



CAPITAL FLOW BONANZAS AS A FUNDAMENTAL INGREDIENT IN SPAIN'S FINANCIAL CRISES, 1850-2015

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ABSTRACT

This paper analyses the mechanisms through which capital flows produced financial instability in Spain over a 165-year period. We study why and how capital bonanzas make crises more likely and severe, and whether their incidence varies depending on types of crises (currency, banking and debt crises). We conclude that most of them occurred in different monetary policy regimes, but they were associated with capital bonanzas in a liberal regulatory framework, both of which contributed to a higher likelihood and greater severity of crises. The analysis of the different monetary policy regimes, financial structures and the types of crises allows us to draw some policy implications that emphasise the need for sound financial regulation and supervision.

Keywords: capital bonanzas, financial crises, Spain

JEL code: G01, N20, F32

RESUMEN

El trabajo analiza los mecanismos a través de los cuales los flujos de capital produjeron inestabilidad financiera en España durante un

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período de 165 años. Se estudia por qué y cómo las bonanzas de capital hacen que las crisis sean más probables y severas, y si su incidencia varía en función de los tipos de crisis (crisis cambiaria, bancaria y de deuda). Concluimos que la mayoría de ellas se produjeron en diferentes regímenes de política monetaria pero que se asociaron a bonanzas de capital en un marco regulatorio liberal, lo que contribuyó a una mayor probabilidad y a una mayor gravedad de las crisis. El análisis de los diferentes regímenes de política monetaria, las estructuras financieras y el tipo de crisis nos permite extraer algunas consecuencias de política económica que ponen de relieve la necesidad de una adecuada regulación y supervisión financieras.

Palabras clave: bonanzas de capital, crisis financieras, España

1. INTRODUCTION

Since 1850, Spain has experienced frequent and severe financial crises, and they have been particularly severe since 1973. As Betrán and Pons (2019) point out, current account imbalances prior to the crises increased vulnerability and financial instability, producing more severe crises. Capital inflows offer several benefits (especially when the level of domestic savings is low) by providing additional financing and enabling the country to import intermediate goods and technology. These positive effects are greater when foreign capital goes to finance tradable goods that are potentially capable of generating productivity improvements and growth (Calvo and Talvi 2008). However, capital inflows can also have adverse effects. Firstly, capital flow reversals can occur, producing crises. Secondly, capital flow bonanzas fuel asset booms encouraging excessive risk-taking when banks invest in booming sectors and, consequently, increase both the probability of a crisis occurring and its severity. Thirdly, a high foreign short-term debt if a capital reversal occurs generates an external credit crunch affecting imports of intermediate and investment goods making crises more severe. Countries that are less dependent on foreign capital are less vulnerable to these effects. How, then, did capital bonanzas affect financial stability in Spain?

Betrán *et al.* (2012) provided a chronology and an account of the Spanish crises and examined their anatomy (in terms of frequency, severity and duration). Betrán and Pons (2019) find current account imbalances to be the main determinant of the severity of Spanish crises. By extending previous research, the aim of this paper is to study the mechanisms through which capital flows produced financial instability in Spain in different monetary regimes (capital controls and exchange rates) and financial structure conditions. In addition, the paper analyses why and how

capital bonanzas make crises more likely and more severe, and whether their effect differs depending on type of crises (currency, banking or debt crises).

The main conclusions are twofold. First, our analysis shows that it is difficult to establish the relationship between the frequency and severity of crises and monetary policy regime. In principle, crises are more frequent in periods of capital controls and floating exchange rates (1921-1935). However, the frequency is also relatively high in periods without capital controls and floating exchange rates (1882-1913 and 1973-2015). Severity seems to be greater in periods without capital controls, and mainly with floating exchange rates (1973-2015). Second, crises were more frequent when there were capital bonanzas that ended in sudden stops. These capital flow bonanzas were associated with processes of liberalisation and financial expansion that contributed to financial crises; in the first place, they mainly increased the probability of a currency crisis, and second, the probability of banking and debt crises. The main mechanisms through which capital inflows generated higher financial instability were by fuelling asset booms and facilitating public borrowing.

Bearing in mind the vulnerability of countries such as Spain, with a large proportion of foreign financing, two main policy recommendations can be made. On the one hand, capital controls and fixed or floating exchange rates do not guarantee the country's ability to evade crises. Second, in periods of capital globalisation, when crises are shown to have been more severe, there is a need to establish sound financial supervision and regulation in order to strengthen financial institutions and mitigate the adverse effects of capital inflows. Unfortunately, this has not been the case in most of Spain's financial crises; in fact, even in some of the more recent crises where regulation seemed to be strong, there were supervisory failures.

The paper is organised as follows. Section 2 analyses why and how the monetary policy regime and the financial structure affect the evolution of capital flows and financial stability. Section 3 examines the mechanism through which capital flows lead to financial instability in the main Spanish financial crises. Section 4 presents the main findings from the analysis of how capital bonanzas increase the probability and severity of financial crises, and how they affect currency, banking and debt crises. Finally, section 5 concludes.

2. THE RELATIONSHIP BETWEEN MONETARY POLICY REGIME, FINANCIAL STRUCTURE AND CAPITAL FLOWS AS A SOURCE OF FINANCIAL INSTABILITY

This section analyses why and how the monetary regime, the financial structure and capital flows affect Spain's financial stability. We consider

different types of crises¹: banking (financial problems affecting banks' balance sheets lead to bailouts, suspensions, mergers and government interventions), currency (a major devaluation of currency or government intervention triggers a rise in interest rates to maintain the value of the currency), stock market (a fall in asset prices of more than 15 per cent) and sovereign debt (when government cannot face budget deficit and public debt payments, and thus default or restructure old debt). In Spain's financial history, these different types of crises have often occurred simultaneously (multiple crisis). A crisis is considered twin or triple (multiple crisis) when different types of financial crises occur within a 2-year window.

Table 1 shows the number, frequency, severity and duration of crises in Spain². We divide the whole period of 165 years³ into four subperiods relating to phases in the international monetary system: (1) 1850-1913, the period of bimetallism and the gold standard; (2) 1919-1935, the interwar years and the establishment of the gold exchange standard in 1926; (3) 1945-1972, the Bretton Woods system, with the dollar standard (with monetary autonomy, stable or fixed-but-adjustable exchange rates and capital controls) and (4) 1973-2015, after Bretton Woods and with most currencies in a managed float regime.

Spanish crises have been frequent, with the exception of the Bretton Woods period when crises were relatively uncommon (Table 1). Crisis severity has been higher in Spain since 1973 than in previous periods, not only due to the major impact of the 2008 crisis; indeed, it was higher in both the 1973-2000 and 1973-2015 periods (-14.3 and -16.9 per cent, respectively)⁴. As visually represented in Figure 1, in terms of the type of crisis, banking and currency (twin crisis) but combined with other types of crises are the most frequent and also the most severe. Duration is also correlated with severity; crises last longer in the post-Bretton Woods period. Looking at the impact by crisis, the most severe crises (1882, 1892, 1976, 1982 and 2008) typically lasted between 5 and 6 years (Figure 1).

The question we seek to answer is how the main characteristics of the monetary policy regime as well as the financial and banking structure

¹ For more detailed information about crisis definition, chronology and an account of Spanish crises see Betrán *et al.* (2012) and Betrán and Pons (2019).

² Frequency is measured by the number of crises as a percentage of the number of years in the period in question, whereas severity is the cumulative loss of output (output loss), estimated by calculating the differences between pre-crisis trend growth and output growth (GDP growth) up to the point when annual output growth has returned to its pre-crisis trend (see Betrán *et al.* 2012). Duration is considered as the number of years until GDP growth returns to its pre-crisis trend.

³ The analysis starts in 1850 due to the lack of data for previous years, mainly current account balance and capital flows.

⁴ By contrast, the world average for a sample of countries indicates that the most frequent and most severe crises occurred in the interwar years (Bordo *et al.* 2001)

TABLE 1
DURATION, DEPTH AND FREQUENCY OF CRISES IN SPAIN, 1850-2015

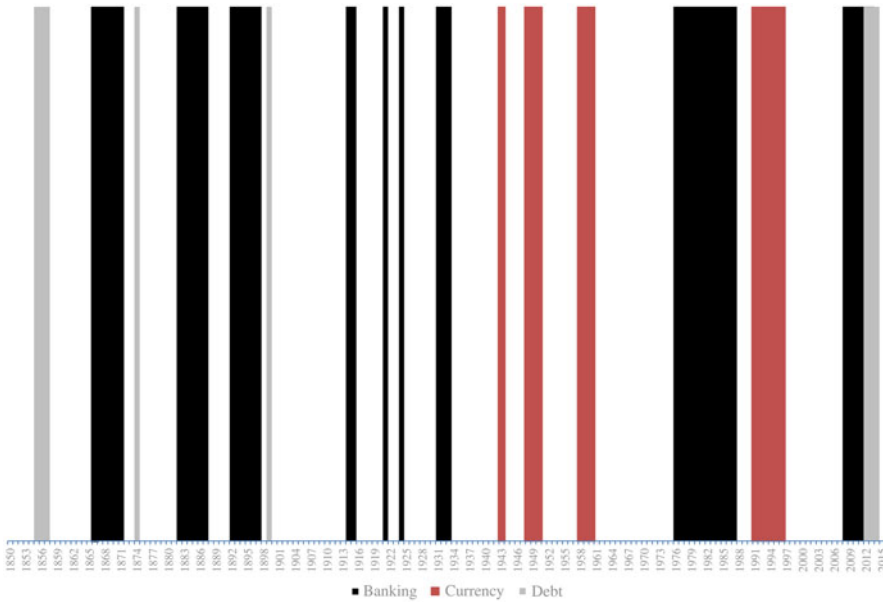
Crisis year	Type of crisis	Duration (years)	Depth (%)	Frequency (%)
1855	Stock market + D	3	-5.62	
1866	Twin 2 (B + SM) + D	3	-11.28	
1874	Stock market + D	1	-10.58	
1882	Triple (C + B + SM) + D	6	-13.52	
1892*	Triple (C + B + SM)	5	-11.77	
1898**	Currency + D	1	-0.25	
1905	Stock market	1	-3.24	
1850-1913		2.83	-8.04	11.1
1914	Twin 2 (B + SM)	2	-3.46	
1921	Triple (C + B + SM)	1	0	
1924	Banking	1	0	
1931	Triple (C + B + SM)	3	-13.04	
1919-1935		1.75	-4.12	18.8
1943	Currency	1	0	
1948	Twin 3 (C + SM)	3	-7.97	
1958	Twin 3 (C + SM) + D	3	-9.57	
1945-1972		2.33	-5.85	7.4
1976	Triple (C + B + SM) + D	6	-25.97	
1982	Twin 1 (C + B)	5	-23.62	
1991	Twin 3 (C + SM)	4	-6.25	
1995	Currency	2	-1.48	
2008***	Twin 1 (C + B + SM) + D	6	-27.33	
1973-2015		4.6	-16.93	11.9

Note: C: currency, B: banking, SM: stock market, D: debt, Twin 1 is a combination of currency and banking crises. Twin 2 is a combination of banking and stock market crises. Twin 3 is a combination of currency and stock market crises. Triple is a combination of currency, banking and stock market crises.

*1892 stock market crisis and 1890 banking crisis. **1898 in Martínez-Ruiz and Nogués-Marco (2014) and 1899 in Betrán *et al.* (2012) using different calculations of Exchange Market Pressure index. ***Debt crisis happened in 2010-2011. Depth or GDP loss defined as percentage of cumulative loss of output estimated by summing the differences between trend growth before the crisis and output growth until the time when annual output growth has returned to its pre-crisis trend. Duration: years taken to return to the pre-crisis trend. Frequency: number of crisis in relation to the number of years, as a percentage.

Source: Betrán *et al.* (2012), Betrán and Pons (2019), Comín (2012), Martínez-Ruiz and Nogués-Marco (2014) and Reinhart and Rogoff (2010).

FIGURE 1
DURATION AND TYPE OF CRISIS, SPAIN 1850-2015.



Note: We classify the crisis as a banking crisis when it occurs simultaneously in combination with other types of crises.

Source: Betrán *et al.* (2012) and Betrán and Pons (2019).

could have affected capital flows and financial stability in Spain. This section also explores crisis resolution.

Table 2 shows the main characteristics of the monetary policy regime, in particular, whether there was a fixed or a floating exchange rate regime in the different crises, as well as the existence or absence of capital controls. We also consider the role of the Bank of Spain and whether the incidence of crises could be related to the presence or absence of a lender of last resort (LLR). Although ensuring financial stability is currently one of the main objectives of this institution, we analyse whether or not this has been the case throughout history. Table 2 also provides information about factors that determine the financial structure, such as the regulatory framework, financial and banking expansion and financial innovation. Processes of liberalisation and banking expansion could boost credit growth due to a loosening in banks' lending standards, which could trigger a crisis. We also analyse some of the main factors related to the crises: Table 3 displays

TABLE 2
FINANCIAL CRISES IN SPAIN, 1850-2015. MONETARY POLICY REGIME AND FINANCIAL STRUCTURE

Crisis year	Monetary policy regime		Financial structure				
	Capital controls	ER regime	LLR	Regulation	Banking structure	Banking expansion (before crisis)	Financial innovation
1850-1913							
1855	Absence	Fixed Silver-Gold	No	Repressive 1848-49 Banking Laws		No	No
1866	Absence	Fixed Silver-Gold	No	Liberal	Multiple banks of issue	Expansion	New financial instruments (short term bonds)
				Bank of issue Law and Credit Company Law, 1856	Banks and credit societies	(Small banks and credit societies with low own resources)	
1874	Absence	Fixed	No	Liberal	Only one bank of issue	Expansion	
1882	Absence	Floating	No	Liberal		Expansion (small banks)	
1892	Absence	Floating	No	Liberal		No	No
1898	Absence	Floating	No	Liberal		No	No
1905	Absence	Floating	No	Liberal		Expansion	No
1914-1935							
1914	Absence	Floating	Yes	Liberal	Mixed banks	No	No
1921	Controls	Floating	Yes	Liberal	Mixed banks	Expansion	No
			Ineffective				
1924	Controls	Floating	Yes	Self-regulated	Mixed banks	Expansion	No
				1921 Banking Law			
1931	Controls	Floating	Yes	Self-regulated	Mixed banks	Expansion	No
				1931 Banking Law			
1940-1972							
1943	Controls	Multiple (<i>de facto</i>)	Yes	Interventionist	Mixed banks	No	No
				1939 Decree			

TABLE 2 (Cont.)

Crisis year	Monetary policy regime		Financial structure				
	Capital controls	ER regime	LLR	Regulation	Banking structure	Banking expansion (before crisis)	Financial innovation
1948	Controls	Multiple	Yes	Interventionist	Mixed banks + Oligopolistic	No	No
1958	Controls	Fixed	Yes	1946 Banking Law Interventionist	Mixed banks + Oligopolistic	No	No
1973-2015	Less controls	Floating	Yes	Slight Liberalisation, 1962 Banking Law	More competition	Expansion of branches	Yes
1982	Absence	Floating	Yes	Liberalisation Savings banks reform, 1987	More competition Mergers (1981)	Expansion of branches Saving banks expansion	Yes Foreign banks
1991	Absence	Floating peg	Yes	Liberalisation 1987 reforms	More competition Mergers (1991, 1994)	Expansion of branches	
1995	Absence	Floating peg	Yes	Liberalisation	More competition		
2008	Absence	Euro Floating	Yes	Liberalisation	More competition	Savings banks expansion Banking internationalisation	Yes New financial products

Note: ER regime: exchange rate regime, LLR: lender of last resort.

Source: Own elaboration. See text in section 2 and Martín-Aceña *et al.* (2014).

TABLE 3
FINANCIAL CRISES IN SPAIN, 1850-2015. PRE-CRISIS FACTORS AND CRISIS RESOLUTION

Crisis year	Pre-crisis factors				Crisis resolution				
	External Imbalances (years before)	Credit expansion (years before)	Public sector problems (years before)	Global crises	Banking resolution	Financial system contraction (after crisis)	Fiscal resolution	Public Debt increase (after crisis)	Regulation consequences
1850-1913									
1855	No	n.d.	Yes			No	No	Yes	
1866	Yes (-3.68)	Yes (5.14)	Yes	Failure of Overend, Gurney & Co (London)	40% banking sector affected	No	No	Yes	
		Railways			25 banks failed			(very high)	
1874	Yes (-0.99)	No	Yes Debt default	German and Austrian Stock markets collapse, 1873		No	No	Yes	Bank of Spain monopoly of issue (as a consequence of the public sector problems)
1882	No	Yes (35.76)	Yes	Banking panic and Stock market crash in Paris	22 banks failed	No	No	No	
1892(*)	No	Yes (9.58)	Yes	Baring Crisis, 1890	2 banks failed	No	No	Yes	
1898	No	Yes (2.52)	Yes			Yes	No	Yes	
		Railways, mining	Debt restructuring (Camacho reform)						
		Railways, mining	Loss in 1898 of Cuba, Puerto Rico, Philippines						
		Railways, mining	Debt restructuring (<i>affidavit</i>)						
1905	Yes (-0.33)		Yes			Yes	No	No	

TABLE 3 (Cont.)

Crisis year	Pre-crisis factors				Crisis resolution				
	External Imbalances (years before)	Credit expansion (years before)	Public sector problems (years before)	Global crises	Banking resolution	Financial system contraction (after crisis)	Fiscal resolution	Public Debt increase (after crisis)	Regulation consequences
1914-1935									
1914	No	No	No	WWI financial crisis	1 bank affected	No	No	No	1921 Banking Law, reaction to banking instability
1921	No	Yes (16.79)	No	Post WWI crisis	1 bank failed	No	No	No repatriation	
1924	Yes (-2.13)	Yes (11.82)	No	1929-31 Wall Street stock market crash and banking crisis	10 banks failed	No	No	No repatriation	
1931	Yes (-1.30)	Yes (9.43)	No		7 banks failed	No	No	No	1931 Banking Law, to increase the government's control of the Bank of Spain to defend the exchange rate
1940-1972									
1943		No	Yes			No	No	No	
1948		No	Yes		No	No	No	No	
1958	Yes (-1.99)	Yes (2.86)	Yes		No	Yes	No	No	1959 Stabilisation Plan (IMF)
1973-2015									
1976	Yes (-3.89)	Yes (6.72)	Yes	U.K. and U.S. currency crises	53% banks affected (small and medium banks)	Yes	Yes	Yes	FGD (Deposit Guarantee Fund) 1977
					Banking restructuring: Big Five banks			(high)	Banking Corporation 1978

1982	Yes (-2.53)	Yes (4.99)	Yes	U.K. and U.S. currency crises	20 banks failed (holding <i>Rumasa</i>)	Yes	Yes	Yes (very high)	Bank DGB 1980
1991	Yes (-3.16)	Yes (7.44)	Yes	European Monetary System Crisis		No	No	Yes (high)	
1995	Yes (-0.65)		Yes	U.K. and U.S. currency crises		No	No	Yes	
2008	Yes (-9.22)	Yes (15.48)	No	2007/8 banking crisis	Savings Banks failed (from 45 to 2)	No	Yes	Yes (very high)	New international regulation: Basel III 2009 CEBS (stress test) 2010 Spain: FROB I (Fund for Orderly Bank Restructuring) 2009, FROB II 2011 SAREB (Company for the Management of Assets proceeding from Restructuring of the Banking System), 2012
		Housing bubble							

Note: External imbalances: Current account balance/GDP, average of the 3 years prior to the crisis, Credit expansion: average of the real credit growth the 3 years prior to the crisis, and Public problems: a combination of public deficits/GDP and Public Debt/GDP averaged over the 3 years. Banking expansion: an increase in the number of banks, savings banks or branches the years prior to the crisis, Financial system size: rate of growth of the total financial assets/GDP the 3 years after the crisis, Public debt: rate of growth of the ratio Public debt to GDP 3 years after the crisis.

Source: Own elaboration, see Appendix 2 and 5 for current account and credit in Betrán and Pons (2019) and public sector in Comín (2017).

data on external imbalances, credit expansions and public sector problems prior to the crises.

Finally, as crisis severity also depends on the resolution of the crisis, Table 3 offers information about the impact of the crisis on the banking sector (number of affected banks and/or failures) and the financial system size (whether or not each crisis resulted in a contraction of total financial sector assets), whether the crisis was fiscally resolved, whether there was an increase in public debt after the crisis, and finally, how regulation changed in response to the crisis.

2.1 1850-1913

Regarding the monetary policy regime, Spain had a bimetallic monetary system until 1883. In 1868, the *peseta* was established as the official monetary unit of the country and notes were convertible at the official rate into both gold and silver (Martín-Aceña 2017). In 1883, gold convertibility was suspended to protect the metallic reserves of the Bank of Spain after the 1882 crisis. This generated a sharp contraction in foreign capital inflows, and the *peseta* entered into a floating exchange rate system. The subsequent period, 1882-1913, was characterised by a floating exchange rate (although Spain always maintained an interest in joining the gold standard) which coincided with capital mobility (Table 3), unlike the general situation in most other countries over this period (which had fixed exchange rates and capital mobility). In the period 1850-1881, with fixed exchange rates and an absence of capital controls, Spain had three crises, representing a frequency of 9.4 per cent. When the country changed to a floating exchange rate, the frequency rose to 12.5 per cent (four crises).

Regarding the role of the central bank, Spain did not follow the «rules of the game» during the gold standard era (1880-1914) and interest rates underwent few changes during this period. The main policy goal of the Bank of Spain was to maintain a high reserve ratio as the bank considered that this would reinforce its credibility. Consequently, the Bank of Spain did not feel committed to exchange rate stability or the convertibility of banknotes into gold (Martín-Aceña *et al.* 2012). However, the Bank of Spain was strongly constrained by the Treasury and its financial needs⁵. As Bordo (2018) mentions, during the 19th century most central banks provided fiscal support to government. In Spain, although the central bank was not a state institution, the government granted the Bank the monopoly of issue in 1874 in exchange for a loan of 150 million *pesetas*,

⁵ The public debt to GDP ratio increased enormously from 1866 to 1875 (from 71.2 to 154.8 per cent), with the foreign debt to GDP ratio rising from 15.9 to 51.4 per cent (Comín 2017). Public deficits also increased during the colonial wars around 1898.

and advanced cash to the Treasury in exchange for government bonds that the Bank kept in its portfolio (Martín-Aceña *et al.* 2012). The Bank performed many functions on behalf of the state, such as being responsible for the collection of direct and property taxes or servicing the public debt. However, the Bank did not assume the responsibilities of LLR until 1914 (Martín-Aceña 2017).

The financial structure was shaped by the 1856 law that established a relatively open and liberal financial framework, and allowed an increase in the number of credit institutions and issuing banks (1856-1866) and credit expansion (Table 3). Financial expansion was also linked to foreign capital inflows, which went mainly to railway construction, mining, banking and public budget deficits covered by foreign debts.

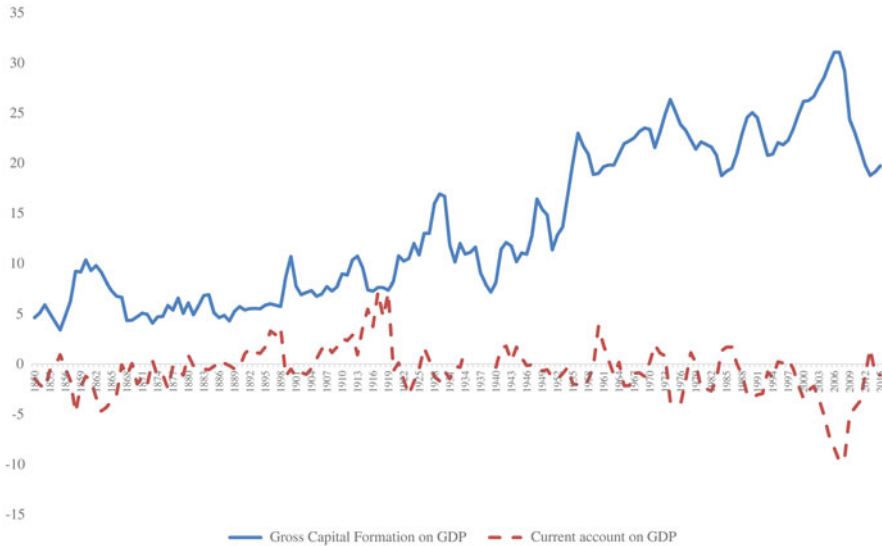
There are a number of potential sources of the relatively high frequency of crises in this period by international standards (Bordo *et al.* 2001). These include the monetary policy regime (with the floating exchange rate); the globalisation of capital, which enabled the government to borrow from abroad; capital flow bonanzas in railways and mining, which despite being tradable sectors and helping to finance industrialisation and economic growth (see Figure 2), facilitated the creation of bubbles and encouraged speculation, and were followed by sudden stops. Moreover, the resulting financial structure, with a banking expansion linked to the 1856 liberal regulatory framework and also to capital inflows (mainly French capital⁶), facilitated credit growth and the channelling of foreign capital towards speculative investments. Regarding crisis severity, on average, crisis severity was higher in the period 1850-1881, with an average output loss of 9.16 per cent (with fixed exchange rate) in contrast to the 7.19 per cent registered in the 1882-1913 period (with a floating exchange rate). However, the most severe crises took place in the period 1882-1913: 1882 (-13.5 per cent) and 1890/92 (-11.7 per cent). The main difference between these two periods in terms of current account was the trade deficits in 1850-1881 (which aggravated crisis severity) and the trade surplus and foreign capital inflows with sudden stops in 1882-1913 (increasing crisis frequency and the severity of some crises).

2.2 1914-1935

WWI gave rise to high levels of financial instability. Most countries suspended convertibility and introduced capital controls; indeed, the

⁶ French capital that promoted some credit societies includes that invested in the *Crédito Mobiliario Español* (1856), linked to the Pereire brothers, the *Sociedad Española Mercantile e Industrial* (1856), linked to Rothschild, and the *Compañía General de Crédito* (1856) with capital from Prost and Guillou.

FIGURE 2
GROSS CAPITAL FORMATION AND CURRENT ACCOUNT BALANCE/GDP,
1850-2015.



Source: For the current account balance/GDP, Tena (2005) and Betrán and Pons (2019) and for gross capital formation/GDP, Prados de la Escosura (2017).

Spanish monetary regime was not so different from other countries in this regard. As a consequence of having remained neutral during the war, Spain's gold reserves rose from 720 million gold pesetas in 1914 to 2,554 million gold *pesetas* in 1921, and ranked as the world's fourth largest gold reserve (Martín-Aceña 2001). This increase in gold reserves prompted the Spanish government to assess the possibility of joining the gold standard (Comisión del Patrón Oro 1929). However, this was eventually ruled out due to tensions in international markets starting in 1928, and especially after the 1931 crisis, when the pound sterling abandoned the gold standard. There was a floating exchange rate system in place but partial exchange controls were introduced in 1919 to contain the depreciation of the *peseta*; it remained stable from 1922 to 1925, and even appreciated in 1926 and 1927. However, in 1928 it again entered a persistent decline, leading to the introduction of systematic exchange rate controls characterised as a «dirty» or managed float system (Martín-Aceña *et al.* 2012). The floating exchange rate may be a factor in the high frequency of crises in this period, although their severity was relatively low by international standards (Betrán *et al.* 2012).

With respect to the central bank, it followed its passive strategy of maintaining a high reserve ratio by identifying the existence of a large volume of metal (gold and silver coins and bullion) with the confidence in the paper notes in circulation. The difference with respect to the previous period was the large amount of metallic reserves. Once again, however, the possibility of adopting the gold standard ran counter to the Bank of Spain's interests (as it was concerned with maintaining large metallic reserves) and also conflicted with the government's need to finance the public deficit, as the adoption of the gold standard would have raised the cost of money (by implementing a restrictive monetary policy) and the cost of financing the budget deficit.

The financial structure was also affected by neutrality because capital accumulation in the hands of entrepreneurs and speculators during war times stimulated banking expansion. It is worth noting the rise in the number of banks between 1915 and 1920 (from 52 to 91) and the increase in total bank assets, bank deposits and loans (Table 3). However, this expansion occurred with no kind of specialisation, very low capital, unprofessional managers and without the supervision and intervention of the Bank of Spain to prevent banking problems (Massó Escofet 1917). When the war finished, there was a wave of bank insolvencies, mainly in Catalonia.

The main effect of the 1920 crisis was a regulatory change, the 1921 law, which created a new legislative framework for the Spanish financial system⁷ and established certain controls and supervision of banking operations, along with a declaration assigning the function of the LLR to the Bank of Spain (Martín-Aceña *et al.* 2014). However, the reforms did not prevent the banking crises that emerged in 1924 and 1931, and the Bank of Spain was still reluctant to act as the LLR (Martín-Aceña 2017)⁸.

The frequency of crises during the interwar period was higher than in the other periods (even higher than the average) but the 1914, 1921 and 1924 crises had little impact (zero output loss in the 1921 and 1924 crises, see Table 1). This higher frequency but relatively low severity of crises (with the exception of the 1931 crisis, which was more severe and had an output loss similar to other 19th-century crises, such as that of 1882), happened in a context of dirty floating, with capital bonanzas and significant banking and credit expansion (Table 3) and large metallic reserves. With the exception of the speculative investments linked to WWI, capital inflows went to sectors such as chemicals, machinery, petroleum and

⁷ It was also a turning point for banking regulation in many countries such as Denmark (1919), Austria (1924-1925), Czechoslovakia (1924), Norway (1925), Portugal (1925), Italy (1926) and Japan (1927).

⁸ The Bank of Spain helped the Banco Central in 1914 and also intervened in the 1931 crisis. Despite this, the Bank decided to provide very limited LLR help.

public services (Puig and Álvaro 2015), most of which were tradable sectors that favoured industrialisation and growth (see online Appendix, Figure A.1).

2.3 1940-1972

In terms of its monetary regime, the Spanish economy during this period was not unlike that of most other countries; the *peseta* was subject to a fixed exchange rate and capital controls. However, with respect to the Bank of Spain's role, although it remained a private bank during most of the period, it was entirely subordinated to the government's interests. It was nationalised in 1962 and some monetary instruments were implemented, but it was not given full autonomy, with monetary policy remaining in the hands of the Ministry of Finance (Martín-Aceña 2017).

Regarding the financial structure, from the end of WWII onwards, financial regulation generally became more intense, but Spanish regulation was even more interventionist than other European legislations. The 1946 Banking Law introduced barriers to entry and a wide-ranging package of regulations (Martín-Aceña *et al.* 2014). Although liberalisation got underway in Spain during the 1950s, it was only weakly reflected in the 1962 Banking Law, and then later in 1969. The Spanish case has all the features, without exception, that characterise a repressed financial system, according to the definition provided by Bordo (2018): interest controls, quantitative controls on credit, state interventionism or ownership of the financial system, government intervention in the allocation of credit and requirements that commercial banks hold government bonds. The financial structure was characterised by a concentrated banking sector in which the so-called Big Five banks achieved a dominant position.

As in the rest of the world, in 1940-1972, there were relatively few banking crises in Spain. According to Bordo *et al.* (2001), regulation of domestic and international markets suppressed banking crises whereas capital controls increased currency crises. In Spain, there were no banking crises because struggling banks and savings banks were systematically rescued by the Bank of Spain. Mergers and acquisitions of banks in trouble by sound banks was the other alternative used to avoid bankruptcies⁹. The timid reforms introduced in 1962 and 1969 had no consequences in terms of financial stability. The three crises that occurred in this period were currency crises, with the 1958 crisis being the most severe (a currency crisis as well as a stock market and debt crisis). Thus, in a context

⁹ There was a total of 109 mergers between 1941 and 1970, although there were no mergers between the core banks.

of capital controls and fixed exchange rates, banking crises disappeared but currency crises did occur. Financial stability was achieved despite significant capital bonanzas during the 1960s into several dynamic sectors such as food and beverages, chemicals or metallic products, in this phase of rapid industrialisation and extraordinary economic growth (De Torres 1967).

2.4 1973-2015

As in many countries, the post-Bretton Woods era in Spain was characterised by a slow but continuous process of liberalisation. A floating exchange rate was in place from 1974 until 1989, when the *peseta* returned to a fixed exchange rate as a consequence of joining the European Exchange Rate Mechanism. In addition, capital controls were in effect until the late 1980s and they were full liberalised in 1994¹⁰.

The Bank of Spain, during the 1970s and 1980s, assumed the role of a modern central bank¹¹ and for the first time the bank became the *de facto* monetary authority, acting as the LLR (Martín-Aceña 2017). However, when the 1977 crisis erupted, the Ministry of Finance and the Bank of Spain were caught unprepared; the authorities had neither the legal instruments, nor the institutional mechanisms to face the turmoil caused by the massive banks' insolvencies. The Bank had to implement emergency measures to prevent bank runs, to provide limited guarantees to depositors with the adoption of a deposit insurance scheme (1977), and to establish an appropriate mechanism to intervene in banks¹², thereby playing a crucial role in the process of restructuring the banking sector (Table 3).

Spain's entry into the European Economic and Monetary Union in 1999 and the loss of certain policy instruments, in particular the monetary and exchange rate policies, was pivotal; monetary policy was defined by the European Central Bank, and the Bank of Spain had the function of implementing the Eurosystem's monetary policy (Martín-Aceña 2017).

The financial structure was shaped by the liberalisation process; in particular, interest rates and other controls were reduced in 1977, and the

¹⁰ Capital controls ended earlier in countries such as Denmark and Germany, but Spain was in line with other countries such as France and Italy (Forero-Laverde 2018).

¹¹ This culminated with the Law of Autonomy of 1994, which guaranteed the autonomy of the Bank with respect to the government.

¹² In 1977, a Deposit Guarantee Fund (*Fondo Garantía de Depósitos*) was established and in 1978 the Banking Corporation (*Corporación Bancaria*) was created to intervene in institutions in trouble, remove and substitute the administrators, reorganise the banks, and in due time, to return them to the private sector.

entry of foreign banks was allowed in 1978. There was an increase in banking competition that resulted in banks expanding their geographical and business areas. In Spain, as in other countries, there was an increase in financial instability because the abovementioned process of liberalisation was not accompanied by an efficient system of regulation and supervision (Poveda 2012). From the 1990s to 2007, there was also a process of deregulation and re-regulation of the financial sector aimed at adapting it to European Union regulations. As a consequence, the expansion of banks—on this occasion saving banks—happened at the same time as low interest rates produced an aggressive, risky lending policy, especially in the building sector (mortgages and loans to real estate developers). The result was the creation of a housing bubble, which burst in 2008.

Regarding the period 1973–2015, the key question that arises is why Spanish crises were so frequent and so severe, when Spain's monetary conditions were not so different from those of other European countries. There are two possible explanations: first, the level of financial repression in the previous period was higher than in other countries, which could raise the likelihood of crises following liberalisation; and second, other factors such as the expansion of the banking sector and the growth in loans fed by the high current account imbalances, especially after joining the European Monetary Union.

In the most recent crises (in 1977, 1982 and 2008) the Bank of Spain played a very active role and acted relatively rapidly, instrumenting new institutions and introducing a wide array of instruments. Crisis resolution has also been related to the different monetary policy regimes. Whereas in most of the Spanish crises, the depreciation of the *peseta* was used as a key shock absorber (e.g. in 1976 the authorities devaluated the *peseta* and managed to secure current account surpluses in 1978 and 1979), after its entry into the eurozone, Spain no longer had the monetary instruments it needed to face the crisis. This implied a more profound, harder domestic adjustment process, the so called «internal devaluation» (austerity measures and wage adjustment), to correct its external position and its public sector problems. By contrast, being in the euro area impeded a «real» currency crisis as there was no currency on which to run.

3. CAPITAL FLOWS AS A DETERMINANT OF SPANISH FINANCIAL CRISES

This section studies the mechanism through which capital flows contributed to the main Spanish financial crises. The influence of capital flows depends not only on the magnitude of the foreign capital inflows but also on their destination; that is, whether they went to tradable sectors

that favoured growth and industrialisation, or to speculative or non-productive investments that fuelled asset booms.

3.1 1866

There were two mechanisms through which capital flows affected financial stability: they enabled the formation of a bubble and facilitated public indebtedness. From the 1850s on, there was a change in the institutional framework¹³ that affected the economy positively and prompted financial expansion and foreign capital inflows, which partly financed the investment in infrastructures and public deficits¹⁴. In the period 1860-1870, foreign capital accounted for an average of around 27 per cent of total investment¹⁵ and around 50-60 per cent of total railway investment (Tortella 1994). Moreover, railway construction was very rapid but dependent on imports¹⁶ and produced huge trade deficits (2.5 per cent of GDP in the period 1862-1866, see Figure A.1 in the online Appendix). The heavy losses suffered by most railway firms in Spain¹⁷ precipitated the Paris Bourse crash and a sudden reduction in capital inflows in 1864. The situation worsened further still in 1866 as a consequence of the failure of Overend, Gurney & Company, a London discount bank (Tedde 2010; Moro *et al.* 2015). The stock market crash mainly affected credit societies involved in the railway sector. Foreign capital flows also financed the public sector. The international crisis put a stop to the sale of public bonds in foreign markets¹⁸.

The loans given to the Spanish government by the Bank of Spain, the banking expansion and some financial practices which stimulated credit and fiduciary money growth all led to financial instability and produced a scarcity of metal from 1863 onwards. This situation affected the Bank of Spain, and when it could not make payments, a bank panic ensued. By the end of the crisis, 40 per cent of Spanish banks had officially been

¹³ Several laws were passed, such as the Disentailment Act (which privatised land formerly owned by the Catholic Church, religious orders and communal land owned by municipalities) in 1845 and 1855, the Railway Law in 1855 and the Bank of Issue Law and the Credit Company Law in 1856.

¹⁴ Banks and credit societies invested in the railway sector and implemented high-risk financial innovations which fostered the expansion of credit and fiduciary money (Navas and Sudrià 2007, Sudrià 2014, Sudrià and Blasco 2016).

¹⁵ Foreign capital inflows were so important that in 1861 the Bank of Spain reduced the interest rate to moderate them (and also to moderate the debt burden).

¹⁶ In 1875-1879 railway materials represented around 3.6 per cent of total imports (Prados de la Escosura 1988).

¹⁷ As Luis Pastor (1866), who was Minister of Finance in the 1850s, explained, the «railroads built did not produce high enough yields to pay interest to either the shareholders or the bondholders; and there was a lack of capital to finance future railroad constructions».

¹⁸ Foreign debt represented around 15-17 per cent of total public debt in the mid-1860s.

liquidated. This represented the first restructuring of the Spanish financial system. Therefore, capital inflows played a role in the origin of the 1866 crisis, by fuelling speculative booms and public indebtedness, along with the sudden stop that occurred in the mid-1860s as a consequence of the international crisis and domestic factors.

3.2 1882

Behind the 1882 «triple» crisis was the so-called *febre d'or* (gold fever in Catalan), and the bursting of the stock bubble created by the boom in Spanish wine exports due to the French phylloxera plague. The stock market boom was fuelled not only by credit expansion but also by foreign investment; although the net capital inflows were clearly below those of the 1860s, they did reach relatively high levels¹⁹. Foreign capital inflows financed the railways and the booming mining sector²⁰.

The Spanish economic situation had begun to deteriorate even before the 1882 crash; in 1881, the government decreed a massive conversion of public debt (the Camacho restructuring) as a consequence of the huge public debt-to-GDP ratio, which peaked at 171.73 per cent in 1879. Public debt was divided into national and foreign debt, with only the latter being paid in gold in order to guarantee the payment in gold to foreign bondholders (Comín 2012). This resulted in a massive capital flight and a sudden stop in 1880 (Prados de la Escosura 2010). As gold flowed out of the country, the Bank of Spain, faced with large reserve losses, was forced to suspend gold convertibility²¹.

The crash began on the Paris stock exchange in January 1882 but the contagion soon spread to Barcelona and Madrid. When the international crisis erupted, interest rates rose, foreign investment halted, Spanish banks experienced huge withdrawals and the Bank of Spain saw a major fall in its gold reserves (Catalán and Sánchez 2013). The stock market crash caused a banking crisis and between 1882 and 1884, 20 banks failed, most of them from Barcelona.

¹⁹ The average ratio of net flows of foreign capital to total gross investment in Spain from 1856 to 1873 was around 32 per cent (Moro *et al.* 2015). This ratio is markedly lower than in Argentina (70 per cent) or Mexico (75 per cent in 1870-1910) but fairly similar to the rate in Canada (37 per cent) (O'Rourke and Williamson 2002).

²⁰ The mining sector experienced a boom thanks to a change in legislation in 1868 and to the public deficit difficulties that finished with the disentanglement of the Riotinto mines in 1873. Mining and railway booms fed back because foreign investment in the mining sector also built mining railways or branches to national trains (Escudero 1996).

²¹ Since convertibility was never resumed, Spain remained outside the gold standard in 1883 (Martín-Aceña 1994).

3.3 1931

During WWI, Spain accumulated positive current account imbalances. The economic growth of the 1920s attracted foreign capital to some dynamic sectors, but there were again capital outflows from 1928 (Ventosa i Calvell 1932). As a result, the *peseta* depreciated and the fall in the nominal exchange rate between 1927 and 1931 was -34.76 per cent with respect to the pound, and more than -50 per cent with respect to the franc and the dollar. Despite the efforts of the Bank of Spain to guarantee its value, the *peseta* continued its depreciating trend until 1932. The depreciation of the *peseta* allowed for an improvement in external competitiveness. Despite this, there was a substantial drop in exports from 1931 to 1935; indeed, the trade channel played a more important role in the spread of the 1929 crisis than has been conventionally understood.

The 1929 U.S. stock market crash dragged down European stock markets, including that of Spain, whose index decreased by around 65 per cent from 1928 to 1934. The stock market collapse and the strong exchange rate depreciation hit a weak banking sector. The deposits–currency ratio, which is used to measure panic or deposit withdrawals, decreased by 23 per cent between 1930 and 1931, but only by 9 per cent from 1929 to 1933. These figures contrast with the 53 per cent decrease in the deposits–currency ratio in the United States in the same period²². The end result was that seven banks failed; a small banking crisis in comparison with other countries²³. However, as Sotelo (2019) shows, despite the relatively small number of bank failures, the balance sheets of many banks were severely hit by the crisis even though they managed to remain afloat.

3.4 1976 and 1982²⁴

These two crises are linked to the oil shocks (in 1973 and 1979) and happened after a period of economic expansion financed by foreign capital²⁵. From this moment on, Spanish current account deficits were mainly the result of the foreign trade deficit, which increased by around 50 per

²² U.S. data from the Federal Reserve Bank of St. Louis, Economic Data.

²³ In relative terms, the banking crisis was milder because the Bank of Spain provided banks with most of the cash they needed to convert deposits into currency (Martín-Aceña 1987).

²⁴ We jointly examine these two crises because the Spanish literature generally holds that the banking problems of the 1980s were also a consequence of the 1977 banking crisis.

²⁵ Since the late 1950s, Spain moved gradually to an open economy and experienced economic growth primarily based on domestic demand. Spanish economic exports remained weak, although raw materials and capital goods imports increased due to rapid industrialisation. The result was a trade deficit to GDP ratio of around -5.55 per cent between 1965 and 1973, but these trade deficits were easily covered by the surplus balances for services and transfers, thanks to tourism revenues and migrant remittances (see Figure A.2 in the online Appendix).

cent, and was closely linked to oil imports. Moreover, trade deficits were not offset by tourism revenues and migrant remittances, as had happened before the oil shocks. There were capital outflows in 1978 (with a fall in foreign capital inflows of more than 24 per cent) and a currency crisis with a deterioration of the exchange rate between 1974 and 1985, from 58 *pesetas*/dollar to 160 *pesetas*/dollar. Foreign capital inflows recovered in 1980 and 1982 but they decreased by more than 44 per cent in 1982.

Technical obsolescence, lack of competitiveness, a low level of self-financing and a high dependence on credit put industrial companies and banks in a precarious situation, and many firms were unable to survive. The crisis was transmitted from the industrial to the banking sector through an increase in failed industrial firms and unpaid clients and was aggravated by a stock market crash that deteriorated the balance sheets of those Spanish banks with large industrial portfolios (Cuervo 1988).

3.5 2008

From the mid-1990s to 2007, Spain experienced rapid growth, benefitting from the Economic and Monetary Union convergence process and the adoption of the euro, a stable macroeconomic framework and favourable financial conditions. All these factors favoured foreign capital inflows (De Grauwe 2013). In this context, a number of bubbles were created, such as the tech bubble (1997-2001) or the construction bubble which started in 1985 but grew substantially from 1996 to 2008²⁶.

Economic growth was accompanied by a decline in competitiveness (Escrivá and Correa 2010) and growing imbalances. The main imbalances accumulated were current account deficits (Escrivá and Correa 2010, the European Commission 2012) and high levels of private debt. The high inflows of foreign capital after joining the euro and low interest rates exacerbated the growth in household debt and non-financial corporations' debt, which rose by 97 percentage points—from 94 per cent of GDP to 191 per cent of GDP—in the period 2000-2007 (Bank of Spain 2017). The international context (the bursting of the U.S. housing bubble in 2007) was crucial in the bursting of this bubble and the associated banking problems. The problem was the reversal in international capital inflows when the banking crisis worsened (Jimeno and Santos 2014). The international financial crisis restricted the access of Spanish banks and the

²⁶ Other factors also fed these bubbles, such as the low interest rates and credit facilities (mainly saving banks trying to gain market share), as well as the financial difficulties faced by municipalities that encouraged them to push the housing sector in order to increase their financial resources, using the saving banks (controlled by local authorities) to expand the construction sector.

government to international markets, and internal problems led to a rise in defaults. After the crisis, there was also a fiscal deficit that transformed into a debt crisis (Comín 2012, 2016).

To sum up, most Spanish crises took place in periods of capital globalisation, when there was easy access to foreign capital. In some cases, these capital inflows contributed to the emergence of an asset bubble and to growing public deficits. In 1866 and 1882, there was an asset boom (railways, mining and banking) fuelled by foreign capital inflows, which also went to buying public debt. In both cases there was a sudden stop that was exacerbated by an international crisis (the failure of Overend, Gurney & Company in 1866 and the Paris stock exchange crash in 1882). The 1931 crisis was also preceded by capital bonanzas during the 1920s, which ended in a sudden stop when the international and domestic conditions changed. In the most recent crises—1976, 1982 and 2008—Spain also accumulated high imbalances (current account and public deficits in 1976 and current account deficits and high levels of private debt in 2008) after a period of economic growth. In these cases, there was also an international shock that precipitated the crisis (the 1973 and 1979 oil crises, the 2007 U.S. subprime mortgage crisis and the 2010 euro crisis). The most severe crises happened in periods of floated (1931, 1976, 1982 and 2008) and fixed (1866 and 1882) exchange rate regimes and with (1931 and 1976) and without (1866, 1882, 1982 and 2008) capital controls. Moreover, the key common feature shared by all these crises is the existence of periods of capital bonanzas followed by sudden stops.

4. CRISES COINCIDING WITH CAPITAL FLOW BONANZAS

This section analyses why capital flow bonanzas produced financial instability and made crises more likely. We also consider the main reasons why capital flow reversals could produce higher output losses. The balance of payments identity holds that current account surplus (CA), net capital flows (KA) and changes in the official reserves are equal to 0:

$$CA + KA + \Delta R \equiv 0$$

When a country runs a current account deficit, it must finance this deficit by a private capital inflow or by a reduction in its official reserves; in both cases, the country runs down its net foreign wealth (Reinhart *et al.* 2016). For this reason, when there is a current account deficit, the country has an external lending scheduled denominated in a foreign currency (the major exception to this is the euro system). However, the reserves used to maintain the level of current account deficit are not large enough, necessitating an adjustment in the current account and trade balance (Bordo *et al.* 2010).

In all periods, capital flows boomed when interest rates in major financial centres were low and foreign capital could be attracted to invest in countries with higher interest rates (Reinhart and Reinhart 2008, 2015). In other words, it is as if countries with excess savings that depress interest rates were interested in investing in countries with a scarcity of savings or an excess of investment; this contributes to price bubbles in the borrowing countries (Bernanke 2005, Caballero *et al.* 2008). As we have seen in previous sections, this was the case with Spain, especially during the 19th century, when foreign capital went to finance investments in railroads, mining and public debt (bonds), as well as the 1973-2008 period (Figure 2). During the 1970s and 1980s there were high nominal interest rates that coincided with inflation. Interest rates began to decrease from 1994, at which point foreign capital started going to housing and other sectors. Spain, in comparison with other European countries and the United States in the periods 1850-1913, 1914-1935 and 1940-2015, was among the countries with the highest current account deficits (the current account balance as a share of GDP)²⁷, as shown in Figures A.2, A.3 and A.4 in the online Appendix.

As mentioned above, capital flows could be a source of vulnerability due to the possibility of foreign investors cutting funding, producing a sudden stop and causing a costly adjustment in the economy (Milesi-Ferretti *et al.* 2011). Kaminsky (2008) argues that a higher degree of financial integration increases the risk of sudden stops, even without domestic problems. In addition, sudden stops occur in clusters, whereas countries subject to these events are heterogeneous in terms of macroeconomic conditions (Calvo *et al.* 2006). Alternatively, a sudden stop could occur without a capital bonanza, as a result of policy mismanagement.

Bordo *et al.* (2010) studied the determinants of sudden stops and their consequences in terms of output per capita for a sample of twenty emerging market countries, for the period of capital globalisation 1880-1913. They found that countries showed increasing vulnerability to sudden stops because they were exposed to external shocks, as a consequence of higher levels of foreign currency debt and large current account deficits associated with high dependence on foreign capital.

However, capital flows and reversals also happened in the interwar period, a period with capital controls. Accominotti and Eichengreen (2016) studied capital flows from six financial centres to twenty-eight recipient countries using data for the period from 1919 to 1932. Capital inflows occurred from 1924 to 1928, peaking in 1927. They increased the current account deficits of European countries, especially central European

²⁷ As data started in 1870 for most countries, these occurred especially in 1870-1890, 1900-1905, 1922-1925, 1928-1932, 1956-1959, 1974-1979, 1990-1995 and 2000-2010.

countries such as Austria, Germany and Hungary. Capital flow reversals, which started as early as 1928, reflected the changes in interest rates and stock market volatility in the main financial centres. However, the authors did not find evidence that country-specific factors (GDP growth, inflation, budget deficit, terms of trade, etc.) were associated with capital outflows. The sudden stop created a need for adjustments to the current account in 1931, for example, by establishing capital controls.

Focusing on a more recent period, Eichengreen and Gupta (2018) affirmed that global factors appear to have become more important relative to country-specific characteristics and policies. Moreover, these global factors have changed in different periods; for example, interest rates in the United States were critical in the 1990s, whereas the volatility in the U.S. stock market (as an indicator of global risk aversion) was the most important factor in the following decade. Hutchison and Noy (2006), using panel data on twenty-four emerging markets for the period 1975-1997, found that sudden stops could have profound consequences for an economy because the reversal of foreign credit inflows, especially in conjunction with a realignment of the exchange rate, caused a drop in domestic investment, production and employment, leading to worse currency crises than might otherwise have occurred. In addition, sudden stops had a greater effect than a currency crisis alone. This is due to the fact that the financial constraints limited imports of intermediate and investment goods, causing a substantial decline in investment, which acted as an external credit crunch.

Most of the situations highlighted by these empirical studies can also be observed in Spain, which has been characterised by lending booms caused by external borrowing from financial centres and defaults. The degree of vulnerability may differ depending on the currency denomination of the loans. In the 19th century, borrowing was denominated in gold and Spain was not on the gold standard, which could increase the cost of taking on debt. As a consequence of Spanish neutrality during WWI and its adverse experience with sovereign defaults in the 19th century, Spain paid all its foreign debts and increased its official reserves, with its gold reserves becoming the fourth largest in the world. Therefore, during the interwar years Spain did not have any foreign public debt, any other types of foreign assets or private debt; moreover, its current account deficits were not very high, although there were some considerable trade imbalances from 1920 to 1929. Finally, by far the largest net capital flows were registered in the period from 1973 onwards, and especially in the period 2000-2007.

The source of the current account balance is different for pre-1945 and post-1945, as shown in Figures A.5 and A.6 in the online Appendix. Prior to 1945, there was a trade balance surplus throughout most of the period, with substantial deficits afterwards. As stated above, this foreign capital

inflow went to investments in bonds, shares and liabilities in railways, mining and public debt, which were vulnerable to sudden stops. However, post-1945 most of the external imbalances were related to trade imbalances. This change in current account composition could lead to increased vulnerability; trade deficits might weaken the currency and could also fuel massive capital inflows. It is possible to run huge deficits when foreigners are willing to lend, but if foreign banks withhold their credit facilities, a severe recession can be caused. The structure of capital flow portfolios is related to the largest sudden stops, with the decline appearing to be sharper in countries with net external liabilities in the form of short-term debts²⁸. Trade deficits imply a short-term debt. Under such conditions, if a capital reversal happens, reserves have to be used or a credit line needs to be arranged in order to avoid a private foreign debt bailout. This has consequences in terms of a credit crunch in the domestic economy, leading to a fall in investments and a higher output impact. Such a situation occurred in the crises during the period 1973-2015, which were the most severe in Spanish financial history.

As mentioned above, foreign capital inflows may lead to more crises because they can fuel asset booms, encouraging excessive speculation, generating exposure to sudden stops and increasing the probability of a crisis occurring. Following Reinhart and Reinhart (2015), we calculate the probability of a crisis coinciding with a capital flow bonanza (per cent). Reinhart and Reinhart (2015) describe a capital flow bonanza as the situation when an economy receives larger-than-normal capital flows relative to its own history. They measure it when the current account balance is in deficit, considering its level relative to nominal GDP in the lowest 20th percentile of experience. Using our new estimation for the current account balance for Spain (Betrán and Pons 2019), we have calculated these capital flow bonanzas for the period (1850-2015), revealing 85 years with capital flow bonanzas. Table 4 lists the years with capital flow bonanzas and crises in each of the periods under study. We observe that the period with the most capital inflows is the most recent (1973-2015), which has the second-highest frequency of crises after 1919-1935 and the highest severity of crises.

We consider episodes in which a capital flow bonanza and a financial crisis coincide within a window of 3 years before and after the crisis. According to Reinhart and Reinhart (2008), if capital flow bonanzas make a country more crisis-prone, the conditional probability, $P(\text{Crisis}_i | \text{Bonanza})$ should be greater than the unconditional probability of a crisis, $P(\text{Crisis}_i)$, where i refers to all the i th «types» of crisis (banking, currency,

²⁸ In the 2008 crisis, the contraction of inflows was greater in terms of banking flows, smaller in portfolio investment, and much smaller in Foreign Direct Investment (Milesi-Ferretti *et al.* 2011).

TABLE 4
CAPITAL FLOW BONANZAS AND CRISES IN SPAIN, 1850-2015

Period	Years with capital flow bonanzas	Number of years with capital flow bonanzas by period	Years with capital flow bonanzas in relation to total years	Crisis coinciding with capital flow bonanzas	Number of crises coinciding with capital flow bonanzas	Conditional probability $P(\text{crisis}/\text{bonanza})$	Unconditional probability $P(\text{crisis})$	% crisis coinciding with capital bonanzas in relation to total crises
1850-1913	1850-1853	29	0.45	1855	6	0.21	0.11	0.86
	1857-1866, 1868			1866				
	1870-1872, 1874-1876, 1879			1874				
1919-1935	1883-1884, 1898, 1900-1903	9	0.53	1882, 1899, 1905	3	0.33	0.24	0.75
	1920, 1922-1925			1921, 1924				
1945-1972	1928-1931	15	0.54	1931	2	0.13	0.11	0.67
	1949			1948				
1973-2015	1950-1953, 1955-1958	32	0.74	1958	5	0.16	0.12	1
	1963, 1965-1969			1976				
	1974-1977			1982				
1850-2015	1980-1983, 1988, 1989,	85	0.51	1991, 1995	16	0.19	0.11	0.84
	1990-1994, 1999			2008				
	2000-2015							

Note: Own elaboration considering Reinhart and Reinhart's (2008) definition of capital flow bonanzas. See text.

TABLE 5
CURRENCY CRISES COINCIDING WITH CAPITAL FLOW BONANZAS, 1850-2015

Period	Crises coinciding with capital flow bonanzas	Number of crises coinciding with capital flow bonanzas	Conditional probability $P(\text{crisis}/\text{bonanza})$	Unconditional probability $P(\text{crisis})$	% crisis coinciding with capital bonanzas in relation to total currency crises
1850-1913	1882 1898	2	0.07	0.05	0.67
1919-1935	1921 1931	2	0.22	0.12	1.00
1945-72	1948 1958	2	0.13	0.11	0.67
1973-2015	1976 1982 1991 1995 2008	5	0.16	0.12	1
1850-2015		11	0.13	0.08	0.85

Note: Own elaboration considering Reinhart and Reinhart's (2008) definition of capital flow bonanzas. See text.

stock market, sovereign default, etc.). For Spain, the unconditional probability of a crisis is 0.11 (11 per cent) (19 crises/165 obs. years) and the conditional probability of a crisis is 0.19 (19 per cent) (16 crises/85 years with capital flow bonanzas). This means that the probability of a crisis coinciding with a capital flow bonanza (the conditional probability) is higher than the unconditional probability. Moreover, the periods with the greatest difference between these two probabilities are 1850-1913 and 1919-1935.

We replicate the exercise for each type of financial crisis to see whether the incidence varies depending on the type: currency, banking or debt. As Table 5 shows, currency crises have a stronger relationship with a previous capital flow bonanza than the other types of crises (see Tables 6 and 7). The conditional probability is 0.13 and the unconditional probability is 0.08. The greatest difference between these probabilities occurred in the interwar period. Moreover, in both the interwar period and the last period analysed (1973-2015), all the crises coincided with a previous substantial capital inflow (see column reporting % crisis coinciding with a capital bonanza in relation to total currency crises). This result is to be expected, given

TABLE 6
BANKING CRISES COINCIDING WITH CAPITAL FLOW BONANZAS, 1850-2015

Period	Crisis coinciding with capital flow bonanzas	Number of crises coinciding with capital flow bonanzas	Conditional probability $P(\text{crisis}/\text{bonanza})$	Unconditional probability $P(\text{crisis})$	% crisis coinciding with capital bonanzas in relation to total currency crises
1850-1913	1866 1882	2	0.07	0.05	0.67
1919-1935	1921 1924 1931	3	0.33	0.24	0.75
1945-72		0	0	0	0
1973-2015	1976 1982 2008	3	0.09	0.07	1
1850-2015		8	0.09	0.06	0.80

Note: Own elaboration considering Reinhart and Reinhart's (2008) definition of capital flow bonanzas. See text.

that large currency depreciations normally go hand-in-hand with sudden stops (Calvo *et al.* 2006).

In the case of banking crises, as seen in Table 6, all banking crises are preceded by capital flows in the last period, 1973-2015. The period with the second-highest percentage of crises preceded by capital bonanzas is the interwar one (see column reporting % crisis coinciding with capital flow bonanzas in relation to total banking crises). The difference between the conditional and unconditional probability is much lower than in the case of currency crises (0.09 and 0.06, respectively); the interwar period is again the one with the greatest difference between the conditional and unconditional probability. However, financial regulation restrained banking crises during the Bretton Woods period.

Regarding debt crises (see Table 7), in all the periods except for the interwar period, debt crises were preceded by a capital bonanza (see column reporting % crisis coinciding with capital bonanzas in relation to total debt crises). Conditional probability (0.08) was higher than unconditional (0.05), with figures similar to the banking crises. However, the period with the highest probability values is the 19th century, when conditional and unconditional probabilities were 0.17 and 0.08, respectively.

TABLE 7
DEBT CRISES COINCIDING WITH CAPITAL FLOW BONANZAS, 1850-2015

Period	Crises coinciding with capital flow bonanzas	Number of crises coinciding with capital flow bonanzas	Conditional probability $P(\text{crisis}/\text{bonanza})$	Unconditional probability $P(\text{crisis})$	% crisis coinciding with capital bonanzas in relation to total currency crises
1850-1913	1855 1866 1874 1882 1898	5	0.17	0.08	1
1919-1935		0	0	0	0
1945-72	1958	1	0.07	0.04	1
1973-2015	1976 2008	2	0.06	0.05	1
1850-2015		7	0.08	0.05	0.88

Note: Own elaboration considering Reinhart and Reinhart's (2008) definition of capital flow bonanzas. See text.

In sum, currency and banking crises preceded by a capital bonanza were more frequent in the interwar years and the last period considered, although there was only an important difference in terms of probability (conditional and unconditional) in the interwar period. However, debt crises were always preceded by a capital bonanza, with the probability being higher during the 19th century. As a consequence, we conclude that policies to restrict capital flows did not rule out the probability of a crisis, because both currency and banking crises occurred during the interwar period²⁹. Nevertheless, their consequences in terms of output loss were more dramatic when current account deficits were higher and under a trade deficit (1973-2015). Thus, capital controls were not enough to prevent the crises, creating a need for banking supervision and regulation to control banks' excessive leverage and risk concentration, and reduce the damaging adjustments to the economy in terms of investment. Indeed, the lack of financial regulation and supervision was behind some of the most severe Spanish crises.

²⁹ Calvo and Talvi (2008) argue that capital outflows can occur in absence of capital bonanzas.

Debt crises were more frequent in the 19th century when there was low fiscal capacity and an underdeveloped state. In the latter case, fiscal development and tougher control would have helped mitigate the negative consequences. In the most recent crises, debt problems appeared not only as a consequence of capital bonanzas but as a result of the fiscal resolution of crises, mainly in the 2008 crisis (and the debt crisis in 2010/12).

5. CONCLUSIONS

Focusing specifically on the case of Spain, we document the crises, their frequency and severity in different periods of monetary policy regimes, financial structure and capital flow trends, in an attempt to identify the relationship between these factors and financial crises. It is difficult to establish the relationship between the frequency and severity of crises, on the one hand, and monetary policy regime, on the other. Crises appear to be more frequent in periods of capital controls and floating exchange rates (1919-1935), but they were also relatively frequent in periods without capital controls with floating interest rates (1973-2015), as expected. Crises seem to be more severe in periods without capital controls (1850-1913 and 1973-2015) and mainly with floating exchange rates (1973-2015). In the interwar years (with capital controls), average severity was low although there was a deep crisis during the Great Depression.

Concerning the Bank of Spain's role, it did not become independent until very late (1994), and with the exception of the financial repression period (1940-1972), did not seem to effectively contribute to financial stability. Throughout most of the analysed period, the Bank's lack of independence and its subordination to government interests and financing needs meant that other goals were not prioritised. Moreover, in some crises, even the most recent one, it failed in its supervisory responsibilities. Regarding financial structure, financial expansion after a change towards more liberal regulation but without control and supervision by the central bank was also a source of instability. This financial expansion was also accompanied by financial innovation and riskier banking practices.

We also analyse the impact of capital bonanzas in the main representative Spanish crises. For most of the crises, we find that although the monetary policy regimes differed, they were associated with capital inflows in emerging sectors in a liberal regulatory framework. Capital flow bonanzas resulted in both a higher likelihood and greater severity of crises. The crises are more severe because external borrowing produces harsher adjustments to the economy, which entail a credit crunch, reducing investment and growth.

We conclude that as financial crises occur in different monetary policy regimes, capital controls do not seem to be the best political tool to prevent

crises. However, financial supervision and regulation could control the excessive leverage and risk concentration of banks that occur when there are external imbalances.

The study of Spanish crises, as in the case of those studied by Bordo (2018), shows that major financial crises do not tend to coincide with credit booms. Indeed, credit booms only played a role in a small number of crises, and when they did, there were also other factors at work. However, as Reinhart and Reinhart (2008, 2015) emphasise, capital flow bonanzas are a key factor and a good predictor of different types of crises: banking, currency and debt. Similarly, crises associated with current account imbalances are found to be more severe (Betrán and Pons 2019).

SUPPLEMENTARY MATERIAL

The supplementary material for this article can be found at <https://doi.org/10.1017/S0212610920000129>.

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