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## British Banking Stability and Bank Capital in the Long Run\*

### ABSTRACT

This paper surveys two centuries of British banking stability and bank capital. Data on failure rates suggests that there have only been two severe systemic banking crises over this period – 1825/26 and 2007/08. It is argued in this paper that these two crises are correlated with inadequately capitalised banking institutions, which in the case of the first crisis meant that banks could not absorb shocks, and in the case of the second meant that risk shifting was not constrained. Banking stability in the interim period was initially due to banks having adequate capital, in the form of extended shareholder liability, to constrain risk shifting. In the post-1940 era, when bank capital was at very low levels, stability was associated with substitutes for bank capital such as government constraints on bank behaviour.

*“The history of money, banking, and financial legislation can be interpreted as a search for a structure that would eliminate instability. Experience shows that this search failed and theory indicates that the search for a permanent solution is fruitless.”<sup>1</sup>*

### I. Introduction

In the aftermath of banking crises, policymakers and economists typically look to the past in an attempt to learn lessons for the present. This paper surveys two centuries of banking stability and bank capital in Britain in an attempt to shed light on the crisis of 2007/08. The main thesis of the paper is that Britain has only had two severe systemic banking crises over the past two centuries (occurring in 1825/26 and 2007/08), and these two crises occurred in an environment of poorly capitalised banking institutions. Inadequate capital implies that banks may be able to absorb shocks. More importantly, however, inadequate capital implies that residual claimants can opportunistically increase asset risk (a phenomenon known as risk shifting), thus increasing the likelihood of a crisis.

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1 Hyman P. Minsky, *Stabilizing an Unstable Economy*, New York 2008, p. 349.

The period in between these two severe crises, although not without periodic stresses on the banking system, was free of systemic crises. This stability appears to have been associated with well-capitalised banks as well as substitutes for equity capital such as government constraints on bank behaviour. Central to the stability of the British banking system in the period prior to World War II was the existence of contingent capital in the form of unlimited shareholder liability, uncalled capital, and reserve liability. The latter two types of contingent capital were similar to the double liability rules which existed in the U.S. prior to the 1930s, except that the liability faced by shareholders was determined by individual banks, not imposed by legislation. It is argued below that the presence of contingent capital incentivised bank shareholders and managers to ameliorate risk shifting, with the result that most banks were able to weather shocks which periodically hit the banking system.

After the disappearance of contingent capital, the last vestiges of which vanished in the 1950s, capital / deposit ratios of British banks were very low. However, it is suggested that the Bank of England's informal control of the banking system allied to the imposition of high liquidity ratios meant that banks were effectively constrained from risk shifting.

Although there is an extensive literature on the role of capital and regulation in ameliorating risk shifting by banks,<sup>2</sup> only a few papers, which focus on the U.S. experience, have examined the role of contingent liability in ameliorating risk shifting and in enhancing banking stability. Jonathan Macey and Geoffrey P. Miller argue that double liability in the U.S. national banking system fostered prudent banking and was effective at protecting depositors.<sup>3</sup> Similarly, Benjamin C. Esty and Richard S. Grossman find that contingent liability discouraged bank risk taking in early twentieth-century U.S. banking system.<sup>4</sup>

The recent financial crisis has exposed weaknesses with the Basel capital adequacy approach to bank regulation. Consequently, there have been suggestions that capital regulation should be radically transformed so as to mimic the contingent liability which was prevalent in earlier decades. For example, Peter Conti-Brown suggests that systematically important financial institutions should have pro rata unlimited liability.<sup>5</sup> Similarly, Mark J. Flannery proposes that banks issue contingent capital certificates, which are debt securities that convert into equity whenever a bank's capital ratio falls below a pre-specified and

- 2 See, for example, George J. Benston / George G. Kaufman, *The Appropriate Role of Bank Regulation*, in: *Economic Journal* 106 (1996), pp. 688-697; Allen N. Berger / Richard J. Herring / Giorgio P. Szegö, *The Role of Capital in Financial Institutions*, in: *Journal of Banking and Finance* 19 (1995), pp. 393-430; Sudipto Bhattacharya / Arnoud W. A. Boot / Anjan V. Thakor, *The Economics of Bank Regulation*, in: *Journal of Money, Credit and Banking* 30 (1998), pp. 745-770; Douglas W. Diamond / Philip H. Dybvig, *Banking Theory, Deposit Insurance, and Bank Regulation*, in: *Journal of Business* 59 (1986), pp. 55-68.
- 3 Jonathan R. Macey / Geoffrey P. Miller, *Double Liability of Bank Shareholders. History and Implications*, in: *Wake Forest Law Review* 27 (1992), pp. 31-62.
- 4 Benjamin C. Esty, *The Impact of Contingent Liability on Commercial Bank Risk Taking*, in: *Journal of Financial Economics* 47 (1998), pp. 189-218; Richard S. Grossman, *Double Liability and Bank Risk Taking*, in: *Journal of Money, Credit and Banking* 33 (2001), pp. 143-159.
- 5 Peter Conti-Brown, *Unlimited Shareholder Liability for Systematically Important Financial Institutions* (Stanford University, Rock Center for Corporate Governance Working Paper). Stanford, CA 2011.

critical level.<sup>6</sup> Anat R. Admati and Paul C. Pfleiderer suggest that the liability of bank equity be increased and placed in an Equity Liability Carrier, which also holds safe debt and is financed by investors bearing limited liability.<sup>7</sup>

This paper is structured as follows. Section two defines and identifies banking crises in the UK over the past two centuries. Section three explains the role capital plays in ameliorating risk shifting. Section four examines the changes to bank capital over the past two centuries, and attempts to highlight the correlation between capital and banking stability. Section five summarises the main findings, outlines policy recommendations, and speculates about the complicity of the political system in the recent crisis.

## II. British Banking Crises

How does one assess whether or not a banking crisis has taken place? As attempts to answer this in a quantitative manner over the long run are notoriously difficult, scholars typically use a narrative approach and use various criteria to determine whether or not a banking crisis has occurred.<sup>8</sup> This paper adopts a similar approach. An episode is defined as a banking crisis if (a) ten per cent or more of the commercial banking system fails in terms of number of institutions or bank assets, or (b) government or central bank intervention prevents the failure of ten per cent or more of commercial banks through bailouts, reorganization or capital injections.

As can be seen from Table 1, this definition of a banking crisis produces a different outcome from the definitions of crises used by Richard S. Grossman as well as Carmen M. Reinhart and Kenneth Rogoff.<sup>9</sup> In both cases, they consider the failure of one or several small commercial or merchant / investment banks as a crisis. Such an approach is eschewed in this paper because bank failures in and of themselves do not mean that the banking system is unstable. In fact, under some circumstances, occasional bank failures may actually promote banking stability. Banks can fail because depositors run them suspecting that they are vulnerable, and this fear of runs and subsequent failure can effectively act as a device which encourages banks to be prudent in the first place.<sup>10</sup> For example, in the case of the English banking system, it has been suggested that English banks in the nineteenth century learned to be become more prudent as a result of ob-

6 Mark J. Flannery, *Stabilizing Large Financial Institutions with Contingent Capital Certificates* (University of Florida, Department of Finance, Insurance and Real Estate Working Paper). Gainesville, FL 2009.

7 Anat R. Admati / Paul C. Pfleiderer, *Increased-liability Equity. A Proposal to improve Capital Regulation of Large Financial Institutions* (Stanford University Graduate School of Business Research Paper). Stanford, CA 2010.

8 Richard S. Grossman, *Unsettled Account. The Evolution of Banking in the Industrialized World since 1800*. Princeton, NJ 2010, pp. 58 et seq.; Carmen M. Reinhart / Kenneth Rogoff, *This Time is different. Eight Centuries of Financial Folly*. Princeton, NJ 2009.

9 Grossman, *Unsettled Account* (cf. note 8); Reinhart and Rogoff, *This Time* (cf. note 8).

10 Charles W. Calomiris / Charles M. Kahn, *The Role of Demandable Debt in Structuring Optimal Banking Arrangements*, in: *American Economic Review* 81 (1991), pp. 497-513.

Table 1: Banking Crises in the UK, 1800-2009

	Banking Crises	Grossman	Reinhart / Rogoff
1810			Y
1815-17			Y
1825/26	Y	Y	Y
1836-39		Y	Y
1847		Y	Y
1857		Y	Y
1866		Y	Y
1878		Y	Y
1890		Y	Y
1914		Y	Y
1974			Y
1984			Y
1991			Y
1995			Y
2007/08	Y	Y	Y

*Notes:* Reinhart and Rogoff list 1878 amongst the banking crises in the UK, but for some reason they do not include it in their main list of crises.

*Sources:* Grossman, *Unsettled Account* (cf. note 8); Reinhart / Rogoff, *This Time* (cf. note 8), pp. 344-347, 387 et seq.

serving bank failures.<sup>11</sup> In addition, the definition of banking crises used in this paper ignores merchant/investment banks as they are not directly linked to the money supply (via deposits) and are not directly involved in credit intermediation. In effect, the definition of banking crisis used in this paper is asking not whether banks failed, but whether there was a systemic failure. Although the figure of ten per cent may appear somewhat arbitrary, this paper is concerned with systemic stability, and a threshold of ten per cent is relatively low. Indeed, even if the threshold was set at five per cent, there is only one additional episode in Table 1 which would be labelled as a crisis, and this crisis occurred in a period whenever banks were inadequately capitalised, thus relaxing our definition does not undermine the general thesis of this paper.

The main difference between the lists of crises in Table 1 is the relative infrequency of banking crises in my list whereas the other two lists suggest that banking crises were common events throughout the last two centuries. This is not to deny that there were periods of distress in the banking system, but simply the banking system was able to weather those episodes. The rest of this section briefly explains why the various crises between 1800 and 2008 cannot be considered as full-blown banking crises. The remainder of the

11 Michael Collins, *Money and Banking in the UK. A History*. London 1990, pp. 84 et seq.; Mae Baker / Michael Collins, *Financial Crises and Structural Change in English Commercial Bank Assets, 1860-1913*, in: *Explorations in Economic History* 36 (1999), pp. 428-444.

paper then attempts to explain why the British banking system was stable for such a long period.

### 1. Pre-1826

The high incidence of banking failures in 1810 was in part due to the many new country banks which had established in the inflationary environment of 1808/09 as well as uncertainty regarding the continued suspension of convertibility arising from the 1810 Bullion Report. The banking failures of 1815-17 were triggered by a post-war depression due in part to the Bank of England gearing up for the eventual resumption of specie convertibility.<sup>12</sup>

Table 2: Bank Failures in the UK, 1800-1914

	Number of Bank Failures / Suspensions	Number of UK Commercial Banks before Crisis	Failure Rate (%)
1810	13	808	1.6
1815-17	51	725	7.0
1825/26	105	571	18.4
1836/37	5	136	3.7
1847	5	148	3.4
1857/58	4	123	3.3
1866/67	6	142	4.2
1878/79	6	144	4.2
1890	0	137	0.0
1914	1	53	1.9

*Notes:* The pre-1826 figures exclude Ireland and the three chartered Scottish banks. The later years include all Scottish and Irish banks, but excludes all private banks and discount companies. There is a discrepancy between Samuel E. Thomas (*The Rise and Growth of Joint-stock Banking*, London 1934) and *Bankers' Almanac and Yearbook* (1931) regarding the number of failures in 1847. The former states it is five, the latter two.

*Sources:* The data for pre-1826 is from Munn, *Scottish Provincial Banking* (cf. note 40), pp. 222 et seqq.; Pressnell, *Country Banking* (cf. note 13), pp. 11, 538; Gilbert, *The History and Principles of Banking*. London 1837, p. 110. – The failure data for 1836-37 and 1847 are from Thomas, *Rise* (as above), pp. 656-662; *Bankers' Almanac and Yearbook* (1931), pp. 279-330. – The failure data for all the other periods is from *Bankers' Almanac and Yearbook* (1931), pp. 279-330. – The number of UK banks for 1836 onwards is from Thomas, *Rise* (as above), pp. 656-662, and various issues of the *Banking Almanac*.

In 1825 a boom in commodity prices and equity stocks came to an abrupt end; this triggered the financial crises of 1825/26. As can be observed in Table 2, during the financial

12 John Harold Clapham, *The Bank of England: A History*, Vol. II. London 1944, pp. 58-62.

difficulties of 1825/26, close to one-fifth of the UK banking system failed. However, even these figures do not adequately reflect the strain on the English country banking system during this crisis, with one Parliamentarian noting that virtually every English country bank had approached the Bank of England for assistance. The bank failures resulted in a rapid fall in the money supply and a severe credit crunch.<sup>13</sup> Indeed, such was the severity of the crisis that Huskisson, President of the Board of Trade, believed that England “*was within four-and-twenty hours of a state of barter*”.<sup>14</sup>

### 2. 1836/37

During 1834-36, many banks and railways were promoted and floated on the equity market, and there was a boom in the price of railway stocks. The collapse of railway stock prices in late 1836 and early 1837 resulted in pressures in the capital and money markets. In addition, some of the newly-established joint-stock banks got into difficulties. In particular, the Agricultural and Commercial Bank of Ireland, an Irish bank established in 1834, after a period of rapid expansion, collapsed dramatically in November 1836. This bank approached both the Bank of Ireland and Bank of England for discount but was refused by both due to the low quality of its assets.<sup>15</sup> This failure was followed by others in 1837, the most notable being the Northern and Central Bank of England. However, as can be seen from Table 2, the failure rate was relatively low during this crisis and the two prominent bank failures were both newly-established banks, which had expanded rapidly in terms of having a large branch network and, particularly in the case of the Agricultural and Commercial, had pitched themselves to the riskier parts of the market.<sup>16</sup> The failures in 1836/37 appear simply to have weeded out the weaker (and riskier) institutions.

### 3. 1847

The commercial crisis of 1847 which was preceded by the collapse of wheat prices and disruption in the money and capital markets arising from calls being made on railway shareholders who had suffered a large reversal in railway stock prices over the previous year. The commercial crisis itself resulted in the bankruptcy of many small merchants and commercial enterprises.<sup>17</sup> However, as can be seen from Table 2, the bank failure rate was relatively low, with no notable institutions failing.

13 Leslie S. Pressnell, *Country Banking in the Industrial Revolution*. Oxford 1956, p. 491.

14 Vincent Stuckey, *Thoughts on the Improvement of the System of Country Banking*, in: *The Edinburgh Review* 63 (1836), pp. 419-441, esp. p. 424.

15 Charles Hickson / John D. Turner, *The Genesis of Corporate Governance. Nineteenth-century Irish Joint-stock Banks*, in: *Business History* 47 (2005), pp. 174-189, esp. p. 183.

16 Collins, *Money* (cf. note 11), p. 84.

17 Daniel Morier Evans, *The Commercial Crisis, 1847-1848*. Devon 1849.

#### 4. 1857

The 1857 crisis was preceded by a worldwide boom in asset prices, and it has been described as the first global financial crisis.<sup>18</sup> Although, as can be seen from Table 2, the bank failure rate was low, there was one notable bank failure – the Western Bank of Scotland. Although this bank was large, it only constituted 4.88 per cent of the British banking system.<sup>19</sup> The collapse of this bank, which was Scotland's largest bank at the time in terms of branch network, resulted in a call on its 1,280 shareholders, who had unlimited liability, of £ 1,089,577.<sup>20</sup> Notably, depositors suffered no losses as a result of this failure.

#### 5. 1866

The 1866 financial crisis was preceded by the intense promotion of and speculation in the stocks of a new wave of companies, particularly finance companies, arising from the deregulation of incorporation law in 1862. The crisis was precipitated by the failure of Overend and Gurney, a leading discount house, which was connected to the banking system through the money markets. As can be seen from Table 2, six banks failed during this crisis, but most of these were small and newly-established banks, apart from the Birmingham Banking Company. This bank, which had been around for nearly three decades, was at that point in time the largest ever UK bank to collapse, and similar to the previous large failures, its shareholders had to make good the deficit between the bank's assets and liabilities.<sup>21</sup> Despite its size, this bank only constituted only 0.70 per cent of the British banking system and 1.15 per cent of the English banking system.<sup>22</sup>

#### 6. 1878

The resilience of the Victorian banking stability was particularly demonstrated after the failure of the City of Glasgow Bank in October 1878. At the time, it had the third largest branch network and was one of the largest deposit-taking banks in the UK. Depositors of this bank lost nothing as shareholders had unlimited liability. They did not even have to wait for the bankruptcy process to get their deposits as other Scottish banks immediately accepted City of Glasgow Bank notes, and they also allowed its depositors (except those who were stockholders of the City of Glasgow Bank) to transfer their deposits. This was possible because the City of Glasgow Bank's stockholders had unlimited liability. Indeed, only 254 out of 1,819 shareholders were solvent at the end of the bankruptcy process. As

18 Charles P. Kindleberger, *Manias, Panics and Crashes. A History of Financial Crises*. New York 2000, p. 129.

19 Based on paid-up capital in 1855, data from *Banking Almanac and Yearbook*. This calculation excludes the Bank of England.

20 Sydney G. Checkland, *Scottish Banking. A History, 1695-1973*. Glasgow 1975, pp. 466-469.

21 Holmes / Green, *Midland. 150 Years of Banking Business*. London 1986, p. 46.

22 Based on paid-up capital in 1865, data from *Banking Almanac and Yearbook*. This calculation excludes the Bank of England.



can be seen from Table 2, a small number of banks failed during this period. Although the City of Glasgow Bank was a large bank, it only constituted 1.98 per cent of the British banking system (in terms of paid-up capital) at the time.<sup>23</sup> This, however, is not to deny that the British banking system faced liquidity pressures in late 1878, and even before the City of Glasgow failure.<sup>24</sup> It did, but it weathered these pressures intact.

### 7. 1890

As can be seen from Table 1, 1890 has been identified as a banking crisis in previous studies due to the privately-organized bailout of Barings Bank, a leading merchant bank which had been seriously affected by the collapse in value of South American securities. However, as can be seen from Table 2, no commercial banks failed during this incident.

### 8. 1914

In the summer of 1914, the breakdown of European capital markets and a foreign exchange crisis resulted in UK banks facing severe liquidity pressures in the money markets, which were aggravated by commercial banks' aggressive liquidity hoarding. The Bank of England was initially unable to deal with this crisis due to the need to maintain gold convertibility. However, the liquidity crisis was averted by an extension of the usual Bank Holiday (3<sup>rd</sup> August) by four days and an issue of Treasury notes rather than the usual policy of suspending gold convertibility.<sup>25</sup> Only one small savings bank, the National Penny Bank, failed in 1914, and this institution had been in trouble since at least 1911.

### 9. 1974

In 1974, UK commercial banks, co-ordinated by the Bank of England, provided liquidity support and loans to what were referred to as secondary or fringe banks. It is estimated that about £ 1,300m was advanced by the commercial banks through what was known as the 'lifeboat' operation.<sup>26</sup> Secondary banks had raised funds on the wholesale money markets and had used these funds to make property and consumer finance loans. These institutions got into liquidity problems in late 1973 / early 1974, but, due to the support of commercial banks, their difficulties did not become a full-blown financial crisis and almost passed unnoticed.<sup>27</sup> Although a few secondary banks failed, no commercial bank was even at risk of failing.

23 Based on paid-up capital in 1878, data from Banking Almanac and Yearbook. This calculation excludes the Bank of England.

24 Michael Collins, The Banking Crisis of 1878, in: *Economic History Review* 42 (1989), pp. 504-527.

25 Richard S. Sayers, *The Bank of England, 1891-1944*. Cambridge 1976, pp. 74 et seqq.

26 Margaret Reid, *The Secondary Banking Crisis, 1973-75. Its Causes and Course*. London 1982, p. 192.

27 *Ibid.*, p. 200.



### 10. 1984, 1991 and 1995

In 1984, Johnson Matthey Bankers, the banking subsidiary of Johnson Matthey PLC, got into difficulties and was taken over by the Bank of England after a failed attempt at coordinating a private sector rescue. The Bank of Credit and Commerce International (BCCI), a large international bank with offices in London, collapsed in 1991. Then in 1995, Barings collapsed again, following losses accumulated by a trader, but this time no bailout was forthcoming from either the private sector or central bank. However, as these institutions were not commercial banks and were relatively small, their failures do not constitute a banking crisis as defined above.

### 11. 2007/08

In 2006 there were nine major commercial banks which dominated British commercial banking. In early 2008, one of these banks (Northern Rock) was nationalised by the UK government. Then in September 2008, the troubled Alliance and Leicester Bank was taken over by Santander, the large Spanish bank which already controlled one of the nine major commercial banks in the UK, another bank was nationalised (Bradford and Bingley), and Lloyds-TSB took over HBOS at the behest of the UK government. Within a matter of weeks, the former as well as the Royal Bank of Scotland received huge capital injections from the British government, with the result that the government was by far the largest owner of these banks. In total, six out of the nine major UK banks were effectively insolvent, and, in terms of total assets, 46.7 per cent of the British banking system required a government bailout.<sup>28</sup> In terms of scale, this collapse of the banking system was unprecedented.

## III. Risk Shifting and Capital

As is well known, creditors of limited liability corporations face a moral hazard problem in that the residual claimants on the corporation's assets have an incentive to risk shift i.e., take greater risks than were promised *ex ante*. The ability to risk shift, and hence the amount of debt a corporation can raise, crucially depends upon the plasticity or fungibility of the corporation's assets.<sup>29</sup> The largest asset of a bank, its loan portfolio, is an extremely plastic asset for at least two reasons. First, bank borrowers place a high value upon discretion, implying that the full details of a loan cannot be placed in the public domain. Second, if banks release private information about borrowers then they are unable to earn the full returns on their information investment.

The high plasticity of a bank's chief asset implies that it should be mainly funded by shareholder equity. However, the intrinsic nature of banking implies that depository in-

28 This in terms of 2006 assets, which were obtained from Thomson ONE Banker Analytics.

29 Armen A. Alchian / Susan Woodward, *The Firm is Dead, Long Live the Firm*, in: *Journal of Economic Literature* 26 (1988), pp. 65-79.

stitutions are highly leveraged, with the potential result that they have a large incentive to risk shift. This incentive is magnified whenever the bank is a limited liability corporation because efficient contract design would imply that liability should not be assigned to depositors because they are more risk averse and have less information than residual claimants.<sup>30</sup>

If a bank is a diffusely-owned limited liability corporation run by professional managers, then the above risk-shifting problem is exacerbated even more and outside shareholders also become concerned about a bank's ability to make excessively risky loans with shareholder capital. The risk-shifting problem is exacerbated by the separation of ownership from control because professional managers bear no downside, but have a large upside, particularly when their compensation is tied to bank performance. Shareholders, however, are concerned about their investment of capital as they bear some of the downside of risk-shifting behaviour in the event of bank financial distress.

One potential way depositors could ensure that a bank would not risk shift is that they could monitor bank and manager behaviour. The free rider problem could be overcome by delegating monitoring to a rating agency or relying upon large depositors.<sup>31</sup> Alternatively, a vigilant financial press could monitor on behalf of depositors.<sup>32</sup> On the other hand, the sequential service rule of demand deposit contracts provides incentives for depositors to invest in information, and thus avoids the free-riding problem.<sup>33</sup> However, all the above ignore two fundamental and theoretical problems with depositor monitoring. First, as discussed above, information about a bank's loan portfolio is private and cannot be revealed to depositors without compromising a bank's relationship with its borrowers. In other words, no amount of depositor monitoring will uncover the quality and value of a bank's loan portfolio. Second, even if depositors could monitor, they could not prevent a bank risk shifting in the last period.

Some laissez-faire-type solutions to the above problem have revolved around the concepts of brand-name (or reputational) capital. According to Benjamin Klein, brand-name capital acts like a forfeitable hostage bond in that banks will not risk shift because the returns to the preservation of brand-name capital always exceed the returns from risk shifting.<sup>34</sup> However, if the discount rate is sufficiently high or in a finite horizon world, there is a point where the present value of the brand-name capital is less than the present value of the gains from risk shifting.<sup>35</sup>

Peter Diamond suggests that banks can achieve stability by having a large portfolio of loans which effectively diversifies away all risk for depositors.<sup>36</sup> In other words, large

30 Charles R. Hickson / John D. Turner, Free Banking and the Stability of Early Joint-stock Banking, in: Cambridge Journal of Economics 28 (2004), pp. 903-919, esp. p. 905.

31 Catherine England, Agency Costs and Unregulated Banks. Could Depositors Protect Themselves?, in: Cato Journal 7 (1988), pp. 771-797.

32 Friedrich A. Hayek, Denationalisation of Money. The Argument Refined. London 1990.

33 Calomiris / Kahn, Debt (cf. note 10).

34 Benjamin Klein, The Competitive Supply of Money, in: Journal of Money, Credit and Banking 6 (1974), pp. 421-453.

35 Charles A. E. Goodhart, The Evolution of Central Banks. London 1988, pp. 60-64; Hickson / Turner, Free Banking (cf. note 30), p. 908.

36 Douglas W. Diamond, Financial Intermediation and Delegated Monitoring, in: Review of Economic Studies 51 (1984), pp. 393-414.

banks are conducive to stable banking systems. However, the Diamond model ultimately relies on depositors being able to monitor banks and punish errant institutions.<sup>37</sup>

Banks owners could assure depositors that their bank would not engage in ex post risk shifting by investing large amounts of capital in the bank. However, there is at least one potential difficulty with this solution if the banking corporation has diffuse ownership and a separation of ownership from control, which would presumably result from the need to raise large amounts of capital. As with depositors, outside shareholders cannot gain access to bank's private information on borrowers. In addition, outside shareholders cannot prevent a bank's management risk shifting in the last period at their (and possibly depositors') expense. Knowing this, rational investors would refuse to invest in the first instance unless managers are credibly and contractually bound to meet shareholders' interests. One potential solution to this would be for shareholders and managers to have contingent capital in the form of extended liability. This would constrain banks from risk shifting as shareholders and managers bear considerable downside risk in the event of bank failure.<sup>38</sup> In addition, banks would not have to hold idle funds at a high opportunity cost.

Risk shifting can potentially be ameliorated by government regulation. Governments could place constraints on bank activity which limit their ability or incentive to risk shift. Regulation, of course, may have weaknesses which undermine its efficacy, particularly regulatory capture.

Risk shifting, by its very nature, cannot be observed and is only exposed whenever the banking system is hit by a shock – either a monetary shock, political shock or real asset price shock. If risk shifting has occurred on a large enough scale or if equity capital resources are insufficient, then banks will be unable to withstand the shock, resulting in a banking crisis. Additionally, an economic shock may increase discount rates dramatically, which in turn raises the profitability of risk shifting by banks.

#### IV. Banking Capital, 1800-2008

Why was the British banking system free of banking crises between 1826 and 2006? It was not necessarily, as illustrated above, the absence of shocks to the banking system, which meant that risk shifting was never exposed. This section argues that adequate equity capital somehow restrained banks from risk shifting from the beginning of this period up to World War II. In the decades following World War II, shareholder capital was not required to restrain risk taking as implicit government control of banks prevented risk shifting.

Why did the British banking system experience crises in 1825 and 2008? This section argues that the 1825/26 crisis occurred due to inefficiencies in the law of business organisation which meant that banks had inadequate capital buffers whenever a large monetary shock hit the banking system. On the other hand, the 2007/08 crisis occurred because banks had inadequate levels of capital to prevent risk-shifting and government restraints on bank risk-shifting had been gradually removed in the three decades prior to the crisis.

37 Ibid.

38 Esty, Impact (cf. note 4).

### 1. Partnership Banks

Prior to freedom of incorporation legislation, which was passed in the mid-1820s, banks in Britain were constrained to the partnership organizational form. In addition, apart from Scotland, note-issuing banks were restricted to having a maximum of six partners. However, there are at least two significant problems that stem from having a small number of partners.

Firstly, as larger banks would typically have a larger equity cushion, they may have been better able to absorb losses arising from non-performing assets during monetary or real shocks. In addition, as partners have unlimited liability, the more partners there are, the greater the potential capital to cover losses in the event of bankruptcy. Indeed, note-holders and depositors would prefer to see the ownership of the bank dispersed amongst many partners, as there is less risk that many owners would lose their entire wealth as compared to a small number of owners. This problem may be exacerbated by any tendency for partners to be homogeneous i.e., from the same family or business.

Secondly, a small number of partners would have limited the size of a bank so that it only functioned in a particular geographical location. This, in turn, would have operated to limit a bank's ability to sufficiently diversify its portfolio, and therefore make it increasingly costly for banks to withstand unexpected shocks. However, English country banks had extensive relationships with London agents who would invest funds on their behalf. Notably, a large percentage of these country banks had at least one partner who was also a partner of their London correspondents; in 1824, 59 per cent of the country banks having agents had a partnership connection with their correspondents.<sup>39</sup> However, these inter-locking partnerships implied that a partner in a bank might have faced several potential calls on their personal wealth unbeknown to depositors and note-holders.

The high failure rate of these partnership banks, particularly during the crisis of 1825/26, is typically attributed to the existence of the six-partner rule. One of the reasons why this conclusion is reached is that Scotland, which had a stable banking system in 1825/26, did not face limits on the number of partners which its banks could have. The historiography of Scottish banking has largely attributed this relative success of Scottish banking to the absence of this six-partnership rule.<sup>40</sup> However, the six-partner rule was not a binding constraint, and that English partnership banks would have been small even in its absence due to inherent and substantial hold-up problems stemming from the nature of English partnership law.<sup>41</sup> Scottish partnership law was closer to the civil law tradition in that it allowed facets of legal personality, which facilitated the formation of large partnerships by limiting contracting and governance decisions to a managerial hierarchy. Many Scot-

39 Pressnell, *Country Banking* (cf. note 13), p. 116.

40 Andrew William Kerr, *History of Banking in Scotland*. London 1884, pp. 69-70; Rondo Cameron, *Banking in the Early Stages of Industrialization. A Study in Comparative Economic History*. New York / Oxford 1967, pp. 97 et seq.; Charles W. Munn, *The Scottish Provincial Banking Companies, 1747-1864*. Edinburgh 1981, p. 236; Lawrence H. White, *Free Banking in Britain. Theory, Experience, and Debate, 1800-1845*. London 21995, pp. 47 et seq.

41 Graeme G. Acheson / Charles R. Hickson / John D. Turner, *Organizational Flexibility and Governance in a Civil-law Regime. Scottish Partnership Banks during the Industrial Revolution*, in: *Business History* 53 (2011), pp. 505-529.

tish partnership banks had dozens of partners and this meant that the notes and deposits were backed by large equity cushions as well as the wealth of multiple heterogeneous owners. Acheson et al. suggest that the difference in partnership law explains the relative stability of the Scottish system rather than the absence of the six-partnership restriction *per se*.<sup>42</sup>

## 2. *Extended Shareholder Liability*

After the 1825 crisis, banks were permitted to establish as corporations with the proviso that shareholder liability was jointly and severally unlimited.<sup>43</sup> Subsequently, until the late 1850s, the owners of British joint-stock banks carried unlimited liability, and until the early 1880s, the majority of banking in Britain was conducted by banks having unlimited shareholder liability.<sup>44</sup> Unlimited liability appears to have played an important role in assuring depositors (and note-holders) in early British banks as to the safety of their bank.<sup>45</sup> As shareholders' personal wealth stood behind the assets of the banks, depositors were confident that risk shifting was highly unlikely because, in the event of bank failure, shareholders were liable right down to their last 'acre and sixpence'. Nevertheless, as ownership in these joint-stock banks was freely transferable, an equilibrium could have occurred whereby shares were owned by low-wealth individuals, thus rendering unlimited shareholder liability worthless. In order to prevent such an equilibrium occurring, candidate shareholders were vetted by directors and the legal system imposed a post-sale-extended liability clause.<sup>46</sup> This clause, which acted to prevent opportunistic share dumping, made shareholders liable for a bank's debts for a period of time after selling their ownership stake.

Whenever the banking system was hit by shocks in 1836-39, 1847, 1857, 1866 and 1878, it was able to endure them because most banks had not been engaging in risk shifting. Indeed, in the case of 1857 and 1878, the shocks may have even removed riskier banks from the banking system. Even though depositors saw banks collapse during these episodes, they were confident that they would receive their deposits back due to the presence of unlimited liability.

Although UK banks were permitted to limit their liability from 1857-58, very few established unlimited liability banks took advantage of this legislation and only several small banks set up with limited liability over the next two decades. Those that did estab-

42 Ibid.

43 Irish Banking Copartnership Regulation Act (6 Geo. IV, c.42); Banking Copartnership Act (7 Geo. IV, c.46).

44 Up until the late 1850s, only the owners of the five publicly-chartered banks enjoyed the privilege of limited liability: Bank of England (1694), Bank of Scotland (1695), Royal Bank of Scotland (1727), British Linen Company Bank (1746), Bank of Ireland (1783).

45 Charles R. Hickson / John D. Turner, Shareholder Liability Regimes in English Banking. The Impact upon the Market for Shares, in: *European Review of Economic History* 7 (2003), pp. 99-125; Charles R. Hickson / John D. Turner, Trading in the Shares of Unlimited Liability Banks in Nineteenth Century Ireland. The Bagehot Hypothesis, in: *Journal of Economic History* 63 (2003), pp. 931-958.

46 Hickson / Turner, Shareholder Liability (cf. note 45).

lish had very high levels of uncalled capital i.e., a defined amount capital which could be called from shareholders in the event of bank failure or by directors at any time. For example, in 1874 the median limited bank had enough uncalled capital to cover 50.6 per cent of deposits and enough paid-up capital to cover 25.2 per cent of deposits.<sup>47</sup> This made these banks “*practically as safe as an unlimited bank*”.<sup>48</sup>

After the failure of the City of Glasgow Bank in 1878 and subsequent the bankruptcy of the majority of its shareholders, the government passed an act in 1879 to aid the conversion to limited liability of the established joint-stock banks.<sup>49</sup> This legislation enabled banks to adopt limited liability and concurrently provide adequate security to depositors by creating ‘reserve liability’, whereby the unpaid portion of bank shares was to be divided into two parts, one callable at directors’ discretion, and the other callable only in the event of bankruptcy. Ultimately, the basic idea of the 1879 Act was to enable banks to “*set aside and hypothecate a certain portion of its registered capital, as an inalienable fund for the protection of its depositors*”.<sup>50</sup>

In 1884, 83 of the 139 British joint-stock banks had reserve liability and nine still had unlimited liability. Indeed, bank shareholders remained unlimitedly liable for all bank notes which their banks issued. The average reserve liability as a multiple of paid-up capital was 2.9. Many of these banks also had uncalled capital and most of the banks which did not have reserve liability had uncalled capital. Overall, for the 139 banks, the extra liability carried by bank shareholders averaged a 3.1 multiple of paid-up capital.<sup>51</sup> In other words, for every pound sterling a shareholder had invested in a bank, they were liable for another £ 3.10 on average. Such high levels of shareholder liability would have potentially acted as a substantial check on bank risk shifting.

As with unlimited liability, one potential problem with reserve liability is that bank shares could end up in the hands of individuals who have inadequate wealth to cover their extra liability. However, bank directors had the power to prevent individuals with inadequate wealth to meet calls from acquiring shares.<sup>52</sup> Notably, oral evidence presented to the U.S.’s National Monetary Commission suggested that bank directors were careful in admitting individuals into ownership, and they frequently rejected transfers to unsuitable individuals.<sup>53</sup> Also, under the 1862 Companies Act, ex-shareholders of banks were liable for all unpaid capital for up to one year after they ceased to be a shareholder.<sup>54</sup>

47 Author’s calculations based on data from John Dun, *The Banking Institutions, Bullion Reserves, and Non-legal-tender Note Circulation of the United Kingdom Statistically Investigated*, in: *Journal of the Statistical Society* 39 (1876), pp. 1-189.

48 *Ibid.*, p. 28.

49 Wilfred Frank Crick / John Edwin Wadsworth, *A Hundred Years of Joint Stock Banking*. London 1936, p. 33.

50 George Rae, *The Country Banker. His Clients, Cares, and Work from an Experience of Forty Years*. London 1885, p. 258.

51 Calculated from data contained in *Banking Almanac and Yearbook*, 1885.

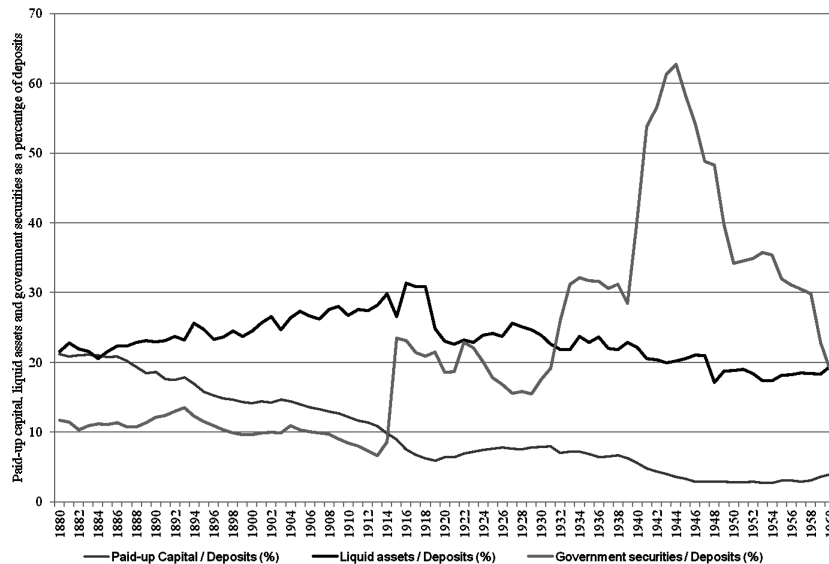
52 Rae, *Country Banker* (cf. note 50), p. 233.

53 Hartley Withers, Robert Harry Inglis Palgrave, *The English Banking System*. Washington, DC 1910, p. 93.

54 Claude C. M. Plumptre, *Grant’s Treatise on the Law relating to Bankers and Banking Companies*. London 1882, p. 507.



Figure 1: Paid-up Capital, Liquid Assets and Government Securities held by UK Banks, 1880-1960



Source: David K. Sheppard, *The Growth and Role of UK Financial Institutions, 1880-1962*. London 1971, pp. 126 et seq.

Contemporary bankers and banking theorists believed that the proportion of capital to liabilities was the best measure of the ultimate stability of a bank.<sup>55</sup> As can be seen from Figure 1, paid-up capital as a proportion of deposits decreases steadily from 1880 to 1920; this trend occurred simultaneously in other advanced economies.<sup>56</sup> As can be seen from Table 3, in 1900, capital in the average British bank equalled one half of deposits, and a substantial proportion of this capital was uncalled capital.<sup>57</sup> By 1921, as can be seen from Table 3, the average total capital / deposits ratio had fallen substantially. The main reason for this was the rapid growth of the money supply (and hence deposits) during World War I. In addition, numerous bank amalgamations typically led to the writing-down of reserve liability and uncalled capital.<sup>58</sup> By 1940, the position was much as it was in 1921, apart

55 Rae, *Country Banker* (cf. note 50), p. 264.

56 Grossman, *Unsettled Account* (cf. note 8), pp. 148 et seq.

57 A note of caution needs to be raised when considering published bank capital and reserves as they may not necessarily give a true reflection of the bank's strength due to 'hidden reserves' (Charles A. E. Goodhart, *The Business of Banking, 1891-1914*. Aldershot 1986, pp. 23 et seq.; Malcolm G. Wilcox, *Capital in Banking. An Historical Survey*, in: Edward P. M. Gardner (Ed.), *UK Banking Supervision. Evolution, Practice and Issues*. London 1986, p. 211). Hidden reserves consisted mainly of the differences between the market and book value of a bank's investments (Thomas Balogh, *Studies in Financial Organisation*. Cambridge 1950, p. 102).

58 Treasury Committee on Bank Amalgamations, *Report of the Treasury Committee on Bank Amalgamations*. London 1918, p. 5. – This committee noted that this came at the "expense of some of the security of the depositors" (ibid., p. 6).



Table 3: British Bank Capital, 1900-1958

	1900	1910	1921	1931	1940	1950	1958
<b>All banks</b>							
Total capital / deposits							
Mean	51.9	45.8	17.4	21.0	17.5	7.6	4.2
Median	44.3	40.3	16.2	20.4	17.4	7.4	3.5
Standard deviation	25.2	22.0	8.8	7.9	7.1	3.1	1.7
Max	126.4	101.8	46.2	38.9	36.2	13.6	9.4
Min	15.8	15.6	6.7	7.6	5.8	1.6	2.2
N	90	57	25	22	16	16	17
Callable capital / deposits							
Mean	33.9	29.3	10.3	11.3	9.4	3.7	-
Median	28.6	24.4	10.5	11.9	10.1	4.2	-
Standard deviation	20.9	19.1	6.7	7.2	7.4	2.8	-
Max	93.6	84.7	23.7	25.9	27.7	10.1	-
Min	0.0	0.0	0.0	0.0	0.0	0.0	-
N	90	57	25	22	16	16	-
<b>5 largest banks</b>							
Top five banks' share of deposits	28.1	37.8	73.1	76.8	80.6	83.4	76.6
Mean total capital / deposits	30.4	29.0	15.1	15.6	12.6	5.1	3.0
Median total capital / deposits	36.1	31.1	13.2	14.7	11.0	4.7	3.0
Mean callable capital / deposits	20.6	19.2	8.7	8.5	7.1	2.8	-
Median callable capital / deposits	25.8	20.8	7.3	7.3	5.8	2.5	-
Mean number of shareholders	10,104.0	16,827.0	48,674.7	64,717.4	n/a	n/a	n/a

*Notes:* The Bank of England is excluded from the above figures. The 1921 and 1931 figures exclude southern Irish banks, whereas the 1900 and 1910 figures include these banks. Total capital consists of reserve liability, uncalled capital, paid-up capital and shareholder reserves, whereas callable capital consists of reserve liability plus uncalled capital.

*Sources:* Author's calculations based on data from Banking Almanac (1900 and 1910), Bankers' Almanac and Yearbook (1921 and 1931), and Stock Exchange Official Yearbook (1940, 1950); BoE C40/102, Memo on Bank Capital dated September 30<sup>th</sup> 1958.

from the top five banks having slightly less capital in relation to their deposit base. The question therefore arises as to whether this fall in capital (both paid-up and uncalled) resulted in banks taking greater risks?

On the one hand, banks may have become intrinsically more stable mainly due to the emergence of large national banks arising from the amalgamation process.<sup>59</sup> The large national banks were better diversified,<sup>60</sup> and therefore could more easily absorb shocks,<sup>61</sup> and, due to their scale, they had to develop more scientific lending practices.<sup>62</sup>

On the other hand, there is an issue as to whether the uncalled capital could have been easily called up in the event of a crisis. As can be seen from Table 3, the average number of shareholders in the largest five banks grew dramatically between 1900 and 1940. One consequence of increasing shareholder numbers is that it may have become very costly for directors to vet share transfers, and these costs may have led to director vetting of share transfers simply becoming a rubber-stamping exercise. Indeed, it is suggested that the majority of shareholders in the 1920s were individuals of modest means.<sup>63</sup> Another consequence may have been dramatically increased administrative costs associated with the collection of reserve capital from shareholders in the event of bankruptcy. However, even if this was the case, the directors of these banks were required to invest significant amounts of capital in the banks in order to qualify as a director, and this investment meant that they were liable for large amounts of uncalled capital in the event of bank failure. For example, the four of the 'big five' banks which had uncalled capital in 1940 had an average of 28.5 directors whose average liability could have been at least £ 3,762.50.<sup>64</sup>

Barclays, in 1921, was the first bank to extinguish its unpaid capital, but the other major banks (Lloyds, Midland, William Deacon's, Martins, National Provincial, and Westminster) only extinguished their unpaid capital between 1956 and 1958. This capital reorganisation was supported and ultimately co-ordinated by the Bank of England.<sup>65</sup> As can be seen from Table 3, by 1958, the total capital / deposits ratio was very low as a result of the extinguishing of uncalled liabilities and the growth of deposits relative to capital. However, the level of hidden reserves means that the true capital position of banks was a lot stronger than that published in financial accounts. For example, Mark Billings and Forrest Capie argue that the average bank's true capital position in 1958 was 2.07 times that of its published figure.<sup>66</sup> Even making this adjustment means that the top five banks in 1958 had a 6.0 per cent total capital / deposits ratio. However, as can be seen from Table 4, using Bank of England figures for loss provisions suggests that the 'true' capital / deposit ratio of the Big Five banks was closer to 4.3 per cent.

59 Joseph Sykes, *The Amalgamation Movement in English Banking, 1825-1924*. London 1926, p. 126; Sayers, *Bank of England* (cf. note 25), p. 11.

60 Forrest Capie, *Commercial Banking in Britain between the Wars*, in: Charles H. Feinstein (Ed.), *Banking, Currency, and Finance in Europe between the Wars*. Oxford 1995, pp. 395-413, esp. p. 399.

61 Holmes / Green, *Midland* (cf. note 21), p. 119.

62 *Ibid.*, p. 113; Joseph Sykes, *The Present Position of English Joint Stock Banking*. London 1928, p. 120.

63 *Ibid.*, p. 141.

64 Calculated from *Stock Exchange Yearbook*, 1940.

65 Bank of England (BoE) Archives C40/102, confidential internal memo dated 30<sup>th</sup> April 1958.

66 Mark Billings / Forrest Capie, *Capital in British Banks, 1920-1970*, in: *Business History* 49 (2007), pp. 139-162, esp. p. 150.

### 3. Constrained Banking in the Era of Low Capital

During the 1940s and 50s, various discussions were held between the banks and the Bank of England about raising bank capital so that banks' capital / deposit ratios would be strengthened, but the Bank of England was always reluctant for one bank to strengthen its capital position as this would mean other banks would have to follow suit, and this would potentially divert capital away from productive industry. The view of the Bank of England was that "*banks were not suffering in prestige from the low ratio of capital to deposits*", and that bank capital had "*long ceased to bear any serious relation either to their liabilities or functions*".<sup>67</sup>

All of the above raises a serious question about the effect of the move away from a heavily capitalised banking system in the pre-1920s towards one that had a low level of capital by 1958. How was this possible? Why did the banking system remain stable despite such low levels of capital and an absence of formal bank regulation?

The main reason why there was a lack of concern about low levels of bank capital was that the Bank of England and the commercial banks had a symbiotic relationship whereby the banks were allowed to operate a cartel and the Bank issued (on behalf of the government) informal directives, which were generally adhered to, even though the Bank had no official power over the banks.<sup>68</sup> The directives were, in general, not supervisory in nature and were not usually concerned with the security of the banking system.<sup>69</sup> Rather they concerned government attempts to influence the economy via credit and monetary policy.

This informal regulatory system was created during the suzerainty of Governor Montagu Norman, who was hostile to bank regulation imposed by the State as he believed that a system of self-regulation with the Bank at the centre was superior.<sup>70</sup> However, he believed that freedom from regulation required that the banking system "*act in the interests of the community and in the interests of the State*".<sup>71</sup> The Bank was "*in frequent formal intercourse with the representatives of all the important banks*",<sup>72</sup> and the Governor had an annual interview with the General Managers / Directors of the major banks, and received routine reports from the Chairmen of the clearing banks.<sup>73</sup>

67 BoE C40/102, confidential internal memo dated 30<sup>th</sup> September 1958.

68 To term this as 'self-regulation' may be stretching it too much (see Forrest Capie, *The Evolving Regulatory Framework in British Banking*, in: Martin Chick (Ed.), *Governments, Industries and Markets. Aspects of Government-industry Relations in the UK, Japan, West Germany and the USA since 1945*. Aldershot 1990, pp. 127-141, esp. p. 131).

69 John Fforde, *The Bank of England and Public Policy, 1941-1958*. Cambridge 1992, p. 21.

70 BoE G13/1, Speech of M. Norman at the Centenary Luncheon of *The Economist*, 2<sup>nd</sup> September 1943; G13/1, Speech of M. Norman at Lord Mayor's Dinner, 1<sup>st</sup> Oct. 1935.

71 *Ibid.* – Indeed, there is a view that banks by the 1920s were regarded as public utilities. For example, Keynes, when asked in 1927 about Labour's proposal to nationalise banks, quipped in his inimitable way that they already were! (see Margaret Ackrill / Leslie Hannah, *Barclays. The Business of Banking, 1690-1996*. Cambridge 2000, p. 100).

72 Evidence of Harvey to Macmillan Committee quoted in Sayers, *Bank of England* (cf. note 25), p. 553. For example, in 1934, there are at least thirty-six meetings with the chairmen, deputies and general managers of all the major banks (BoE ADM 34/23, Norman's Diary 1934).

73 Henry Clay, *Lord Norman*. London 1957, pp. 276 et seq.

The Bank's power to enforce its wishes upon other banks, usually attributed to moral suasion, may have been due to the threat of the Bank no longer maintaining an account for another bank and not allowing such a bank to use its discount window.<sup>74</sup> Although the Bank was given statutory powers under the 1946 Bank of England Act (9 & 10 Geo. 6 c. 27) to enforce compliance with its directives, it did not have to resort to using that power.<sup>75</sup>

The most likely reason this informal system appears to have worked is that banks were allowed to operate a cartel as a quid pro quo for their compliance with directives and for their willingness to hold government debt.<sup>76</sup> Indeed, the official view was that competition and banking stability were incompatible. Consequently, as the cartel contributed to the stability of the banking system, it was promoted by the authorities.<sup>77</sup>

The first Bank of England directive on lending was issued in 1920, and such directives were issued on an infrequent basis over the next half century.<sup>78</sup> Directives were both quantitative and qualitative. Quantitative requests involved banks reducing the volume of loans or constraining the growth of lending.<sup>79</sup> Qualitative directives, which were mainly issued in the post-1945 era, involved lending to specific industries.<sup>80</sup>

In the inter-war years, banks voluntarily maintained high reserve ratios (ten to eleven per cent of total assets) and, as can be seen from Figure 1, held a high proportion of their assets in cash and other liquid securities. However, directives regarding liquidity were issued in the post-1945 years, with the reserve ratio set at eight per cent and the liquidity ratio varying around 30 per cent.<sup>81</sup>

74 BoE G12/1 Committee on the Working of the Monetary System, Memoranda of Evidence, Bank of England, p. 5, June 1957. – For example, it was Bank policy that large banks which merged with other banks would not be entitled “to support from the Bank nor to recognition of its paper as prime for the purpose of discount, security or otherwise” (G8/56, Committee of Treasury Minutes, 8<sup>th</sup> Apr. 1925). See John Edwin Wadsworth, *The Banks and the Monetary System in the UK, 1959-1971*. London 1973, p. 105; Fred Hirsch, *The Bagehot Problem*, in: *The Manchester School* 45 (1977), pp. 241-257.

75 Wadsworth, *Banks* (cf. note 74), pp. 105 et seq.

76 Brian Griffiths, *The Development of Restrictive Practices in the UK Monetary System*, in: *Manchester School* 41 (1973), pp. 3-18; Philip L. Cottrell, *The Financial System of the United Kingdom in the Twentieth Century*, in: Luigi De Rosa (Ed.), *International Banking and Financial Systems. Evolution and Stability*. Aldershot 2003, pp. 43-72, esp. p. 64.

77 Geoffrey Jones, *Competition and Competitiveness in British Banking, 1918-1971*, in: Geoffrey Jones / Maurice Kirby (Eds.), *Competitiveness and the State. Government and Business in Twentieth-century Britain*. Manchester 1991, pp. 120-140, esp. p. 136. – There was, of course, a welfare cost to this banking structure (Brian Griffiths, *The Welfare Cost of the UK Clearing Banks' Cartel*, in: *Journal of Money, Credit and Banking* 4 (1972), pp. 227-244).

78 Cottrell, *Financial System* (cf. note 76), p. 48.

79 Edward Nevin / Edward W. Davis, *The London Clearing Banks*. London 1970, p. 154; Wadsworth, *Banks* (cf. note 74), p. 106.

80 *Ibid.*

81 Nevin / Davis, *Clearing Banks* (cf. note 79), p. 154; Wadsworth, *Banks* (cf. note 74), pp. 106 et seq., 112 et seq.

Table 4: The Top Six London Clearing Banks, 1958

	Loans	British govt. securi- ties	Depo- sits	Pub- lished capital & re- serves	Pub- lished capital / deposits	'True' capital estimate	Provi- sions for 5% drop in govt. & 1% bad debts	'True' ratio after deduc- tion of provi- sions
	(£m)	(£m)	(£m)	(£m)	(%)	(£m)	(£m)	(%)
Barclays	377.7	476.8	1,511.7	43.9	2.9	92.2	27.6	4.3
Lloyds	341.5	326.3	1,259.6	37.4	3.0	68.4	19.7	3.9
Martins	91.9	88.1	334.3	11.3	3.4	26.8	5.3	6.4
Midland	398.2	451.5	1,507.1	33.2	2.2	83.0	26.5	3.7
National Provincial	240.1	215.2	831.6	24.3	2.9	50.3	13.1	4.5
Westminster	248.4	249.3	889.1	28.7	3.2	60.0	14.9	5.1

Notes: As the 'true' capital estimate for the National Provincial is not available for 1958, Billings and Capie's average ratio of 'true' capital to published capital for other banks are used.

Sources: BoE C40/102, Memo on Bank Capital dated September 30<sup>th</sup> 1958; the 'true' capital estimate is from Billings / Capie, Capital (cf. note 66), p. 150.

As well as having high liquidity ratios, commercial banks in the post-1914 era also held large amounts of government debt as shown in Figure 1. As can be seen from Figure 1 and Table 4, British government securities still constituted a large proportion (27.9 per cent on average) of deposits in 1958.

As is illustrated by Table 4, high liquidity ratios and large holdings of government debt resulted in low proportions of deposits actually being lent out to borrowers. Ultimately this would have severely limited bank's ability to risk shift and may explain why the Bank was uninterested in low capital / deposit ratios, and why the banking system was stable despite low capital ratios.

#### 4. The Demise of Constrained Banking and the Rise of Capital Regulation

The informal system of control with the Bank of the England at the centre began to unravel in the early 1970s. The process which precipitated this unravelling began in the mid-1950s with the growth of institutions operating on the periphery of the banking system, where the Bank was unable to extend its customary authority.<sup>82</sup> By the late 1960s commercial banks had less than 50 per cent of the UK deposit market, with building societies, National Savings and foreign banks having most of the rest.<sup>83</sup> In addition, secondary banks, borrowing

82 Fforde, Bank of England (cf. note 69), pp. 699 et seq.

83 John Edwin Wadsworth, Big and Little Banks. Economic and Historic Influences on the Size of English Banks (Société Universitaire Européenne de Recherches Financières Working Paper). Tilburg 1978, pp. 5, 13; Jones, Competition (cf. note 77), p. 124.

on the money markets, had captured some of the banks' lending market. This increase in competition had two main effects. First, the new institutions had no incentive to comply with Bank of England directives or requests and the mushrooming of institutions made informal control more complex so the informal regulatory system outlined above was less effective.<sup>84</sup> Second, commercial banks abandoned their interest rate cartel in 1971.

The secondary banking crisis of 1974 resulted in the Bank of England extending its informal supervisory powers over other deposit-taking institutions in the summer of 1974. As part of the new supervisory system, banks had to make detailed statistical returns (annually for clearing banks and quarterly for other banks) and then be interviewed by the Bank. Rather than have hard and fast balance sheet ratios which banks had to adhere to, the Bank formed an overall impression of each bank via quantitative data and qualitative information, and this was then used to determine a course of action necessary to ensure continued stability. This supervisory approach was essentially codified in the 1979 Banking Act, which also created a new authorisation system and a deposit insurance scheme. The supervisory system was updated in the 1987 Banking Act to overcome deficiencies highlighted by the failure of John Matthey Bankers in 1984. As prudential regulation was enacted, Bank directives in terms of lending and liquidity gradually disappeared, potentially giving banks a lot more latitude in terms of risk shifting.

Capital adequacy was an important issue addressed by the Bank in its interviews with banks. It employed a risk/asset ratio as part of its supervisory system, which weighted assets (commercial loans = 1; connected lending = 1.5; property = 2; UK government bonds = 0.5) in the bank's balance sheet by their perceived riskiness.<sup>85</sup> No minimum was stipulated, but the ratio was used on a case-by-case basis with individual banks as part of the supervisory process. In an attempt to harmonise international banking regulation, the US federal supervisory authorities and the Bank of England published a proposal on standardising capital adequacy rules in 1987.<sup>86</sup> This proposal outlined the risk-weighting methodology, but suggested that it only be used to inform supervisory decision-making and that the actual capital adequacy ratio would be set much higher than the minimum ratio. This accord was superseded by the Basel Accord, which essentially adopted a similar approach to capital adequacy.

The Basel Accord, which was fully operational by the end of 1992, required banks to have a minimum of total capital equal to eight per cent of risk-weighted assets. The risk weights (0, 25, 50 and 100 per cent) were meant to reflect the credit risk of the bank's assets. Capital was sub-divided into high-quality (Tier 1) and second-rate (Tier 2), and at least 50 per cent of the capital base had to consist of Tier 1 capital. The former included paid-up capital and disclosed reserves, whereas the latter was allowed to consist of subordinated debt amongst other things. The risk weighting methodology of Basel I

84 Jack Revell, *Solvency and Regulation of Banks. Theoretical and Practical Implications* (Bangor Occasional Papers in Economics 5). Bangor (Wales) 1975, pp. 47 et seq.; Wadsworth, *Banks* (cf. note 74), p. 119.

85 Chris Blackhurst, *What lurks behind UK Bank Supervision?*, in: *International Financial Law Review* 2/1985, pp. 4-10, esp. p. 8. – Interestingly, these weights differ radically from those adopted under the various Basel Accords.

86 Bank of England, *Agreed proposal of the United States federal banking supervisory authorities and the Bank of England on primary capital and capital adequacy assessment*, London 1987.

was crude and created all sorts of opportunity for regulatory arbitrage, and, as a result, it was superseded by the second Basel Accord, published in 2004.<sup>87</sup> This Accord allowed banks to use their own elaborate internal risk measurement models to determine the amount of capital that they had to hold. The role of the supervisors was simply to assess the adequacy of these models and ensure that they were properly implemented.

Basel II has been the subject of several criticisms ranging from regulatory capture, its neglect of illiquidity risk, its over-reliance on ratings agencies, its procyclical tendencies, the incentives it created for banks to shift risk to structured investment vehicles and to use complex financial instruments such as CDOs, and its inability to take account of systemic risk. However, the problems with the Basel system or regulation are much more fundamental.

First, under the Basel rules, subordinated debt is viewed as capital. However, as subordinated debt-holders are not residual claimants, they have less incentive than shareholders to ensure that bank management do not engage in risk shifting. Although such debt-holders are less risk averse than depositors, they nevertheless face the same moral hazard problems.

Second, the Basel minimum capital ratios have become a target instead of a minimum threshold. In addition, there is the belief that risk can be captured and measured by risk management techniques. This has resulted in the supervisory authorities simply relying on risk metrics and not using their judgment about the riskiness of a bank's overall position. The flexible and judgement-based supervisory system which the Bank of England operated until the early 1990s, which used risk/asset ratios as a heuristic, was replaced by a rules-based system which was overly reliant on banks' self-assessments of their own risk. Such a regime, as the recent crisis has borne out, was totally unable to prevent banks engaging in risk shifting on an historic scale.

## 5. Discussion and Conclusions

The two major crises in the British banking system over the past two centuries have been associated with inadequately capitalised banks. The 1825/26 crisis occurred in an environment where banks were constrained to having six partners with the result that they had inadequate capital resources to withstand large shocks. The 2007/08 crisis also occurred in an environment where banks had inadequate capital resources to withstand the collapse of asset values. However, the problem was more severe than that as it appears that capital adequacy regulation failed to prevent banks from engaging in risk shifting.

In the period between these two major crises, the British banking system was relatively stable. This stability coincided for a large part of this period with well-capitalised banks with shareholders having contingent liability. The demise of contingent liability was preceded by the introduction of informal yet stringent controls placed on bank behaviour by the government through the agency of the Bank of England.

87 Dewatripont / Rochet / Tirole, *Balancing the Banks. Global Lessons from the Financial Crisis*. Princeton, NJ 2010, pp. 88-100.



What can policy-makers learn from this long-run look at British banking stability and bank capital? One major policy prescription emerges from the analysis above: regulators should consider re-introducing contingent liability as this gives managers and shareholders substantial incentives to not engage in risk shifting. Both Macey and Miller and Grossman have made similar policy prescriptions.<sup>88</sup> However, this is probably not politically feasible. A second best option in this case might be to adopt contingent capital certificates or equity liability carriers. This is only a second-best option as shareholders and managers are not personally liable in the event of default – it is this potential personal liability which discourages risk shifting in the first instance.

Although the two crises which Britain has experienced could be blamed on poor institutional or regulatory design, the more perplexing question is why the political system allowed such a state of affairs to arise in the first place. In the case of the 1825/26 crisis, the existence of small poorly-capitalised banks was due to the chartering privileges of the Bank of England, which restricted all other banks to the partnership organisational form and note-issuing banks to having no more than six partners. In return for providing loans to help finance government expenditure, the Bank was given a monopoly of joint-stock banking in England. Notably, even when banks were permitted to incorporate in 1826, they were not permitted to establish within a 65-mile radius of London, and the Bank of England effectively blocked any move to allow banks limited liability.<sup>89</sup> However, the government's willingness to weaken the Bank's monopoly may have had more to do with the availability of alternative sources of finance rather than concerns about the structural stability of the banking system.<sup>90</sup>

The 2007/08 financial crisis has been recently attributed to the increase in inequality in advanced economies.<sup>91</sup> The basic argument is that government policies made credit more easily available to poor people to help ameliorate the rise in inequality for those in the lower deciles of the income distribution. Another possible causal connection is that the disproportionate numbers of top income earners from the financial sector used their influence to lobby for the deregulation of the financial sector, which ultimately led to the crisis. However, there may be no casual connection between rising inequality and financial deregulation; they may simply be both due to a diminished concern for the middle classes by the political establishment.<sup>92</sup> Consistent with this view, the cost of bailing out the banking system will ultimately be borne by middle-class taxpayers.

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88 Macey / Miller, Liability (cf. note 3); Grossman, Liability (cf. note 4).

89 John D. Turner, 'The last acre and sixpence'. Views on Bank Liability Regimes in Nineteenth-century Britain, in: *Financial History Review* 16 (2009), pp. 111-128, esp. p. 115.

90 J. Lawrence Broz / Richard S. Grossman, Paying for Privilege. The Political Economy of Bank of England Charters, 1694-1844, in: *Explorations in Economic History* 41 (2004), pp. 48-72, esp. p. 60.

91 See *The Economist*, January 20<sup>th</sup>, 2011.

92 Earl A. Hickson / Charles R. Thompson, Predicting Bubbles, in: *Global Business and Economics Review* 8 (2006), pp. 217-246.