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The secondary market for bank shares in nineteenth-century Britain

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Stock transferability is regarded as a basic characteristic of the corporation, enabling businesses to continue even though their ownership is in constant flux.[2] Indeed, some scholars attribute the emergence of the corporation to the advantages which transferable shares provide investors.[3] In modern capital markets, easily transferable and liquid company shares are regarded as vital characteristics because they permit investors to encash and diversify their assets at low cost.[4] Ultimately, tradability and liquidity create incentives for economic agents to invest in long-run projects, which results in productivity growth and, eventually, economic growth.[5]

Although a market for company shares had existed for just over two centuries in Britain, there was a dramatic increase in the breadth and depth of this market in the nineteenth century. Previous studies of the nineteenth-century capital market have focused on the promotion of companies, sources of capital and the characteristics

[1] Turner acknowledges financial support provided by the trustees of the Houblon-Norman Fund and a British Academy grant (SG-36598). We are indebted to Edwin Green for his advice and encouragement at the beginning of this project. The access to archive material at Barclays, Lloyds-TSB, HBOS, Royal Bank of Scotland Group and HSBC was very much appreciated. Thanks to all the archivists who have looked after us: Jessie Campbell, Edwin Green, Seonaid McDonald, Rosemary Moore, Helen Redmond, Ruth Reed, Karen Sampson, Reto Tschan, Philip Winterbottom, Lucy Wright and Sian Yates.

[2] R. R. Kraakman, P. Davies, H. Hansmann et al., *The Anatomy of Corporate Law: a Comparative and Functional Approach* (Oxford, 2004), pp. 10–11.

[3] R. B. Ekelund and R. D. Tollison, 'Mercantilist origins of the corporation', *The Bell Journal of Economics*, 11 (1980); R. B. Ekelund and R. D. Tollison, 'Tradeable shares and the supply-side of corporate development: reply', *The Bell Journal of Economics*, 14 (1983).

[4] A. Bhide, 'The hidden costs of stock market liquidity', *Journal of Financial Economics*, 34 (1993), p. 43; T. Chordia, R. Roll and A. Subrahmanyam, 'Market liquidity and trading activity', *Journal of Finance*, 56 (2001), p. 501; S. Woodward, 'Limited liability in the theory of the firm', *Journal of Institutional and Theoretical Economics*, 141 (1985), p. 602.

[5] R. Levine and S. Zervos, 'Stock markets, banks, and economic growth', *American Economic Review*, 88 (1998).

of investors in railway and banking companies.[6] However, apart from the organisation of stock exchanges,[7] the secondary market for company shares in the nineteenth century has been relatively neglected by scholars.[8] In particular, we know very little about the level and determinants of trading activity and liquidity on nineteenth-century equity markets.

Using all the available data garnered from an extensive trawl of bank archives, this article analyses the tradability and liquidity of the secondary market for bank shares in the nineteenth century. Joint-stock banks were a major contributor to the growth of the nineteenth-century capital market: in the two decades following the liberalisation of banking incorporation law in the mid 1820s, *circa* 151 English and 19 Scottish joint-stock banks were established.[9] By 1870, the banking sector was the largest in the British equity market, constituting just over 20 per cent of total issues.[10]

Our dataset not only enables us to analyse how tradability and liquidity changed over the century but, importantly, it enables us to ascertain the determinants of liquidity in the nineteenth-century capital market. First, it is believed that ownership concentration has a detrimental impact upon liquidity.[11] As diffusion of ownership and geographical diffusion of owners varies greatly across nineteenth-century British banks, we can assess the impact of ownership structure on liquidity. A major

[6] B. L. Anderson and P. L. Cottrell, 'Another Victorian capital market: a study of banking and bank investors on Merseyside', *Economic History Review*, 28 (1975); S. A. Broadbridge, 'The sources of railway share capital', in M. C. Reed (ed.), *Railways in the Victorian Economy: Studies in Finance and Economic Growth* (New York, 1968); L. Newton, 'Towards financial integration: the development of English joint banks in London and the provinces', in U. Olsson (ed.), *Business and European Integration Since 1800: Regional, National and International Perspectives* (Göteborg, 1997); M. C. Reed, 'Railways and the growth of the capital market', in M. C. Reed (ed.), *Railways in the Victorian Economy: Studies in Finance and Economic Growth* (New York, 1968); M. C. Reed, *Investment in Railways in Britain, 1820–1844* (Oxford, 1975).

[7] R. C. Michie, *Money, Mania and Markets: Investment, Company Formation and the Stock Exchange in Nineteenth-Century Scotland* (Edinburgh, 1981); R. C. Michie, *The London Stock Exchange: a History* (Oxford, 1999); W. A. Thomas, *The Provincial Stock Exchanges* (London, 1973).

[8] A notable exception is the recent work of Hickson and Turner. See C. R. Hickson and J. D. Turner, 'Shareholder liability regimes in English banking: the impact upon the market for shares', *European Review of Economic History*, 63 (2003); C. R. Hickson and J. D. Turner, 'Trading in the shares of unlimited liability banks in nineteenth century Ireland: the Bagehot hypothesis', *Journal of Economic History*, 63 (2003); C. R. Hickson, J. D. Turner and C. McCann, 'Much ado about nothing: the introduction of limited liability and the market for nineteenth-century Irish bank stock', *Explorations in Economic History*, 42 (2005).

[9] S. G. Checkland, *Scottish Banking A History, 1695–1973* (Glasgow, 1975), pp. 372–3; R. Harris, *Industrializing English Law: Entrepreneurship and Business Organization* (Cambridge, 2000), p. 221.

[10] R. S. Grossman, 'New indices of British equity prices, 1870–1913', *Journal of Economic History*, 62 (2002), pp. 129–31. In terms of market capitalisation, banking was the second largest sector after the railways. In 1870 bank equity constituted 10.91 per cent of overall market capitalisation. By 1899, this figure was 16.36 per cent.

[11] Bhide, 'Stock market liquidity'; B. Holmstrom and J. Tirole, 'Market liquidity and performance monitoring', *Journal of Political Economy*, 101 (1993).

contribution of this article is our finding that diffuse ownership is closely associated with liquid stock.

Second, it is widely believed that extended shareholder liability, which was a common feature in the nineteenth-century capital market, hindered the liquidity of the market.[12] As all the banks in our study had unlimited shareholder liability and subsequently limited their liability, we are able to analyse the impact of shareholder liability extensions on liquidity. Surprisingly, we find that liability doesn't appear to affect liquidity.

Third, changes in share denomination are typically believed to affect liquidity.[13] Indeed, Jeffreys claims that the fall in share denomination in the nineteenth century had a liquidity-enhancing rationale.[14] As several of the banks in our study had stock splits, we examine their effect on liquidity: we find that they had an imperceptible impact.

Fourth, we examine the impact on liquidity of having a market listing. Modern corporations value a listing on a stock exchange partially because it is liquidity-enhancing. Although several of the banks in our study did not have their shares quoted/traded on a stock exchange, it appears not to have had a deleterious impact on their liquidity. Finally, we analyse the impact of directorial self-dealing on liquidity. Although the directors of modern corporations are typically reluctant to trade in the shares of their company, in contrast, many of the banks in our study permitted directors to buy and sell the bank's shares on behalf of the company. Based on our evidence, we suggest that this may have enhanced the liquidity of shares.

The article proceeds as follows. Section I provides some background on the evolution of English and Scottish joint-stock banks with transferable shares. Section II describes the trading of bank stock. Section III describes our data and methodology. Section IV examines the long-term trends in the tradability and liquidity of bank stock. Section V analyses the determinants of liquidity. The final section is a brief conclusion.

I

Following the financial crisis of 1825, which was attributed to the Bank of England's monopolistic position and the concomitant weak state of the partnership banks,[15] Parliament introduced joint-stock principles into English banking by enacting the

[12] J. B. Jeffreys, 'The denomination and character of shares, 1855–1885', *Economic History Review*, 16 (1946), p. 384; A. Winton, 'Limitation of liability and the ownership structure of the firm', *Journal of Finance*, 48 (1993), p. 505.

[13] T. E. Copeland, 'Liquidity changes following stock splits', *Journal of Finance* 34 (1979); K. C. Han, 'The effects of reverse stock splits on the liquidity of the stock', *Journal of Financial and Quantitative Analysis*, 30 (1995).

[14] Jeffreys, 'Character of shares'.

[15] S. E. Thomas, *The Rise and Growth of Joint Stock Banking* (London, 1934), p. 58.

Banking Copartnerships Act (1826).[16] Unlike the partnership banks which preceded them, these joint-stock banks had transferable ownership shares. However, despite a suggestion to introduce limited liability, bank owners were still subject to joint and several unlimited liability.[17]

By the mid eighteenth century, Scotland had three state-chartered banks (Bank of Scotland, Royal Bank of Scotland, British Linen Company), which enjoyed the privileges of incorporation, limited liability and transferable shares. As these banks confined their business to Edinburgh, merchants in the Scottish provinces began to establish banks so as to provide a reliable means of payment and increase the availability of credit.[18] These banks, similar to their English counterparts, were restricted to the partnership form of organisation. However, unlike their English counterparts, these banks were able to take advantage of Scotland's flexible partnership law, which granted partnerships the privilege of having a separate legal personality, and as a consequence they had transferable shares.[19] In 1810 the era of joint-stock banking in Scotland commenced with the establishment of the Commercial Bank of Scotland. It was followed by the National Bank and Aberdeen Town and Country Bank, which both commenced in 1825. Although these banks had unlimited liability, they were significantly larger than the provincial banks in terms of owners and number of branches. As there was some legal uncertainty regarding these concerns, legislation was passed for Scotland in 1826 (7 Geo. IV, c. 67), which confirmed their legal status as joint-stock companies with unlimited shareholder liability and transferable shares.[20]

[16] 7 Geo. IV, c. 46. See P. L. Cottrell and L. Newton, 'Banking liberalisation in England and Wales, 1826–1844', in R. Sylla, R. Tilly and G. Tortella (eds.), *The State, the Financial System, and Economic Modernization* (Cambridge, 1999), pp. 77–83. A provision within this Act restricted note-issuing banks from establishing inside a 65-mile radius around London. Remaining legal doubts with regard to the establishment of non-issuing joint-stock banks within this radius were eliminated by the Bank of England Privileges Act (1833) – 3 & 4 Will. 4, c. 98. For further discussion on the background to this Act see T. E. Gregory, *The Westminster Bank Through a Century* (London, 1936), pp. 32–49.

[17] B. C. Hunt, *The Development of the Business Corporation in England, 1800–1867* (Cambridge, MA, 1936), p. 50. According to William Clay, the Bank of England objected strongly to joint-stock banks having limited liability. See W. Clay, *Speech of William Clay, Esq., M.P. on Moving for the Appointment of a Committee to Inquire into the Operation of the Act Permitting the Establishment of Joint-stock Banks. To Which are Added, Reflections on Limited Liability, Paid-up Capital, and Publicity of Accounts, as Applied to Such Institutions; With Some Remarks on an Article on Joint-stock Companies in the Last Number of the Edinburgh Review* (London, 1837).

[18] Checkland, *Scottish Banking*, p. 111; C. W. Munn, *The Scottish Provincial Banking Companies 1747–1864* (Edinburgh, 1981), p. 4; R. S. Rait, *The History of the Union Bank of Scotland* (Glasgow, 1930), p. 14.

[19] R. H. Campbell, 'The law and the joint-stock company in Scotland', in P. L. Payne (ed.), *Studies in Scottish Business History* (London, 1967), p. 143; F. W. Clark, *A Treatise on the Law of Partnership and Joint-Stock Companies According to the Law of Scotland* (Edinburgh, 1864), p. 2.

[20] J. S. Fleming, 'On the theory and practice of banking in Scotland', *Journal of the Institute of Bankers*, 4 (1883), p. 133; Munn, *Scottish Provincial Banking*, p. 85.

The establishment of unlimited liability joint-stock banks with transferable shares progressed slowly at first, with 28 English banks and 5 Scottish banks having formed by 1833. Subsequently, there was a rapid expansion of the system, with a further 115 English banks and 13 Scottish banks establishing in the period up to and including 1844.[21]

Several pieces of legislation enacted in the late 1850s permitted banks to adopt limited shareholder liability.[22] By 1875 there were no new limited liability banks in Scotland, but there were 47 limited liability banks in England.[23] Significantly, the majority of the established English joint-stock banks did not convert to limited liability.[24] The en masse conversion of the established banks to limited liability had to wait until the confidence in unlimited liability was undermined by the failure of the City of Glasgow Bank in October 1878.[25] This infamous failure appears to have changed shareholders' perception of the risks involved in holding unlimited bank shares,[26] and there was also a concern that shares in unlimited banks would be sold to low-wealth individuals.[27] Consequently, great pressure came from shareholders for a move to limited liability,[28] and as a result of this general concern, the Companies Act[29] was enacted in 1879 to aid the conversion of the old-established joint-stock banks to limited liability.[30] The Companies Act partially achieved this by creating 'reserve liability', which, if adopted, made shareholders liable for a predetermined multiple of paid-up capital in the event of bankruptcy. At the end of 1884,

[21] Checkland, *Scottish Banking*, pp. 372–3; Thomas, *Joint Stock Banking*, pp. 656–62.

[22] 20 & 21 Vict. c. 49; 21 & 22 Vict. c. 91.

[23] J. Dun, 'The banking institutions, bullion reserves, and non-legal-tender note circulation of the United Kingdom statistically investigated', *Journal of the Statistical Society*, 39 (1876), p. 26. This figure excludes the Bank of England.

[24] R. S. Sayers, *Lloyds Bank in the History of English Banking*. (Oxford, 1957), p. 222. According to the *Banking Almanac*, by 1879, only eight of the established English joint-stock banks had converted to limited liability, with all but one of the conversions occurring prior to 1866. The banks and the year of their conversion are as follows: Bank of Whitehaven (1866), County of Stafford (1873), Cumberland Union (1865), Halifax Commercial (1864), Liverpool Commercial (1860), Moore and Robinson's Nottinghamshire Bank (1866), Union Bank of Manchester (1862), Worcester City and County (1865).

[25] The City of Glasgow failure has been described as 'the last serious deposit bank failure in the UK', M. Collins, *Banks and Industrial Finance in Britain, 1800–1939* (Cambridge, 1991), p. 30. Although the failure of this bank did not result in any losses for depositors or note-holders, only 254 of the bank's 1,819 shareholders were solvent after the bank's liquidation, Checkland, *Scottish Banking*, p. 471.

[26] L. H. White, *Free Banking in Britain: Theory, Experience and Debate 1800–1845* (London, 1995), p. 50.

[27] L. Levi, 'The reconstruction of joint stock banks on the principle of limited liability', *The Bankers' Magazine*, 40 (1880), p. 474; Hickson and Turner, 'Shareholder liability regimes', p. 104.

[28] Anon, 'Banking capital and limited liability', *The Bankers' Magazine*, 42 (1882), p. 717; Sayers, *Lloyds Bank*, p. 222.

[29] 42 & 43 Vict., c.76.

[30] W. F. Crick and J. E. Wadsworth, *A Hundred Years of Joint Stock Banking* (London, 1936), p. 33; Gregory, *Westminster Bank*, vol. 1, p. 206.

no Scottish banks had unlimited liability, and only 7 out of 115 English joint-stock banks had unlimited liability.[31]

Although most banks only adopted limited liability in the early 1880s, from the mid 1820s, and earlier in the case of Scotland, banks had shares which were personal estate and transferable, subject to the bank's own regulations.[32] The importance of this transferability was recognised by a contemporary legal commentator who stated that:

> The distinction between a banking copartnership and an ordinary trading partnership consists in the power and privilege which, by the provisions of the deed of settlement of the former, are given to a proprietor to retire and withdraw his capital from the concern, without a dissolution of the partnership, by transferring his shares. This power and privilege constitute very many inducements to the investment of capital in such concerns…[33]

Given the importance of stock transferability to contemporaries, the focus of this article is on the determinants of the tradability and liquidity of joint-stock bank shares in the nineteenth century. The next section goes on to examine the trading of joint-stock bank shares.

II

From the 1830s, stock exchanges increasingly acted as intermediaries for traders in bank stock.[34] However, some small banks and banks located in regions which did not have a stock exchange were usually traded on informal markets, organised by stockbrokers operating in these localities.[35]

The only provision in the English Banking Copartnership Act (1826) which may have directly affected the transferability of bank shares was section 13, which required banks to have joint and several unlimited shareholder liability and imposed a post-sale-extended liability on shareholders. This post-sale-extended liability provision made shareholders liable for the bank's debts for three years after they had sold their shares, and simply prevented opportunistic dumping of shares.[36] Although similar legislation didn't exist in Scotland, Scottish law held shareholders who sold their shares liable for debts incurred during their tenure if existing owners were unable to cover these losses from their own personal assets.[37] After the 1862

[31] The banks and the dates of their conversion to limited liability are: Bank of Westmorland (1888), Coventry Union Banking Company (merged with rival in 1889), Lancaster Banking Company (1896), Sheffield and Hallamshire Bank (1889), Stuckey's Banking Company (1892), Whitehaven Joint-stock Bank (1888), Wolverhampton and Staffordshire Banking Company (merged with rival in 1888).

[32] C. C. M. Plumptre, *Grant's Treatise on the Law Relating to Bankers and Banking Companies* (London, 1882), p. 431.

[33] Ibid., p. 456.

[34] J. R. Killick and W. A. Thomas, 'The provincial stock exchanges, 1830–1870', *Economic History Review*, 23 (1970).

[35] Ibid., p. 102.

[36] Hickson and Turner, 'Bagehot hypothesis'.

[37] G. J. Bell, *Commentaries on the Laws of Scotland* (Edinburgh, 1858), p. 224.

Companies Act, English and Scottish banks could register as unlimited liability companies, and as a result reduce their post-sale-extended liability to one year.

Notably, most economists and legal scholars believe that joint and several unlimited liability greatly diminishes the transferability and liquidity of shares.[38] The main explanation for this view is that there is no anonymity in the market for shares as each shareholder has to collect information on each candidate owner as well as co-owners due to the joint and several nature of the unlimited liability requirement. As all the banks included in our study were established in the early period of joint-stock banking, they all at one time had unlimited shareholder liability, allowing us to analyse the effect of unlimited shareholder liability upon transferability. Furthermore, the conversion of the unlimited liability banks to limited liability will enable us to examine the extent to which joint and several unlimited liability hindered the transferability and liquidity of bank shares. Although bank shareholders still had extended liability after the conversion to limited liability, it was *pro rata*, implying that shareholders faced dramatically reduced information costs as the wealth of co-owners had little bearing on their potential downside risk. Consequently, one should observe dramatically increased stock trading.[39]

The only other legislation which had a direct bearing on the trading of bank shares was the Sale and Purchase of Shares in Joint Stock Banking Companies Act (1867), which was enacted 'for the prevention of contracts for the sale and purchase of shares and stock in joint stock banking companies of which the sellers are not possessed or over which they have no control'.[40] Although the stated aim of this legislation was to prevent short selling and speculation in bank shares, it has been suggested that the real aim was to enable customers to determine exactly who a bank's shareholders were.[41]

As well as legal constraints on the trading of bank shares, there was internal governance of trading. For example, the deeds or contracts of copartnership of English and Scottish joint-stock banks permitted shareholders to transfer or trade their shares provided that the prior approbation of the board of directors had been received. The main rationale for this process was that the existence of joint and several unlimited liability required a vetting mechanism to prevent low-wealth individuals from becoming owners.[42]

[38] F. Easterbrook and D. Fischel, 'Limited liability and the corporation', *The University of Chicago Law Review*, 52 (1985); K. F. Forbes, 'Limited liability and the development of the business corporation', *Journal of Law, Economics, and Organisation*, 2 (1986); P. Halpern, M. Trebilcock and S. Turnbull, 'An economic analysis of limited liability in corporation law', *University of Toronto Law Journal*, 30 (1980); H. Hansmann and R. Kraakman, 'Toward unlimited liability for corporate torts', *Yale Law Journal*, 100 (1991); H. Hansmann and R. Kraakman, 'The essential role of organizational law', *Yale Law Journal*, 110 (2000); Winton, 'Limitation of liability'; Woodward, 'Limited liability'.

[39] P. Halpern, 'Limited and extended liability regimes', in P. Newman (ed.), *The New Palgrave Dictionary of Law and Economics* (London, 1998), p. 586.

[40] 30 Vict., c. 29.

[41] F. G. Hall, *The Bank of Ireland 1783–1946* (Dublin, 1949), pp. 251–2.

[42] Hickson and Turner, 'Bagehot hypothesis'.

In our data sample (see next section), apart from the Sheffield and Rotherham Bank, banks don't appear to record instances whenever directors' approbation of a transfer was refused. The directors' minutes and transfer journals of the Sheffield and Rotherham Bank report ten refusals of transfer in the period 1848–77.[43] A note beside one of these refusals indicates that the transfer was refused due to 'the purchaser's circumstances not being satisfactory'.[44] On another occasion, approbation was given 'if the enquiries be satisfactory as to his respectability'.[45] One possibility as to why no other banks reported transfer refusals is that there were none due to self-selection; no unsuitable person would incur the cost of agreeing to buy shares knowing that the bank directors would refuse them.

According to Withers and Palgrave, the limitation of liability did not result in changes to bank deeds with respect to the vetting of share transfers by directors.[46] Such vetting was still required because banks either had uncalled capital or reserve liability. George Rae, the banking expert, noted that:

> Directors have the power to make this [shareholders that have adequate wealth to meet all calls] an indispensable condition of proprietorship: they are empowered by your Deed of Settlement to reject, as a shareholder, anyone of whom they do not approve…if it is not exercised, portions of the stock may gradually drift into the hands of persons of insufficient substance.[47]

Nevertheless, given that reserve liability was a *pro rata* extended liability regime, there may have been less of an incentive for bank directors to vet share transfers than there had been under unlimited liability as the admission of low-wealth shareholders into the bank didn't impose the same externalities on other owners.

III

A comprehensive search of British banking archives was undertaken in order to locate trading data for bank shares. Our sample includes all of the banks for which we were able to locate share trading data. One important source of such data is share transfer journals, which provide details of every share transfer. Unfortunately, only the transfer books of Sheffield and Rotherham Bank (1861–1900) and Bank of Whitehaven (1866–1900) have survived.[48] These transfer books, as well as giving the biographical details of buyers and sellers, state the number of shares transferred.

[43] RBS Archives: Sheffield and Rotherham Directors' Minute Books (SR/1/1, SR/1/2, SR/1/4), May 1848, Feb. 1851, Mar. 1859, June 1859. Sheffield and Rotherham Bank, Bank Shares Transfer Book, 1861–May 1885 (SR28/1), Dec. 1867 (2), July 1867 (1), Aug. 1873 (3), July 1877 (1).

[44] RBS Archives: Sheffield and Rotherham Directors' Minute Book (SR/1/2), Feb. 1851.

[45] RBS Archives: Sheffield and Rotherham Directors' Minute Book (SR/1/4), June 1859.

[46] H. Withers, and R. H. I. Palgrave, *National Monetary Commission: the English Banking System* (Washington, 1910), p. 93.

[47] G. Rae, *The Country Banker: His Clients, Cares, and Work from an Experience of Forty Years* (London, 1885), p. 233.

[48] RBS Archives: Sheffield and Rotherham Bank, Bank Shares Transfer Book, 1861 – May 1885 (SR28/1-2); Bank of Whitehaven, Register of Transfers (BWH/7/1).

Additional sources of trading data include stock journals and share registers. However, very few of these journals and registers have been preserved due to their size and minimal archival value. The stock registers and journals of the Ashton, Stalybridge, Hyde & Glossop (1837–99), Bank of Liverpool (1852–82), Caledonian Banking Company (1846–92), Central Bank of Scotland (1835–68), Huddersfield Banking Company (1836–97), Union Bank of Scotland (1862–81), and Wilts and Dorset Banking Company (1835–53) contain a chronological record of each share transfer.[49]

Shareholders' registers also contain data on share transfers, but such data are not arranged chronologically; rather they are organised on an individual shareholder basis. For example, the shareholders' register of the Hampshire Banking Company (1836–77) contains 717 pages with one or two entries per page, and each entry includes shareholder biographical information as well as the dates of each of their purchases, sales and transfers of the bank's stock.[50] From these entries the trading activity of this bank's stock was pieced together. In a similar way, the trading activity of the Sheffield and Hallamshire Bank was constructed from its share registers (1836–99).[51]

As directors vetted share transfers, the minutes of the boards of directors were also consulted. However, the majority of minute books examined either mention nothing about transfers or contain a general statement to the effect that the board took cognisance of transfers received. Unfortunately, this was the case for several of the larger banks, e.g. City Bank, London and Westminster, London and County Bank, London Joint Stock Bank, Manchester and Liverpool District Banking Company, North and South Wales Bank. Nevertheless, the minutes of six banks contain details of share transfers; three of these banks ceased recording transfers in their minute books in the late 1870s, possibly because liability was no longer unlimited and directors were a lot less circumspect in their vetting, if they even vetted at all. Using these minute books, data were collected on the share trading of Commercial Bank of Scotland (1815–81), County of Stafford Bank (1836–98), Leicestershire Banking Company (1836–99), Liverpool Union Bank (1835–79), Sheffield and Rotherham Bank[52] (1851–60), and Union Bank of London[53] (1840–99).[54]

[49] HSBC Archives: Huddersfield Banking Company, Stock Journal (H23). Barclays Archives: Bank of Liverpool, Register of Shareholders (ACC310-85). Lloyds-TSB Archives: Wilts and Dorset Banking Company, Shareholders' Register (3177). RBS Archives: Ashton, Stalybridge, Hyde & Glossop Bank, Stock Register (ASH/1). HBOS Archives: Caledonian Banking Company, Transfer Books (945/1/429/79-84); Central Bank of Scotland, Stock Journal (945/8/4/1); Union Bank of Scotland, Register of Transfers (2003/040/17 & 25).

[50] Lloyds-TSB Archives: Hampshire Banking Company Shareholders' Register (1085).

[51] HSBC Archives: Sheffield and Hallamshire Share Registers (598/1, 598/2).

[52] Details of share transfers in this bank were not recorded in the minute books prior to 1851.

[53] The minutes for 1863 and 1864 are missing.

[54] HSBC Archives: Leicestershire Banking Company, Minutes of Directors (K15 to K23). Lloyds-TSB Archives: Liverpool Union Bank, Directors' Meeting Books (093 & 094). RBS Archives: Commercial Bank of Scotland, Board Minute Books (CS/13/1 to CA/13/10); Union Bank of London, Directors' Minute Books (UNI/1/1 to UNI/1/49); Sheffield and Rotherham Bank, Directors' Minute Books

All these minute books record the names of transferors, transferees and the number of shares transferred.

The minute books of the National Provincial Bank of England report details of transfers from 1842 until 1878.[55] Unfortunately, it appears that not all transfers were recorded in these minutes. Furthermore, it is sometimes difficult to distinguish between trades in the different types of shares which this bank issued.

As we have no trading data for the vast majority of our banks prior to 1836 (see second column of Table 1), our analysis starts in that year. From Table 1, we see that our sample includes the Union Bank of London, which, similar to many London banks, had few branches, acted as agents for provincial banks and was extensively involved in international finance. In 1859 this was the third largest English bank in terms of paid-up capital and number of owners. Our sample also includes two of the larger Scottish joint-stock banks, and two of the smaller joint-stock banks in Scotland. Finally, we have trading data for eleven provincial banks from a variety of English regions. As can be observed from Table 1, these banks range from some of the smallest provincial banks (e.g. Ashton, Stalybridge, Hyde & Glossop Bank and County of Stafford) to some of the larger provincial banks (e.g. Bank of Liverpool).

As can be seen from Table 1, the banks in this study include two out of the seven English joint-stock banks which converted to limited liability prior to 1879. Twelve other banks in Table 1 converted after 1879, with one not adopting limited liability until 1889. With respect to the reserve liability levels of these banks, there are wide-ranging liability extensions, ranging from zero to 8.96 times paid-up capital. The changes in liability regimes and the variation of reserve liability across banks will permit us to analyse the impact of liability extensions upon the tradability and liquidity of bank shares.

Following the usual convention, trading activity is measured by calculating the number of trades and volume of trade.[56] Although the usual method of measuring market liquidity in the empirical finance literature is to use the bid–ask spread quoted by market makers,[57] no such data exist for nineteenth-century bank stocks.[58] Consequently, in this study, several alternative metrics are used to measure liquidity. First, the average absolute price change between trades is used because an

(SR/1/1 to SR/1/4); County of Stafford Bank, Minutes of the Directors (CST/4/1, CST/4/2, CST/25/1, CST/25/2).

[55] RBS Archives: National Provincial Bank of England, Minute Book of Court of Directors (NAT/1/4 to NAT/1/19). The minutes up until 1842 did not give details of individual transfers. Prior to this, the minutes only stated 'that share transfers were brought before the Court'.

[56] Chordia, Roll and Subrahmanyam, 'Market liquidity'.

[57] Ibid., 'Market liquidity'; H. Demsetz, 'The cost of transacting', *Quarterly Journal of Economics*, 82 (1968); D. Easley, N. M. Kiefer, M. O'Hara and J. B. Paperman, 'Liquidity, information, and infrequently traded stocks', *Journal of Finance*, 51 (1996).

[58] Furthermore, the bid–ask spread has several limitations as a measure of liquidity, especially for infrequently traded stocks; see S. J. Grossman and M. H. Miller, 'Liquidity and market structure', *Journal of Finance*, 43 (1988), pp. 628–30.

Table 1. *Some characteristics of banks included in study*

Bank (est.)	Trading data available	Liability limited	Reserve liability multiple[e]	Paid-up capital (£'000s)			Number of branches[f]			Share price (£)[g]		
				1849	*1879*	*1894*	*1849*	*1879*	*1894*	*1844*	*1879*	*1894*
English banks												
Ashton, Stalybridge, Hyde & Glossop (1836)	1837–99	1884	2.50	37	50	50	0	0	0	2.00	8.00	7.75
Bank of Liverpool (1831)	1853–82	1882	5.45	625	625	1,000	0	0	32	23.75	23.88	38.25
Bank of Whitehaven (1837)	1867–99	1866	0.00	50	99	99	1	5	7	n/a	21.00	24.17
County of Stafford Bank[a] (1836)	1836–98	1873	8.96	30	60	74	0	0	0	6.88	15.00	12.75
Hampshire Banking Co.[b] (1834)	1836–76	–	–	80	150[c]	–	4	29[d]	–	n/a	n/a	n/a
Huddersfield Banking Co. (1827)	1840–96	1882	2.04	140	415	411	2	4	12	24.00	49.50	60.50
Leicestershire Banking Co. (1829)	1836–99	1880	1.00	100	300	400	6	13	23	35.00	85.00	23.00
Liverpool Union Bank (1835)	1844–79	1882	4.00	300	600	600	0	1	8	11.75	34.50	55.00
Sheffield and Hallamshire Bank (1836)	1836–99	1889	0.00	125	210	250	0	0	5	3.50	53.75	60.00
Sheffield and Rotherham Banking Co. (1836)	1851–99	1880	3.13	121	161	192	2	5	7	n/a	84.00	24.50
Union Bank of London (1839)	1840–99	1882	2.85	423	1,395	1,705	2	4	10	12.50	38.00	32.00
Wilts and Dorset Banking Co. (1835)	1837–52	1883	3.50	100	300	500	18	53	64	7.75	35.50	43.25

Continued

Table 1. *Continued*

Bank (est.)	Trading data available	Liability limited	Reserve liability multiple[e]	Paid-up capital (£'000s)			Number of branches[f]			Share price (£)[g]		
				1849	*1879*	*1894*	*1849*	*1879*	*1894*	*1844*	*1879*	*1894*
Scottish banks												
Caledonian Bank of Scotland (1838)	1846–92	1882	3.00	125	150	150	8	19	26	n/a	4.50	4.38
Central Bank of Scotland (1834)	1835–68	–	–	57	–	–	6	–	–	n/a	–	–
Commercial Bank of Scotland (1810)	1815–81	1882	2.00	600	432	1,000	47	105	141	169.00	238.00	69.00
Union Bank of Scotland (1830)	1862–81	1882	4.00	1,000	1,000	1,000	48	129	131	95.00	202.50	21.81

Notes: [a]This bank was known as Bilston District Banking Co. until 1873.
[b]Became Capital and Counties Bank in 1878 after merging with the North Wilts Banking Co. in 1877.
[c,d]These are the 1874 figures. [e]These are the 1884 figures. [f]These figures include sub-branches. [g]This is the last reported price of the year.
Sources: *Banking Almanac and Yearbook*, 1845, 1850, 1875, 1880, 1885, 1895; J. Orbell and A. Turton, *British Banking: a Guide to Historical Records* (Aldershot, 2001); *The Course of the Exchange*, 1844; *Investors' Monthly Manual*, 1879, 1894.

important aspect of liquidity is the extent to which large price changes between trades is absent.[59] Unfortunately, there only exists a complete set of price data for four banks. Second, the number of trades divided by the number of issued shares and volume of trade divided by the number of issued shares are used as proxy measures of liquidity. These metrics measure the turnover of issued shares, and are frequently used as measures of liquidity in inter-market comparisons.[60]

The archive records of Bank of Liverpool, County of Stafford Bank, Hampshire Banking Company, Union Bank of London and Wilts and Dorset Bank do not enable us to distinguish between share sales and gratuitous assignments of shares. Gratuitous assignments were usually bequests from a deceased shareholder to their beneficiaries or *inter vivos* gifts between family members. An inability to distinguish between share sales and gratuitous assignments may result in an overestimation of the trading activity (and liquidity) of shares in these five banks. Using data on gratuitous transfers for three English banks on which data exist for all gratuitous transfers, one can assess the dimensions of this potential overestimation. Gratuitous trades as a percentage of total trades are 16.0, 8.5 and 4.1 per cent for the Leicestershire Banking Company, the Sheffield and Rotherham Bank, and the Sheffield and Hallamshire Bank respectively. The volume of shares transferred gratuitously as a percentage of total volume of transfers are as follows: Leicestershire Banking Company (16.0), Sheffield and Rotherham (11.9), and Sheffield and Hallamshire (4.8).

IV

This section examines the long-term trends in share tradability and liquidity. From Tables 2, 3 and 4 several broad trends in trading activity and liquidity emerge. After the initial flurry and active trading of bank stock in the 1830s, the 1840s and 1850s are characterised by little activity and relative illiquidity. Overall, trading activity and liquidity increased somewhat in the 1860s, with trading activity reaching a zenith in the 1870s and early-to-mid 1880s. Trading, however, was less active and shares less liquid in the late 1880s and 1890s. Notably, as we can see from Table 3, from the mid 1830s until the end of the century, there appears to be little improvement in the liquidity of bank shares despite major progress in the development of organised exchanges.

The question arises as to the relationship between the activity in the market for bank stock and the performance of the overall equity market, as measured by stock market indices.[61] Apart from the 'bubble' years of the mid 1840s, the overall

[59] Bhide, 'Stock market liquidity', p. 33.

[60] K. C. Han, 'The effects of reverse stock splits', p. 164; Levine and Zervos, 'Stock markets', p. 538; J. P. Ogden, F. C. Jen, and P. F. O'Connor, *Advanced Corporate Finance: Policies and Strategies* (New Jersey, 2003), p. 109.

[61] The indices were obtained from A. D. Gayer, A. Jacobson and I. Finkelstein, 'British share prices, 1811–1850', *Review of Economic Statistics*, 22 (1940); A. D. Gayer, W. W. Rostow and A. Jacobson

Table 2. *Mean annual trading activity, 1836–99*

Bank	Number of share trades							Volume of trade						
	1836–9	1840s	1850s	1860s	1870s	1880s	1890s	1836–9	1840s	1850s	1860s	1870s	1880s	1890s
English banks														
Ashton, Stalybridge, Hyde & Glossop	39.3	8.6	11.6	18.8	18.6	23.5	24.1	1,669	435	780	993	1,016	956	1,031
Bank of Liverpool[a]			73.6	120.3	165.3	156.0				4,159	4,458	5,255	4,815	
Bank of Whitehaven[b]				28.7	43.0	27.9	42.5			399	404	253	356	
County of Stafford Bank	0.0	0.0	1.2	1.9	0.0	4.5	12.8	0	0	96	115	0	452	552
Hampshire Banking Co.[c]	13.8	20.5	24.7	46.1	63.4			259	545	545	858	1,278		
Huddersfield Banking Co.[d]		25.3	22.6	33.6	34.4	31.4	34.6		530	488	545	625	516	459
Leicestershire Banking Co.	12.3	19.3	17.5	21.7	52.9	92.8	73.1	176	224	188	187	479	1,525	1,132
Liverpool Union Bank[e]		28.8	17.7	15.9	22.6				1,275	994	969	907		
Sheffield and Hallamshire Bank	112.3	60.5	42.0	45.5	53.6	59.4	70.9	2,971	1,719	332	425	508	582	884
Sheffield and Rotherham Banking Co.			48.6	50.2	40.6	62.9	48.7			1,024	550	249	980	781
Union Bank of London[f]		128.7	338.8	865.6	975.0	1,057.2	887.6		4,283	6,761	9,477	8,348	8,538	8,097
Wilts and Dorset Banking Co.	68.3	42.2	38.7					2,275	2,191	1,611				

Scottish banks														
Caledonian Bank of Scotland[g]		41.0	43.6	47.7	109.2	96.8	95.3		1,268	1,706	1,660	3,254	2,127	2,649
Central Bank of Scotland[h]	17.2	15.5	27.3	28.9				66	49	112	96			
Commercial Bank of Scotland	39.3	48.4	72.7	138.8	154			216	244	271	320	360		
Union Bank of Scotland				205.3	204.8						727	512		

Notes: [a]The figures for the 1850s exclude 1850–2, and the figures for the 1880s only contain 1880–2. [b]The figures for the 1860s only contain 1867–9. [c]Figures for 1870s only cover 1870–6. [d]Figures for 1890s only cover 1890–6. [e]Figures for 1840s only cover 1844–9. [f]Figures for 1840s cover 1842–9, and figures for 1870s cover 1870–8. [g]The figures for the 1840s cover 1846–9, and the figures for the 1890s cover 1890–2. [h]The figures for the 1860s only contain 1860–8.
Source: See text.

Table 3. *Mean annual liquidity, 1836–99*

Bank	Number of share trades/number of shares (%)								Volume of trade/number of shares (%)							
	1836–9	1840s	1850s	1860s	1870s	1880s	1890s	Overall	1836–9	1840s	1850s	1860s	1870s	1880s	1890s	Overall
English banks																
Ashton, Stalybridge, Hyde & Glossop	0.39	0.06	0.09	0.15	0.15	0.19	0.19	*0.15*	16.70	2.73	6.24	7.95	8.13	7.65	8.25	*7.29*
Bank of Liverpool[a]			0.15	0.24	0.33	0.31		*0.26*			8.32	8.92	10.51	9.63		*9.38*
Bank of Whitehaven[b]				0.39	0.48	0.29	0.44	*0.40*				5.42	4.48	2.66	3.72	*3.78*
County of Stafford Bank	0.00	0.00	0.02	0.02	0.00	0.02	0.07	*0.02*	0.00	0.00	1.60	1.56	0.00	2.38	2.91	*1.29*
Hampshire Banking Co.[c]	0.23	0.29	0.27	0.37	0.42			*0.32*	4.32	7.62	5.83	6.93	8.52			*6.84*
Huddersfield Banking Co.[d]		0.18	0.16	0.24	0.22	0.18	0.20	*0.20*		3.78	3.49	3.89	3.93	3.04	2.70	*3.51*
Leicestershire Banking Co.	0.25	0.39	0.35	0.43	0.45	0.23	0.18	*0.33*	3.51	4.47	3.77	3.75	3.98	3.81	2.76	*3.72*
Liverpool Union Bank[e]		0.10	0.06	0.05	0.08			*0.07*		4.25	3.31	3.23	3.02			*3.37*
Sheffield and Hallamshire Bank	0.22	0.29	0.42	0.46	0.54	0.59	0.53	*0.45*	5.94	4.96	3.32	4.25	5.08	5.82	4.91	*4.71*
Sheffield and Rotherham Banking Co.			0.24	0.74	0.81	0.38	0.20	*0.48*			5.12	5.36	4.97	4.89	3.25	*4.71*

Union Bank of London[f]		0.21	0.56	1.19	1.12	1.03	0.81	*0.81*		7.14	11.27	13.23	9.56	8.35	7.36	*9.36*
Wilts and Dorset Banking Co.	0.34	0.21	0.19					*0.23*	11.38	10.96	8.05					*10.49*
Scottish banks																
Caledonian Bank of Scotland[g]		0.08	0.09	0.10	0.22	0.16	0.16	*0.14*		2.54	3.41	3.32	6.51	3.55	4.41	*4.06*
Central Bank of Scotland[h]	0.81	0.62	1.09	1.16				*0.91*	3.18	1.97	4.48	3.86				*3.48*
Commercial Bank of Scotland	0.65	0.81	1.21	2.31	2.57			*1.68*	3.59	4.06	4.52	5.34	6.00			*4.93*
Union Bank of Scotland				2.05	2.05			*2.10*				7.27	5.12			*6.09*
Average	0.36	0.38	0.41	0.67	0.69	0.34	0.31	*0.58*	6.08	5.75	5.74	5.76	5.73	5.18	4.47	*5.80*

Notes: [a]The figures for the 1850s exclude 1850–2, and the figures for the 1880s only contain 1880–2. [b]The figures for the 1860s only contain 1867–69. [c]Figures for 1870s only cover 1870–6. [d]Figures for 1890s only cover 1890–6. [e]Figures for 1840s only cover 1844–9. [f]Figures for 1840s cover 1842–9, and figures for 1870s cover 1870–8. [g]The figures for the 1840s cover 1846–9, and the figures for the 1890s cover 1890–2. [h]The figures for the 1860s only contain 1860–8.
Source: See text.

Table 4. *Annual average absolute change in prices, 1836–99*

	1836–9		1840s		1850s		1860s		1870s		1880s		1890s	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Huddersfield Banking Co.[a]			2.09	2.78	1.60	2.19	1.50	3.15	1.47	2.74	1.06	1.55	0.48	0.66
Leicestershire Banking Co.	3.44	5.58	1.83	2.35	1.20	1.48	1.01	1.59	0.50	0.92	0.68	0.99	0.72	1.52
Liverpool Union Bank[b]			4.00	4.25	1.79	2.55	2.01	2.94	1.14	1.56				
Sheffield and Rotherham Banking Co.					1.94	3.25	0.83	1.29	0.86	1.49	0.80	1.45	0.70	1.03

Notes: [a]Figures for 1890s only cover 1890–6. [b]Figures for 1840s only cover 1844–9.
Source: See text.

market in the 1840s and 1850s was relatively flat. Thereafter, riding on the boom of new securities coming to the market, the market rose from 1860 until the early 1870s, apart from a substantial collapse in 1866. Up until this point, trading activity in bank shares, apart from during the mid 1840s mania, appears to mirror the movements in the overall market.[62] However, while the overall market falls from 1873 until the mid 1880s, trading activity in bank shares continues to increase, possibly because the banking sector performed better than the rest of the market in this period. Subsequently, the rise of the overall market from the late 1880s and during the 1890s coincides with a lacklustre period of trading in the market for bank stock.

An interesting issue is the extent to which nineteenth-century financial crises may have affected the tradability and liquidity of bank stock. The crises of 1837 and 1847 appear to have reduced trading activity in the shares of most banks. Of the eight banks for which we have data for the 1830s, six show a substantial fall in trading activity after the 1837 crisis. Eight out of the eleven banks on which we have data for the 1840s experience a significant fall in trading activity after the 1847 crisis. Only trading in the shares of the Commercial Bank of Scotland, Union Bank of London and Wilts and Dorset appear to be unaffected.

In contrast to the above crises, the 1857 financial crisis appears to have had a negligible impact upon trading activity. This even holds true for the three Scottish banks in Tables 2 and 3, which is remarkable given that the Western Bank of Scotland, Glasgow's premier bank at the time, collapsed in 1857, and its 1,280 shareholders had a call for just over £1 m.[63] The 1866 crisis, precipitated by the failure of Overend and Gurney, only affected the Liverpool banks in our sample.[64] Despite concerns that the City of Glasgow failure in 1878 would result in shares being offloaded, the trading data for the English banks do not demonstrate any change following the City of Glasgow crisis. Unsurprisingly, given the severity of the collapse, trading of shares in three Scottish banks increased substantially following the City of Glasgow collapse. This was particularly the case for the Caledonian Bank, which was the owner of four City of Glasgow shares. This bank was subsequently forced by the liquidators of the City of Glasgow to cease trading on 5 December 1878.[65]

Overall, this evidence is consistent with the view that banks became more robust to crises over the nineteenth century. One possible explanation is that investors and depositors came to recognise that unlimited shareholder liability protected both

Schwartz, *The Growth and Fluctuation of the British Economy* (Oxford, 1953); and K. C. Smith and G. F. Horne, *An Index Number of Securities, 1867–1914* (London, 1934).

[62] Cottrell and Newton, 'Banking liberalisation', p.103, suggest that the mania for railway shares lead to a contraction in demand for bank shares.

[63] Checkland, *Scottish Banking*.

[64] The effects of the 1866 crisis were particularly acute in Liverpool (Crick and Wadsworth, *Joint Stock Banking*, p. 188). P. L. Cottrell, has suggested that the impact of the Overend Gurney crisis on share trading was more severe than our results suggest. See P. L. Cottrell, *Industrial Finance 1830–1914: the Finance and Organisation of English Manufacturing Industry* (London, 1980), p. 58.

[65] As this action was merely temporary, the bank reopened in June 1879.

parties from expropriation by bank directors. Concomitantly, it is generally believed that banks may have introduced more sophisticated risk-management practices over this time period.[66]

V

As the liquidity of stock is an important consideration for the shareholders and managers of companies, in this section we want to ascertain the determinants of (and potential hindrances to) the liquidity of nineteenth-century bank stock. In particular, we examine the impact of the following on stock liquidity: ownership structure, shareholder liability, share denomination, being listed on a market, and directorial share dealing.

One would expect firms with more diffused ownership to have more liquid stocks.[67] Theoretically, the existence of unlimited liability may turn this on its head as the costs of monitoring larger numbers of owners could result in diminished liquidity.[68] Nevertheless, a director-vetting mechanism along the lines proposed by Hickson and Turner would substantially reduce the costs associated with trading unlimited liability stock so that diffuse ownership should result in more liquid stock.[69] We therefore analyse the impact of ownership structure on the liquidity of bank stock.

We were only able to obtain detailed shareholder data, which enabled us to calculate ownership concentration measures, for three of our sample banks. In the late 1870s and early 1880s, the top ten/twenty/thirty shareholders owned the following percentages of stock: Bank of Liverpool (14.1, 22.6, 31.5); Caledonian Banking Company (9.9, 16.8, 22.5); Union Bank of Scotland (19.3, 26.3, 31.2).[70] On this evidence, we can see that the ownership in these banks was relatively diffuse.[71]

[66] F. Capie and M. Collins, 'Industrial lending by English commercial banks, 1860s–1914: why did banks refuse loans?', *Business History*, 38 (1996); F. Capie and T. C. Mills, 'British bank conservatism in the late 19th century', *Explorations in Economic History*, 32 (1995); M. Collins, 'English bank development within a European context, 1870–1939', *Economic History Review*, 51 (1998); M. Collins and M. Baker, 'Sectoral differences in English bank asset structures and the impact of mergers, 1860–1913', *Business History* 43 (2001); M. Collins and M. Baker, *Commercial Banks and Industrial Finance in England and Wales, 1860–1913* (Oxford, 2003).

[67] H. Demsetz and K. Lehn, 'The structure of corporate ownership: causes and consequences', *Journal of Political Economy*, 93 (1985); Bhide, 'Stock market liquidity'.

[68] Woodward, 'Limited liability', p. 606.

[69] Hickson and Turner, 'Bagehot hypothesis'.

[70] Shareholder lists obtained from HBOS Archives: Union Bank of Scotland Shareholder List (1885), UBS 7/20/20; Barclays Archives: Bank of Liverpool, List of Shareholders (1879), ACC25-0204; British Library: Caledonian Banking Company, Official List of Shareholders (1878), 8219, p. 29.

[71] In the modern finance literature a weak definition of concentrated ownership is when one shareholder owns more than 10 per cent of the stock. See R. La Porta, F. Lopez-De-Silanes and A. Shleifer, 'Corporate ownership around the world', *Journal of Finance*, 54 (1999); M. Faccio and

Table 5. *Ownership characteristics of banks*

Bank	Number of shareholders			% of capital stock per owner			Limit on proportion of shares owned by individual (%)	Ownership geographically concentrated?[a]
	1849	1879	1894	1849	1879	1894		
English banks								
Ashton, Stalybridge, Hyde & Glossop	251	154	185	0.40	0.65	0.54	0.00	yes
Bank of Liverpool	438	619	1,559	0.23	0.16	0.06	0.00	no
Bank of Whitehaven	115	377	468	0.87	0.27	0.22	0.00	n/a
County of Stafford Bank	97	111	145	1.03	0.90	0.69	1.00	n/a
Hampshire Banking Co.	160	286[4]	–	0.63	0.35	–	3.33	yes
Huddersfield Banking Co.	293	339	373	0.34	0.29	0.27	4.00	yes
Leicestershire Banking Co.	198	402	768	0.51	0.25	0.13	2.00	n/a
Liverpool Union Bank	265	181	482	0.38	0.55	0.21	n/a	n/a
Sheffield and Hallamshire Bank	355	351	455	0.28	0.28	0.22	1.00	yes
Sheffield and Rotherham Banking Co.	227	299	475	0.44	0.33	0.21	0.00	yes
Union Bank of London	630	3,300	5,000	0.16	0.03	0.02	0.00	no
Wilts and Dorset Banking Co.	400	1,006	2,612	0.25	0.10	0.04	0.00	yes
Scottish banks								
Caledonian Bank of Scotland	920	982	1,000	0.11	0.10	0.10	n/a	yes
Central Bank of Scotland	400	–	–	0.25	–	–	2.00	yes

Continued

Table 5. *Continued*

Bank	Number of shareholders			% of capital stock per owner			Limit on proportion of shares owned by individual (%)	Ownership geographically concentrated?[a]
	1849	1879	1894	1849	1879	1894		
Commercial Bank of Scotland	n/a	1,401	2,447	n/a	0.07	0.04	0.00	no
Union Bank of Scotland	1,830	1,348	2,097	0.05	0.07	0.05	0.00	no

Notes: [a]The answer to this question is yes if a super-majority (66%) of shareholders came from the same county/city/region. Some of the trading data described in the text above provided details on the location of shareholders. 82.7% of share sales in the ASHG Bank between 1837 and 1899 were to individuals living in the ASHG area. Between 1853 and 1882, 47.4% of share transfers of Bank of Liverpool shares were to individuals living outside Liverpool. Only 20.6% of transfers in Hampshire Banking Co. shares between 1836 and 1876 were to individuals living outside Hampshire. Only 11.1% of share transfers in the Huddersfield Banking Co. between 1840 and 1896 were to individuals living outside Huddersfield and its immediate environs. Only 3.9% of all stock transfers in Sheffield and Hallamshire Bank between 1836 and 1899 were to individuals living outside Sheffield. 72.1% of all share sales in the Wilts and Dorset Banking Co. between 1837 and 1852 were to individuals living in Wilts and Dorset. Using shareholder lists for 1878 obtained from *The London Gazette*, the top four areas which Union Bank of London shareholders were located in were as follows: London (21.5%), Kent (12.3%), Ireland (11.6%), Sussex (8.3%). Using a Bank of Liverpool List of Shareholders for 1879 (Barclays Archives: ACC25-0204), we found that 33.5% were from Liverpool, 16.8% from Ireland and 7.6% from Manchester. Using *A List of Proprietors of Scottish Bank Shares* for 1845 (HBOS Archives: NSAS/1110/13/192/1), we found that the shareholders of the Commercial Bank of Scotland and Union Bank of Scotland were distributed throughout Scotland. Whereas, 68.1% of the Central Bank of Scotland's shareholders were from the northeast of the country. The Caledonian Bank's shareholders were located mainly in the northeast of the country (45.6%) and the Highlands and Islands (38.8%). The four banks on which we have no information undoubtedly had geographically concentrated ownership.
Sources: *Banking Almanac and Yearbook*, 1850, 1880, 1895. Deeds and Contracts of Copartnership.

Table 5 contains two related proxies for ownership concentration: size of the shareholder constituency and the percentage of capital stock per owner. Based on these two proxies, three banks in our sample could be described as having relatively diffuse ownership – Union Bank of London, Commercial Bank of Scotland and Union Bank of Scotland. Although the Bank of Liverpool is relatively low on these measures, the evidence from its shareholder list suggests that its ownership was relatively diffuse. Notably, the Union Bank of London and Bank of Liverpool have the highest volume-of-trade liquidity measure, and the two Scottish banks have the highest number-of-trades liquidity measure. The very high share prices of the two Scottish banks, as can be seen from Table 1, explains why their volume-of-trade liquidity measure is lower than that of these two English banks.

At the other end of the spectrum, some of the smallest banks, with high percentages of capital stock per owner, have the lowest liquidity – Ashton, Hyde, Stalybridge and Glossop Bank (ASHG), County of Stafford Bank, Huddersfield Bank, Liverpool Union Bank. Notably, the Liverpool Union Bank and ASHG Bank have a large volume of trade despite having a low trading frequency. In both cases, this was as a result of significant block trades taking place as incumbent shareholders consolidated their holdings.[72] Consequently, as can be seen from Table 5, the number of shareholders fell significantly for both banks between 1849 and 1879.

Four banks with low shareholder numbers appear to have more liquid shares than other banks of a comparable size. However, from Table 5, we can see that the constitutions of these four banks (Hampshire Banking Company, Huddersfield Banking Company, Leicestershire Banking Company, Sheffield and Hallamshire Banking Company) placed an upper limit on the number of shares which one individual could own. By so doing, these banks were preventing a concentrated ownership arising, and subsequently enhancing the tradability and liquidity of their stock. Such restrictions were commonplace; however their existence may have been due to reasons other than liquidity-enhancement.[73]

As can be observed from Table 5, the only bank in our sample which dramatically increased the size of its shareholder constituency was the Union Bank of London. Unlike the other banks in our sample, this institution was a large metropolitan bank with access to a large pool of capital. It is notable that in the 1850s, its liquidity increased substantially, whereas the liquidity of other banks' shares was stagnant. This increase occurred after the bank made its rights issue in 1854, resulting in a larger pool of capital and shareholders.[74] The trebling of its shareholder numbers between the

L. Lang, 'The ultimate ownership of Western European corporations', *Journal of Financial Economics*, 65 (2002).

[72] Anderson and Cottrell, 'Another Victorian capital market', p. 599.

[73] Although several of the larger banks in Table 5 did not have such provisions, the attraction of holding a large block in these banks might have been reduced by the low upper limit on the number of votes any one shareholder was entitled to cast at shareholder meetings.

[74] Shareholder numbers increased from 651 in 1853 to 1,000 by 1859.

mid 1850s and 1879 possibly accounts for the substantial increase in the liquidity of its stock.

One would normally expect geographically dispersed ownership to result in more liquid shares.[75] However, under unlimited liability, geographically dispersed ownership should result in lower liquidity because of the costs of enforcing the extended liability.[76] As can be seen from Table 5, the ownership of most of our sample banks was geographically concentrated. Notably, the four banks with the most liquid shares are the four banks which do not have their ownership concentrated in a particular region or city. This may simply be picking up the fact that diffuse ownership requires a geographical spread of owners. However, the Caledonian Bank, although its ownership was diffuse, had a geographically concentrated ownership. This may explain why its shares were less liquid than those of banks with similar or even smaller levels of ownership diffusion.

As mentioned above, many scholars believe that liquid capital markets cannot exist under circumstances where there is unlimited shareholder liability because there would be no anonymity in the market for shares. Consequently, the limitation of liability should result in an increase in trading activity and liquidity. However recent work by Hickson *et al.* has undermined this preconception.[77] As all of the banks in our sample converted to limited liability, we can test the impact of shareholder liability on tradability and liquidity.

The Bank of Whitehaven was one of the first unlimited liability joint-stock banks to convert to limited liability. However, as can be observed from Tables 2 and 3, in the 1870s its shares were no more actively traded or liquid than unlimited liability comparators.

Table 6 compares trading activity and liquidity in the five years before and after banks limited their liability in an attempt to assess the impact limiting liability had on the market for shares. It is notable that the trading activity of only the Leicestershire Banking Company and Sheffield and Rotherham Banking Company increases significantly following the limitation of liability. These, as we shall see below, were the only two banks in Table 6 which had stock splits when they limited their liability.

As can be seen from Table 6, the limitation of liability had little impact on the liquidity of bank shares, with the liquidity of several bank shares actually decreasing. Notably, the shares of the Union Bank of London, the largest metropolitan bank in our sample, actually fall. One explanation as to why the limitation of liability appears to have little impact is that banks still had extended liability, and share transfers still had to be vetted. However, aside from the fact that directors' incentives to vet may have dramatically fallen, shareholders' liability had decreased dramatically and was now

[75] T. Loughran and P. Schultz, 'Liquidity: urban versus rural firms', *Journal of Financial Economics*, 78 (2005).
[76] Woodward, 'Limited liability'.
[77] Hickson, Turner and McCann, 'Much ado'.

Table 6. *Average annual trading activity and liquidity five years before and after limitation of liability*

Bank	Number of share trades		Volume of share trades		Number of share trades/ number of shares (%)		Volume of trade/ number of shares (%)	
	Before	After	Before	After	Before	After	Before	After
Ashton, Stalybridge, Hyde & Glossop	24.6	22.8	944.8	1,053.8	0.20	0.18	7.56	8.43
Caledonian Bank of Scotland	115.8	86.7	3,353	1,855	0.22	0.15	6.37	3.09
County of Stafford Bank	0	0	0	0	0	0	0	0
Huddersfield Banking Co.	34.2	35.6	644.0	659.0	0.20	0.21	3.79	3.88
Leicestershire Banking Co.	76.2	94.6	632.6	1,583.4	0.51	0.24	4.22	3.96
Sheffield and Hallamshire Bank	62.8	65.6	662.6	588.0	0.63	0.66	6.63	5.88
Sheffield and Rotherham Banking Co.	36.4	54.8	187.3	869.0	0.15	0.23	0.78	3.62
Union Bank of London	1,087.4	965.2	9,105.2	7,215.8	1.21	0.88	10.11	6.56

Source: See text.

pro rata, implying that they were substantially less concerned about the financial standing of their co-owners.[78] Notably, as can be observed from Table 6, the tradability and liquidity of Sheffield and Hallamshire Bank shares appear to be unaffected by its conversion to limited liability despite its shareholders having no reserve liability. In the longer term, as can be observed from Table 2, trading activity and liquidity of most bank shares declined in the latter half of the 1880s and into the 1890s, probably due to wider economic conditions affecting the stock market.

Changes in share denomination, in the form of stock splits, are usually associated with a desire to increase the liquidity of a stock issue.[79] Somewhat paradoxically, consolidations of share issues or reverse splits have also recently been associated with liquidity enhancement.[80] Notably, our sample allows us to test for the impact of stock splits on liquidity as it contains three stock splits and two reverse stock splits.

The Sheffield and Rotherham Bank had a 4-for-1 reverse stock split in 1862 and its neighbour, the Sheffield and Hallamshire Bank, had a 5-for-1 reverse stock split in 1845.

[78] Ibid., p. 935.
[79] Copeland, 'Liquidity', p. 115.
[80] Han, 'The effects of reverse stock splits'.

The reverse stock split of the Sheffield and Hallamshire Bank was followed by a reduction in the number of share trades and volume of trade (Table 2), and it had a small negative impact on the liquidity of its stock (Table 3). On the other hand, although the reverse stock split of the Sheffield and Rotherham Bank in 1862 appears to have reduced the volume of trade, as can be seen from Tables 3 and 4, this consolidation was followed by an increase in liquidity. A possible explanation for this finding is that reverse splits decrease the transactions costs of marketing shares and/or that higher share prices are a good indicator of quality.[81]

The above two banks also had stock splits in the latter part of the nineteenth century (Sheffield and Rotherham – 1-for-4 split in 1880; Sheffield and Hallamshire – 1-for-5 split in 1897), and the Leicestershire Banking Co. had a 1-for-5 stock split in 1879. As can be seen from Tables 3 and 4, the Sheffield and Rotherham and Leicestershire splits had little or possibly a negative impact on the liquidity of their shares. Although the Sheffield and Hallamshire stock split resulted in dramatically increased trading activity, both liquidity metrics fall. Therefore, based on this evidence, it appears that stock splits did not necessarily enhance the liquidity of nineteenth-century bank stocks. One possible explanation for this finding is that stock splits were perceived by investors to be adverse signals of a stock's quality, which may explain why they were infrequent in this period.

Modern firms are desirous of a stock market listing partially for its liquidity-enhancing effects. As can be seen from Table 7, four of the banks in this study did not have their shares listed on a stock exchange. Notably, for three of these banks, this does not appear to have affected their liquidity. As can be observed from Table 3, Hampshire Banking Company, Leicestershire Banking Company and Wilts and Dorset shares were liquid relative to banks of a similar size.

Table 4 contains the annual average absolute change in prices for the four banks for which complete per-trade-price data exist. The lower the value of this metric, the more liquid is the stock. Interestingly, according to this metric, Leicestershire Banking Company, which was not listed on a stock exchange, has the most liquid shares despite initially being the smallest bank in terms of paid-up capital (Table 1) and owners (Table 5). This admittedly limited evidence, taken with the above, suggests that listing on a stock exchange does not appear to have been for liquidity-enhancement reasons. This may have been because the informal (and unregulated) markets operated by local stockbrokers were more than adequate substitutes for stock exchanges.

As can be seen from Table 7, the deeds of only four banks committed directors, if requested by the seller, to purchase shares when they had refused to authorise a transfer. These clauses in the deeds typically stipulated that the price to be paid for such shares was to be equal to the average price of the last ten transfers.[82] These

[81] Han, 'The effects of reverse stock splits', p. 160.

[82] The exceptions to this are as follows. The Leicestershire Banking Company's deed (clause 56) states that the at the bank's AGM, a conventional price would be fixed by a vote. This price had to be 10 per

Table 7. *Market listings and directorial dealing*

Bank	Directors permitted to buy and sell shares on behalf of bank	Provisions in deeds for buying shares if transfer refused	Markets on which shares are traded (1874)
English banks			
Ashton, Stalybridge, Hyde & Glossop	yes	no	none
Bank of Liverpool	yes	no	Liverpool
Bank of Whitehaven	yes	yes	Whitehaven, Carlisle
County of Stafford Bank	yes	no	Birmingham
Hampshire Banking Co.	yes	no	none
Huddersfield Banking Co.	yes	no	Huddersfield, Leeds
Leicestershire Banking Co.	yes	yes	none
Liverpool Union Bank	n/a	no	Liverpool
Sheffield and Hallamshire Bank	yes	yes	Sheffield
Sheffield and Rotherham Banking Co.	yes	no	Sheffield
Union Bank of London	no	no	London
Wilts and Dorset Banking Co.	no	yes	none
Scottish banks			
Caledonian Bank of Scotland	n/a	n/a	Aberdeen, Edinburgh
Central Bank of Scotland	yes	no	n/a
Commercial Bank of Scotland	yes	no	Edinburgh, Glasgow
Union Bank of Scotland	yes	no	Edinburgh, Glasgow

Sources: Deeds and Contracts of Copartnership. Markets on which shares were traded were obtained from *Investors' Monthly Manual*, 1874.

provisions may have existed to assure shareholders that they could exit their investment in the bank and liquidate their capital. Notably, the banks which had this clause typically had more liquid stock than their counterparts.

As can be seen from Table 7, bank deeds typically permitted directors to buy and sell shares on behalf of the bank, although they were not obliged to do so. Although such an activity would be regarded with suspicion in contemporary financial markets, it may have served a useful purpose in the development of early capital markets by effectively permitting shareholders to exit on demand, making bank shares more attractive to investors.[83] In our sample, only the Wilts and Dorset and Union Bank of London did not permit this activity. Notably, in the 1830s–50s, when the market for bank stock was still in its infancy, these two banks had the most liquid stock in terms of the volume-of-trade metric (Table 3). One possible explanation as to why these two banks didn't have directorial dealing in stock is that, due to their size and location, they had a wider pool of potential owners.

Although directorial dealing may have enhanced liquidity, not every contemporary believed it to be beneficial for shareholders. For example, two witnesses before Parliamentary select committees believed that bank directors shouldn't trade in shares because they could opportunistically buy them at below market prices.[84] The practice of directors purchasing shares is believed to have been ended voluntarily after it was discovered that the directors of the infamous City of Glasgow Bank purchased close to 15 per cent of its stock to support its price in the months before its collapse.[85]

VI

The evidence above suggests that bank shares could be easily traded in the nineteenth century, and, even by the standards of modern financial markets, the market for bank shares was relatively liquid. For example, Easley *et al.* state that on major contemporary stock exchanges it is common for some stocks not to trade for days or weeks, and that over 1,000 stocks on the New York Stock Exchange average less than one trade per day.[86] Our evidence also suggests that the market for bank shares did not become more liquid over the nineteenth century despite the growth and development of organised exchanges.

We also find that the shares of banks which had a diffuse ownership were more liquid than the shares of banks with concentrated ownership. One implication of

cent below the estimated *bona fide* real value. The Bank of Whitehaven's deed (clause 57) stated that the price to be paid should be equal to the average of the previous five transfers.

[83] E. A. French, *Unlimited Liability: The Case of the City of Glasgow Bank* (London, 1985), p. 10.

[84] British Parliamentary Papers *Select Committee Report on Joint-stock Banks, 1836*, Evidence of Austin (Q.1928) and *Select Committee Report on Joint-stock Banks, 1837*, Evidence of Gilbart (Q.2123–4).

[85] Checkland, *Scottish Banking*, p. 481.

[86] Easley *et al.*, 'Liquidity', p. 1405.

this result is that the liquidity of the market for shares may have dramatically increased with the growth of large banks in the second decade of the twentieth century. Although liquidity is usually perceived as something beneficial to the development of financial capitalism, there is a school of thought that suggests that capital markets can be too liquid, thus undermining governance by encouraging diffused ownership and passive investing.[87] Therefore, the very thin trading of some bank stocks in the nineteenth century may have resulted in better governance, with investors active in exercising the rights of participation that their ownership granted them.

Our findings support recent studies which suggest that extended shareholder liability may not have been a major hindrance to the development of financial capitalism.[88] Notably, our evidence also suggests that the introduction of limited liability did not result in an increase in trading activity or liquidity, raising some measure of doubt as to the importance of limited liability for the development of liquid secondary markets.

[87] Bhide, 'Stock market liquidity'; A. Shleifer and R. W. Vishny, 'Large shareholders and corporate control', *Journal of Political Economy*, 96 (1986).

[88] Hickson and Turner, 'Bagehot hypothesis'; Hickson, Turner and McCann, 'Much ado'.