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Financial crises
and financial market regulation:
the long record of an 'emerging'

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FINANCIAL CRISES AND FINANCIAL MARKET REGULATION: THE LONG RECORD OF AN 'EMERGER'

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Abstract

The main goal of this paper is to trace the long record of financial crises and financial market regulation from the perspective of an emerging economy. Two questions are addressed: first, what explains the incidence and severity of financial crises in an emerging market economy? And, second, what is the role of learning: how does the country learn from its past experience in financial crises to improve institutions and develop better techniques so as to successfully manage successive crisis events? To answer the above questions, I first present evidence on financial crises in Greece over a long time span. Greece has been chosen as an appropriate case-study since it is a country with a rich history in financial crises. I try to identify a variety of crisis events, thus providing a chronology. Moreover, I present a number of facts about the incidence, frequency and severity of crises events. Second, I discuss the key determinants of the crises, which are closely related to country-specific factors, such as credit expansion, fiscal imbalances, and the limited reserve coverage of the monetary base. And third, I deal with the evolution of the regulation. I place emphasis on the post-crisis regulatory responses that changed the country's institutional developments.

JEL classification: E5, N2

Keywords: financial crises, emerging economies, sudden stops, financial market regulation.

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*'We have been here before...
This time is (not) different. It almost never is'
(Reinhart and Rogoff 2009)*

1. Introduction

In the present era of globalization, financial crises are a recurring phenomenon in the history of emerging market economies. The literature is rich in evidence, both narrative and empirical, on external shock-driven sudden stops of capital inflows, current account reversals, currency drops, a rise in sovereign risk spreads, output losses, and severe financial turbulence (Calvo, Izquierdo and Mejía 2004, Calvo, Izquierdo and Talvi 2005, 2006, Calvo and Talvi 2005; Krugman 2009). The pattern has been common to all emerging economies during recent years. A rapid and sudden cut-off in capital inflows is often accompanied by currency, debt, and banking crises, while the impact of the crisis on the real economy and its incidence differ markedly across countries, depending on the special features of the affected country's economic structure. Prominent examples of this analysis are the 1998 Russian default lending crisis, the 1998 Brazilian crisis, and the 2001 crises in Argentina and Turkey.

More recently, Reinhart and Rogoff (2009, 2010) covering a large number of mature and emerging countries over eight centuries, have provided a comprehensive look at the varieties of financial crises. They find a strong link between sovereign debt crises and banking crises across rich and poor countries alike. Researchers' interest has now focused on the comparison of the emergers' crisis experience across the two periods of globalization: the present era from 1980 to present, and the first era of 'golden' globalization from 1870 to 1914. They have concluded that the crisis pattern for the 1880s and the 1890s emergers was strikingly similar to the experience of today's emerging market economies (Reinhart 2010, Bordo 2008, Bordo *et al.* 2001, Eichengreen and Lindert 1989). This means that many driving forces that were present during the recent emerging market crises were also at work in the emergers' crises a century ago.

In this paper, my main task is to trace the history of financial crises and financial market regulation from the perspective of an emerging economy. Two questions are addressed. First, what explains the incidence and severity of financial crises in an emerging market economy? And second, what is the role of learning? In other words,

how does the country learn from its past experience in financial crises to improve institutions and develop better techniques so as to successfully manage successive crisis events? Learning concerns both institutional learning and how to follow policies consistent with the aims of these institutions.

The case-study of my analysis is Greece, a country with a rich history in financial crises. Greece before World War II is a typical example of a South-Eastern European (SEE) ‘emerging market economy’,¹ as it was on the ‘periphery’ of the international monetary system.² Most of the historical literature so far has concerned the experience of the advanced countries of Western Europe. Interest in studying the behaviour and response of emerging countries has appeared only recently. However, historical research has largely focused on the peripheral areas of Latin America and Asia and only partly on the emerging economies of SEE. Indeed, the history of financial crises in that particular region of the European periphery—which faced a more turbulent financial, economic, and political environment—is still unexplored or only partly studied. Hence, tracing the past experience of an SEE emerger, like Greece, enriches our knowledge to answer the following questions: first, why do crisis events hit countries with backward and unsound economic and political institutions more frequently and more severely? Second, how does the absence of ‘country’ and ‘currency trust’ exaggerate the effects of a financial crisis on the real economy? And third, how do the emergers learn to prevent and contain crisis episodes?

¹ The name ‘emerging markets’ was originally coined by Antoine Van Agtmael of the World Bank Group in 1981. It was designed to ‘give a more uplifting feeling to what we had originally called the Third World Fund’ (Van Agtmael 2006). Although the term was loosely defined—that is, any economy with low to middle per capita income—it is usual to consider an emerging economy as a country, regardless of whether it is very big or very small in size, that has embarked upon economic development and reform programme and begun to open its markets and ‘emerge’ onto the global market economy. An emerging economy is characterized by fast growth, moving from a closed economy to an open market economy, and building sound institutions which enhance performance, transparency, accountability and efficiency within the system. Another key characteristic is also the increase in foreign (portfolio and direct) investment.

² Countries participating in the international gold standard regime were divided into ‘core’ and ‘peripheral’, according to their faithfulness to specie rules. There are three typical features placing Greece on the system’s periphery (Lazaretou 2005): first, there was an exceptionally large number of alternations between periods of fixed and flexible exchange rates. Second, governments proved to be unable to maintain a fixed exchange rate regime, as was revealed by the frequent regime alternations that resulted in the short-lived adoption of the prevailing international monetary system. And, third, various Greek governments were strongly committed to the specie standard rule, as revealed by the periodic abandonment of the metallic standard in the face of an emergency and the hard efforts for resumption made afterwards.

To answer the above questions, I will first present evidence on financial crises in Greece over a long time span. In particular, I will try to identify different varieties of crisis events, providing thus a crisis chronology. Moreover, I will present a number of facts about the incidence, frequency, and severity of crisis events. To this end, I use the standard definition of financial crises. Second, I will discuss the key determinants of crisis events, closely related to country-specific factors, such as monetary expansion, fiscal imbalances, and the limited reserve coverage of domestic money. And third, I will deal with the evolution of regulation, placing emphasis on the post-crisis regulatory responses that changed the country's institutional developments. On the basis of the nine forms of prudential supervision of banks as identified by Mishkin (2001) and White (2009), I will discuss the regulatory framework that was initiated for the first time in 1931, as the government's response to the 'mother of all crises'. I will conclude by presenting important lessons derived from the country's historical experience.

2. Currency crises, banking crises and debt crises: defining the terms

Before revisiting the long record on financial crisis episodes from the perspective of an emerging market economy, it might be useful to set the theoretical framework by defining the terms used. Following Eichengreen and Portes (1987), the typology of financial crises can be thought as including three types of crises explained by different sets of variables: currency crises, banking crises, and debt crises (see also Goldstein 2007, Bordo 2006, 2008, Reinhart and Rogoff 2009, Part I).³

Currency crises are viewed as being caused either by weak economic fundamentals or certain government policy actions, self-fulfilling expectations of market participants, and possibilities of multiple equilibria, or they are viewed as a run on a currency or a financial panic (see, *inter alia*, Krugman 1979, 1997, 1999, Obstfeld 1996). Attention has been drawn to the importance of balance sheet effects for the sustainability of a currency target. Measures of real exchange rate overvaluation, external imbalances, foreign

³ It should be noted that the taxonomy of crises into categories is a rather difficult task, since every crisis event is a specific historical episode associated with certain period and country features. However, a taxonomy of crises might be helpful in identifying the incidence and the frequency of crisis events across different time periods and different country samples for the same time period.

exchange reserves and export growth are explanatory variables for currency crises (Catao 2006, Catao and Solomou 2005). For identifying the period of a currency crisis event, in my empirical work I rely on the following definition: a currency crisis is defined as a speculative attack on the exchange rate, resulting in a sharp devaluation or depreciation within a given year in the case of a flexible rate regime, or in a large outflow of the country's foreign reserves, accompanied by a forced abandonment of an exchange rate commitment in the case of a fixed rate regime.

In the case of *banking crises*, attention should be paid to the special features of banks, such as maturity and currency transformation and asymmetric information. These features make banks vulnerable to runs and collapses following adverse shocks of either domestic or external origin. Theory and practice provide us with four typical sources of bank failures: imprudent credit policies, imprudent investment policies, poor asset-liability management, and bank panics.

Bank runs have been modelled as asymmetric information problems between depositors and banks, random manifestations of mass hysteria, or self-fulfilling expectations of depositors (Kindlerberger 1978, Diamond and Dybrig 1983). Hence, banking crises encompass both liquidity and solvency crises. A bank is illiquid when it is not able to meet short-term expected and unexpected obligations when they fall due. A bank is insolvent when its liabilities are greater than the value of its assets. As long as profits are sufficient to cover loan loss provisions, the level of bank capital and its capital adequacy ratio remain unchanged. However, when profits fall short, the amount of the bank's capital declines.⁴ To sum up, real economy disturbances may adversely affect the banks' loan portfolio (credit risk); bubbles in equity and bond markets often collapse and destroy the value of the banks' securities portfolio (market risk); and exchange rate disturbances induce interest rate changes which change the position and the slope of the yield curve (exchange rate and interest rate risk).

⁴ A liquidity crisis can become a solvency crisis, since the liquidity and solvency position of a bank are clearly interrelated. For example, the information that a bank is illiquid will cause a wholesale deposit run, which will spread to retail deposit withdrawals. Ultimately, the illiquid bank becomes insolvent, since it will have to resort to using insufficient capital resources to meet all of its obligations. For a textbook view of the relationship between liquidity and solvency, see Casu *et al.* (2006).

In my analysis, I identify banking crises as periods of severe difficulty, either because of a severe liquidity shortfall, and/or a reduction of the banks' capital position. In twin crises, both currency and banking crises occur together. Severe currency volatility results in a sharp rise in the risk premium and the interest rates, thus making banks and corporations face increasing lending costs. Furthermore, currency mismatches bring to the surface serious weaknesses in the banks' balance sheets.⁵

A *debt crisis* is a situation in which the country either has sizeable arrears of principal and/or interest on its obligations to its lenders, or in which there is debt restructuring or debt repudiation with commercial creditors (Detregiache and Schilimbergo 2001, Manasse, Roubini and Schimmerlfenning 2003). In other words, a debt crisis occurs when investors conclude that the debt ratio has become unsustainable. Thus, debt crises might be better explained by economic factors that measure the weight of domestic and foreign debt, the amount of debt service obligations, or the ability of a country to generate sufficient resources to meet these obligations. In emerging market economies, currency crises are closely linked to the probability of sovereign default, in the sense that a currency crisis increases the probability of fiscal distress. It will activate currency mismatches that result in a 'balance sheet crisis' both for the government and the private sector.

In general, a sovereign country's negative decision on its debt obligations may have two forms: repudiation and rescheduling. 'Debt repudiation is an outright cancellation of all current and future debt obligations by a borrower [...] [while] debt rescheduling is the change of the contractual terms of a loan such as its maturity and interest payments' (Saunders and Cornett 2003, p398). Rescheduling has been the most common type of sovereign risk event in the period after World War II, whereas a large proportion of debt problems were met with repudiations before World War II (Eichengreen and Portes 1987). This difference in behaviour is explained by the fact that before the war most international debt was in the form of foreign bonds, while after the war debt was in bank

⁵ A currency mismatch occurs when an entity's net worth and net income are not well hedged against a change in the exchange rate. Excessive debt exposure and the holding of insufficient foreign exchange reserves exaggerate currency mismatch between local currency reserves and hard currency denominated liabilities. Bordo and Meissner (2006a, 2006b) have found that currency mismatch is a robust determinant of financial crises both in the pre-1914 and the post-1980 eras of globalization.

loans. However, in the present era of globalization, bond financing is again the main instrument of sovereign borrowing. This is clearly a similarity to the earlier era of ‘golden’ globalization.⁶ Finally, a third generation crisis or a ‘balance sheet crisis’ is defined as a twin crisis accompanied by a debt crisis.

Apparently, to analyse financial crises we need a ‘minimal structure’ around which historical observations can be placed (Eichengreen and Portes 1987). This structure is thought to be made up of four elements. First, it consists of a chain of events that characterise a financial crisis. Linkages run from exchange rate disturbances to debt defaults and bank failures, and eventually to the real macro-economy. Second, the propagation of the disturbance and the probability of its turning into a generalized crisis are influenced by the specific institutional character of the country’s financial system. How well do the banks manage risk? Are they supervised and regulated by an independent authority or not? Third, the government should be actively involved in creating a regulatory framework that insulates the banking system and the real economy from a shock. And fourth, there is a need to link monetary stability with financial stability. Exchange rate and monetary arrangements influence both the volatility of the exchange rates and the interest rates. In the context of the so called ‘balance sheet approach’ to financial crises (Goldstein 2007, Borio 2004, Beim and Calomiris 2001, Allen *et al.* 2002), a financial crisis can be considered a chain, drawing attention to the fact that a crisis can emerge from weaknesses in banks’ balance sheets, vulnerabilities in corporate and household balance sheets, and problems in the government’s balance sheet (see Chart 1).⁷

⁶ International bank lending makes renegotiation easier and less costly for a number of reasons. First, the number of foreign investors in any international lending syndicate is very small compared to the thousands of geographically dispersed bond holders, and thus an agreement on the changes in the contractual terms on a bond is more likely to be reached. Second, in bond financing, debt is no longer heavily concentrated among relatively homogenous international banks, but is held by a diverse group of financial investors who may be focused more heavily on rates of return, rather than on establishing a long-term lending relationship with a sovereign. Third, governments and regulators in advanced lending countries consider the economic and social costs of a default on a sovereign borrower or a repudiation of its debt contracts more important than those on bond loans, because bond defaults are likely to be geographically and numerically more dispersed in their effects. Therefore, it is more likely for lending governments to bail out countries and indirectly provide liquidity to financial investors so as to reduce the probability of repudiation and thus increase the probability of renegotiation or rescheduling.

⁷ The chain can begin anywhere in the crisis circle. In particular, a financial crisis occurs when a shock exposes the vulnerability of one or more sectors in the economy and thus the demand for financial assets

3. The pattern of financial crises: the Greek case

The pattern of financial crises in Greece is shown in Figures 1 and 2. Figure 1 shows the frequency of crises measured as percent in total, where I divide the number of crisis events that occurred in each sub-period. The data set is separated into five different sub-periods: the years prior to 1880, the gold standard period (1880-1913), the interwar period (1919-1939), the Bretton Woods period (1945-1974), and the most recent period (1975-2008). As can be seen, in the period before World War I the predominant form of crisis were currency crises, followed by banking crises, although debt crises were the second most frequent type of crisis before 1880. Before 1913, currency crises accounted for more than half of all crisis events. By contrast, banking crises predominated in the interwar years; they account for more than two-thirds of total events. The pattern of crises did not change notably after World War II. Currency collapses remained the most frequent crisis event, followed by banking crises, while no debt crisis event occurred during that period.⁸ There also is no evidence of a twin crisis, while a third-generation crisis occurred only once, in 1932.⁹

Figure 2 shows the frequency of crises measured as a percentage per year; the years in crisis are divided by the total number of years in each data sub-sample. The figure suggests that, with the exception of the interwar period, crises appear to be more frequent after World War II. Surprisingly, the crisis frequency of 36.7 percent during the Bretton Woods period is much greater when compared to 17.7 percent in the period after 1975,

sharply declines. For example, investors and creditors can lose confidence in the government's ability to service its future debt obligations. The resulting capital outflow leads to increasing balance sheet problems. As foreign investors pull out of the country, the exchange rate comes under pressure. Interest rates increase due to a higher risk premium or due to the efforts of the monetary authorities to slow down capital outflow. The sharp fall in the exchange rate and the rise in the interest rates mean that banks, households and corporations face increasing lending costs, and that their debt obligations in local currency increase notably.

⁸ This finding is not in line with the evidence presented in Bordo *et al.* (2001) and Bordo and Meissner (2006a), who found that banking crises in both industrial and emerging economies predominated before 1913, while currency crises prevailed after 1945. The different Greek pattern might be explained by the fact that the country experienced a large number of exchange rate regime switches before 1913. The switch to an abnormally inconvertible paper currency was the government's response to several military events. For an analysis of how excess government spending threatened the viability of the gold standard regime in Greece, see Lazaretou (1995).

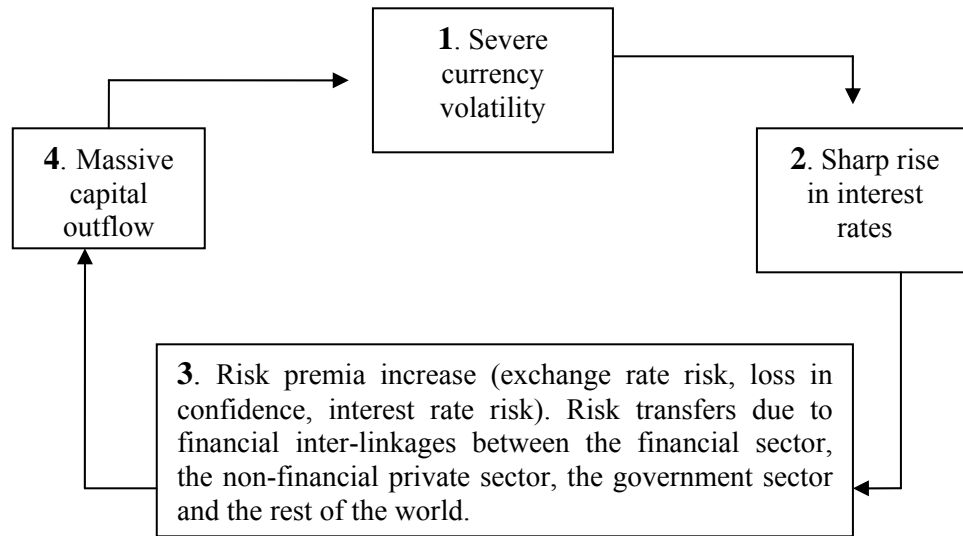
⁹ In 1932, a debt rescheduling, a banking crisis, and a currency collapse occurred together.

while it is cut only in half compared to the most unstable period of the interwar era (71.4 percent). Another interesting point to be stressed here is that the frequency of crises was much lower in the early era of globalization before 1913, when compared to the post-1975 era. Finally, as expected, all types of crisis show the greatest frequency during the interwar period, confirming that the interwar crisis event still remains the ‘mother’ of all subsequent historical crisis episodes.

It may be interesting to compare the Greek crisis experience in the two eras of ‘finance capitalism’—that is, pre-1913 and post-1975. Then, improvements in technologies of communication and transfer—for example, the transatlantic telegraph cable in the late 1860s, which was the only way to transmit information across oceans—reduced the cost of money and goods transformation, thereby contributing to greater economic integration. Both periods are very similar to each other in many respects, but very distinct in others. Clear similarities are the use of bond financing as an instrument of sovereign borrowing and the high degree of world capital and goods market integration. However, a stark difference is the post-1975 strong increase in financial leverage, caused by the decoupling of money and credit aggregates. This means that after 1975 banks funded growth mainly through non-monetary liabilities, and thus their role in credit creation *via* bank loans is of great importance (Schularick and Taylor 2009).¹⁰

¹⁰ More importantly, the decoupling of money and credit aggregates offers support for the ‘credit view’ supported by Bernanke, Getler and Gilchrist (1999), against the ‘money view’ supported by Friedman and Schwartz (1963).

Chart 1
Interpreting financial crises: the balance sheet approach



Source: Sheikh and Heijmans 2004.

A closer look at the 1890s crisis episode and the current crisis event reveals that financial instability in Greece has been largely credit-driven. As Reinhart and Rogoff (2008) have argued, periods of financial distress have been associated with economic downturns and typically follow waves of domestic and international credit expansion. Figures 3 and 4 tell us of this story. Figure 3 plots the ratio of bank private credit to GDP over the pre-World War I period; this ratio shows the importance of the main function of the banks, namely channelling savings to investors. The data refer to bank gross loans to firms and households gathered by the balance sheets of eight domestic banks with a long presence on the Greek money market. Based on a simple inspection of the data, two periods of soaring credit can be easily detected. The first one took place from the mid-1870s to the early 1890s, and the second one from 1898 until the outbreak of World War I.

Systematic attempts to industrialize the country can be dated to the last quarter of the nineteenth century. The economic policy of the governments placed emphasis on the development of the private sector and the introduction of new technology into the

production process, with parallel attempts to free the economy from stifling state control. It was at this time that first efforts were made to create infrastructure, which helped to modernize the country as well as to restructure the economy. During that period, agricultural production increased, industry was introduced, trade developed, credit grew rapidly, and the number of functioning banks increased. New banking products appeared, such as mortgage-backed loans, mortgage-backed credit lines, and long-term bank bonds. Rich Greek emigrants were attracted by the high deposit rates and kept their money in Greek banks.¹¹ Moreover, the country's modernization and the implementation of many large public works attracted foreign private investment capital. Foreign and Greek businessmen heavily invested in residential and commercial properties, as well as in portfolio investments.¹² A lending boom soon occurred,¹³ which made land and resource prices soar.

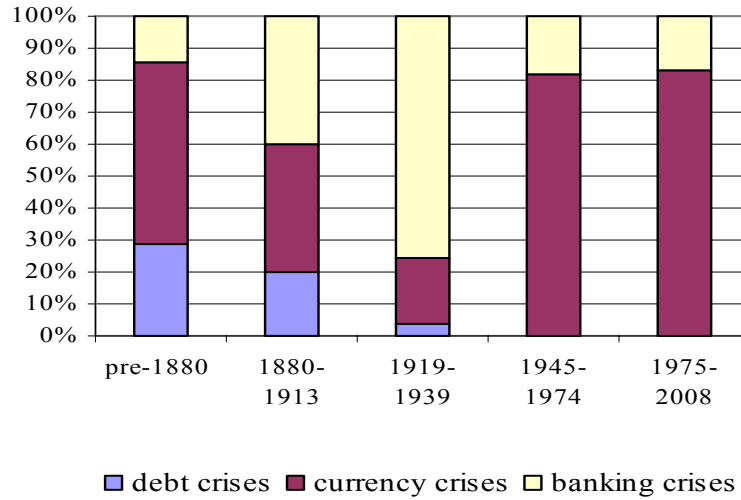
Economic growth in the 1880s was based on cheap and easy foreign lending. After the country's foreign debt compromise in 1878-1879, Greek government bonds were again traded on the London stock market, and successive Greek governments started to borrow heavily from abroad to cover excess spending, both consumption and investment. During that period, the country's creditworthiness was rebuilt, since the governments considered the gold standard as a 'good housekeeping seal of approval' along the lines considered by Bordo and Rockoff (1996), in order to improve the country's access to the foreign capital markets and attract cheap lending (Lazaretou 2005). Ultimately, the government accumulated an enormous external debt burden with gold clauses that triggered its ability to repay it, and thus the currency experienced an intense speculative attack. In 1895, the spot exchange rate almost doubled.

¹¹ The return on bank deposits was much higher than those prevailing in the world money market. The return on savings deposits was set to 5.5-6 percent annually and the rate on time deposits to 3-5 percent.

¹² A common feature of all rich Greeks of that time was the purchase of land and construction activity. As a result, real estate prices soared. Mine bonds were also bid up to above the fundamental prices.

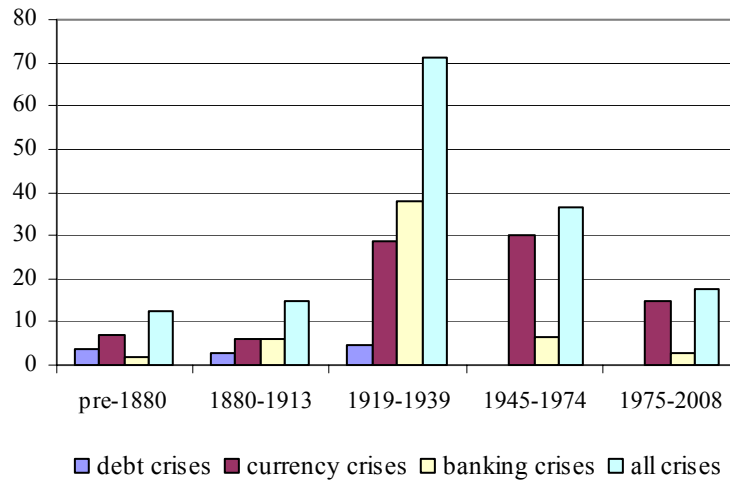
¹³ In the 1880s private credit grew by a factor of two when compared to the previous period. A peak in credit occurred in 1885-1886. This was the year when the country adopted, *albeit* sporadically, the gold standard.

Figure 1
Crisis frequency (percent in total)



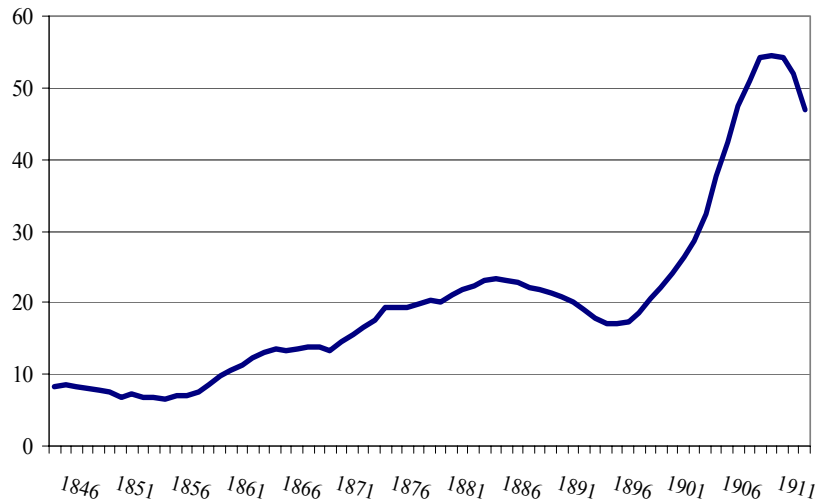
Notes: A currency crisis is identified as a year when there was either a forced abandonment of an exchange rate commitment, an official depreciation, or an abnormally large devaluation of the value of the exchange rate in a given year. A debt crisis is identified as a year when government debt repudiation or restructuring occurred. A banking crisis is identified as a year when either a widespread deposit bank run occurred, banks went bankrupt, or when they asked for bail-out when the function of the lender of last resort was activated to confront a wholesale or a deposit bank run. Isolated events are not taken into account, but only the year when the event took place, excluding the years of oncoming or ongoing crises. See also Table A in the appendix.

Figure 2
Crisis frequency (percent per year)



Note: See Figure 1.

Figure 3
Credit soaring in the first era of globalization, 1846-1914
(percent to GDP)



Note: Bank gross loans to firms and households. Computations are based on yearly averages, using a five-year rolling time span. They remain unchanged when we use a longer (ten-year) rolling window. Using a rolling time span helps to minimize the resulting loss of information, which is the principle drawback of averaging. End-of-year data.

Source: See appendix.

With the successful rescheduling of foreign debt in 1898, a second period of soaring credit was put in motion. This time the credit increase was strong and rapid: the ratio of bank loans to GDP grew by a factor of four, reaching a peak in 1910-1911, when the country credibly joined gold after a long, painful process of effective fiscal adjustment and monetary restraint. A key driver was the rapid output growth that the country generally experienced in the years prior to World War I. Export trade increased mainly after 1905, and the growth of domestic production accelerated. The shipping industry marked considerable progress, expanding its activities to the transit trade of third countries. Greater economic activity brought with it an increase in the number of commercial banks. The country's international credit standing was rebuilt, resulting in foreign capital inflow.

In the current era of financial capitalism, soaring private credit has also been the key driving force. As seen in Figure 4, the ratio of private bank loans to GDP soared in the few years prior to the current crisis. While in the 1990s the mean rate stood at very

low levels (36.6 percent), in the first half of the 2000s it quickly soared to 54.4 percent. Thereafter, it increased even more rapidly, approximating 84 percent in 2008 and 81 percent in 2009, becoming twice as high as in 2000. Lending became very cheap and easy, just after the country's entrance into the euro area, soon resulting in a 'liquidity overhang' that triggered an asset price bubble and a consumption and investment boom. However, in the wake of the international crisis in 2008, a bust soon followed, causing the country's structural inefficiencies to resurgence—such as excess public indebtedness, a sharp enlargement of both the current account deficit and fiscal deficit, and a heavy loss in the country's international credit standing (Bank of Greece 2010).

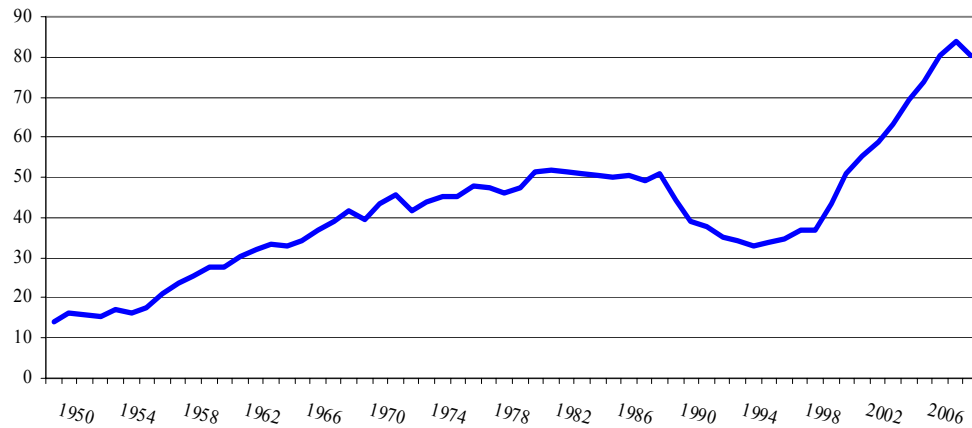
4. What went wrong? The economic and financial environment

With the help of some simple descriptive statistics and using the Greek case as a working template, in this section I will highlight the key driving forces of emerging market crises. My interest is on the pre-1913 golden era of globalization. This era was characterized globally as a period of a low frequency of crises events. During that period, crises were phenomena observable in emerging rather than advanced countries.¹⁴ This was because emerging market economies lacked a sound institutional framework and had not learned to follow successful policies within that framework. This framework includes sound fiscal and monetary institutions, as well as regulation and supervision authorities. This is what Caballero *et al.* (2004) have named 'country' and 'currency trust'.¹⁵ In particular, sound fiscal institutions mean the existence of an efficient tax system, the avoidance of excessive public debt, and the credible commitment to balance the budget. Sound monetary institutions include the credible adherence to the classical gold standard, by holding sufficiently large gold reserves to minimize a currency mismatch between hard currency liabilities and domestic currency revenue.

¹⁴ By contrast, the interwar crisis was largely a phenomenon in advanced countries, mainly attributed to key errors in policy and regime choice in the advanced world. The collapse of the Bretton Woods system as well as today's crisis can be also considered as such.

¹⁵ An economy has 'country trust' when foreign investors have confidence in the underlying soundness of the country's monetary and fiscal institutions; it has 'currency trust' when the government credibly adheres to its commitment to a nominal anchor.

Figure 4
Credit soaring in the current era of globalization, 1950-2009
(percent to GDP)



Note: total bank credit, *i.e.* loans to firms and households. Yearly averages are calculated by using a five-year rolling window. End-of-year data.

Source: See appendix.

The advanced countries of that time had developed a sound and solid institutional framework that allowed them to manage crisis episodes successfully. They had developed financial markets, which had largely overcome the problem of asymmetric information, and they had efficiently channelled savings to productive investment. They enacted balanced fiscal policies and non-accommodative monetary policy targeting the fixed rate. They operated within the framework of globalization with free trade, free capital, and labour movements. They had successfully established important institutions such as a legal system to protect property rights and constitutional democracy, which greatly supported financial growth (Bordo and Rousseau 2006).

By contrast, emerging countries of that time were in the process of developing fiscal and monetary institutions. They faced a more turbulent financial environment and experienced long periods of political instability. This in turn meant that they were prone to the occurrence of crises and that they had not learned to deal with them. What were the ‘risk factors’ for them? In the era of *laissez faire laissez passé*, excess saving in the

advanced world flowed towards the then poor peripheral countries.¹⁶ The massive capital inflows boosted asset prices in the emerging countries, particularly of land and unexploited physical resources, and fed a credit and growth boom. Inflows were accompanied by high budget deficits and government debt accumulation. In conjunction with an accommodative monetary policy, inflows fuelled domestic inflation and fed speculative attacks on the currency. The real burden of debt (both private and public) soared, asset prices failed, and lending went bust. Ultimately, the government and the banks faced a balance sheet crisis.

As we saw in the previous section, the Greek record of financial crises verifies the story outlined above. What was the economic and financial landscape that made an ‘emerging’ like Greece more vulnerable to crises?¹⁷ First, pre-World War II Greece was a poor agricultural economy;¹⁸ it financed its growth process through heavy foreign lending. Second, capital inflows were attracted by higher returns to land and other resources and led to lending booms. Booms were accompanied by fiscal expansion, financed by money creation and government debt accumulation. However, the interplay between fiscal imbalances and monetary disturbances resulted in frequent convertibility crises. The country responded to the speculative attacks on the currency by adopting, if only occasionally, the gold standard as ‘a good housekeeping seal of approval’. This enabled the country to continue attracting cheap foreign capital.

Third, the country was prone to a debt crisis when the domestic economy collapsed as a consequence of a lending bust. This was because the country’s fiscal and monetary institutions were extremely fragile. The governmental financial system was weak due to the inherent structural inefficiencies and the frequent external spending shocks, such as wartime emergencies. In particular, the tax system, based largely on indirect taxes and

¹⁶ For today’s crisis, world-wide excess liquidity was also the main risk factor, resulting in lower interest rates, inducing more risk-taking, and contributing to the creation of asset price bubbles, both financial and in real estate. This time capital flowed from economies with a large current account surplus, such as China and India, towards the advanced countries that were in deficit (for instance, the US) and generated an enormous demand for financial assets.

¹⁷ A comparison of crisis frequency between Greece as an example of an emerging country and advanced countries reveals that the majority of crisis events occurred in emerging economies. For Greece, one can find a crisis frequency of 14.7 percent per year for the years prior to 1913; it exceeds by a factor greater than three the crisis frequency of less than 4 percent per year for advanced countries, as the latter has been addressed by Bordo *et al.* (2001) and Bordo and Meissner (2006b).

¹⁸ Per capita income was less than half the combined average of the most advanced countries.

custom duties, was procyclical. Thus, successive governments were unable to raise sufficient tax revenues to service the debt. Further, monetary policy was loose and accommodated fiscal policy.¹⁹ Fourth, the country suffered from ‘original sin’, as put forth by Eichengreen and Hausmann (1999) and Eichengreen *et al.* (2003). That is, it was not able to borrow abroad or even at home in terms of its own currency; debt issue required gold or exchange rate clauses. This in turn meant that in the case of a nominal currency devaluation, the debt burden soared, increasing the likelihood of the government’s default on its outstanding debt, with certain repercussions adversely affecting the quality of the balance sheet both of the banks and the private sector. As a result, risk premia rose.

Fifth, the country had the experience of ‘sudden stops’. Sudden stops were a common feature in the economic history of the emergers (Catao 2006, Bordo *et al.* 2010). Every time the economic and financial circumstances in the advanced lending countries changed and thereby led to a cut-off of cheap capital inflows to the emerging economies, the latter soon faced a balance of payments crisis and a debt crisis. This was exactly the case of a sudden stop event that Greece experienced in the early 1890s and again in the early 1930s. Sixth, the country was financially less developed; financial depth measured as the ratio of bank assets to GDP and/or broad money to GDP exhibited a positive long-term trend, even though it was relatively weak and excessively volatile.²⁰ Throughout the whole sample period from 1846 to 1939, banking intermediation as measured by both indices stood at very low levels: it was on average 51 and 37.7 percent, respectively.

The data strongly support the historical accounts. Figure 5 shows the pattern of gross capital inflows to Greece based on Stone’s portfolio calls on London data from 1870 to 1913 (Stone 1999). Due to a lack of data, portfolio calls on London can be considered a proxy for foreign capital inflows to the country, since London was then the most important lending centre for emerging economies. As is evident, the time series seems to be stationary,²¹ although it was extremely volatile. However, an upward trend

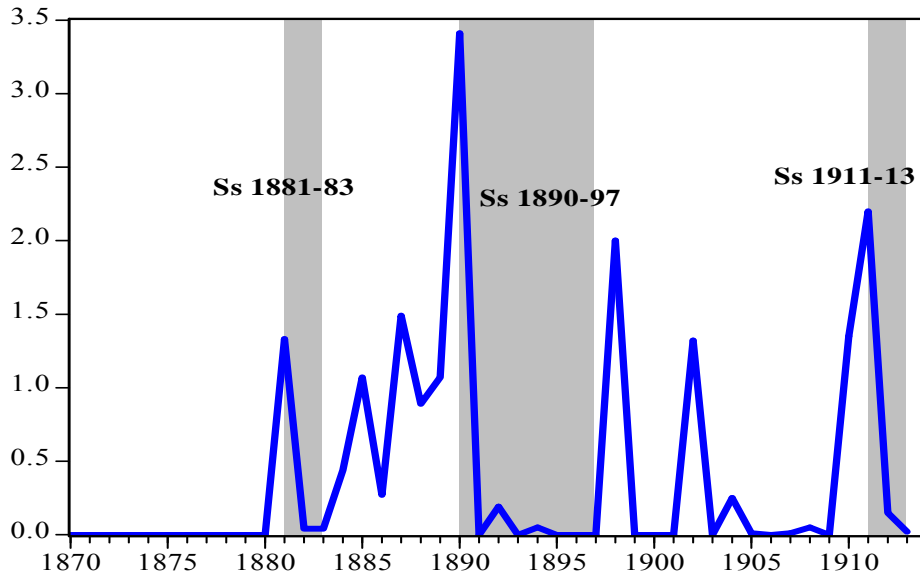
¹⁹ It has been shown that monetary base variations were the proximate determinant of the money supply movements, explaining more than 80 percent (Lazaretou 2008).

²⁰ The ratio of assets to GDP illustrates the importance of bank services relative to the size of the domestic economy. The ratio of broad money to GDP reflects the size of the country’s banking system.

²¹ Application of the standard tests for stationary verifies the above conclusion.

was present from 1879 to 1890. Gross foreign capital inflows pointed to a peak in 1898, 1903, and again in 1910. Following the same working definition as in Catao (2006, 7), I define a sudden stop as a drop from peak to trough of no less than two standard deviations of the deviations of the respective series, from a linear trend and/or any drop that exceeds 3 percent of GDP over a period shorter than four years. Based on this definition, the figure clearly shows a significant rise in the second half of the 1880s and a sudden drop in the 1890s. This pattern is in accordance with the average pattern of capital inflows for a large panel of emerging countries during that period.²² Precisely, three episodes of sudden stops can be detected and are denoted in the shaded areas: 1881-1883, 1890-1897, and 1911-1913.²³ The second episode was associated with the 1893 debt repudiation.

Figure 5
Gross portfolio calls on London, 1870-1913 (million of pounds)



Note: Sudden stops are in the shaded areas.
Source: Data from Stone 1999.

²² See, for example, the case of Latin American and Asian countries (Catao 2006, Bordo 2006).

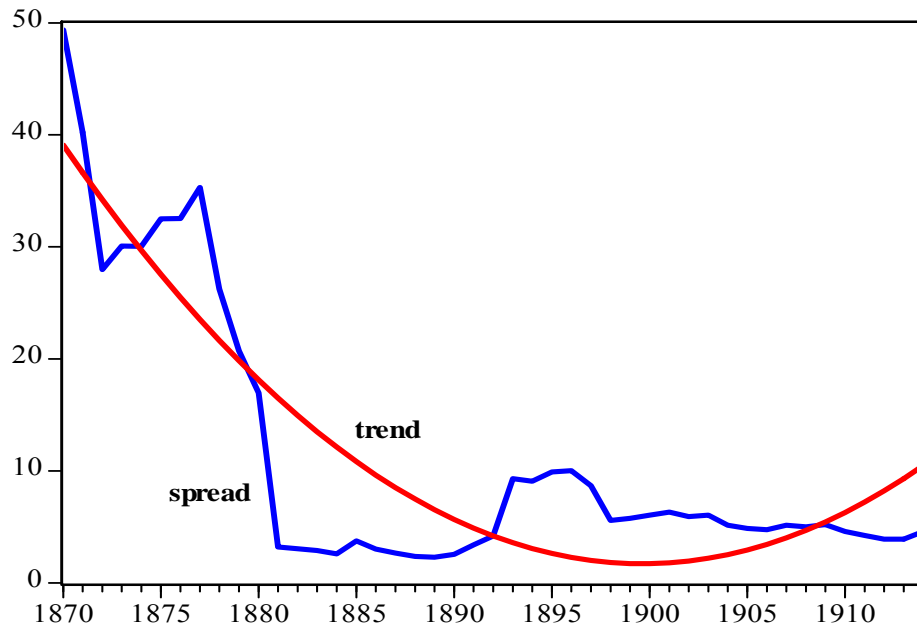
²³ Although the first episode does not satisfy the first precondition of the working assumption—namely, the drop (1.3 million pounds) is less than two standard deviations of the deviations of capital inflows from its linear trend (1.5 million pounds)—it still amounts to more than 9 percent of GDP in a two-year period and thus is taken into account.

Figure 6 shows the path of the sovereign bond spread over the period between 1870 and 1914. The bond spread is measured as the difference between the Greek bond yield and the British consol yield.²⁴ Although it shows a declining long-term trend, reflecting greater world-wide financial market integration, it sharply increased above its trend in the years of a sudden stop, especially in the years when a sudden stop was followed by a debt crisis, as was the case in the 1890s.

Figure 7 depicts the time series behaviour of the nominal and the real exchange rate of the drachma against the pound sterling. For the larger part of that time, Greece did not adhere continuously, but only partially, to the gold standard. As shown, the country experienced high depreciating rates during sudden stop episodes. The most notable example is the episode of 1890-1897. The drop in capital inflows was accompanied by a sizeable depreciation in nominal terms between 1892 and 1895. The nominal value of the currency rate peaked in 1895, two years after the 1893 debt crisis. Depreciation was also sizeable in 1886, followed by the sudden stop event of 1881-1883. Following Catao (2006, p11), I define a currency crash as nominal exchange rate depreciation greater than at least one standard deviation of the annual percentage change of the spot exchange rate of the drachma against the pound sterling over the period between 1885 and 1914. I also assume that this depreciation was not fully reversed within a three-year window. Based on this working assumption, I date four such events: 1886, 1892, 1893, and 1894.

²⁴ The data are from Obstfeld and Taylor (2003).

Figure 6
Greek sovereign bond spread, 1870-1914 (percentage points)

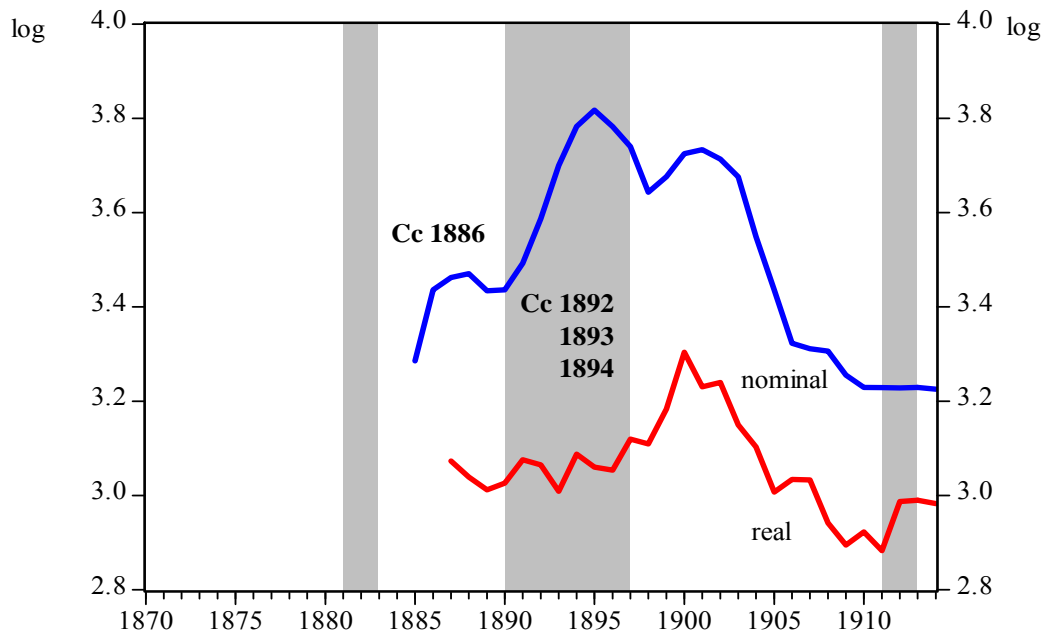


Note: Greek gold bond yield minus British consol yield; percent per annum.
Source: See appendix.

Figure 8 depicts the evolution over time of the real GDP per capita. In the same figure, the incidence of crisis events is also indicated and the sudden stop episodes shaded. One can notice that sudden stops and crisis events were associated with notable drops in the level of the real GDP per capita.²⁵ Figure 9 shows output losses associated with each sudden stop event. Following Adelet and Eichengreen (2005) and Bordo (2006), output loss is measured as the change between the average growth rate three years before the crisis and the average growth rate three years after the crisis. A three-year growth average is considered to serve as a proxy for the trend growth. As seen, the sudden stop episode of 1890-1897 was associated with a considerable output loss.

²⁵ However, the 1881 and 1912-1913 reductions in the real GDP per capita were largely determined by a sharp increase in the country's population in those years, as the result of the country's territorial enlargement.

Figure 7
The nominal and real exchange rate of the drachma against the pound sterling, 1885-1914

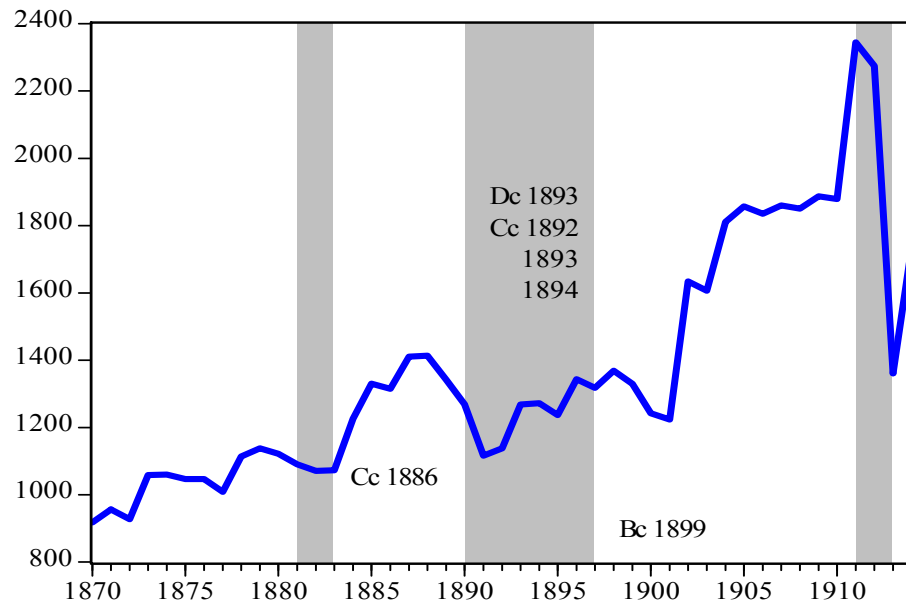


Notes: Cc = dates of the currency crises. Sudden stops are in shaded areas. Spot rates, yearly averages. LHS = real (1887-1914), RHS = nominal. The real exchange rate has been calculated as the ratio of British wholesale prices (Sauerbeck index) to prices for basic foodstuffs in Greece, using the bilateral nominal exchange rate as the conversion ratio. The food price index (1866-1877 = 100) has been constructed as a simple geometric average of the relative prices of five traded food products. Since data on quantities consumed are not available, a Laspeyres index cannot be calculated. Moreover, as Fisher (1927) and Mitchell (1938) have pointed out, the simple geometric average has the advantage of smoothing the time series of prices with regard to extreme values. This is very important in the case of food products, because their prices exhibit high volatility. Pre-1914 official data for a price index do not exist. The data for the Sauerbeck index have been taken from the *Journal of Royal Statistical Society* and Grilli and Kaminsky (1991).
Source: See appendix.

So far, the inspection of the Greek historical data has indicated that drops in foreign capital inflows were associated with currency crises and debt crises. These fluctuations in capital flows were largely determined by external shocks, such as a change in the central bank rate of the lending countries. For example, the 1890-1897 crisis in Greece can be considered the outcome of an array of adverse shocks in the international economic and financial environment, which worried foreign creditors who, until the late 1880s, were generously supplying cheap loans to emerging economies without any guarantee and at

low interest rates.²⁶ Specifically, the lending boom of the 1880s ended suddenly in 1890-1891, when the advanced lending countries stopped lending as economic conditions in advanced Europe gradually improved and investment opportunities reappeared. The core countries' central banks responded by increasing their discount rates, which caused a massive slowdown in investment abroad.

Figure 8
Real GDP per capita, 1870-1914

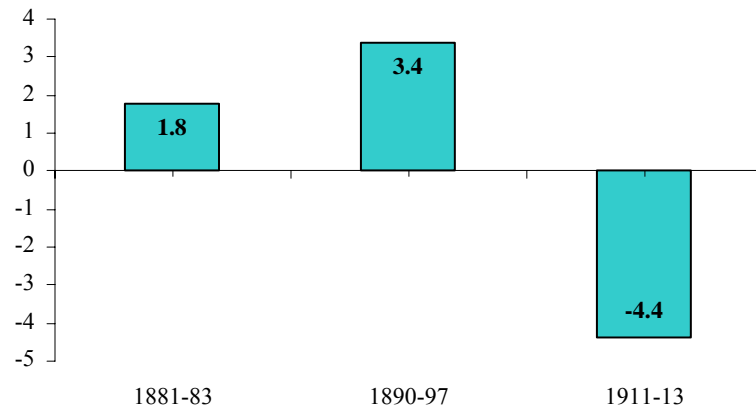


Note: In 1990 international US dollars. Cc = dates of currency crises events; Bc = dates of a banking crisis; Dc = dates of a debt crisis; sudden stops are in the shaded areas.

Source: See appendix.

²⁶ Specifically, Argentina's crisis in 1890—associated with a sharp decline in foreign capital, default on external debt, and a revolution—was a major shock to British investor confidence and precipitated the Baring crisis in London in 1890-1891 (for details, see Eichengreen 1992, Della Paolera and Taylor 2001). At the same time, the Sherman Silver Act in 1890 led to a period of uncertainty surrounding US ability to remain on gold (Friedman and Schwartz 1963, Grilli 1990). A year later, in 1891, Portugal's credit standing began to suffer. Government support for failing Portuguese enterprises caused a heavy burden on the budget and, in conjunction with an increase in the ratio of debt service payments to tax revenues, made suspension of convertibility and debt default inevitable (Reis 1992).

Figure 9
Output loss during sudden stops



Note: Change in real output growth rates, percentage points. Output loss has been calculated as the change in the average growth rates three years before and after the sudden stop event.

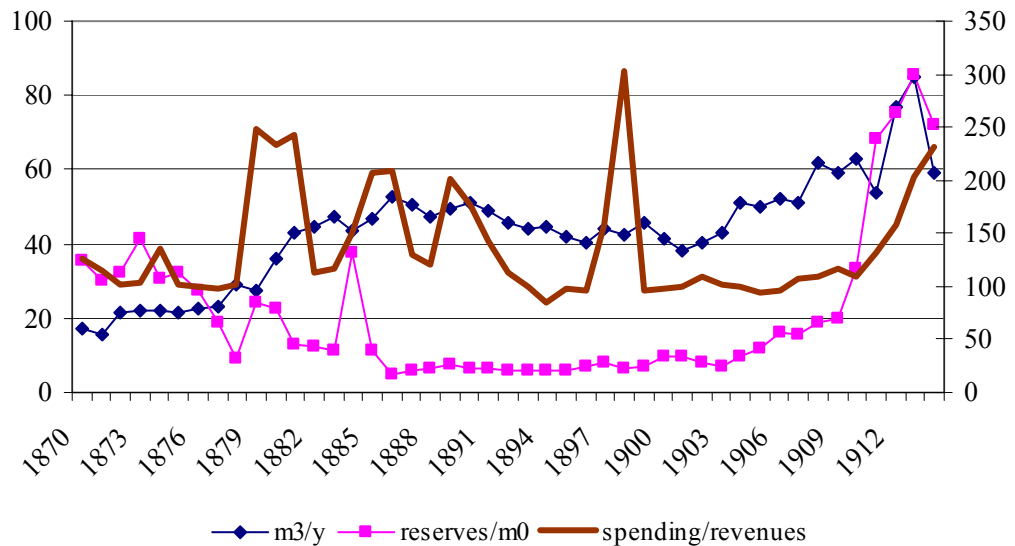
However, external shocks affected emerging countries differently. Country-specific factors closely related to fiscal, monetary and financial behaviour were the key drivers of this effect. Figure 10 shows the trend of the fiscal and monetary policy indicators over time. One can observe that fiscal behaviour as proxied by the ratio of total government spending to total tax revenues is generally lax, noticeably cyclical without however exhibiting a long-term trend. Sudden stop episodes and currency crashes were preceded by periods of high expenditure, which were accompanied by rapid monetary expansion as shown by the ratio of M3 to GDP. The ratio doubled between 1870 and 1880 and tripled between 1885 and 1890. As a result, a concomitant sharp drop in the international reserve coverage of the domestic currency occurred, implying that the country's monetary authorities were no longer able to adhere to the specie convertibility rule. Further, by regressing the cyclical component of real government expenditure on the cyclical component of real GDP,²⁷ bivariate regression estimates verify the well-known conclusion that in countries that experience currency crises, fiscal policy is procyclical.²⁸ A procyclical response of fiscal policy to the business cycle means that during cyclical

²⁷ The cyclical component is measured as deviations from a log linear trend. The coefficient on the trend takes a positive and statistically strongly significant value.

²⁸ The estimates are available upon request.

upswings fiscal policy exacerbates imbalances, which in turn causes nominal exchange rate depreciation and a drop in the reserve coverage of the monetary base.

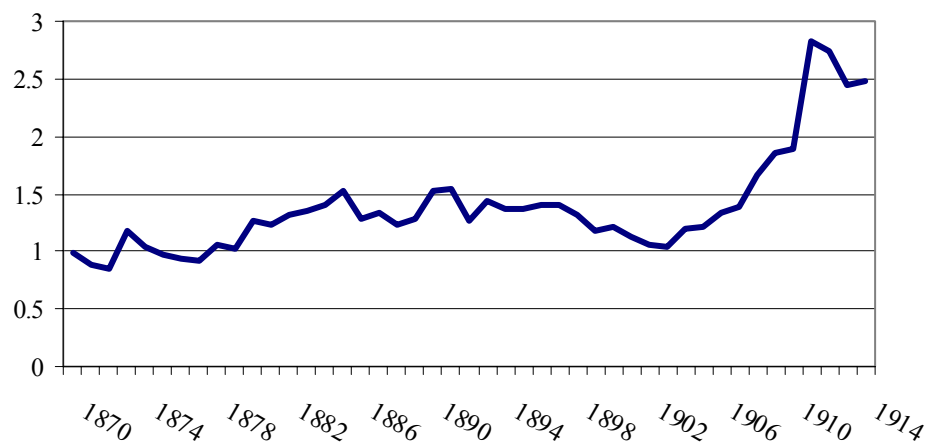
Figure 10
Fiscal and monetary policy stance indicators, 1870-1914



Note: percent per annum. The ratio of spending to revenues is measured on the right hand axis.
Source: See the appendix.

Figure 11 plots the M3 multiplier—that is, the ratio of broad money (M3) to monetary base (M0). It corroborates the view that monetary expansion played a significant role in aggravating currency crises during sudden stop events. As with the ratio of broad money to GDP, domestic bank credit as proxied by the M3 multiplier is also cyclical throughout the period under study. From the turn of the century, however, it exhibited a strong upward trend, as the result of the country’s rapid financial development process that started in those years.

Figure 11
M3 multiplier, 1870-1914



Note: M3 to M0 ratio. End-of-year data.

To recapitulate, in the pre-1913 period Greece experienced sudden stops in foreign capital inflows, accompanied by currency and debt crises. Country-specific factors were the key driving forces of this effect. Indeed, as the data show, all crisis events were preceded by periods of fiscal laxity, rapid monetary expansion, and limited reserve coverage of the domestic money.²⁹

5. The role of learning: the regulatory regime

Let us now turn to the role of learning. What has the country learned from its past experience in financial crises so as to improve institutions? What have we learned about banking supervision in Greece? Has the Greek financial system been regulated? Were financial crises followed by changes in the regulatory framework in order to prevent

²⁹ Probit estimates strongly support the above conclusion. The coefficients on variables predicting the crisis, *i.e.* $m3/y$, $reserves/m0$, and $spending/revenues$ are shown to be statistically significant in spite of the small number of crisis events.

future crisis events? What was the role of the country's central bank? In this section, I try to answer these questions. Specifically, I will deal with the evolution of the regulatory regime, placing emphasis on the post-crisis regulatory responses that changed the institutional determinants.

The country's long record of crises illustrates several interesting points. First, as seen in the previous section, financial crises were a common feature of the country's economic and monetary history. Second, with the exception of the interwar years, banking crises were not common; this might explain why banking regulation was not crisis-driven. Third, crisis events left their mark on the weak fiscal position of the country, which fed speculative attacks on the domestic currency, thus causing debt and exchange rate crises. Fourth, financial crises were not always followed by changes in the regulatory framework. Fifth, a full and effective prudential regulatory regime was introduced for the first time in 1931; this was the immediate response of the government to the impact of the 1929 crash.³⁰ Until then, banking regulation was absent. Sixth, the country's central bank, the Bank of Greece, did not even once act as a lender of last resort.

5.1 The rationale

Broadly speaking, there is no clear-cut definition of the term 'regulatory framework' or 'regulatory regime'. In practice, regulatory rules are rather the outcome (that is, the product of a compromise) of a conflict game between the regulated entities and the regulating principle. There may be also a significant divergence between the rules and the actual practice of regulated entities, resulting in an ineffective or weak enforcement of regulation. Therefore, regulation changes might predate crises. However, when reading the world history of financial crises one may conclude that governments, in principle, used to act according to 'a learning by crisis procedure'. Explicitly, in an

³⁰ Nowadays, micro and macro prudential supervision is a key issue among the country's central bank responsibilities. However, in the years after the end of World War II until the late 1990s, when the liberalization of the Greek banking system was completed, credit policy was totally and strictly guided by the government in order to serve the goals of the economic policy it pursued. This means that savings were not distributed to investors according to the market forces. Instead, state interventions included the setting of upper limits on credit lines, rate ceilings and floors, and unproductive interest rate discriminations. Stated-owned banks dominated the domestic money market by setting large spreads and enjoyed monopoly rents. Hence, banking competition was extremely weak.

attempt to make the system more crisis-resistant, governments always made significant reforms after the occurrence of a generalized crisis, concerning the improvement of the structure, the regulation, and the supervision of commercial banking. This is a common practice following a major crisis, whether economic or non-economic.³¹

For both the advanced world and developing economies, banking regulation and supervision were absent in the nineteenth century. This was because the world money and capital markets were dominated by the *laissez faire laissez passé* principle. Economic thought and policy were also largely dominated by the same principle. It was not until the wake of the great crash of 1929 and the wide-spread bank panics and failures in the early 1930s that strict legislation was adopted by almost all countries that participated in the then prevailing international monetary system.

Nowadays, nations and international organizations have built highly sophisticated systems of financial monitoring. However, as the current crisis episode has demonstrated, they totally failed since it suffered serious deficiencies (de Larosi re 2009). Many mutually reinforcing factors contributed to increased systemic risks. First, many consider that ‘liquidity overhang’ was the main challenge that central bankers faced during the last decade (Bernanke 2005, 2009, Krugman 2009). Second, structural changes and innovation in the financial sector weakened risk management practices and increased leverage (Sacasa 2008, Blanchard 2008, IFS 2008, FSF 2008, and Borio 2007). And third, shareholders and managers were characterized by destabilizing incentives. In other words, they increased short-term returns on equity by increasing leverage and being exposed to high risks (Rajan 2005, 2009). Further, when they acted in this manner, they disregarded systemic risks. Therefore, for central bankers the main challenge ahead is ‘to rush in like fire-fighters and at the same time to be as vigilant as policemen’ (Nowotny 2009).

³¹ Let us take as an example the practice following a major earthquake. Greece is a country with rich experience not only in financial crises, but also in seismic events. The government always improves the regulation of building construction every time a major quake hits the country, making buildings more resistant for the future. Even though safe, short-term projections for the exact time of a seismic event are not possible yet, all concerned entities (citizens, scientists, and the government) believe that a major earthquake will certainly hit the country some day. Therefore, the only remaining option is to strengthen the current institutional framework—that is, to introduce even stricter regulatory rules and prudentially supervise the engineering market.

It is widely accepted that banks play a pivotal role in the economy. They channel funds from units in surplus to units in deficits. They transform small-size, low-risk and highly liquid deposits into loans which are of larger size, higher risk, and illiquid. The reasons for their existence are related to their task of monitoring borrowers, producing information, transforming liquidity, and facilitating consumption. Their existence is also related to their role as a commitment mechanism for prudential behaviour—that is, ensuring that banks hold sufficient liquidity and capital resources. Information costs and information asymmetries due to imperfect distribution of information among different parties give rise to adverse selection and moral hazard problems. Through their ability to collect information, banks can reduce these problems and channel funds to highly productive investments, thus stimulating economic growth.

However, due to the fact that depositors cannot adequately monitor bankers' action, banks create a new type of asymmetric information. Regulation is therefore justified, since it is delegated the task of monitoring of banks and thus protecting depositors. Mishkin (2001) has delimited nine basic forms of prudential supervision of banks: (i) restrictions on asset holdings and activities; (ii) separation of banking and other financial service industries; (iii) restrictions on competition; (iv) capital requirements; (v) risk-based deposit insurance premia; (vi) disclosure requirements; (vii) bank chartering; (viii) bank examinations; and (ix) a supervisory *versus* regulatory approach. More recently, White (2009) has also identified nine basic forms of policy intervention to deal with asymmetric information problems: (i) controls on entry; (ii) capital requirements; (iii) limits of economies of scale; (iv) limits on pricing; (v) liability insurance; (vi) disclosure requirements; (vii) bank examination; (viii) limits on economies of scope and diversification; and (ix) bank supervision and enforcement. Both Mishkin (2001) and White (2009) have argued that these policy interventions are needed to reduce the asymmetric information problem which affects financial markets. Thus, policies that enhance the effectiveness of the above-mentioned forms of prudential supervision will preserve the safety and soundness of the financial system.³²

³² Comparing Mishkin's and White's classifications, Giordano (2009) has proposed twelve possible regulatory instruments. Her classification is based on a clear 'separation of regulatory instruments from the objectives they are designed to achieve and from the effects they actually produce' (p245). These are:

However, history has shown that there is no optimal regulatory regime to prevent crises and preserve financial stability. As Calomiris and Gordon (1991) have argued, banking and capital markets are in continuous transformation due to technological change, making the task of designing an effective regulatory framework extremely difficult. Furthermore, Barth *et al.* (2001) have shown for a sample of sixty countries that, in some cases, tighter forms of restrictions are associated with a less stable financial system.

5.2 Banking in Greece during the unregulated era

The Greek banking system was typically characterized by multiple-issue banks, while a central bank was absent until 1928.³³ The country's quick banking development after 1900 was based on inadequate capital and the complete absence of a regulatory framework.³⁴ The high rate of growth of economic activity at that time increased money transactions as well as the demand for money and caused an enlargement of the banking system.³⁵ These favourable developments continued in the early 1920s. They were mainly driven by three forces: first, the sudden and rapid increase of the country's population in 1922-1923 augmented domestic consumption and output demand; second, bank deposits sharply increased due to a massive money creation in the first half of the 1920s; and, third, the strong devaluation pressures on the drachma due to high inflation not only increased exports but, more importantly, reinforced speculation against the currency. The abnormal fluctuations of the drachma exchange rate against the pound sterling during those years caused large discrepancies between buying and selling prices. Speculative attacks on the currency were strong, frequent, and excessively profitable. From 1918 to 1927, a large number of banks, 46 in total, were created just to exploit these profits.

(i) restrictions on entry and on dimensions; (ii) regulation on ownership and control; (iii) restrictions and directions on activities and asset holdings; (iv) price regulation; (v) capital and liability requirements; (vi) deposit insurance; (vii) regulation on compensation and insurance schemes for managers and directors; (viii) accounting standards; (ix) disclosure to authorities and on-site examinations; (x) disclosure to the public; (xi) regulation on organization, risk management and corporate governance; and (xii) enforcement of the regulation.

³³ The country's financial system made its start with the inception of the National Bank of Greece (NBG) in 1842. It was created and functioned as a 'universal bank' that served as a deposit and discount bank, as well as a provider of short- and long-term credit. At the same time, it was an issue bank. Earlier attempts to operate a banking institution dated to the early 1830s, but failed.

³⁴ Until 1900, only four out of 23 credit institutions remained active.

³⁵ From 1900 to 1914, seven new banks operated; some of them proved to be the most trusted and long-lived financial institutions of the country.

However, very few managed to survive, while arbitrage profits were minimized soon after the currency's stabilization in 1926-1927. Most of them were eventually dissolved or went bankrupt in the wake of the 1929 financial crisis.³⁶

The main characteristics of the Greek banking system were as follows: (i) numerous small banks co-existed with very few large ones; (ii) they were highly leveraged and poorly asset-liability managed; (iii) they enjoyed monopoly rents; (iv) lending was not well collateralized;³⁷ (v) they were not regulated by an institutional principle; and (vi) there was no central bank which could safeguard monetary and financial stability and act as a lender of last resort during periods of crisis.

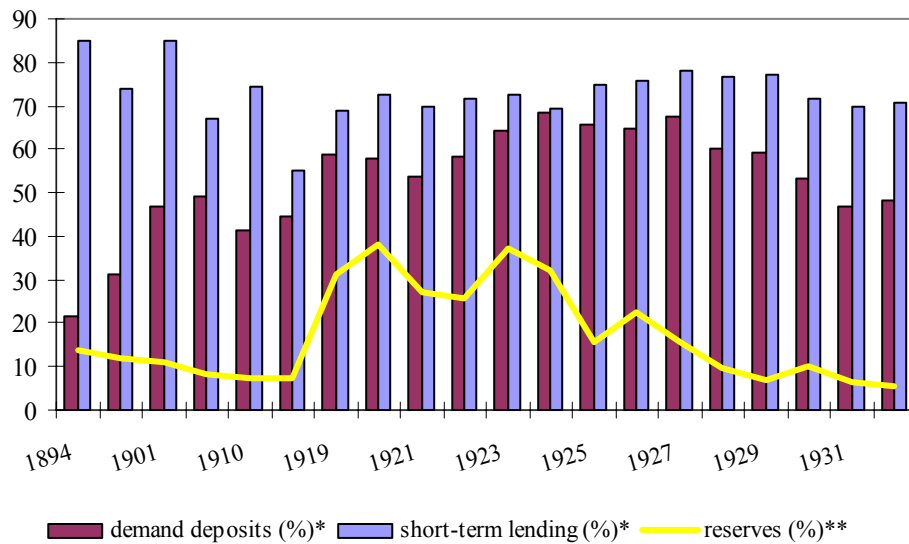
In particular, the excess liquidity in the first half of the 1920s caused a rapid increase in bank deposits. In the absence of a developed capital market and due to the low public confidence in the domestic currency and the high monetary instability, private agents preferred to keep their money with the banks in the form of more liquid investments (*e.g.*, demand deposits), to be able to convert them into a gold-based foreign exchange more easily. Domestic consumption and output demand also increased during that period. Banks accommodated the increase in output demand by expanding short-term lending. As seen in Figure 12, discounts and advances accounted for more than 75 percent of total private lending in 1928. Demand deposits were 60 percent of total private deposits. At the same time, the ratio of reserves to assets was kept at high levels. The rapid increase in bank deposits, which was not followed by a respective rise in the banks' equity capital, resulted in a fall of the equity to assets ratio and an increase in the proportion of deposits to equity. As is evident in Figure 13, the equity to assets ratio followed a downward movement. The low values of the ratio indicate that the banks were highly leveraged, that is the ratio of deposits to equity was high. The equity to assets ratio

³⁶ Between 1917 and 1923, 17 new banks entered the market; in 1924, 11 new banks were created; in 1925, eight; in 1926, eight; and in 1927, two more. In the first months of the interwar crash, 12 banks went bankrupt. By the end of 1932, the banks (both domestic and foreign) that remained active were reduced to 32.

³⁷ Collateral is a stabilizing factor in the banking system. As shown, it is the key determinant of the different growth rates and different development levels reached by various countries. In advanced countries with well-defined property rights and where the commercial value of the collateral is a large portion of the total outstanding loan, the risk premium is lower for a given probability of default since the recovery rate is higher. This in turn induces higher investment and a better use of the country's savings. However, in less developed peripheral countries collateral has a low value and property rights are not well-protected.

is a measure of capital adequacy;³⁸ low values imply that the bank operates with less equity and more debt.

Figure 12
Deposits, loans, and reserves, 1894-1932



Note: All banks; * as percent to total private deposits and to total private lending; ** as percent to total bank assets.

Source: Data based on banks' balance sheets; Lazaretou 2008.

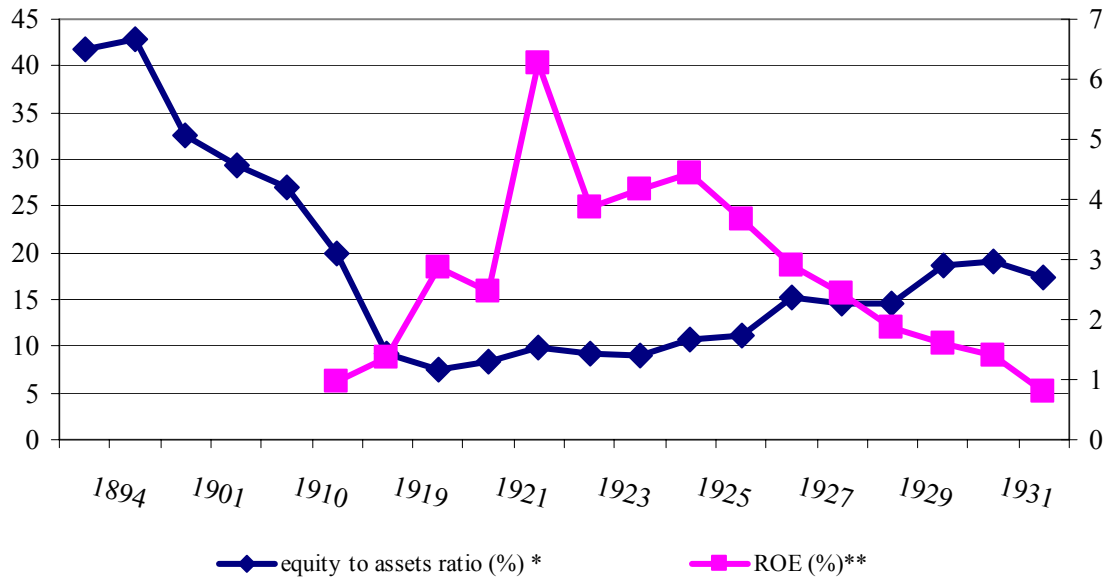
Furthermore, a simple inspection of the banks' balance sheets suggests that the Greek banks were also poorly asset-liability managed in the sense that assets and liabilities seemed to have, on average, the same maturity. This means that they malfunctioned in terms of the transformation of liquidity—which is one of the most important banking operations—and, consequently, they could not enjoy funding profits. Even though the Greek banks could not enjoy funding profits, they still enjoyed high profits as released by the trend behaviour of the returns to equity ratio (ROE). As seen in Figure 13, ROE moved upwards in the first half of the 1920s. Two forces chiefly drove bank profitability: first, high profits derived from the speculation against the currency, and, second, monopoly rents. In particular, the market was characterized by an

³⁸ This is an index of capital adequacy in financial and not in regulatory terms. In other words, it measures financial leverage and represents both a profit and risk measure.

oligopolistic structure. On the eve of the 1929 crash, 85 percent of the total bank deposits were kept in six banks; four banks held 80 percent of the total equity capital. Bank competition was extremely weak and, in conjunction with interest-inelastic demand for lending and supply of private deposits, the interest rate spread was high enough.³⁹

³⁹ The discount rate fluctuated between 7.5 and 11 percent. The short-term lending rate was 15 percent or even higher. However, the return on bank deposits was rather low: 3.5-4 percent on sight deposits, 4 percent on time deposits, and 5 percent on savings.

Figure 13
Balance sheet indicators, 1894-1932



Notes: * All banks; ** 6 large banks; LHS = equity to assets ratio; RHS = return on equity.
Source: Data based on banks' balance sheets; Lazaretou 2008.

In summary, the Greek banking system, although it expanded rapidly, was poorly asset-liability managed in terms of liquidity transformation. Greek banks also suffered from capital inadequacy and were highly leveraged. More importantly, they were not supervised by an institutional principle, nor was there a central bank that could preserve monetary and financial stability.

5.3 What was the role of the Bank of Greece? The new regulatory framework

Up until the end of the 1920s, the domestic banking system was dominated by the National Bank of Greece (NBG), which acted as a commercial and an issue bank. It was by far the biggest player in the domestic money market. However, profit motives and its priority to preserve the convertibility of its banknotes did not allow it to operate as ‘the bankers’ bank’ and lender of last resort for the domestic money market in times of crisis. Rather, it performed as the Treasury’s bank and, after 1920, as the sole money issuer. Thus, it usually appeared extremely reluctant to take part in rescue operations leading to help other commercial banks in difficulty. As a consequence, monetary tightness usually

resulted in real effects, and financial stability could not be preserved. Hence, there was a need to establish a separate and independent issuing institution that would conduct monetary and exchange rate policies. In May 1928, the new central bank, named Bank of Greece, was born.

As a guardian of the gold exchange standard, the new bank was charged with maintaining the convertibility of the currency and performing the function of lender of last resort. However, due to the small size and structure of its portfolio, it was not ready to perform the functions of a central bank from the very beginning. Hence, defending the exchange rate of the domestic currency by selling and buying foreign exchange at the official parity was its ultimate function. Its discount rate policy was also unsuccessful. At its beginning, the bank's credit policy aimed at facilitating private lending, by lowering the already high market lending rate. However, it did not succeed in lowering it since commercial banks did not face liquidity problems at that time and the demand for money remained at high levels.

However, the situation changed two years later, in the wake of the 1929 crisis. The 1929 worldwide financial crisis reflected itself in Greece in the form of bank panics, dissolutions, and bankruptcies. The commercial banks that experienced a severe liquidity shortfall turned to the Bank of Greece, asking for assistance and rescue. Unable to meet their liquidity requirements, they attempted to obtain support through the lender of last resort function, asking the central bank to bail them out.⁴⁰ The Bank of Greece, however, neither undertook a rescue effort, nor did it cope with the crisis. Consistent with its primary goal—that was, to maintain the international price of the domestic money stable, by protecting the relationship between banknote circulation and foreign exchange reserves (see Part I, Part II, articles 4, 5, and 61 of its statute)—it continued to implement a strongly anti-inflationary policy. Hence, in the aftermath of the 1931 pound sterling crisis it raised its rate by three percentage points, from 9 to 12 percent.⁴¹ Further, its

⁴⁰ They did not turn to the NBG as they used to do in previous crisis episodes, since the latter also faced severe liquidity problems and thus was unable to provide liquidity to other troubled banks.

⁴¹ Not until April 1932, when the country followed the US in the dollar's uncoupling from gold, did the stance of the monetary policy pursued change considerably, by allowing the bank rate to gradually decline. However, this regime change did not last, since a year later, in 1933, the golden constraint was restored by joining the Gold Bloc.

activities as lender of last resort were not explicitly nor institutionally specified.⁴² Ultimately, the credit shortage increased the market lending rate, and the economy suffered from severe recession pressures. Wide-spread bank panics, bankruptcies, and money balances hoarding soon caused a liquidity squeeze in the domestic money market. The money supply measured by M3 aggregate, fell by 2.6 percent at the end of 1931, and by 4.9 percent at the end of 1932, whereas in 1930 it had increased by 27.7 percent. The monetary M0 base fell by 15.2 percent in 1931, while in the following year it increased by almost the same rate.⁴³

The 1929 crisis, by causing several bankruptcies and a wide-spread bank panic, destroyed the already fragile and vulnerable stability of the domestic banking system and impaired public confidence. More importantly, it demonstrated its key structural inefficiencies and characterized as imperative the need to establish a banking supervisory regime aimed at making the banks more crisis-resistant and at protecting depositors. Thus, in the aftermath of the great crash, in 1931, a rigorous set-up concerning the structure, regulation and supervision of domestic commercial banking was initiated for the first time (see the laws of 30 June and 7 July 1931). As expected, the government acted according to the ‘learning by crisis procedure’. That is, it was actively involved in creating a regulatory framework that would insulate the banking system and the real economy from a shock. The Bank of Greece was defined as the regulatory agency. The Banking Regulation Law had as a key objective the strengthening of banks’ capital adequacy; the imposition of restrictions on the mixing of banking and commerce, thus protecting banks from excessive business risk; and the support of banking specialization and consolidation. As a result, new specialized banking institutions were established, while the number of small-sized local banks operating was sharply reduced.

The main features of the new institutional set-up were as follows (see articles 10 to 14 and 16): (1) all commercial banks were obliged to keep reserves with the central bank or in cash to meet excess liquidity demand. The required reserve ratio was initially set at 7 percent of total bank savings and demand deposits in domestic money kept with the

⁴² Its statute rigorously specified the rules of its credit policy: it was allowed to provide only short-term lending facilities to banks in difficulty *via* discounted traded bills.

⁴³ This increase was chiefly attributed to the compulsory reserve requirements that, beginning in 1932, all commercial banks had to keep with the central bank for prudential purposes.

central bank, or 12 percent of total bank deposits kept in the form of required reserves as vault cash.⁴⁴ The reserve required ratio was the most important institutional change, since with this ratio a new tool for monetary control was introduced. Through it, the central bank could control more efficiently banks' lending activities and check their liquidity conditions. (2) Banking activities were strictly specified and banks' involvement in trade and industrial activities was strictly prohibited in an attempt to avoid banks' exposure to business risk. (3) A lower limit of equity was set to safeguard capital adequacy. (4) It was specified that all banks were to operate in the form of a limited company. (5) All banks were obliged to submit to the central bank monthly financial statements. Specifically, they were obliged to release monthly reports about their daily reserve requirements, their demand deposits and savings deposits.

Based on the nine basic forms listed by Mishkin (2001) and White (2009), Tables 1 and 2 summarize the main features of the banking reforms in the period before World War II. The entire sample period is divided into the unregulated period until 1930 and the post-1931, regulated period. An emphasis is placed on the identification of banking regulatory agencies and the forms of prudential supervision over the two periods.

⁴⁴ See article 15 of the Law of 7 July 1931.

Table 1. Greek banking regulatory agencies

Period	Banks	Central Bank
pre-1931	Totally unregulated	Until 1928, there was no central bank. A system of multiple issue banks was in effect until 1920. Afterwards, until 1927, there was only one bank of issue, the NBG, which also had commercial responsibilities. The NBG did not even act as a lender of last resort in times of difficulty, nor did it take measures to prevent or contain a crisis episode.
1931-1939	Strict rules of prudential supervision in place	The Bank of Greece established in 1928 served as the country's central bank. It was the sole institution responsible for maintaining monetary and financial stability. It was the regulatory agency. However, it never acted as a lender of last resort.

Table 2. Bank regulatory regimes in Greece

Forms of Prudential Supervision	All Banks	
	First Period up to 1930	Second Period 1931-1939
(a) controls on entry bank chartering	Free entry; a locally located multiple system of issue banks. The government granted the monopoly of issue in exchange of raising money to cover its spending.	Subject to government and central bank authorization
(b) capital requirements	No limits	A fixed minimum
(c) restrictions on asset holdings and activities; limits on economies of scope and diversification; separation of banking and other financial service industries	No limits	Strict limits: The mixing of banking and commerce activities was strictly prohibited.
(d) limits on economies of scale; restrictions on competition	No limits	<i>De facto</i> support of banking consolidation
(e) risk-based deposit insurance premium; liability insurance	No	Deposit insurance; a minimum reserve requirement ratio
(f) disclosure requirements	No	Information disclosure to the Bank of Greece. All commercial banks were obliged to publish at the end of every month daily financial statements.
(g) bank examination	No	The Bank of Greece was the official regulatory agency.
(h) bank supervision and enforcement	No. Limited (poor and informal) supervision due to the presence of a government commissioner on the board of the directors of the banknote-issuing banks.	Strict enforcement of rules
(i) limits on pricing	No limits	No limits

6. Concluding remarks

Several important lessons can be drawn from Greece's long record of crisis experience. First, a comparison of the key characteristics and the sources of the two historical episodes of financial instability ('then' and 'now') reveals that excess credit was the main crisis determinant in both instances. Second, country-specific features such as fiscal laxity, credit expansion, and the limited reserve coverage of the domestic currency were the key aggravating factors of the earlier crisis. And third, data and historical accounts verify that the government's response to a crisis event was weak, slow, and delayed. This means that the government officials learned only with serious difficulty and after a long delay how to manage successive crises and develop better techniques. For example, studying the historical experience of dealing with the interwar banking crisis, one can conclude that the delayed government action contributed to the delayed recovery. Explicitly, even though the introduction of the deposit insurance principle and the new regulatory framework were the immediate response of the government to the wide-spread bank panic, the government decided only after several delays to release the country from its golden fetter and heavily devalue the currency in an attempt to relieve the economy of the strong deflationary pressures of the gold regime.

Recently, several scholars have raised the following question:⁴⁵ Can strict regulation generate innovations that might in turn produce future crises? This is not the general rule. Certainly, there are many other risk factors. For example, riskiness might arise from global macroeconomic imbalances combined with inherent financial inefficiencies and weak institutional determinants that put to work destabilizing incentives. A crucial issue is thus addressed: How can we strengthen the deep institutional determinants of financial development (such as the rule of law, property rights, corporate governance, and constitutional democracy) to avoid a new crisis? Therefore, an interesting topic for further research might be to identify the predicted probabilities of a crisis event. By enlarging the country sample to include all SEE countries, probit regression results might show if and to what extent country-specific features would be the most important predictor of crashes.

⁴⁵ See, for example, Gigliobianco, Giordano and Toniolo (2009).

‘History does not repeat itself, but it does rhyme’.⁴⁶ History has shown that, even though financial crises were accompanied by considerable output loss, they were always followed by a period of growth that lasted many years. However, as historical accounts demonstrate, crisis events will always occur, and it is very difficult to avoid repetition. On the other hand, policy-makers and governments often have a short historical memory. This means that their past attempts to strengthen prudential supervision either failed or were proven to be ineffective in preventing similar situations in the near future.

⁴⁶ Mark Twain (1940) actually wrote: ‘it is not worthwhile to try to keep history from repeating itself for man’s character will always make the preventing of the repetition impossible’.

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Appendix

Table A: Dates of Crisis Events

Block I: Before 1914

Debt crises	Currency crises		Banking crises	Sudden Stops***
	definition 1*	definition 2**		
1826	1831	1886 ¹	1834	1881-83
1843	1848	1892	1899	1890-97
1893	1868	1893	1906	1911-13
	1877	1894		
	1886			
	1895			

Notes: ¹ The data series starts as late as 1885. Debt crises = I include only the year of debt repudiation. Negotiations years are excluded. Currency crises = * Definition 1: I refer to the year of a heavy speculation attack on domestic money, causing abnormal fluctuations of the exchange rate or the year of a nominal currency depreciation or devaluation; ** Definition 2: following Catao's working assumption (2006), I define a currency crisis (that is, a currency drop) as nominal exchange rate depreciation greater than at least one standard deviation of the annual percentage change of the spot exchange rate of the drachma against the Pound Sterling over the sample period. I also assume that this depreciation is not fully reversed within a three-year window. Banking crises = I include the years of a wide-spread bank panic and/or the years of massive bank failures. Isolated events are not taken into account. *** Following Catao's (2006) working assumption, I define a sudden stop as a drop from peak to trough of no less than two standard deviations of the deviations of the respective series from a linear trend and/or any drop that exceeds 3 percent of GDP over a period shorter than four years.

Block II: 1919-1939

Debt crises	Currency crises	Banking crises
1932	1923 ²	1919
	1925 ²	1927
	1926 ²	1929
	1931	1930
	1932	1931
	1936	1932
		1935
		1936
		1939

Note: ² Years of heavy currency speculation and abnormal exchange rate fluctuations.

Block III: 1945-2008

Debt crises	Currency crises	Banking crises
None	1945	1967
	1949	1974
	1951	1988 ⁵
	1953	2008 ⁶
	1963 ³	
	1964 ³	
	1965 ³	
	1971	
	1973	
	1983	
	1985	
	1994 ⁴	
	1997 ⁴	
	1998	

Notes: ³ Gold hoarding; ⁴ speculation attacks resulting in an abnormal increase in the interest rates to defend currency; ⁵ an isolated event of a bank failure due to a corporate governance failure (fraud risk), therefore not taken into account; ⁶ bail-out, rescue package.

Data

For the period from 1846 to 1914, bank loans to firms and households refer to total gross loans to the private sector. The data on lending are taken directly from the *Balance Sheets* of the eight large commercial banks of Greece. For the period from 1950 to 2009, total bank credit includes loans to firms and households; the data are from the Bank of Greece. The data for the level of the Gross Domestic Product (1833-1938) in current prices and in constant 1914 prices, both aggregate and per capita, are from Kostelenos et al. (2007). GDP deflator is a Paasche type index of the prices of 10 products from the primary and secondary sectors and covered over 23 percent of the total value of GDP. GDP has been computed 'based on estimates made directly using the production (value added) method, the most notable exception being the analysis of the tertiary sector, where a combination of the income method and of an indirect approach has been used' (Kostelenos et al. 2007, 251). For the period after World War II, the data for the GDP in current prices are from the National Statistical Service of Greece. Total bank assets for the same sample of banks are also taken directly from their balance sheets. Broad money (M3) and monetary base (M0) are from Lazaretou (2010). Demand deposits, vault cash, and short-term lending (advances and discounts to traders) refer to all commercial banks for the period from

1894 to 1932 and are taken from the banks' balance sheets. The equity to assets ratio has been computed for all commercial banks for the period between 1894 and 1932. Return on equity has been assessed for six large banks for the period between 1910 and 1932. The financial statements of those banks are my primary data source. The data for the nominal exchange rate of the drachma against the British pound are taken from Bank of Greece (2009). Total reserves, foreign exchange and metallic, are from Bank of Greece (2009). The data for total government spending and total tax revenues are from the Greek Government Budgets, *Annual Reports*, and concerned realized entries.

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