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Banking Crises in Comparative and Historical Perspective: the Nineteenth Century

This paper was written before the current financial crisis had reached the gigantic proportions we now observe (in fall of 2008), but the emphasis on U.S. instability does seem to fit.[1] The recent history of U.S. financial capitalism has clearly demonstrated, once again, the fragility of its institutions. As the paper attempts to show, that is part of an American tradition going back to the nineteenth century. Crises are also an integral part of the financial history of European countries, but there are some important differences.[2] Indeed, they supply this paper's point of departure, which is to briefly review the nineteenth-century history of a special form of financial crises – banking crises – in the United States, Great Britain and Germany in comparative perspective, and to offer a few conclusions which that experience suggests.

I. Preliminaries

Not on offer here is a "model" of banking crises. Nevertheless, the paper does make use of the theoretical approach associated with asymmetric information, since that approach helps to understand how banking crises can affect the level of economic activity.[3] Under conditions of relatively slow change and limited competition among banks for customers, banks accumulate knowledge about the quality of their borrowers which remains "private" and unobservable to the banks' creditors (including their depositors); and all is well. In periods of rapid change and more intense competition, however, banks will face the problem of asymmetric information, since they will tend to know less about their borrowers and the latter more about the riskiness and profitability of their investment projects than the banks. According to the theory, the banks will thus charge a price for loans which reflects the average of high and low-quality borrowers. The classical "lemons problem" (of adverse selection) results, with high-quality borrowers dropping out of the "market". Credit rationing, another bank response to increased demand for credit accompanied by higher interest rates and poor information, will exacerbate the problem since the less

1 As part of a panel on financial crises presented to the "Wirtschaftshistorischer Ausschuss" in Salzburg in March 2008. N. B. Technical difficulties delayed publication of the paper.
2 The differences seem to have persisted. For an observation from the current crisis see The Economist, 27. September 2008.
3 Here I follow Frederick Mishkin, Asymmetric Information and Financial Crises: A Historical Perspective, in: R. Glenn Hubbard (Ed.), Financial Markets and Financial Crises (A National Bureau of Economic Research Project Report). Chicago 1991, pp. 69-108.

risky projects (with lower expected returns) will leave the market.[4] The overall result is a decline in lending, a higher rate of interest, and a decline in economic activity.

In crises times, usually initiated by some macro-economic shock, the problem of asymmetric information tended to magnify. An early result was an increase in the "spread" of interest rates between high- and low-quality borrowers; but as crises deepened, asset prices fell and high-quality borrowers experiencing refinancing difficulties began to retrench and withdraw from the market thus enhancing the problem of adverse selection. Banks themselves began to face refinancing problems as their creditors (largely depositors) became uncertain about the quality of the debt the banks held in their asset portfolios; and at this point any unexpected financial shock (such as the failure of a prominent firm) could engender a large-scale withdrawal of deposits, even a panic. The related decline in the money supply would then enhance deflation throughout the economy and contribute further to its contraction.

The concept of asymmetric information, of course, describes a *condition* of financial relationships between economic actors which affects their behavior in financial crises but, as the preceding paragraph tries to suggest, it is *not* a cause of crises. This paper favors what has become known as the "Kindleberger-Minsky" interpretation.[5] In this view, financial crises result from the overly sanguine expectations held by economic actors and by financial intermediaries and the excessive creation of credit (and debt) to finance such expectations in the boom period preceding crisis. "Overtrading" is Kindleberger's favored term, "fragility" (over-leveraged balance sheets) and "speculative frenzy" Minsky's.[6] Banking crises – and their extreme form of bank panics – result from the banks' collective creation of money to finance booms and occur when bank creditors observe some shock causing asset values to fall and have no information on the asset portfolios of the different banks. These creditors therefore rush into the banks (following a "first come, first served" rule) to withdraw their cash.[7] Given the illiquidity of banks' (untradeable) loans and bank liabilities payable on demand, the rush leads to bank failures, in a basically unit banking system to a contraction of interbank credit as banks call in or refuse to extend their loans and attempt to build up their cash reserves.

A last preliminary point concerns the definition of "banking crisis". For the purposes of this paper I considered two such definitions. One corresponds to the classic view of bank panics in which runs by creditors/depositors cause many bank failures. In the compara-

4 For the "lemons problem" the *locus classicus* is George Akerlof, The Market for Lemons, in: Quarterly Journal of Economics 84 (1970), pp. 488-500; for credit rationing Joseph Stiglitz/ Andrew Weiss, Credit Rationing in Markets with Imperfect Information, in: American Economic Review 71 (1981), pp. 393-410.

5 Charles Kindleberger, Manias, Panics and Crashes. A History of Financial Crisis. New York 1978; Hyman Minsky, A Theory of Systemic Fragility, in: Edward Altman/ Arnold W. Sametz (Eds.), Financial Crises. Institutions and Markets in a Fragile Environment. New York 1977, pp. 138-152.

6 Minsky speaks of the multiplication of "Ponzi positions" throughout the financial system, by which he means highly leveraged firms whose cash flow is less than their debt charges but whose asset values (= capitalized expected profits) are believed to exceed their debt.

7 This section is based on Charles Calomiris/ Gary Gorton, The Origins of Banking Panics: Models, Facts, and Bank Regulation, in: Hubbard, Markets (cf. note 3), pp. 109-174. They are largely concerned with U.S. banking panics here.

tive and historical context examined here, the definition sets a high threshold, as Table 1 shows.[8]

Table 1: Banking Crises in three Countries, 1814-1914

Crisis Year	Great Britain	Germany	U.S.A.
1814			+
1819			+
1825/6	+		
1836/9			+
1847/8	+	?	
1857		?	+
1861			+
1866/7			
1873			+
1878			
1882/4			+
1890/3			+
1900/01			
1907			+
1914	+		+

+ = banking crisis

By this definition only the U.S. banking system could be characterized as chronically crisis-prone. By this definition, however, a number of important crises in Great Britain and Germany in which banks were significantly affected or which had important consequences for banking policy are excluded. That raises the question of the international comparability of nineteenth-century banking crises, of course; but since such a definition would also make the comparison intended here meaningless, I thus opt here for the broader definition suggested above, i. e., in which banking crises are identified as financial crises which had significant effects on one or more important banks or which had important policy implications for banking. Table 2 below indicates the comparative pattern.

8 Some ambiguity attaches to the dating of crises, since extreme phenomena such as widespread runs on banks could follow upon earlier, less dramatic signs of financial trouble. For the dates used here see the country crises tables below.

Table 2: Banking Crises in three Countries, 1814-1914

Crisis Year	Great Britain	Germany	U.S.A.
1814			+
1819			+
1825/6	+*		
1836/9	+	+	+*
1847/8	+*	+*	+
1857	+	+	+*
1861			+*
1866/7	+	+	
1873	+	+	+
1878	+		
1882/4	+		+
1890/3	+*	+	+*
1900/01		+	
1907	+	+	+*
1914	+	?	+

+ = banking crisis
* = significant crisis

As a preliminary result one may claim that (a) banking crises took place in all three countries; and that (b) the U.S. banking system was far more crisis-prone than its two European counterparts. I return to this result at the end of the paper.

II. U.S. Banking Crises

The history of banking crises in the U.S. is inseparable from the country's history of government banking regulation. Thanks in part to the country's "Founding Fathers", the U.S. political system developed as a decentralized, federal structure; and banking regulation developed accordingly. The individual states, endowed early with considerable autonomy, had the power to charter joint-stock banks or to found state-owned banks from which they received revenues; and they did so on a large scale. Up to the Civil War they chartered almost exclusively note-issuing banks.[9] They "regulated" through the number of banks they chartered and the terms of the charters (stipulating the maximum amount of capital and note circulation, minimum cash reserve requirements, the state's share in gross profits, severe restrictions on branches, etc.). Virtually all states banned the establishment of branches by banks domiciled in other states; and this proved to be a most significant restriction, one which dictated the dominance of unit banking in the U.S.

9 One reason often given for the early prominence of note-issuing banks is the poor condition of the country's coinage and which was related to bimetallism. For this see Richard H. Tilly, Geld und Kredit in der Wirtschaftsgeschichte (Grundzüge der modernen Wirtschaftsgeschichte 4). Stuttgart 2003, pp. 121 f., and literature cited there.

At this point it needs to be added that for much of the nineteenth century, bank regulation in the U.S. was dualistic: the federal government also regulated. In the Ante-bellum years (to 1861) this took the form of two experiments with central banks by the federal government. The First Bank of the U.S. operated from 1791 to 1811. By virtue of its relatively large capital (of ten mill. $), a near monopoly of the business and deposits of the federal government, and branches in the country's most important business centers, it came to serve as a brake on state banks' business and earned the enmity of economic political interests of the states. These brought the First Bank to an end in 1811 when its charter was not renewed.[10] Five years later, however, federal government and various business interests converged and the Second Bank of the U.S. came into being. It was much larger and even more controversial than its predecessor, particularly after Nicholas Biddle became its chief executive and pursued what many historians have interpreted as a conscious central banking policy regulating private banks.[11] The renewal of its charter turned into a highly-publicized political issue after Andrew Jackson's election in 1828. In 1836 it "went private" and met an ignominious end in 1841. Its demise as "central bank" is believed to have contributed significantly to the panic of 1837, though debate on the issue continues.[12] From 1861 to 1913, in any case, the U.S. banking system operated without a central bank.

During the Civil War, however, the federal government (until 1865 only in the North) regulated all note-issuing banks (or about 85 percent of state-chartered banks) via the National Banking Acts of 1863 and 1864. These measures regulated the size of note circulation, minimum capital and cash reserve requirements.[13] In 1865 a ten percent tax on state bank notes forced the state banks to choose between a National Bank charter and giving up note-issuing rights. The overwhelming majority of those banks chose the former course. Interestingly, however, some continued as banks without this charter, for one of the unintended results of the Act was that it added a further incentive for the development of deposit banking. Another result was the formal classification of banks into the category "country bank", "reserve city bank" and "central reserve city bank". Required reserves of the first and second category banks could be held in the form of deposits in the second or third class. The rule led to the pyramiding (and concentration) of reserves in New York City, which were invested in the call loan market there to finance stock market transac-

10 Bray Hammond, Banks and Politics in America. From the Revolution to the Civil War. Princeton, N. J. 1957, pp. 114 ff., 197 ff.

11 For this story, see Hammond, Banks (cf. note 10), chs. 10-14; see also Tilly, Geld (cf. note 9), and literature cited there.

12 For differing views Hammond, Banks (cf. note 10); Peter Temin, The Jacksonian Economy (A Norton Essay in American History). New York 1969; Peter Rousseau, Jacksonian Monetary Policy, Specie Flows and the Panic of 1837 (NBER Working Paper Series 7528). Cambridge, Mass. 2000; Jane Knodel, Rethinking the Jacksonian Economy: The Impact of the 1832 Bank Veto on Commercial Banking, in: Journal of Economic History 66 (2006), pp. 541-574.

13 The Act was a wartime measure designed to support the price of federal government bonds. The federal government issued the new "National Bank" "national" bank notes in exchange for the purchase (and deposit) of federal bonds. See Tilly, Geld (cf. note 9), and the sources cited there; see also Fritz Redlich, The Molding of American Banking. Men and Ideas (History of American Economy. Studies and Materials for Study). New York 1968.

tions.[14] A further result of these measures, to be sure, was the instability of U.S. banking in the period, for bad news in the stock market translated quickly into a loss of confidence in banks. That was probably owing to one thing for which the National Banking Act did not provide: a central bank which could act as a lender of last resort. These observations can serve as a kind of foreword to Table 3, which summarizes the U.S. banking crises, 1814-1914.

As suggested in previous paragraphs, the large number of unit banks, most of them with poorly diversified risk structures, made the U.S. banking system crisis-prone. This structure was in large part a result of the country's dual regulation. The correspondent banking network, which followed from the National Banking Acts and developed, so to speak, as an alternative to branching, led to a concentration of deposits in NYC and made the entire banking system quite dependent on the NY stock exchange. Of the eleven crises recorded here, six followed upon a marked decline in stock prices. Two of these – in 1857 and 1907 – had significant international repercussions. Nine of the crises, however, also reflected seasonal swings in the demand for cash payments in the country's largely agrarian regions and which led to a cash drain from NY and other financial centers. This inelasticity of the money supply made the banking system vulnerable to financial shocks.[15] This was precisely the point at which a central bank with money-creating capacities could have exercised a benign influence; but from 1832 to 1913 that institution was not available.[16] It is interesting to observe that in the 30 years in which a U.S. central bank existed just one banking panic occurred (the crisis of 1819). That corresponds to the conventional interpretation of U.S. banking instability followed here, even if it falls short of "proving" the case.

14 On these results, see Tilly, Geld (cf. note 9), pp. 143 ff.; John A. James, Money and Capital Markets in Postbellum America. Princeton, N. J. 1978; also Jan Körnert, Analyse der Finanzmärkte der USA in den fünf Bankenkrisen der National Banking-Ära, in: Bankhistorisches Archiv 31 (2005), pp. 87-106.

15 In contrast to some older works, Calomiris/ Gorton, Origins (cf. note 7), emphasize the "enabling", rather than primary role of seasonal demands as cause of banking panics. A further destabilizing factor may have been the relatively strong demand for bank notes in rural agricultural regions – a demand not well served by the inelastic regional distribution of notes dictated by the National Banking Act of 1865. On this see Redlich, Molding (cf. note 13).

16 In the crises of 1884, 1890, 1893 and 1907 the New York Clearing House issued certificates which served as inter-bank money and this helped stabilize the New York money market; but it was no substitute for the missing central bank.

Table 3: U.S. Banking Crises, 1814-1914

Crisis Year	Probable Immediate Cause	Short Description	Consequences
1814	Price Collapse of U.S. Federal Bonds	Suspension of Convertibility; many Bank Failures	Founding of 2nd Bank of the U.S.
1819 (early in Year)	Fall in Cotton Prices	Bank Failures and Convertibility Suspension (Note-Issuing Banks)	2nd Bank of U.S. begins to act as a Central Bank
1837 (May)	Redistribution of Deposits of Federal Government; "Specie Circular"; Bank of England	Many Bank Failures and Widespread Suspension of Payments by Banks	Declining Money Supply and Price Deflation
1839 (October)	Cotton Prices	Collapse of 2nd Bank of U.S.; many Banks suspend Payments	"Biddle's Corner" (Collapse of Speculation of Bank of U.S.); Depression
1857 (October)	Collapse of New York Bank and many Stock Exchange Dealers; Fall in Price of Railroad Securities	Price Collapse of U.S.-Railroad Securities; Drain of Specie from NY; Payments Suspension of NY Banks, then of Banks throughout U.S.	Crises in London and Hamburg
1861	Civil War; Price Collapse of U.S. Bonds	Many Banks suspend Payments	National Banking Act of 1863 and 1864
1873 (September)	Decline of Stock Prices; Collapse of Jay Cooke, Investment Banker	Suspension of Payments; Collapse of nine "National Banks" and 40 "State Banks"	Longest Depression of 19th Century
1884 (May)	Decline in Stock Prices	Bankruptcy of prominent Stock Dealer; Collapse of NY Banks (eight "National Banks" and 50 "State Banks"); Clearing House "Money Creation"	Limited to NY; successful "Clearing House" Action.
1890 (November)	Baring Crisis, London; Decline in Stock Prices	Gold Exports; Loss of Reserves; 40 Bank Failures	Clearing House Certificates issued ("Money Creation")
1893 (April)	Stock Price Decline; Gold Exports; Deposit Withdrawals from NY Banks	Failure of "Country Banks"; Payments Suspension by NY Banks; Failures of 49 "National Banks" and 250 "State Banks"	Goldstandard Debate; Bank Reform-Discussion begins
1907 (October)	Decline in Stock Prices; Gold Export; Deposit Withdrawals from NY Banks	Collapse of NY Banks and of ca. 200 "National" and "State Banks"; Clearing House "Money"; Cash Payments Suspension by many (non-NY) Banks	Aldrich-Vreeland Act, National Monetary Commission; Federal Reserve Act of 1913

Sources: Calomiris/ Gorton, Origins (cf. note 7); Charles Calomiris/ Larry Schweikart, The Panic of 1857. Origins, Transmission, and Containment, in: Journal of Economic History 51 (1991), pp. 807-834; Mishkin, Information (cf. note 3); Hammond, Banks (cf. note 10); Temin, Economy (cf. note 12); Rousseau, Policy (cf. note 12); Körnert, Analyse (cf. note 14); Milton Friedman/ Anna Jacobson Schwartz, A Monetary History of the United States, 1867-1960. A Study by the National Bureau of Economic Research, New York (Studies in Business Cycles 12). Princeton, N. J. 1963.

III. British Banking Crises

As in the U.S. banking crises in Great Britain in this period were related to banking regulation. In Great Britain, however, regulation was centralized, determined by Parliament and the government. The privilege of incorporation with limited liability and the right to issue notes long represented the main instrument of British regulation. The first to obtain such rights was, of course, the Bank of England in 1694. It defended that monopoly for well over a century, since 1720 aided by the "Bubble Act".[17] The rising demand for money and credit in eighteenth-century Britain, however, led to a rapid expansion of banks throughout England in the form of private partnerships which issued promissory notes payable at sight and which made loans. These "country banks" had come to form the backbone of British banking by the first decades of the nineteenth century – by 1825 about 650 such banks were in operation – but they were highly dependent on the English money market and thus, indirectly, on the Bank of England, whose notes supplied that market's "cash".[18] Given the growing importance of the London market's international business, the "country banks" necessarily became also subject to international influences.

This interdependent structure was hit hard by the crisis of 1825-26, to which I return below. Relevant here are the regulatory changes which came in the wake of that crisis: foremost were restrictions on the "country banks" business, the opening of Bank of England branches in various cities outside London and a loosening of that Bank's monopoly of joint-stock banking – a kind of recognition that small unit banks could turn difficulties of the London market into a nation-wide banking crisis. In 1833 joint-stock banks were permitted to locate in London as well, provided they did not issue notes. This turned out to be a far-reaching step, since it marked the beginnings of private banks based on demand deposits subject to check. Crises signs in the late-1830s led then to still further reform discussion, which culminated in 1844 in the well-known "Peel's Act". This divided the Bank into two departments which sought to separate that institution's note-issue function from its "banking" business (= receipt of deposits on the liabilities side and discount and "Lombard" loan transactions on the assets side). The issue department held 14 mill. £ of "unbacked" notes in circulation, but additional note issue was limited to the exchange of notes for specie. If the "banking" department desired more notes from the issue department for its discount and loan business it had to supply that department with the equivalent in gold or silver.[19] This inelasticity was to hinder the Bank's response to crises. Nevertheless, the Act was a milestone, since it froze the note circulation of private banks and *de facto* eliminated the latter as an alternative source of currency. This strengthened the Bank of

17 This law – a response to the "South Sea" and "Mississippi Bubbles" of 1719-20 associated with John Law – made incorporation for business purposes extremely difficult and limited even firms which needed much capital to six partners. The law was repealed in 1825.

18 Country bank notes were part of the local currency throughout the country, but not in London or in crises times. The *locus classicus* on the role of the "country banks" is doubtless still Leslie S. Pressnell, Country Banking in the Industrial Revolution. Oxford 1956. This section of the paper also draws on Tilly, Geld (cf. note 9), Chapter II.4, and esp. pp. 79-84, where relevant literature is cited.

19 Since the banking department could receive notes from its customers, it could accumulate a bank note reserve of its own. Insofar as these notes were paid out to customers they entered the country's money supply – which could thus vary independently of changes in the gold reserves; and to this extent Peel's Act did not reflect the "currency principle" which it had been thought to embody. See Michael Collins, Money and Banking in the UK. A History. London et al. 1988, pp. 175 ff.

England's special role as "protector" of the nation's gold reserves and principal source of liquidity for the banking system.

The Bank of England's subsequent crisis policy stance remained ambiguous to 1914. The main reason for this was the great weight that it continued to assign to its ability to generate profits and dividends for its private shareholders and which made it a competitor of the private commercial banks. From 1866 on its role as lender of last resort in crises was on the whole praiseworthy; but doubts persisted well into each of these. From the 1850s on, however, this possible source of instability was more than outweighed by structural change in the British commercial banking system. This led to the dominance of large joint-stock deposit banks, whose nation-wide systems of branches permitted a degree of risk diversification which made them much less crisis-prone than the "country banks" they had replaced. Britain's nineteenth-century crisis history may be seen against the background of the changes just described. Table 4 below, like Table 3, attempts to summarize that history.

The crisis of 1825-26 was not only arguably the worst banking crisis Britain experienced in the nineteenth century, but also had great significance for the political economy of banking. In addition, it was the crisis which most resembled the U.S. banking crises discussed earlier. As pointed out above, thanks to the development of "country banking", England had a unit banking system with many small regional banks, linked as a whole to the country's financial center in London and dependent on the stability of the money and capital markets there. A speculative boom in South American government securities and expansion of credit and note issue marked the years 1824-25, aided by an "easy money" stance adopted by the Bank of England. From May 1825 on, however, confidence ebbed; and when in December a major London bank failed, panic broke out. A number of banks experienced runs based largely on rumors and customers' anticipation of contagion – as the asymmetric information approach would suggest. In the aftermath of crisis, the regulatory changes noted above were implemented. Blame focused mainly on the "country banks" and the small notes they issued (= one £ and smaller). The Bank of England, oddly, was absolved from blame, as those charged with investigating the crisis overlooked the procyclical stance the Bank had taken.[20]

The crisis of 1847 is also worth mentioning here, in part because important banks faced runs and failed (see Table 4), but mainly because the Bank of England's pro-cyclical policy probably made the crisis worse and when "failure contagion" threatened, the Bank's belated response left its gold reserves so low that Peel's Act had to be rescinded. This response, though late, nevertheless did signal to the private and commercial banks that they would have access to the "lender of last resort" if need be; and it sufficed to quell panic.

In subsequent years Britain experienced several banking crises, but nothing comparable to the panics which marked 1825-26 and (briefly) 1847. The crisis of 1857 was "imported" from the U.S., the failure of "American Houses" bringing down a number of banks. The crisis of 1866 (near a cyclical peak) followed from the failure of a "quasi-bank", Overend, Gurney and Co., one of London's largest discount houses but one which for some time had been "pursuing a policy of almost criminal recklessness".[21] The "Baring Crisis" brought

20 See on this especially Pressnell, Country Banking (cf. note 18), pp. 477-500.

21 Edward Victor Morgan, The Theory and Practice of Central Banking 1797-1913. London [2]1965,

Table 4: Banking Crises in Great Britain, 1814-1914

Crisis Year	Probable Immediate Cause	Short Description	Consequences
1825-26 (December 25 - May 26)	"Country Banks"; South American Securities	Crisis transmitted through failed London Banks and Brokers; 60 Banks fail, mostly "Country Banks"	Ban of "Small" Bank Notes; Founding of Bank of England Province Branches; Joint-Stock Banks without Note Issue ("Deposit Banks") allowed
1847 (October)	Collapse of Agricultural Prices, of big Merchant Firms and of Private Bankers	Crisis spreads via London Money Market; Collapse of two big Bill Dealers and of seven important Non-London Banks (= total of 31 with debts = 13 mill. £)	Decline in Gold Reserves of Bank of England; Peel's Act temporarily rescinded to allow Bank to discount liberally
1857 (October & November)	U.S. Banking Crisis	Collapse of Scottish Joint-Stock Banks and of Trading Houses with U.S. Credit Connections	Decline in Gold Reserves; Discount Rate Increase (to ten percent); Peel's Act again rescinded
1866 (May)	Run on Overend, Gurney & Co.	Experiment as a "Universalbank" ("Credit Mobilier Banking")	High Discount Rate (ten percent); Peel's Act rescinded
1878 (October)	Run on City of Glasgow Bank (for the 2nd time)	Failure of large Joint-Stock Bank with 133 Branches and five mill. £ of debt; Decline of Confidence in Banks	Decline in Gold Reserves; Joint-Stock Banks activate Right to Limited Liability
1890 (November)	Illiquidity of Baring Brothers; Collapse of Argentinian Securities	Bank of England formed Crisis-Syndicate of Merchant Bankers: Aid package = 15 mill. £; Gold Imports	Government supplied Bank of England with risk-free Securities; Increased Risk-Averseness and dwindling Trust in Bank of England by Joint-Stock Banks
1907 (October)	U.S. Banking Crisis	Loss of Gold Reserves; no Banking Crisis	Discount Rate Increase (to seven percent); Joint-Stock Banks form their own Gold Reserves

Sources: Pressnell, Country Banking (cf. note 18); Collins, Money (cf. note 19); Charles N. Ward-Perkins, The Commercial Crisis of 1847, in: Eleanora M. Carus-Wilson (Ed.), Essays in Economic History. Reprints edited for the Economic History Society, Vol. 3. London 1962, pp. 265-269; Morgan, Theory (cf. note 21); Tilly, Geld (cf. note 9); Leland H. Jenks, The Migration of British Capital to 1875 (Nelson's University Paperbacks). London 1971.

down one of "the City's" most prestigious merchant banks, but its claim to fame derived largely from the collective "rescue action" organized by the Bank of England.[22] From the "Baring Crisis" in 1890 to World War One, indeed, the banking system seemed quite crisis-resistant.[23] A low-keyed debate on the source of this stability has long permeated the literature on British banking history. It pits the positive role of the Bank of England as central bank par excellence against both the efficiency of the London money and capital markets and the large joint-stock banks with their regionally well-diversified structures.[24] The gold standard rules which prevailed in the period, in addition to the continued concern of the Bank of England's leadership with the Bank's profitability, cast some doubt on the former position; but the issue cannot be resolved here. Here it suffices to point out that in both respects, the British banking system differed markedly from that of the U.S.

IV. German Banking Crises, 1814-1914

German experience, the third side of this three-sided comparison, resembled that of Britain in at least two respects. First, for most of the nineteenth century it had a central bank (in Prussia, by far the largest and most powerful state, since 1846). Second, it initially regulated banking mainly via delegation of the rights (a) to form a corporation with limited liability and (b) to issue bank notes (promissory notes payable at sight).[25] As industrialization gathered momentum in the 1840s and 1850s, at first private banks organized as partnerships supplied most of the growing credit and means of payment needs via the instrument of the bill of exchange. In the 1850s, however, entrepreneurs drew on French experience and founded a number of banks organized as "Kommanditgesellschaften auf Aktien" – based on an owner with unlimited liability and the issue of shares whose nominal value set the limit of liability of their owners. From 1870 on, however, joint-stock banks could be organized as limited liability corporations by simple registration – as long as they issued no bank notes. With the founding of the German Reichsbank in 1875 Germany had a

pp. 178 f., writes of the "wild" panic which ensued. See also on this Marcello de Cecco, Money and Empire. The International Gold Standard, 1890-1914. Oxford 1974.

22 On this see especially De Cecco, Money (cf. note 21); and for details Leslie Pressnell, Gold Reserves, Banking Reserves, and the Baring Crisis of 1890, in: Charles Raymond Whittlesey/ John Stuart Gladstone Wilson (Eds.), Essays in Money and Banking in Honour of R. S. Sayers. Oxford 1968, pp. 167-228.

23 The banking crisis of 1914 (discussed in De Cecco, Money (cf. note 21)), though important for British banking, seemed too special to be included in the discussion here.

24 The joint-stock banks seem to have become not only more professional but also quite conservative in their business policies after 1890, a change which may have contributed to stability. See on this Tilly, Geld (cf. note 9); Collins, Money (cf. note 19); Michael Collins/ Mae Baker, Financial Crises and Structural Change in English Commerical Bank Assets, 1860-1913, in: Explorations in Economic History 36 (1999), S. 428-444; Forrest Capie/ Geoffrey Wood, Money in the Economy, 1870-1939, in: Roderick Floud/ Donald McCloskey (Eds.), The Economic History of Britain since 1700. Vol. 2: 1860-1939. Cambridge [2]1994, pp. 217, 230 f., stress the importance of the Bank of England; Dieter Ziegler, Das Korsett der "Alten Dame". Die Geschäftspolitik der Bank of England 1844-1913 (Schriftenreihe des Instituts für bankhistorische Forschung 15). Frankfurt am Main 1990, esp. pp. 131-142, stresses other factors (including the big deposit banks).

25 This section draws on Tilly, Geld (cf. note 9), Chapter II.5, and literature cited there.

national central bank and it soon became the country's sole source of bank notes.[26] Other than the Reichsbank's operations, however, the country's commercial banks remained largely unregulated (as in Britain); and the Reichsbank's policies have been categorized as "accommodating", rather than "restraining".[27]

This policy stance, however, does not seem to have produced an unstable banking system. The Table 5 below attempts to summarize that system's nineteenth-century crisis history.

With a total of just five crises and possibly one (or no) banking panics with runs on deposits, the development of the German banking system in the nineteenth century may be characterized as relatively stable. Since this paper represents a selective survey of the secondary literature, it does not rule out the possibility that closer study of the six crises mentioned above (which is certainly a desideratum) could reveal more instability than is reported here. Until that happens, however, one may assume that comparative stability is what needs explaining. At least three hypotheses, which are complementary rather than competitive, suggest themselves; and they will be treated in turn.

The first of these is the historical path of economic development. In the first half of the nineteenth century "Germany" was a congeries of nations, with a much larger proportion of its population engaged in subsistence and non-market economic activities than either Great Britain or the U.S. Banks and bank money were at home in the "commercial islands" (such as Hamburg, Berlin, parts of the Rhineland, parts of Saxony, etc.) which stood above the German "subsistence sea". Until around the last third of the century, only a small minority of the population used banks and bank money; and as small businesses felt the need to do so, they were likely to go to the public savings banks or join the growing number of credit cooperatives – which in this period grew more rapidly than the commercial banks. Nevertheless, the demand for the services of the latter did grow in these years and those banks grew accordingly. Table 6 suggests the numerical relationship involved.[28]

26 The Reichsbank built on the older Prussian Bank and inherited its branch network and much of its business.

27 See on this point Tilly, Geld (cf. note 9), Chapter II.5, esp. pp. 118 ff., and the literature cited there. The growing importance of the well-regulated public savings banks and the credit cooperatives in the last third of the century should not be overlooked in any assessment of the stability of the banking system as a whole. This issue, briefly mentioned at the end of the paper, cannot be discussed here in the detail it deserves.

28 The difference between the number of commercial banks and the total number of credit institutions reflects for Germany the savings banks, mortgage banks and credit cooperatives, for Britain savings and mortgage banks, for the U.S. largely saving and loan associations.

Table 5: German Banking Crises, 1814-1914

Crisis Year	Probable Immediate Cause	Brief Description	Consequences
Late 1847 to Spring 1848	Agricultural Crisis; Commercial and Banking Crisis in Great Britain	Collapse of Firms in Trade and Industry; several important Bank Failures	Revolution; Repression; Government Spending on Railroads etc.; Founding of Joint-Stock Bank
1857 (October)	Banking Crisis in U.S. and Great Britain	Collapse of Trading Houses in Hamburg; Crisis spreads to German Trade and Industrial Centers; Stock Market Decline and Collapse and Near-Collapse of Several Banks	Silver Imports to Hamburg from Austria
1866 (June)	Austro-Prussian War; British Banking Crisis; Stock Market Decline	Money Scarcity and several Bank Failures	Prussian Bank exemplary as Lender of Last Resort
1873 (May)	Stock Market Panic; Collapse of many newly founded Business Corporations	Collapse of Stock Market Prices; many Joint-Stock Bank Failures	Legal Reform of Laws regulating Business Corporations
1901 (May - June)	Stock market decline; collapse of several banks	Collapse of Leipziger Bank and revelation of its illegal business operations	Reichsbank as Lender of Last Resort active in money market
1907 (October)	Banking crisis in U.S.	Gold Exports to U.S. and Great Britain; Tight Money	Official Reichstag Investigation of German Banking, 1908; Quarterly Reports by Joint-Stock Banks; Reichsbank notes as Legal Tender, 1909

Source: Helmut Böhme, Frankfurt und Hamburg. Des deutschen Reiches Silber- und Goldloch und die allerenglischste Stadt des Kontinents. Frankfurt am Main 1968; Knut Borchardt, Währung und Wirtschaft, in: Deutsche Bundesbank (Ed.), Währung und Wirtschaft in Deutschland 1876-1975. Frankfurt am Main 1976, pp. 3-55; Burhop, Underpricing (cf. note 31); Hans Rosenberg, Die Weltwirtschaftskrise 1857-1859 (Kleine Vandenhoeck-Reihe 1396). Göttingen ^{2}1974.; Percy Ernst Schramm, Hamburg, Deutschland und die Welt. Leistung und Grenzen hanseatischen Bürgertums in der Zeit zwischen Napoleon I. und Bismarck. Ein Kapitel deutscher Geschichte. München 1943; Tilly, Geld (cf. note 9).

Table 6: Number of Banks in 1913

Credit Institutions	U.S.A.	Great Britain	Germany
Private Commercial Banks	25.000	100 (8.600)*	2.200
Total Number of Credit Institutions	32.000	?	24.000

*Bank Offices

Sources: Tilly, Geld (cf. note 9), and literature cited there; Deutsche Bundesbank (Ed.), Währung und Wirtschaft in Deutschland 1876-1975. Frankfurt am Main 1976; Herman E. Krooss/ Martin R. Blyn, A History of Financial Intermediaries. New York 1971.

The second hypothesis points to the restrictive role of the state concerning the right of banks to organize as joint-stock companies with limited liability and to issue bank notes. When business demands for this kind of institution surfaced in the 1840s and 1850s in Prussia, the government first responded by conversion of its own bank into a special kind of joint-stock company with the note-issuing privilege. As this proved insufficient, statutory limits on the bank's note circulation were lifted and by the 1860s it enjoyed a virtual monopoly of note issue in much of Germany. It is interesting to note at this point that in the notorious "Gründerkrise" of the 1870s, the monopoly of the Prussian Bank temporarily weakened as the question of the Reichsbank came on the political agenda (and the resolve of the Prussian Bank's leadership probably weakened as well).The result was a pro-cyclical central bank policy and corresponding movement in the money supply – which may have enhanced the economic damage done by the crisis.[29]

The third hypothesis focuses on the role of the big credit banks. After a somewhat shaky start, by the 1880s concentration had gained momentum so that by the end of the century, the five or six "great banks" were (by capital) the largest German enterprises and had virtually nation-wide networks of branches which gave them a well-diversified risk structure and enhanced their stability. Moreover, by this time they had become "universal banks", or banks which combined investment with commercial banking activities – a combination which probably helped overcome the problem of asymmetric information inherent in bank-customer relationships. In these respects, of course, they differed radically from their U.S. counterparts.[30]

Of the six crises listed in Table 5, only two (1873 and 1901) were wholly "endogenous", while three (the crises of 1847, 1857 and 1866) also reflected British influences and one (1907) was an "import" from the U.S. The crisis of 1847/48 briefly threatened, but only a small number of badly exposed banks fell and the "systemic crisis" which followed reflected socio-political conflict as much as financial distress. The crisis of 1873 felled many banks, but mostly because they were poorly (or criminally) organized and not because of their banking practices. Indeed, the 1873 crisis was actually a stock

29 See on this Tilly, Geld (cf. note 9), and literature there.

30 See on this Timothy Guinnane, Delegated Monitors, Large and Small: Germany's Banking System, in: Journal of Economic Literature 40 (2002), pp. 73-124. As "universal banks", however, they also differed from British commercial banks. On this see also Tilly, Geld (cf. note 9), esp. Chapter II.5.

market crisis.[31] The crisis of 1901 reflected a crass abuse of shareholder (and depositor) trust, but though the crisis seemed threatening, energetic intervention by the Reichsbank limited the damage.[32]

V. Final Comparisons and Summary

In all three countries, as seen above, government regulation initially focused on the grant of rights to form joint-stock companies with limited liability and to issue notes payable on demand. In all three countries, the note-issuing privilege became less important as the advantages of demand deposits as "credit money" became better recognized. It seems likely that in all three countries the restrictive government regulation of note issue stimulated the commercial banks to develop demand deposits as an alternative source of working capital – in Britain and the U.S. as demand deposits subject to check, in Germany as current account balances available on demand via bank drafts, *giro* transfer or bills of exchange.[33] This is an interesting early example of financial innovation induced in part by regulation, which thus helped to create a new regulatory problem.[34] In all three countries, finally, governments recognized the indirect regulatory role that central banks could play in the banking system. In Great Britain and Germany, this even led to a monopoly of note issue by the central bank. In the U.S., however, the decentralized structure of government led to a multitude of state-level regulations of banking. The vested interests that developed out of this created a power structure that proved inimical to a central bank controlled by the federal government and which contributed to the relatively short life of central banking in nineteenth-century America – in contrast, as has been shown, to Great Britain and Germany, where central banks close to the government played a much larger role.

Nevertheless, one may doubt whether central banking is the key to the different frequency of banking crises in the three countries. What we know of the operation of the central banks in Britain and Germany suggests that those institutions could dampen

31 On this see Markus Baltzer, Der Berliner Kapitalmarkt nach der Reichsgründung 1871. Gründerzeit, internationale Finanzmarktintegration und der Einfluss der Makroökonomie (Münsteraner Beiträge zur Cliometrie und quantitativen Wirtschaftsgeschichte 11). Berlin/ Münster 2007; Carsten Burhop, The Underpricing of Initial Public Offerings in Imperial Germany, 1870-1896 [Unpublished Ms. 2007]; Tilly, Geld (cf. note 9), and literature cited there.

32 Carsten Burhop presented a paper on this crisis to the "Wirtschaftshistorischer Ausschuss" in Salzburg in March of 2008: "Finanzinstitutionen als Risikofaktor: Der Zusammenbruch der Leipziger Bank als Problem der Unternehmensverfassung" (cf. pp. 18-30). See also Richard H. Tilly, Die deutsche Wirtschaftskrise von 1900/01 und der Fall der Leipziger Bank, in: idem (Ed.), Bankenkrisen in Mitteleuropa im 19. und 20. Jahrhundert (Geld und Kapital 3). Stuttgart 2000, pp. 69-99.

33 These current account balances could derive from lines of credit the bank supplied. On these see Jacob Riesser, Die deutschen Großbanken und ihre Konzentration im Zusammenhange mit der Entwicklung der Gesamtwirtschaft in Deutschland. Jena [3]1910, pp. 204-215; see also the evidence cited in Richard H. Tilly, Zeitreihen zum Geldumlauf in Deutschland 1870-1913, in: Jahrbücher für Nationalökonomie und Statistik 187 (1973), pp. 330-363, esp. pp. 338-342.

34 As Calomiris and Gorton and others have pointed out, bank notes were tangible and had market prices, at least in the U.S.; and these helped economic actors to distinguish between "good" and "bad" banks. See also Hugh Rockoff, The Free Banking Era. A Re-Examination (Dissertations in American Economic History). New York 1975; and for England see Pressnell, Country Banking (cf. note 18).

and limit the economic damage done by crises; but they could do little to prevent their outbreak.[35] State-level regulation of banking in the U.S. had it most pernicious effects through its attempted protection of the many individual banks the states created, most of all via the bans on branch banking. This insured the predominance of a unit banking system in the U.S., which proved highly vulnerable to cyclical downturns. The contrast to the nation-wide branch networks controlled by the big British and German commercial banks at the end of the nineteenth century is unmistakable (note the dominant position of commercial banks in the U.S. credit system in Table 6 above).

The section on U.S. banking crises argued that the National Banking Acts may have enhanced the growth of New York as principal recipient of the deposits of banks throughout the country. Seen in comparative context, this variant of "correspondent banking" could be interpreted as an alternative to the branch banking that U.S. laws forbade. But though this arrangement shaped the pattern of U.S. banking crises, it was not their "cause". As the introduction to this paper indicated, crises broke out – and not only in the U.S. – because of the inherent tendency of capitalist finance to respond to rising profit expectations with a race to exploit new opportunities. The herd behavior which marked this race, however, inevitably produced a general condition of financial fragility, overexpansion, and ultimately, breakdown. The "boom-bust" syndrome is suggested in the cyclical position of the crises. Table 7 indicates the relationship.

Table 7: Cyclical Position of Banking Crises in the U.S. (1819-1914)

United States		Great Britain		Germany	
Crisis Year	Relevant Peak	Crisis Year	Relevant Peak	Crisis Year	Relevant Peak
1819	1815	1825	1825		
1837	1837				
1839	1837	1847	1845	1847/48	1847
1857	1857	1857	1857	1857	1857
1860	1861	1866	1866	1866	1864/65
1873	1873			1873	1873
1884	1881	1878	1873		
1890	1890	1890	1890		
1893	1890			1901	1900
1907	1907			1907	1907

Sources: Text and Calomiris/ Gorton, Origins (cf. note 7); Mishkin, Information (cf. note 3); Willard Long Thorp, Business Annals. United States, England, France, Germany, Austria, Russia, Sweden, Netherlands, Italy, Argentina, Brazil, Canada, South Africa, Australia, India, Japan, China (National Bureau of Economic Research, Inc., Publications 8). New York 1926; Spree, Wachstumstrends (cf. note 36); Walt W. Rostow, British Economy of the Nineteenth Century. Oxford 1948.

The three countries' experience can be summarized as in Table 8 below.

35 The sudden weakening of a central bank, however, could possibly magnify the dimensions of a crisis, e.g., as in the U.S. in 1837 or in Germany in 1873.

Table 8: Cyclical Position of Banking Crises in Three Countries

Country	At or Near Peak	Recession	Other
U.S.A.	6	2	2*
Great Britain	5	1	
Germany	3	1	1**
Total	14	4	3

*War and "Silver-Gold" Question; **War
Source: Text and Table 7.

Financial crises are troubling phenomena because of the economic damage they do. Crises were and are not simply downward deviations from a long-term growth trend; they apparently have affected that trend.[36] In the nineteenth-century U.S. moreover, cyclical downturns which followed severe financial crises were deeper and longer than other cyclical downturns, as Grossman has shown.[37] This was also likely the case in the other two countries, though a study is missing. It may be the case that such crises have eliminated inefficient firms; but it is also the case that "innocent bystanders", i. e. economic actors in most branches of the economy, suffered (and suffer) from the macro-economic consequences of financial crises. Sources of credit dried up and investment atrophied. Economic growth foregone as a result of financial crises represents their "social costs". Crises are also the times when asymmetric information has had its most pernicious effects on the economy, as Mishkin[38] and others have shown. Such economic effects could have serious social and political consequences, as the German crises of 1847-48 and 1873 ("discrediting of liberalism") or the U.S. crises of 1907 and 1929-33 suggest. That may well still prove to be true; and it supplies one good reason for paying more attention to the history of such crises. Another one has to do with government regulation. New regulatory rules are needed, but if American financial history is any guide, they must be constructive ones; for extensive regulation of the kind currently contemplated in many quarters can have – via the induced response by financial firms seeking to evade regulation – dangerous effects.

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36 See on this Rainer Metz, Trend, lange Wellen, Strukturbrüche oder nur Zufall. Was bestimmt die langfristige Entwicklung des Bruttoinlandsprodukts?, in: Eckart Schremmer (Ed.), Wirtschafts- und Sozialgeschichte. Gegenstand und Methode. 17. Arbeitstagung der Gesellschaft für Sozial- und Wirtschaftsgeschichte in Jena 1997 (Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte, Beiheft 144). Stuttgart 1998, pp. 117-164; Solomos Solomou, Economic Fluctuations, 1870-1913, in: Floud/ McCloskey, Economic History (cf. note 24), pp. 247-264; Reinhard Spree, Wachstumstrends und Konjunkturzyklen in der deutschen Wirtschaft von 1820 bis 1913. Quantitativer Rahmen für eine Konjunkturgeschichte des 19. Jahrhunderts. Wolfram Fischer zum 50. Geburtstag. Göttingen 1978.

37 Richard S. Grossman, The Macroeconomic Consequences of Bank Failures under the National Banking System, in: Explorations in Economic History 30 (1993), pp. 294-320. As many economists have recently noted, the current (Fall, 2008) financial crisis will probably have a similar result. See e. g. The Economist, 11. October 2008, various articles.

38 Mishkin, Information (cf. note 3).