Prudential Policy, Macroeconomic Stability and Comovement:

The Financial Crisis in Historical Perspective

Nathan Sussman*

and

Yishay Yafeh*

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Abstract

Three types of reasons for the current crisis have been raised in the literature: microeconomic reasons related to incentives and moral hazard problems; macroeconomic reasons related to the stability of the US economy; and reasons related to the policies of the Federal Reserve during the crisis. We shed light on the importance of these factors by studying the Baring crisis of 1890, which was similar to the 2008 collapse of Lehman Brothers in some important respects, yet was short-lived and did not spread globally. After illustrating the similarities between the two episodes, we argue that microeconomic problems such as lax banking supervision and moral hazard existed in both periods and are therefore unlikely to fully account for the different outcomes; the decision of the Bank of England to bailout Baring's Bank differed from the Fed's decision to allow Lehman Brothers to fail, but we suspect that this alone cannot be the sole explanation for the different outcomes; instead, we propose that the macroeconomic stability of the UK financial system "then" was much greater than that of the US financial system today; this element is, in our opinion, crucial for understanding the differences between the two crises. The evidence we provide lends support to macro-based views of the current crisis such as Jagannathan et al. (2009), Obstfeld and Rogoff (2009) and Reinhart and Rogoff (2011).

* Both authors are of the Hebrew University and CEPR, msussman@mscc.huji.ac.il; yishay.yafeh@huji.ac.il. Yafeh is also affiliated with ECGI. We thank Michael Bordo, Charles Calomiris, Charles Wyplosz, and participants of the CEPR/PPP4 conference in Geneva for helpful comments and suggestions. Financial support from the Krueger Center at the Hebrew University School of Business is gratefully acknowledged.

1. Introduction

The literature on the recent financial turmoil has focused primarily on microeconomic explanations for the crisis including, among others, inappropriate managerial incentive schemes, moral hazard in banking associated with mortgage securitization, inappropriate risk valuation models, conflicts of interest in credit ratings, regulatory failures of various forms and many more.[1] A much smaller literature has focused on macroeconomic reasons for the crisis; studies such as Jagannathan et al. (2009), Obstfeld and Rogoff (2009) or Reinhart and Rogoff (2011) focus on macroeconomic weaknesses of the US economy as the major underlying cause of the crisis.

In this study we use historical evidence from the late nineteenth century to support the claim that macroeconomic factors "mattered." To do that, we compare the Baring crisis of November 1890 — which occurred in London and did not result in a global financial crisis — with the collapse of Lehman Brothers in New York in 2008 which was followed by turmoil in financial markets around the world. We show that both shared somewhat similar causes and economic environments; yet their effect was quite different. We argue that microeconomic reasons are unlikely to fully account for the differences in the severity of the two crises; lax banking supervision and moral hazard problems associated with the expectations of banks to be bailed out in times of trouble existed in both periods. Indeed, banking regulation in the nineteenth century was much less developed than in the twenty-first

[1] For a comprehensive discussion of microeconomic explanations for the crisis, see *The Financial Crisis Inquiry Report* (2011). Among the recent studies of the underlying causes of the crisis, Keys et al. (2010) provide compelling evidence that mortgage securitization was associated with moral hazard problems; Rajan et al. (2010) discuss inappropriate risk valuation models; Benmelech and Dlugosz (2009) discuss some of the problems related to credit rating agencies.

century. Perhaps a more plausible reason for the differences in the way the two crises evolved may have to do with the policies taken by the Bank of England "then" vs. the Federal Reserve in 2008. We discuss these policies below, and conjecture that the Bank of England's decision to bailout Baring's Bank, in contrast with the Fed's decision to let Lehman's Brothers fail, are unlikely to have been the most crucial difference between the two crises. Instead, we argue that a fundamental reason why the current financial crisis has turned into a severe global crisis whereas the Baring crisis did not is the different macroeconomic environment of London "then" vs. New York (and the US) now. Throughout the period when London was the world's financial center, the macroeconomic fundamentals of the UK economy (primarily, the fiscal deficit and trade balance) were stable, in contrast with the position of the US today. Indeed, soon after the UK became a net borrower (rather than the provider of capital to the rest of the world) it ceased being the world's financial core. Although there are many differences between the UK at the time and the US now, we believe that the evidence in this paper contributes to the macroeconomic-oriented literature on the crisis by providing a historical counterfactual that illustrates the importance of macroeconomic factors. Nevertheless, because the Baring crisis differs from the current crisis both in the policies taken by the central banks and in the macroeconomic environment in which it took place, we cannot offer a conclusive proof on the relative importance of these two factors. We can, however, suggest that microeconomic factors are not the underlying cause of the differences between the two periods.[2]

[2] In this respect, the logic of the present paper is close in spirit to that of Saiegh (2010).

In addition to providing evidence on the macroeconomic underpinning of the current crisis, the paper attempts to make two additional contributions. First, we contribute to the historical literature on the Baring crisis (e.g. Eichengreen, 1999, and other studies discussed below). The results in the present paper, and in particular, the comparison with the current crisis, enable us to revisit the conventional wisdom, established by contemporaries and historians, regarding the reasons for the relatively small impact of the Baring crisis on the global financial system of the time. While many accounts laud the successful intervention of the Bank of England in providing liquidity to financial markets, our view is that, without the macroeconomic stability of the UK at the time, combined with the low degree of contagion in the global financial system, this celebrated intervention would probably not have been sufficient to avert a larger crisis.

Second, the discussion here adds to claims made in our earlier work (Mauro, Sussman, and Yafeh, 2002 and 2006) in which we argue that the modern global financial system is characterized by a high degree of comovement of asset prices, sometimes beyond what is warranted by fundamentals, whereas the historical international financial system of the pre-World War I era was less prone to it. Thus, the spread of the current crisis across countries and continents is typical of crises in the modern period of globalization, whereas the slow and limited spread of the Baring crisis was typical of crises "then."

The rest of the paper is organized as follows: in Section 2 we argue for the relevance of the comparison between the Baring crisis of 1890 and the current one. In Section 3 we compare key variables between the two episodes, highlighting microeconomic similarities and macroeconomic differences; In Section 4 we discuss the policy responses of the Bank of

England and the Federal Reserve; Section 5 focuses on the limited spread of the Baring crisis vs. the global reach of the current financial turmoil; and Section 6 concludes.

2. The Relevance of the Baring Crisis of 1890

This section begins with a brief historical account of the Baring crisis (for more details, see Eichengreen, 1999, and Saiegh, 2010). We then argue that the comparison between the Baring crisis and the current crisis is valid, especially around the collapse of Lehman Brothers, both in view of the extent of financial globalization in the two periods and in some important aspects related to the outbreak of the crises themselves.

The Fall of Baring's Bank

According to contemporaries, the House of Baring was the largest investment bank in London and, by extension, the largest in the world.[3] Like its rival, Rothschild's Bank, Baring's was a privately-held company not listed on the London Stock Exchange. Baring's underwrote sovereign debt for a number of foreign governments that would be classified, using modern parlance, as emerging economies.[4]

During the years preceding the crisis, the value of Argentinean bonds quoted on the London Stock Exchange more than doubled, from about £21 million in 1885 to almost £50 million in 1890. Expressed in terms of British GDP of the time, the exposure of British investors to Argentina doubled during this time period, from about 1.7% to 3.4% of GDP. The volume of bonds listed on the London Stock exchange handled by Baring's also

[3] The *Investor's Monthly Manual* (November 29, 1890, p. 564) refers to Baring's Bank as "… perhaps the greatest firm of merchant banking in the world."

[4] For example, Baring's was exposed to Argentina, Russia, Massachusetts, the Cape Colony, Canada and China (*Investor's Monthly Manual* listings, 1890).

increased dramatically, from about £5.5 million in 1885 to more than £18 million in 1890, of which, almost £15 million were floated between 1884 and outbreak of the crisis.[5] At the same time, the total exposure of London to Latin American sovereign debt remained constant at about 10% of British GDP. Chart 1 presents the price of Argentinean bonds relative to the price of a market-weighted portfolio of emerging market sovereign bonds (excluding Argentina).[6] The euphoria of investing in Argentina can be readily seen and so can its bloody aftermath following the Argentinean default.

Enjoying capital inflows at an unprecedented scale, Argentina's economy experienced an economic boom between 1885 and 1890.[7] The great liquidity in the economy led to speculation in real estate funded by *Cedulas* – mortgage-based loans. These mortgage-based loans were tradable and ended up on European stock markets in large quantities. With hindsight, since the *Cedulas* were based on (what now seems like) inflated land prices funneled by foreign investment, a crisis was nearly inevitable. Moreover, Argentina's Provinces accumulated debt at an increasing rate. Precipitating the crisis in 1889, capital inflows to Argentina declined sharply and the price of Argentinean bonds in London started to plummet. A revolution which broke out in Argentina in August 1890 hastened the onset of a financial crisis.

As noted earlier, Baring's Bank was involved in underwriting massive amounts of Argentinean debt since 1885. In 1889, as the price of Argentina's bonds in London started to

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[5] All figures are based on the authors' calculations drawing on figures from the *Investor's Monthly Manual* from 1885 and 1890. Between 1885 and 1890 Argentina's older debt was retired.

[6] We use a market-weighted portfolio of emerging market bonds constructed in Mauro, Sussman and Yafeh (2006) which includes: Argentina, Brazil, Canada, Chile, China, Colombia, Costa Rica, Egypt, Greece, Hungary, Japan, Mexico, Portugal, Queensland, Russia, Sweden, Turkey, and Venezuela.

[7] This paragraph draws on Eichngreen (1999) and della Paolera and Taylor (2001).

fall, Baring's extended a new 21 million pesos (about £4.5 million) loan destined for the Buenos Ayres waterworks (Ziegler, 1988). However, since the London market sentiment towards Argentina had changed, Baring's could not dispose of (sell) the loan. At the same time, Argentina's government called in the money, putting Baring's at a risk of insolvency.[8] Moreover, the Russian government, which held large deposits with Baring's (which acted as an agent for servicing some of the Russian bonds traded in London), withdrew almost £5 million, so that any attempt to recall additional deposits in 1890 would have caused the bank to fail.

Baring's approached the Bank of England in early November, 1890 and the Bank, fearing a collapse of the banking system and the London stock market, acted to provide liquidity to Baring's. On November 15, when the near-collapse of Baring's became public knowledge, stock markets reacted sharply, but news of the successful supply of liquidity to Baring's led to a quick correction. The Bank of England's intervention is discussed in more detail below.

Similarities in Financial Globalization Then and Now

To render the comparison between the Baring crisis of 1890 and the sub-prime crisis of 2007-2010 valid, we begin by showing that the different outcomes of the crises of 1890 and 2008 are not due to differences in the extent of financial globalization. Although common, the premise that financial globalization is based on modern technology is not true. Between 1870 and the outbreak of World War I the world experienced an era of globalization

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[8] When underwriting Argentina's and other countries' bonds, London underwriters were committed to providing a certain amount of capital even before the loan (bonds) was sold to investors, thus putting the underwriting bank at substantial risk if it could not dispose of the debt.

which, in certain respects, was similar to today's. In other respects, the globalization of the twenty-first century has yet to match the previous era of globalization.[9] During that past era, London — the world's main financial center at the time — saw massive amounts of capital raised by contemporary "emerging markets" (although the term was not used at the time), combined with very active trading by investors who were extremely well informed about events taking place in remote countries.

There is widespread agreement in the economic and financial history literature (e.g. Obstfeld and Taylor, 2004) that the extent of globalization over the past 150 years can be described by a U-shaped curve. Whether financial globalization is measured as the ratio of foreign assets (or foreign liabilities) to GDP, the flow of capital to GDP, or using a variety of other measures, the extent of globalization was very high during the pre-World War I era, declined dramatically in the interwar era and during World War II, and remained low for several more decades before beginning to rise again. Only in the final years of the twentieth century did financial globalization achieve a level and form reminiscent of the pre-1914 period. In particular, the London market for bonds (debt) issued by the "emerging economies" of the day was large (with an overall capitalization amounting to more than one half of Britain's GDP), liquid (with bond prices fluctuating considerably and reported in the newspapers on a daily basis), and supported by timely and reliable information (with political and economic news about emerging economies widely available in the press). The typical portfolio of a British investor around the turn of the twentieth century was probably more

[9] For a review of the large literature on financial globalization "then" and "now," see Mauro, Sussman and Yafeh (2006).

internationally diversified, and included a far larger share of emerging market securities, than that of his great grandchild living at the beginning of the twenty-first century.[10]

Despite the overall similarity in the scale of capital flows (relative to GDP) in the two periods, it is interesting to note that, while global movements of capital today tend to be multi-directional (e.g. from the US to Europe and vice-versa), in the period 1870-1913 capital flows were, for the most part, unidirectional, primarily from Britain (and a few other wealthy economies) to capital-scarce developing countries in South America, Asia, Australia and Canada (within and outside the boundaries of the British Empire). In particular, the United States today is a large net borrower with far more capital flowing into the country than flowing out from the United States to other economies. By contrast, all large economies in the period 1870-1913, and especially the UK, were net lenders, exporting capital to poorer nations. We view this difference as crucial for understanding the differences between crises in the two periods and discuss it in more detail below.

Similarities in the Magnitude of the Crises and in the Pre-crisis Environment

To establish the quantitative similarities between the historical Baring crisis and the insolvency of Lehman Brothers we normalize all magnitudes by GDP – that of Britain in 1890, the largest and wealthiest economy in the world at the time, and that of the US today. As a measure of financial risk, we use, for the 1890s, the volume of Latin American bonds

[10] There are, of course, important differences between the two periods, including in the types of assets traded (bonds, especially those issued by governments "then," vs. more equities today), the technology (speed) of trade and the predominance of individual investors "then" vs. institutional investors today. These and other differences are discussed in Mauro, Sussman and Yafeh (2006) and are not central to the analysis here.

traded in London — these economies shared certain characteristics and, for the most part, were considered risky — and the volume sub-prime mortgages in the modern period.

Table 1 indicates that the potential for macroeconomic, financial and banking crises were almost identical in the two cases, even though, *ex post*, the outcomes were ultimately very different. The crises are not only similar as far as relevant magnitudes go; both crises emerged following a period of low interest rates and high levels of liquidity which were associated with the upturn of the business cycle. In the following charts, we compare the developments of both crises in by aligning the historical and contemporary series using crisis-relative dates: November 1890 for the outbreak of the Baring crisis and July 2007 for the beginning of the sub-prime crisis.

As can be seen in Chart 2, both crises were precipitated by a run-up in the underlying asset prices and a decline which preceded, by about six months, the onset of the financial crisis. The crisis itself was followed by a sharp decline in asset prices; the rise and fall in modern asset (housing) prices is, of course, much steeper than the historical one.

A similar picture emerges when we compare the stock prices of banks exposed to "problematic" underlying assets in both periods. For the Baring crisis, we use the stock price of the London and River Plate Bank, a London banking company exposed to the Argentinean economy;[11] for the sub-prime crisis, we use the stock price of Lehman Brothers. Chart 3 shows that stock prices increased up to the start of the crisis; of course, the different endings of both crises and the different policy responses are reflected in the collapse of Lehman

[11] Data on the stock price of the London and River Plate Bank are drawn from issues of the *London Times*. Since Baring's was a private company, we cannot use data on its stock price.

Brothers' stock price, whereas the price of the London and River Plate Bank stock stabilized, albeit at a lower level.

The rapid rise in asset prices occurred in a macroeconomic environment of low interest rates and GDP growth. Chart 4 illustrates the similarity in pre-crisis economic growth whereas the aftermath of the crises is not similar —the US experienced a larger drop in output following the collapse of Lehman Brothers, whereas this is not the case for the aftermath of the Baring crisis in 1890 (the crisis did have severe consequences for the Argentinean economy, however, see Saiegh, 2010).

3. Microeconomic Similarities and Macroeconomic Differences

Microeconomic and Regulatory Similarities

Whereas much of the microeconomic literature on the origins of the current crisis focuses on the deficiency of the US financial system as we know it today, in these respects, the banking system of the UK in the late nineteenth century seems to have been no better.

For example, some observers argue that modern banking supervision authorities should have detected and warned against the presence of "toxic assets" on bank balance sheets (e.g., former SEC Chairman Christopher Cox, as quoted in Saiegh, 2010). However, when Baring's accumulated "toxic" Argentinean land-based assets at inflated prices, there was no regulatory authority which was supposed to issue a wakeup call; the popular press was the only one to express concern about the value of Argentinean assets.[12] On January 1,

[12] Statutory banking supervision was established in Britain only in 1979. Before that, there was only informal monitoring of banks by the Bank of England.

1889, almost two years before the Baring's crisis, *The London Times* described lending to Argentina as dangerous and Baring's actions as problematic:

To this country (Argentina) and in a lesser degree, to South America generally, the eyes of many people have been turning of late in the hope of finding more remunerative investments for their money than can be obtained in other quarters….. the disposition of the public to lend has been temporarily abused, Argentine provincial and municipal loans and companies having been issued in dangerous profusion during the past year. It is not reasonable to blame the Argentine people in this matter so much as their chief financial advisors in Europe, Messers Baring Brothers…. In this matter of Argentine issues Messers Baring have not acted with as much prudence and care as their position and trust reposed in them by the public demanded and that we hope they will not commit similar indiscretions again.

Despite this warning, in the following year lending to Argentina orchestrated by Baring's continued to increase. On June 24, 1890 *The London Times* published an article by its Buenos Aires correspondent describing the precarious situation of Argentinean finances, focusing mainly on the *Cedulas*: "It is not the amounts of notes and *cedulas* that have been actually issued…. It is their reckless manner in which they were issued…" Another detailed report published on August 25, 1890 included data on the *Cedula* issues and the necessary cost of paying the interest on them as well as informing the readers that the Argentinean provincial and national governments are ultimately responsible for this debt. *The Times* warned readers that "the issues of *Cedulas* in recent years is of startling character…..It is asserted that *Cedulas* were given upon valuations four or five times in excess of the real value of the properties mortgaged." Apparently, much like today, the writing was on the wall.

Rating agencies are often blamed for sanctioning risky securities based on sub-prime loans by assigning high ratings to risky assets (e.g. Bolton et al., 2011); in the late nineteenth century there were no ratings at all; economic data on securities was provided only by the financial press. According to Flandearu and Flores (2009), the rating of countries could be inferred from the underwriters of their debt – the more prestigious underwriters developed their reputation and market shares by monitoring their clients. Nevertheless, this norm may have created a moral hazard situation which Baring's was tempted to exploit.

"Originate to distribute" practices and moral hazard problems associated with the poor incentives of banks to monitor and screen clients of securitized loans have also been emphasized as a key aspect of the crisis (Keys et al., 2010); yet Baring's, and other underwriters of the same era, were also in the business of *de facto* selling the issuer's debt to investors on the London market. Indeed, this very practice nearly drove Baring's to bankruptcy when the demand for Argentinean debt declined. In other words, it seems that the practice of making risky loans with the expectation of passing the risk on to other investors existed in both periods and it is not clear that the scale of this phenomenon (relative to the size of the economy) is higher today than it was a hundred years ago.[13]

Finally, some studies focus on the compensation and incentives of managers in modern financial firms which may have led to excessive risk taking. Bolton et al. (2010) provide a theoretical framework and Cheng et al. (2010) document empirically a correlation between managerial incentives and risk taking (although they argue that this risk reflects investor preferences rather than managerial agency problems). Baring's was a private partnership where the partners (owners) were personally liable for the bank's obligations. Only after the crisis was Baring's converted to a joint stock company. Nevertheless, it appears that the bank was happy to take gambles, with the expectation of a government bailout in case of trouble. After all, it was Francis Baring, the founder of Baring's, who coined, in 1797, the term *lender of last resort*. It is therefore unlikely that moral hazard by

[13] See Flandreau and Flores (2009) for more details.

bank managers today is the main factor distinguishing the current financial crisis from Baring's a century ago.[14]

Macroeconomic Differences

In contrast with the microeconomic banking environment "then," which was not better regulated than it is today and appears to have been as prone as its modern counterpart to moral hazard in banking, the macroeconomic environments in the "core" economies of the two periods, the UK and the US, were very different. These macroeconomic differences constitute, in our view, better candidates for explaining the different outcomes of the crises than microeconomic factors.

In the previous era of globalization the fundamental financial position of Britain was sound: The British Government did not run persistent deficits and its current account was positive at all times, making Britain a net capital exporter and creditor throughout the period (Chart 5). In addition, the British currency, the pound, was extremely stable with a fixed value in terms of gold, made possible by the sound macroeconomic fundamentals of the British economy.

Today, the financial center, the United States, looks very different: The United States Government has been running persistent and large deficits in the years leading to the crisis and the economy as a whole has been characterized for years by persistent current account

[14] Saiegh (2010), who also studies the Baring crisis, makes a similar argument. He uses historical evidence to suggest that "greed" is not a novel feature of modern investment banking; he also argues, for very similar reasons, that banking supervision is not the most salient factor distinguishing the two periods and concludes that microeconomic explanations for the sub-prime crisis had their antecedents in the Baring crisis.

deficits, making the United States a giant net borrower (Chart 6). Indeed, the United States has been borrowing not only from other rich economies (like Japan), but also from much poorer nations (like China), a phenomenon which appears to be in contrast with economic intuition and models. In sharp contrast with the past experience of Britain, whose capital exports increased during the pre-World War I period of globalization, the United States has been increasing its foreign debt (capital imports) since the 1980s. In recent years, these macroeconomic imbalances have shaken (some of) the confidence in the US dollar as the world's leading currency; the dollar has been losing value against other major currencies and there is occasional talk of its eventual replacement by the euro or other currencies.

Perhaps pushing this comparison to an extreme degree, historically, Britain ceased to be the financial center of the world following World War I precisely when its economic characteristics started to resemble some of those of the US economy today: the British Government started running budget deficits (during the War) and became a net borrower (from the United States); its currency, the British pound, depreciated in value because the macroeconomic imbalances experienced by the British economy were so severe that adherence to a fixed exchange rate regime was no longer possible. Eichengreen (2011) compares the shock of World War I to the pound and to London's position as the world's banker to the chronic U.S budget deficits.[15] Although one could argue that the British Empire

[15] See, Eichengreen (2011) pp. 32-3. In earlier work, Eichengreen (2005) argues that New York's position as the world's banker is undermined, as was London's position in the past, due to macroeconomic imbalances: "… there is a difference between (Britain after World War I and the US) and today, namely that the present situation occurs against the backdrop of large, ongoing current account deficits for the country that is banker to the world. In principle, there is no reason why the country with the most efficient financial system that is providing intermediation serves to the rest of the world cannot run a balanced current account or a surplus. There is no reason why importing short-term capital and exporting long-term capital should also require it to run a current account deficit, as the United States is doing" (p. 14).

lasted for another 25 years or so after this period, it is easy to associate the beginning of its end with the emergence of these economic phenomena.

4. Policy Responses to the Baring and Lehman Brothers Crises

Most contemporary observers and economic historians seem to agree that the actions of the Bank of England, which, for the first time, followed the prescriptions of Walter Bagehot (1873) and acted as a lender of last resort, helped prevent a major financial crisis following the malaise of Baring's. This was in stark contrast with the traumatic financial events that followed the Overend and Gurney bank failure of 1866, whereby more than 200 companies went bankrupt after the Bank of England had refused to bail out the insolvent banking company (Wood, 1999; Flandreau and Ugolini, 2011). In this section we focus on quantitative evidence on the policy and financial market responses in the two crises

The Bank of England's Response to the Baring Crisis of 1890

The decline in demand for bonds issued by the Government of Argentina started in early 1890, but Baring's was hoping to forestall default by providing the Government with additional credit. However, by November 1890 it became apparent to Baring's that it would not be able to sell the Argentinean debt it had underwritten and, in addition, it could not accommodate the Russian government's request to withdraw £1.5 million on November 11 (Saiegh, 2010). Baring's therefore sought assistance from the Bank of England.

The Bank of England, which was in charge of the gold convertibility of the pound, could not extend credit to Baring's without beefing up its gold and other reserves (otherwise, this would have constituted a monetary expansion which was not allowed under the rules of the classic Gold Standard). Therefore, during the week that followed, William Lidderdale, the Governor of the Bank, proceeded in two channels: the first was to beef up gold reserves, and the second was to secure a line of credit to Baring's in order to avert a collapse and panic on the London financial market. There were also rumors of an attempt to sell Baring's to Rotshchild's Bank (*The London Times*, November 18, 1890). Owing to their explosive potential, all these activities were done in full discretion.

On November 15, *The Times* reported that "it became known that one of the big banking houses in London is in trouble." The report mentioned rumors related to difficulties related to Argentina's debt. "One 'house' had to seek outside help." The help was provided by the Bank of England and other banks. The report ended by assuring the readership that "we are sure that there need be no fear of any event of the kind that was considered possible." In the following days more details were disclosed. On November 17, it was disclosed that the liabilities of Baring's involved a total of £21 million. On the following day assurances were made that the Bank of England gave a £12 million guarantee to Baring's and stood by to provide liquidity to all banks with "reasonable security." On November 19 and 20, panic hit the stock market. On November 19th, *The Times* wrote: "the news of recent events has only just begun to reach dwellers in the country who form an important section of the investing public, and are not, as a rule, constant students of the history of the City. When they realize that the most dangerous moment is already past we think that orders to buy… sound stocks which are now cheap will again be received." The Bank of England declared that all banks participating in the guarantee should provide pro rata support and should not sit on their assets: "A time of discredit is just the time when strong banks should show that they are strong, and the only way to do that is to make it plain to all their regular customers that accommodation will be promptly given them to a reasonable and even liberal extent" (*The Times*, November 20th, 1890).

In the following days the markets calmed down, and the *Economist* (*Investor's Monthly Manual*, November 29, 1890, p. 564) summed up the events:

The past month will long be remembered in the City. The downfall of … Baring… perhaps the greatest firm of merchant banking in the world… but it will be even more distinguished by the fact that a crisis of the gravest character has been averted by the action of the Bank of England, aided by joint-stock and other banks.

The liquidity provided to Baring's allowed it to liquidate some of its assets and negotiate with Argentina without affecting the market. A more detailed article examining developments on the London Stock Exchange shows that the collapse of Baring's on November 11 had only a small impact on the Stock Exchange. Despite concerns suggesting that "…speculators became alarmed at the prospect of stringent money for a lengthy period and … that sooner or later great masses of securities must be liquidated ..." (*Investor's Monthly Manual*, November 29, 1890, p. 564), the downturn was short-lived and the market rebounded immediately.

The comparison with events in 2008 is tempting. As in the Baring crisis, in the days preceding its collapse, Lehman Brothers sought assistance from the Federal Reserve, but, as is well known, eventually filed for bankruptcy on September 15, 2008, sparking a global liquidity crisis and continued intervention by the Federal Reserve whose effects are, at the time of writing, still controversial. The different outcomes of the two crises are therefore "over-identified" in the sense that they may have been due to differences in the macroeconomic environment (described in the Section 3) and/or due to differences in policies adopted by the Bank of England "then" vs. the Federal Reserve in 2008[16]. The main implication, however, of the discussion here is that microeconomic weaknesses (or the extent of financial globalization) are unlikely to account for the differences between the two periods.

5. The Spread of Crisis in the Two Periods: Comovement and Contagion

In this section we digress briefly from the discussion of the causes of the crisis to a discussion of its spread and of the comovement of asset prices in the two periods. As Mauro, Sussman and Yafeh (2002) show, during the pre-1914 era, emerging market asset (bond) prices followed country-specific trajectories and were determined by country-specific events such as wars, rebellions, droughts or other changes in the political and economic climate. By contrast, in the modern version of globalization, country-specific events, while still relevant, tend to have more limited influence on asset prices, while global developments play a greater role. In the 1990s for example, the price of bonds issued by the Government of the Philippines responded more to events taking place in, say, Russia, than to political events taking place within the Philippines. In other words, emerging market asset prices today, which are influenced by "global" events and by events taking place in other countries, tend to move together to a much greater extent than they did in the past. This result holds not only for sovereign debt but also for equity (Goetzmann, Rouwenhorst and Li, 2005); furthermore, there is considerable evidence showing that assets belonging to the same "category" (e.g.

[16] Bordo and Wheelock (2011) suggest that, in comparison with European central banks, the institutional framework of the Federal Reserve System hinders the effectiveness of the Fed as a Lender of Last Resort.

S&P 500 stocks) tend to move together even in developed economies (e.g. Barberis, Shleifer and Wurgler, 2005; Claessens and Yafeh, 2011). This comovement in asset prices is especially pronounced in times of crisis: financial crises of the 1990s often took place simultaneously in several emerging markets, but they were typically restricted to one country in the pre-1914 period (Mauro, Sussman and Yafeh, 2002).[17]

In the context of the comparison between the Baring crisis and the current crisis around the collapse of Lehman Brothers, the absence of "contagion" across countries during the Baring crisis may have played a role in limiting its severity. First, the Bank of England was able to increase its balance sheet rapidly because of the increase in deposits at the Bank and because of shipments of gold from Paris and Russia. Stated differently, the crisis in the London market did not cause an equivalent rise in yields in Paris and the gap between interest rates in the two most important financial centers induced the *Banque de France* to ship of gold to England.

A second illustration of the role of the absence of contagion "then" is the limited spread of the crisis from Argentina to other countries. Only Argentina's immediate neighbors suffered significant price volatility during the Baring crisis, whereas European bonds moved much less. Table 2 shows that, with the exception of Argentina and Brazil, all other bonds were traded on November 27, 1890 at prices which were no lower than on November 11.

Next, in Chart 7 we plot the prices of assets directly affected by the crisis – bonds issued by the Government of Argentina, the value of a market-weighted portfolio of

[17] Explanations for the increased comovement of asset prices today tend to focus on investor behavior, in particular, the division of assets into groups ("growth stocks," "emerging markets") either in order to satisfy regulatory requirements and prudential practices or because of "bounded rationality" and the inability to make asset allocation decisions using the full universe of assets (e.g., Barberis, Shleifer and Wurgler, 2005).

emerging market bonds, and three bank bonds – London and Westminster, Lloyds and the London and River Plate Bank. It can be readily seen that asset prices, buoyed by low interest rates, seem to have moved together in the run-up to the crisis (the average correlation coefficient between monthly prices of these assets in the period January 1886 to December 1888 is about 0.7); however, once the crisis broke out, asset prices diverged, suggesting the investors were able to discriminate between the varying underlying risks of these assets: Investor sentiment towards Argentina-related assets and emerging market bonds were quite different from the sentiment towards British domestic assets (e.g. London and Westminster Bank). By contrast, the correlation across asset prices in recent decades is high and crises tend to spread across related and unrelated economies (e.g. Mauro, Sussman and Yafeh, 2002).

Finally, we follow Bordo and Haubrich (2010) and examine the spread between railroad bonds and Consols (Chart 8).[18] One manifestation of a severe financial crisis is that the risk premium on riskier assets rises sharply. This is the outcome of a decline in the appetite for risk or the “flight to quality” whereby entire classes of (risky) assets are sold and their prices decline sharply, relative to the risk free asset. We observe no similar phenomena during the Baring crisis.[19] We conclude that the absence of “contagion” has played a role in limiting the severity the crisis.

[18] We thank Mike Bordo for this suggestion.

[19] Our selection criteria for the bonds used in Charts 8 is that they were perpetuities or of long maturity (over 40 years) so that their spreads between them and the Consol, which was a perpetual bond, could be calculated.

6. Conclusions

In line with the conclusions of Saiegh (2010), the historical comparison outlined here suggests that microeconomic and regulatory problems in the US financial system are probably not at the root of the current crisis: regulation of (some) financial institutions in the United States in recent years has been poor, but regulation of financial institutions in Britain around the turn of the twentieth century was even poorer. Inappropriate incentive schemes may have adversely affected the behavior (and bailout expectations) of present-day financial institutions on Wall Street, but these problems certainly existed during the Baring crisis of 1890. The most striking difference between today's international financial system and that of the pre-World War I era is, in our view, that the financial core, the United States, is fundamentally much more unstable than Britain was at the time. We regard the problems within the US economy, sub-prime loans, the collapse of Lehman Brothers and AIG and so forth, as symptoms of this instability rather than as its cause. Another difference between the Baring crisis of the late nineteenth century and the recent financial turmoil is that the Bank of England, acting as a lender of last resort, succeeded in stabilizing the London financial market in November 1890, whereas the Federal Reserve allowed Lehman Brothers to fail. Although we cannot identify the effect of this intervention alone given the differences in the macroeconomic environments, we suspect that the success of the Bank of England in quickly stabilizing the financial markets by attracting gold reserves to London and by injecting liquidity probably stemmed from the beliefs of market participants that its actions would stabilize the financial market — a belief that rested on the stability of British macroeconomic fundamentals. Eichengreen (2005, p. 16) expresses concern about this state of affairs:

In my view, the fact that the reserve currency country is running current account deficits and incurring a large net foreign debt threatens to undermine its position as banker to the world. This means that long-term foreign claims on the U.S. are as easily liquefied as long-term U.S. claims on foreigners – even more so to the extent that long term U.S. foreign assets take the form of illiquid FDI and U.S. long-term foreign liabilities take the form of treasury bonds. While there may be something to the "banker to the world" metaphor, now – unlike Britain before 1914 and the United States before 1971 – we are talking about a bank with a negative net capital.

In hindsight, therefore, it is not clear if the Bank's actions, regarded then as the anchor of the international gold standard, would have sufficed had the financial core at the time been as unstable as the US is today.

We conclude by speculating that the cure to the crisis is unlikely to be found merely in new regulation of financial markets (although some new regulation will probably be helpful); the cure to the crisis will most certainly not be found in restricted capital flows and reduced globalization. Instead, future financial stability will be achieved only when the fundamental imbalances in the US economy are addressed, so as to make the financial "core" of today's era of globalization as stable as the financial "core" of yesterday.

Data Sources

FRED – St. Louis Federal Reserve Bank Data Base

Investor's Monthly Manual (IMM), published by the *Economist*, various issues, 1880-1899.

Mitchell (1988), British Historical Statistics, Cambridge University Press.

The London Times, various issues, 1880-1899.

References

Bagehot, Walter (1873), *Lombard Street: A Description of the Money Market*, Irwin Press, Homewood, Illinois, 1962 Reprint.

Barberis, Nicholas, Andrei Shleifer and Jeffrey Wurgler (2005), "Comovement," *Journal of Financial Economics,* Vol. 75, pp. 283-317.

Benmelech, Efraim and Jennifer Dlugosz (2009), "The Credit Rating Crisis," NBER Macro Annual, pp. 161-207.

Bolton, Patrick, Hamid Mehran and Joel Shapiro (2010), "Executive Compensation and Risk Taking," Federal Reserve Bank of New York Staff Report No. 456.

Bolton, Patrick, Xavier Freixas, and Joel Shapiro (2011), "The Credit Ratings Game," forthcoming, *Journal of Finance*.

Bordo Michael and Joseph Haubrich, (2010), "Credit Crises, Money and Contractions: An historical View," *Journal of Monetary Economics*, Vol. 57, pp. 1-18.

Bordo Michael and David Wheelock, (2011), "The Promise and Performance of the Federal Reserve as Lender of Last Resort 1914-1933," NBER Working Paper No. 16673.

Cheng, Ing-How, Harrison Hong, and Jose Scheinkman (2010), "Yesterday's Heroes: Compensation and Creative Risk-Taking," ECGI Discussion Paper No. 285/2010.

Claessens, Stijn and Yishay Yafeh (2011), "Additions to Market Indices and the Comovement of Stock Returns around the World," IMF Working Paper No. 11/47.

Eichengreen, Barry (1999), "The Baring Crisis in a Mexican Mirror," *International Political Science Review,* Vol. 20, No. 3, pp. 249-270.

Eichengreen Barry, (2005), “Sterling’s Past, Dollar’s Future: Historical Perspectives on Reserve Currency Competition.” Transcript of the Tawney Lecture, delivered to the Economic History Society, Leicester.

Eichengreen Barry (2011), *Exorbitant Privilege: The Rise and Fall of the Dollar and the Future of the International Monetary System*, Oxford, Oxford University Press..

Financial Crisis Inquiry Report (2011), *Final Report of the National Commission on the Causes of the Financial and Economic Crisis in the United States*, Washington, Official Government Edition.

Flandreau, Marc and Juan Flores, (2009), “Bonds and Brands: Foundations of Sovereign Debt Markets, 1820–1830,” *The Journal of Economic History,* Vol. 69, No. 3, pp. 646-684.

Flandreau, Marc and Stefano Ugolini (2011), “Where It All Began: Lending of Last Resort and the Bank of England during the Overend, Gurney Panic of 1866,” CEPR Discussion Paper No. 8362.

Goetzmann, William, Geert Rouwenhorst and Lingfeng Li (2005), “Long Term Global Market Correlations,” *Journal of Business*, Vol. 78, No. 1, pp. 1-38.

Jagannathan, Ravi, Mudit Kapoor and Ernst Schaumburg (2009), “Why Are We in a Recession? The Financial Crisis is the Symptom Not the Disease!” NBER Working Paper No. 15404.

Keys, Benjamin, Tanmoy Mukherjee, Amit Seru and Vikrant Vig (2010), “Did Securitization Lead To Lax Screening? Evidence from Subprime Loans,” *Quarterly Journal of Economics*, Vol. 125, No. 1, pp. 307- 362.

Mauro, Paolo, Nathan Sussman and Yishay Yafeh (2002), “Emerging Market Spreads: Then Versus Now,” *Quarterly Journal of Economics*, Vol. 117, No. 2, pp. 695-733.

Mauro, Paolo, Nathan Sussman and Yishay Yafeh (2006), *Emerging Markets and Financial Globalization: Sovereign Bond Spreads in 1870-1913 and Today*, Oxford, Oxford University Press.

Obstfeld, Maurice and Kenneth Rogoff (2009), “Global Imbalances and the Financial Crisis: Products of Common Causes,” CEPR Discussion Paper No. 7606.

Obstfeld, Maurice and Alan Taylor (2004), *Globalization and Capital Markets: Integration, Crisis, and Growth*, Cambridge, Cambridge University Press.

della Paolera, Gerardo, and Alan Taylor (2001), *Straining at the Anchor: The Argentine Currency Board and the Search for Macroeconomic Stability, 1880-1935*, Chicago, University of Chicago Press.

Rajan, Uday, Amit Seru, and Vikrant Vig (2010), "The Failure of Models That Predict Failure: Distance, Incentives and Defaults," Electronic copy available at: http://ssrn.com/abstract=1296982 .

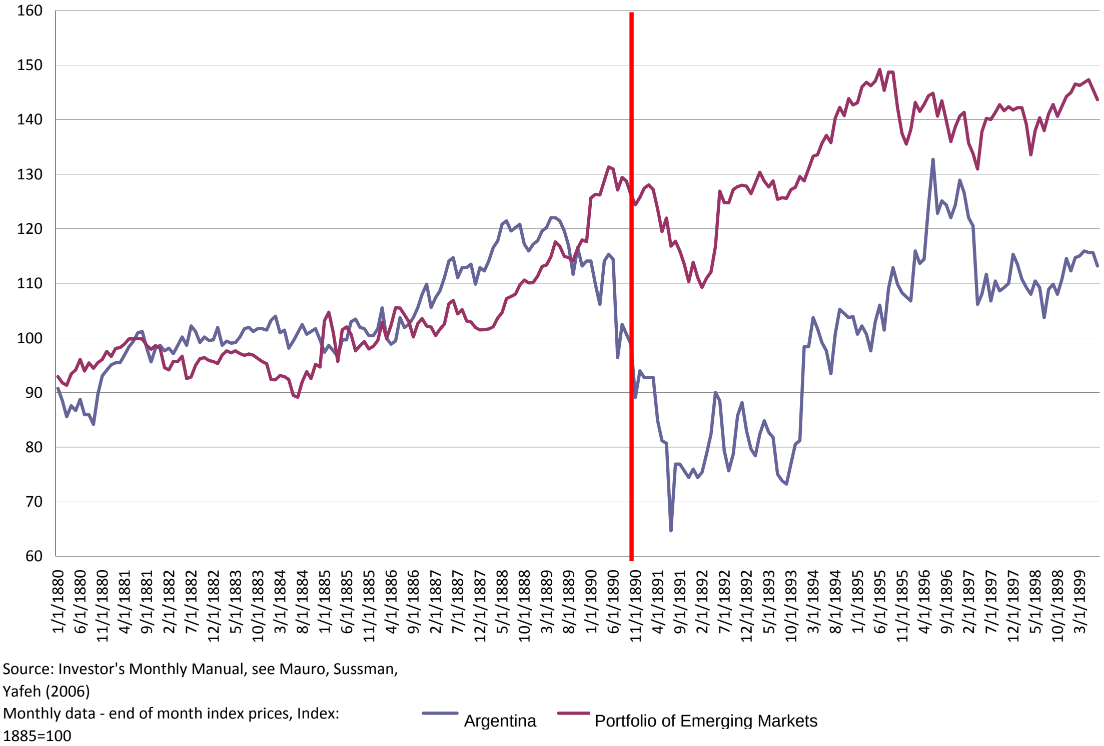
Reinhart, Camen, and Kenneth Rogoff (2011), "A Decade of Debt," CEPR Discussion Paper No. 8310.

Saiegh, Sebastian (2010), "Back to the Future: Present-day Lessons from the Financial Panic of 1890," unpublished manuscript, UCSD

Wood, Geoffrey (1999), "Great Crashes in History: Have They Lessons for Today?" *Oxford Review of Economic Policy*, Vol. 15, No, 3, pp. 98-109.

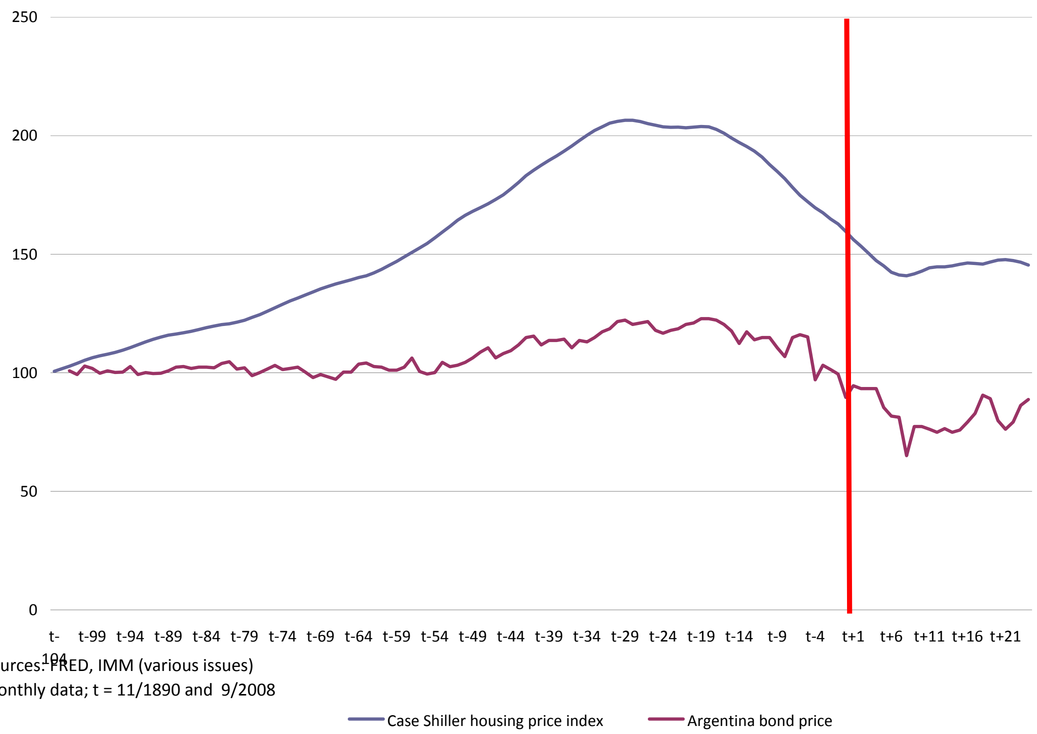
Ziegler, Philip (1988), *The Sixth Great Power: A History of One of the Greatest Banking Families, The House of Baring's, 1762 – 1929*, London, Collins.

Chart 1: Sovereign Bond Prices: Argentina and a Market-Weighted Portfolio of Emerging Markets



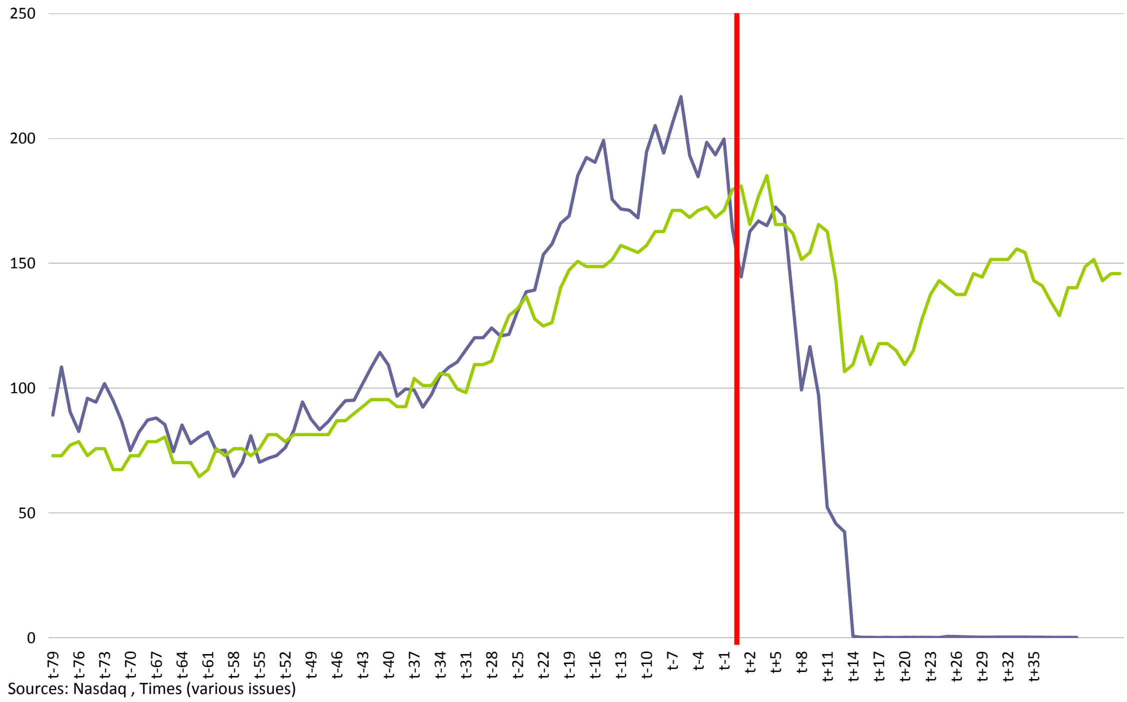
Source: Investor's Monthly Manual, see Mauro, Sussman, Yafeh (2006)
Monthly data - end of month index prices, Index: 1885=100

Chart 2: Trends in Argentinean Bond Prices and US Housing Prices



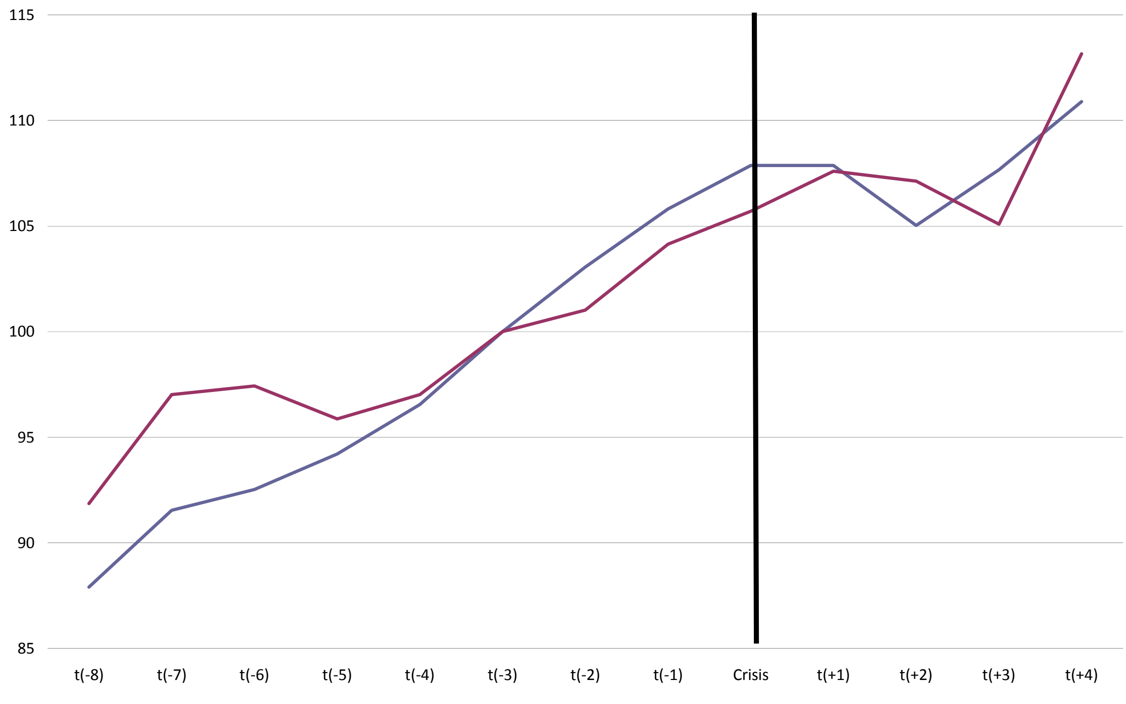
Sources: FRED, IMM (various issues)
Monthly data; t = 11/1890 and 9/2008

Chart 3: Stock Prices of Crisis-affected Banks, Baring's and Lehman Bros



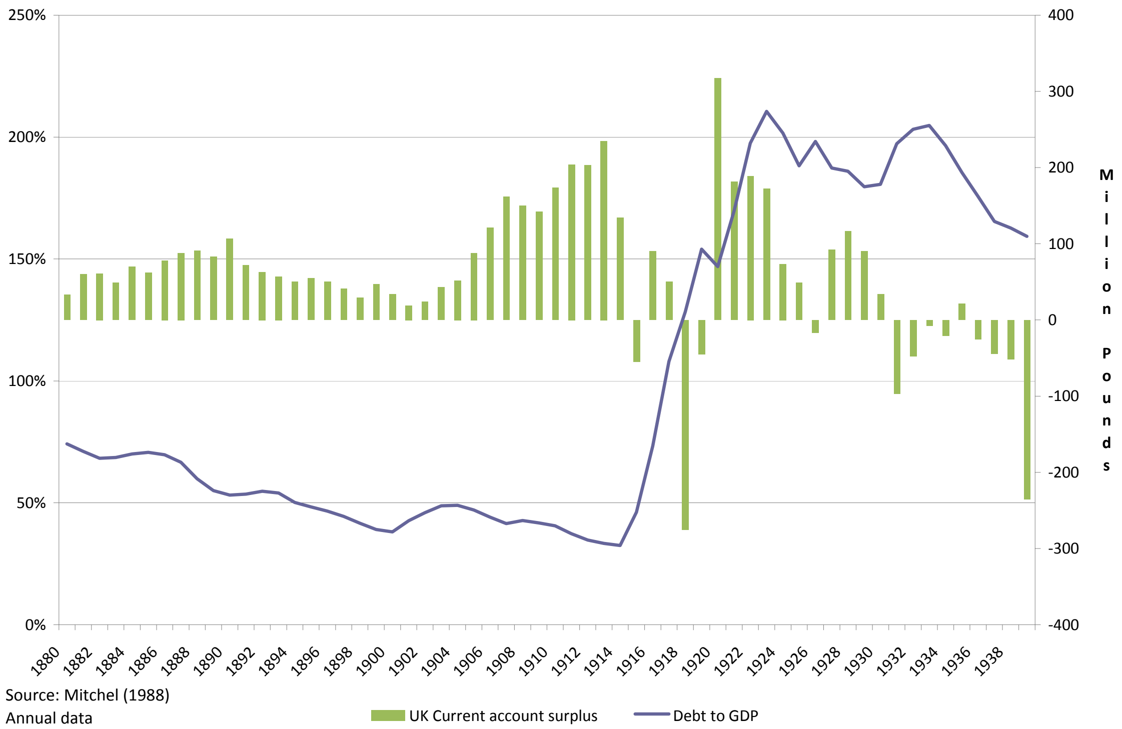
Sources: Nasdaq , Times (various issues)
Monthly data end of month ; t = 11/1890 and 7/2007

Chart 4: Real GDP: UK and US



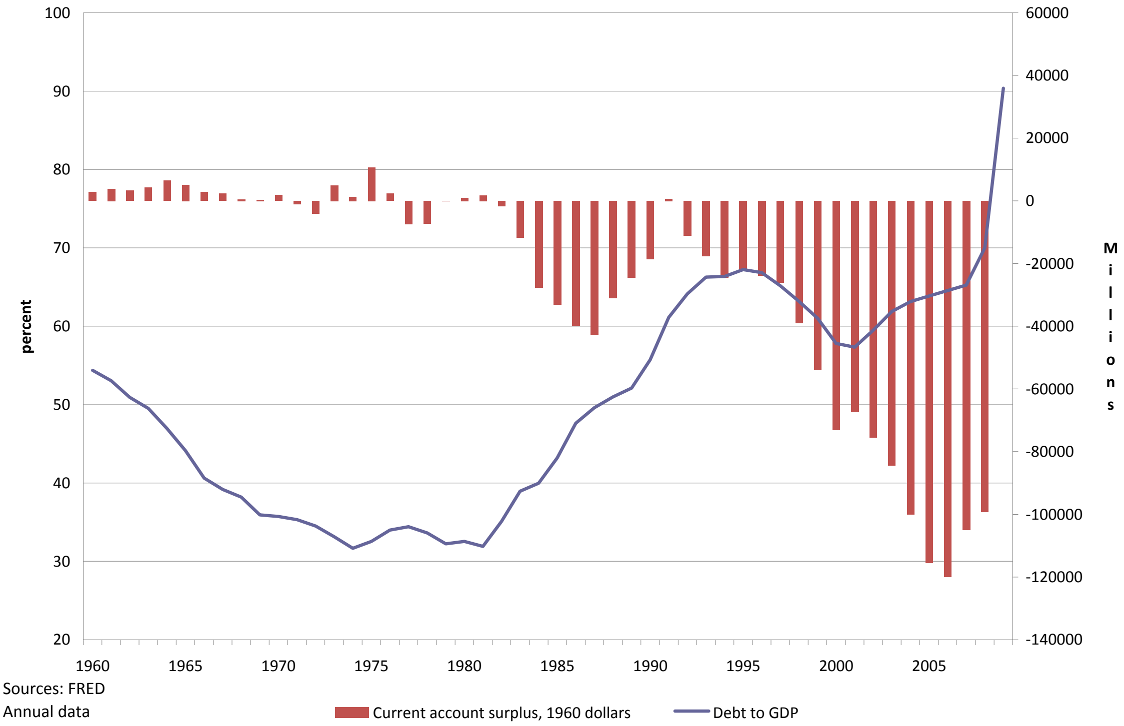
Sources: FRED , Mitchell (1988)
Annual data; t = 1891 and 2007, Index; 1887 AND 2005 = 100

Chart 5: UK Current Account and Debt to GDP, 1880-1937



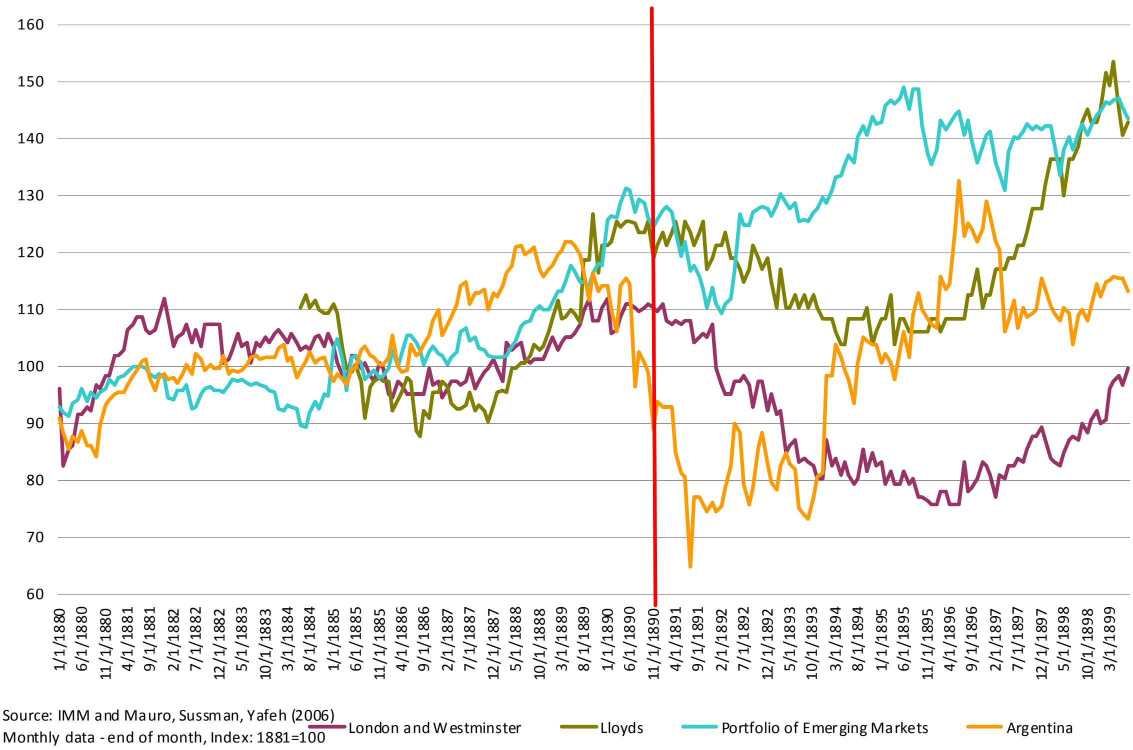
Source: Mitchel (1988)
Annual data

Chart 6: US Current Account and Debt to GDP, 1960-2008



Sources: FRED
Annual data

Chart 7: Selected Asset Prices, London 1880-1890



Source: IMM and Mauro, Sussman, Yafeh (2006)
Monthly data - end of month, Index: 1881=100

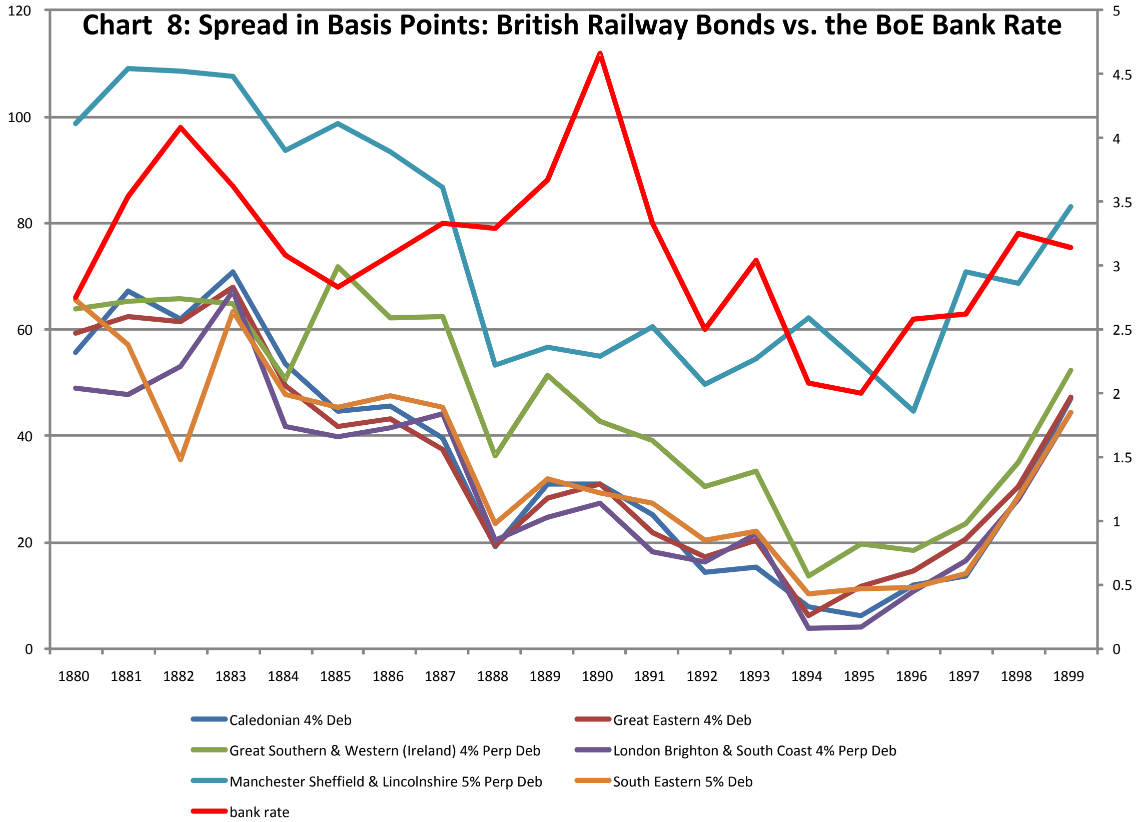


Chart 8: Spread in Basis Points: British Railway Bonds vs. the BoE Bank Rate
120
100
80
60
40
20
0
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1880 1881 1882 1883 1884 1885 1886 1887 1888 1889 1890 1891 1892 1893 1894 1895 1896 1897 1898 1899
Caledonian 4% Deb
Great Eastern 4% Deb
Great Southern & Western (Ireland) 4% Perp Deb
London Brighton & South Coast 4% Perp Deb
Manchester Sheffield & Lincolnshire 5% Perp Deb
South Eastern 5% Deb
bank rate

Source: IMM.

Table 1: The Macroeconomic Magnitudes of the Baring Crisis and the Current Crisis

UK figures are in millions of pounds, US figures are in billions of US dollars. "Problematic assets" are defined as mortgage-based securities in default, 2007/8 figures based on reports in the financial press, e.g. Bloomberg, May 17, 2008.

	Baring Crisis		**Sub-prime Crisis**
UK GDP	1,442	US GDP	14,061
Value of Latin American debt	140	Value of sub-prime related assets	1,400
Latin American debt relative to GDP	9.8%	Sub-prime related assets relative to GDP	10.0%
Value of Argentinean bonds	49	Value of problematic sub-prime assets	475
Argentinean bonds relative to GDP	3.4%	Problematic sub-prime assets relative to GDP	3.3%
Value of Baring's balance sheet "difficulties"	21	Value of Lehman Brothers' problematic balance sheet assets	175
Baring's balance sheet "difficulties" relative to GDP	1.5%	Lehman Brothers' problematic balance sheet assets relative to GDP	1.2%

Table 2: Collapse and Recovery of Bond Prices – November 11 to November 27, 1890
Source: *Investor's Monthly Manual*, December 31, 1890

Country/ bond	Price on November 11th	Price on November 19th	Percent change	Price on November 27th	Percent change
Argentina 1884 5%	80.00	67.50	-15.6	75.00	+11
Brazil 1889 4%	89.00	77.00	-13.5	81.00	+5.2
Mexico 6%	91.50	86.00	-6.0	92.00	+7.0
Uruguay 5%	53.00	39.00	-26.4	54.00	+38.5
Greece 1881-4 5%	89.25	86.50	-3.1	91.00	+5.2
Hungary Gold rentes	89.50	87.50	-2.2	89.50	+2.3
Italy 5% rentes	92/00	91.00	-1.1	92.50	+1.6
Portugal 3%	56.25	53.75	-4.5	56.25	+4.6
Russia 4%	97.50	96.75	-0.8	97.00	+0.3