

*The impact of limited liability on ownership and control:
Irish banking, 1877-1914¹*

Graeme G. Acheson and John D. Turner
School of Management and Economics
Queen's University of Belfast
Belfast
BT7 1NN
j.turner@qub.ac.uk

Abstract

Limited liability is regarded as the *sine qua non* of the modern company, enabling firms to raise capital from a broad spectrum of investors who have well-diversified portfolios. This paper uses the ownership records of an Irish bank which converted to limited liability in 1883. We explore the impact of introducing limited liability upon the bank's ownership and control. We find that ownership becomes more dispersed amongst individuals from a broader social spectrum. However, there is little impact on geographical dispersion or on portfolio diversification. Furthermore, although limited liability appears to contribute to the rise of the professional director, the evidence suggests that managerial incentives are weakened.

In 1855, *The Economist*, commenting on the Limited Liability Act, wrote that: “never, perhaps, was a change so vehemently and generally demanded, of which the importance was so much overrated.”² However, seventy years later this same periodical had turned volte-face³, and by the end of the twentieth century, it claimed that limited liability is the key to industrial capitalism, and has ultimately transformed the world!⁴ Indeed, most modern scholars would concur with this latter viewpoint in that limited liability is regarded as the *sine qua non* of the modern corporation, bestowing enormous economic benefits upon society.⁵ According to Sir John Hicks, the main benefit of limited liability is that it facilitates the raising of capital from a broad spectrum of investors, permitting firms to make large-scale investments, and consequently reap economies of scale.⁶ From an investor perspective, limited liability is believed to have facilitated efficient portfolio diversification, but it may also have been a precursor to the separation of ownership from control.⁷ However, very little evidence has been gathered, historical or otherwise, which examines the impact of introducing limited liability upon a firm’s ownership and control.⁸

For a large part of the nineteenth century, banking in Great Britain was dominated by institutions having unlimited shareholder liability. However, following the infamous City of Glasgow failure in 1878, every major bank in the three kingdoms moved to limited shareholder liability. Hence, we have a natural experiment where the impact of limited liability on ownership and control can be tested. Banking is an interesting experiment because most of the banks that converted to limited liability had reserve liability, which was a form of uncalled capital only callable in the event of default. Uncalled capital was a common feature of many early limited liability firms, and there was a concern that uncalled capital had a negative

impact on the dispersion of ownership and on the social make-up of the shareholding constituency.⁹

There is almost a consensus amongst earlier writers that limited liability would encourage wealthier and more influential individuals to own bank shares.¹⁰ However, very little is said about the expansion of the shareholding constituency that may have diluted the ownership and influence of these shareholders. Earlier writers also tend to emphasise that limited liability would lead to improved governance of banks, due mainly to a better class of shareholder and a more circumspect banking public.¹¹ However, limited liability by decoupling the link between ownership and wealth may have reduced managerial incentives.

Fortunately, in stark contrast to most other banks, very detailed and complete records have survived for the Ulster Bank, an Irish bank which converted to limited liability in 1883. Using this bank's archives, we examine the changes to the diffusion of ownership, the social status of shareholders, the geographical dispersion of owners and the governance of the bank after the limitation of shareholder liability. We do this by examining the shareholder records for 1877, 1892 and 1914. Then, using probate records, we examine the wealth of deceased shareholders for each year from 1877 to 1914 to ascertain whether bank shareholders were less wealthy after limited liability was introduced. Obtaining shareholder wealth also allows one to ascertain whether shareholders had adequate wealth to cover potential calls on reserve liability. In addition, the probate data is used to assess the impact of limited liability on portfolio diversification.

Unsurprisingly, our results suggest that the introduction of limited liability was followed by an increase in ownership diffusion and a more diverse shareholding constituency in terms of wealth and social status. However, our results also show that

the directors of the bank substantially reduced their holdings of bank stock. Finally, our findings also suggest that the diversification benefits of limited liability may not be as great as the standard view would suggest.

This article begins by tracing the evolution of limited liability in Irish banking. In particular, the possible consequences of the introduction of limited liability upon ownership and control are examined. Section II describes the nature of our archival and probate data, as well as giving some background on the Ulster Bank. Section III examines the changes in ownership and control after the Ulster Bank moved to limited liability. Section IV concludes and provides a brief discussion on the implications of the results.

I

The first bank to be incorporated in Ireland was the Bank of Ireland in 1783. As well as receiving the privilege of incorporation, it had limited liability.¹² Furthermore, the Bank's charter restricted all other banks to the partnership form of organisation, with note-issuing limited to banks having six partners or less.¹³ The restriction on the formation of joint-stock banks lasted until 1825, when the Banking Copartnership Regulation Act (1825) was enacted. This Act permitted banks to form freely as joint-stock companies and enjoy all the privileges usually associated with incorporation, except limitation of liability.¹⁴

Following the liberalising 1825 Act, there were two prominent waves of joint-stock bank promotion, with the Belfast Banking Company, Northern Banking Company, Hibernian Joint-stock Bank and the Provincial Bank of Ireland being established in the mid-1820s, and the Royal Bank of Ireland, National Bank of Ireland, Ulster Banking Company and Agricultural and Commercial Bank being

established in the mid-1830s. All of these banks, apart from Agricultural and Commercial Bank which failed in 1836, survived well into the twentieth century.¹⁵

Although the joint-stock banks had unlimited shareholder liability, shareholders could trade their ownership stakes. Consequently, a major concern was that the shares of such banks could eventually be owned by impecunious individuals, dramatically reducing depositor confidence in the stability of the bank.¹⁶ However, the deeds of settlement or copartnership of Irish banks granted directors the right to vet all share transfers and refuse entry to unsuitable individuals. Depositor confidence in these unlimited liability joint-stock banks was high as long as the directors were wealthy because such directors had a self-interest in maintaining shareholder quality, as they were joint and severally liable to the full extent of their wealth for any debts that other shareholders were unable to meet.¹⁷

Limited liability only became freely available to Irish banks in the late 1850s.¹⁸ However, despite the passage of this liberalising legislation, none of the established joint-stock banks in Ireland converted to limited liability, and only one bank of any significance established with limited liability. This bank was the Munster Bank which was established in 1864 to meet the demand for banking services in the south-western counties of Ireland.¹⁹ Therefore, an interesting question is why the established joint-stock banks did not adopt limited liability for at least another two decades.

One possibility is that it was not attractive for note-issuing banks to convert to limited status as liability was still unlimited with respect to note issue.²⁰ However, banks' note issue was relatively small compared to their deposits, effectively making the unlimited liability requirement for note issue redundant. Furthermore, the Hibernian Bank and the Royal Bank of Ireland did not have note issues.

Possibly the main reason for the reluctance of banks to convert to limited liability at this time was that unlimited shareholder liability was the best available form of note-holder and depositor protection. Notably, a contemporary banking expert argued that unlimited liability was ‘thought by the shareholders more conducive to profit, and by the depositors, more likely to give safety’.²¹ Undoubtedly, the collapse in May 1866 of Overend Gurney and Co., a large London discount firm which had recently adopted limited liability added to the general distrust of limited liability in the banking community.²² Attitudes may have been further hardened by the failure of two newly-formed limited liability banks in Dublin in the mid-1860s.²³

Banks’ preference for unlimited liability ended with the failure of the City of Glasgow Bank in October 1878. The City of Glasgow Bank was a prominent unlimited liability Scottish bank, which by the mid-1870s had 123 branches and had amassed some £8,489,000 in deposits.²⁴ According to George Rae the failure of this bank “may be said to have brought unlimited liability in banking to a violent end”.²⁵ Indeed, prior to the City of Glasgow collapse, “the old established and well managed Irish joint stock banks were reluctant to limit the liability of their members”²⁶, but that quickly changed following the bankruptcy of 1,565 of the City of Glasgow’s 1,819 shareholders.²⁷

Although there was a desire on the part of banks to move to limited liability, there was an acknowledgement that a major problem was how to move to limited liability and concurrently provide adequate security so as to retain the confidence of depositors. The Companies Act (1879)²⁸ was enacted to partially achieve this end by enabling banks to “set aside and hypothecate a certain portion of its registered capital, as an inalienable fund for the protection of its depositors”.²⁹ This inalienable fund was referred to as reserve liability. Initially, it appears as if Irish banks were reluctant to take advantage of the 1879 Companies Act³⁰, but by September 1883, the seven joint-

stock banks had all converted to limited liability, and the reserve liability of Irish banks ranged from two to four times paid-up capital.³¹

The key question being addressed in this article is whether or not the introduction of limited liability into Irish banking had an impact on ownership and control. Some scholars suggest that the limitation of liability should lead to a more diffused ownership of shares.³² Under unlimited shareholder liability, there is a particular minimum level of share ownership that allows each investor to cover their costs of ownership, which depends upon their wealth levels.³³ Whereas, under reserve liability, an owner's liability is directly correlated with the number of shares they own, implying that shareholders may own fewer shares.

It is generally acknowledged that the credibility of unlimited shareholder liability depends upon unsuitable individuals being excluded from ownership.³⁴ Therefore, with the introduction of limited liability, one would expect to see a broader shareholding constituency, with those having less wealth and belonging to a lower social class becoming shareholders. However, with reserve liability attaching to ownership, directors will still need to exercise some control over who owns bank shares, although their incentives to do so will be dramatically reduced as liability is now *pro rata* instead of joint and several. Furthermore, as directors now exercise less control over who becomes an owner, they will consequently require less information on candidate owners, possibly resulting in a geographical dispersion of ownership.

One would expect the wealthiest shareholders of an unlimited liability bank to play an important role in the governance of the firm, as they have the most to lose from the entrance of low-wealth individuals into ownership and excess risk-taking.³⁵ Therefore, once liability is limited, the wealthiest shareholders may no longer be as involved with the bank's governance. Furthermore, as argued above, one would also

expect the wealthiest shareholders to be the largest, implying that the coming of limited liability may lead to those involved in governance having fewer shares.

It is believed that one of the largest benefits deriving from limited liability is that it permits shareholders to hold diversified portfolios.³⁶ As mentioned above, when shareholders have unlimited liability, they tend to own more shares in the firm. Furthermore, the more unlimited liability firms an individual invests in, the greater the likelihood that there will be calls on their wealth, with the consequence that individuals do not engage in much diversification. It will be difficult to assess the impact of the conversion of Irish banks to limited liability on portfolio diversification, as most other publicly-quoted firms at this time were already limited. Nevertheless, it will be interesting to note what impact the conversion to limited liability had on the proportion of Ulster Bank stock that investors had in their asset portfolios.

II

In order to analyse the impact of the introduction of limited liability upon bank ownership and control, the Ulster Bank was selected because its archives are not only the most accessible of any Irish bank, but preserved within its archives are detailed and comprehensive shareholder records. The Ulster Banking Company was established in 1836 under the Irish Banking Copartnership Regulation Act (1825) with the aim of developing trade in the Belfast region, whilst remaining under the control of local proprietors.³⁷ In 1867, it registered under the Companies Act of 1862 as an unlimited liability company, and it eventually converted to limited liability in September 1883, changing its name to Ulster Bank Ltd.. However, as with many other British and Irish banks which converted to limited liability, the Ulster Bank had

reserve liability, which was set at four times paid-up capital.³⁸ The Ulster Bank existed as a limited liability bank for nearly 35 years before its share capital was acquired by the London County and Westminster Bank in late 1917.

In this article, snapshots of ownership and control are taken in 1877, 1892 and 1914. These particular years are selected for a number of reasons. Firstly, 1877 was chosen as this is the last year in which we can examine the ownership of the bank prior to the effects of the City of Glasgow crisis in 1878 and the subsequent push for limited liability. Unfortunately, no shareholder registers prior to 1876 have survived. Secondly, 1892 was selected as an interim year, as at this stage it was nine years since the conversion to limited liability, and one would anticipate that changes in ownership and control, if they were going to occur, would have been noticeable by this time. The terminal year of 1914 was selected because it allows us to examine the ownership and control of the bank thirty years after conversion to limited liability, without the effects of the Great War influencing results.

The deeds of the Ulster Bank were similar to those of its two Belfast-based rivals in most respects. One unique feature of the Belfast-based banks was their corporate governance structure, whereby the banks were managed on a day-to-day basis by a permanent board of four directors who were answerable to a shareholders' committee of seven.³⁹ Unlike the directors, the shareholders' committee was elected annually, with at least two new members required to join the committee each year.⁴⁰ Under the deeds of the Ulster Bank, the directors (aided by the shareholders' committee) vetted share transfers so as to prevent low-wealth individuals owning bank shares.⁴¹ Notably, this activity continued even after the bank moved to limited liability so as to ensure that new shareholders had sufficient wealth to cover any claims that might arise as result of calls on reserve liability.

As can be seen from Table 1, the paid-up capital of the Ulster Bank was very close to the median for Irish banks in each of the three selected years, implying that the Ulster Bank was typical from a size viewpoint.⁴² In terms of shareholder numbers, the Ulster Bank was very close to the median in 1877, but in the other two sample years, it was at least double the median. Indeed, only the National Bank, with 7,300 shareholders in 1914, had a similar shareholder base, despite the Ulster having less paid-up capital. Over the period, shareholder numbers increased for all banks, with the differences in growth partially attributable to the relative success of banks in terms of deposit-raising and profitability, with the Ulster being one of the most successful in this period.⁴³

Table 1. Capital and owners of Irish banks in 1877, 1892 and 1914

	1877			1892			1914		
	<i>No. of owners</i>	<i>Paid-up capital (£'000s)</i>	<i>Share Price (£)</i>	<i>No. of owners</i>	<i>Paid-up capital (£'000s)</i>	<i>Share Price (£)</i>	<i>No. of owners</i>	<i>Paid-up capital (£'000s)</i>	<i>Share Price (£)^c</i>
Belfast Bank	714	250	117	1,403	400	111.88	2,939	500	10.25
Hibernian Bank	1,380	500	66.75	1,800	500	2.56	2,000	500	5.97
Munster Bank ^a	1,410	350	10	-	-	-	-	-	-
Munster and Leinster Bank ^b	-	-	-	2,000	200	4.69	2,000	200	7.25
National Bank of Ireland	3,700	1,500	74.25	6,000	1,500	21.13	7,300	1,500	19.50
Northern Bank	718	150	93.25	1,592	400	23.50	n/a	500	22.88
Provincial Bank of Ireland	2,000	500	84	2,400	500	24.94	3,319	540	25.50
Royal Bank of Ireland	1,410	300	33.25	1,670	300	25.50	1,700	300	13.25
Ulster Bank	1,444	300	12.25	3,914	450	10.81	7,014	500	10.375
Median	1,410	325	70.50	1,900	425	22.32	2,939	500	11.81

Notes: The Bank of Ireland is excluded from this Table because ownership figures were never reported or published. Furthermore, it differed somewhat from the other Irish joint-stock banks due to its charter and special relationship with the government.

^{a, b} The Munster Bank failed in 1885 and was replaced by the Munster and Leinster Bank in 1887.

^c The share price figures are taken from the December issue of the *Investors' Monthly Manual*, apart from the 1914 figure, which is the opening price as reported in the January 1914 edition.

Sources: Ownership and paid-up capital figures are from the *Banking Almanac* and the *Bankers' Almanac and Yearbook*. Share prices are from *Investors' Monthly Manual*.

As can be seen in Table 1, the share price of the Ulster Bank was substantially less than the median share price in 1877, approximately half the median in 1892 and close to the median in 1914. The Ulster Bank's low share price may have made it more attractive to smaller investors.⁴⁴ Indeed, if any bank was going to be better able to attract smaller investors after moving to limited liability, it was going to be banks having low share prices. This point was recognised by Mr. H. Johns, a director of the Belfast Bank, who, whilst advocating a stock split at the 1906 AGM, argued that:

Yet the undoubted benefit that the Bank will secure by spreading its shares over a greater number of shareholders may be to some extent counterbalanced by a diminution in quality, so to speak, of the new shareholders, that we should be drawing our shareholders from a lower grade of society, and that this might in some way militate against or adversely affect the position of the Bank. I do not think that this is an objection that need cause you the least apprehension or uneasiness. We wish to put our shares within the reach of thrifty persons who are just beginning to save money, but while this is so the same supervision which at present exists will be exercised by your Board and Directors so as to prevent any undesirable person from coming on to the Bank's Share Register.⁴⁵

In order to examine the changes in ownership after the move to limited liability, data was collected from the Ulster Bank's Annual Return of Shareholders.⁴⁶ These annual returns contained information on each shareholder's profession, address and number of shares held. For the purposes of our study, shares owned by a group of individuals were split and assigned equally between them.⁴⁷ Following the social conventions of the era, shares owned jointly by a husband and wife are viewed as being owned by the husband.

In order to gain an estimate of shareholder wealth, a dataset of shareholder probated effects was constructed. The first step was to obtain each shareholder death that was recorded in the Ulster Bank's Shareholder Registers for 1877 to 1912 inclusive and 1914.⁴⁸ Thankfully, the death of a shareholder was always entered into these registers. We then gathered information on a deceased owner's shareholding,

occupation and address from the relevant annual shareholder register. Between 1877 and 1914, 2,043 Ulster Bank shareholders died, and the bequeathed wealth of 1,213 of these was obtained from the relevant Will Calendar books.⁴⁹ Unfortunately, the Will Calendar books for 1902 and 1903 are missing. The bequeathed wealth figures were then adjusted for inflation by converting all wealth figures to 1877 values.⁵⁰

There is a drawback with using this methodology to estimate the wealth of shareholders in that many of the shareholders who died in the period may have been elderly, and, as such, they may have run down their wealth reserves. Additionally, many individuals may have attempted to avoid death duties by making *inter vivos* gifts or by undervaluing the value of their business.⁵¹

III

This section examines the changes in ownership and control over the three sample years. Firstly, the changes in diffusion of Ulster Bank shares is analysed. Secondly, the occupational / social status and wealth of shareholders is examined to see whether share ownership is opened up to a wider spectrum of society after the introduction of limited liability. Thirdly, we look at the geographical distribution of shareholders in order to assess what impact the introduction of limited liability may have had upon the ability of the bank to attract investors from a wider area. Fourthly, an attempt is made to ascertain the impact of limited liability upon portfolio diversification. Finally, we examine the changes in corporate governance that occurred after the introduction of limited liability.

From Table 2 one can see that there is nearly a 500 per cent rise in the number of shareholders between 1877 and 1914, with only a 67 per cent increase in the number of issued shares, implying a significant dilution of ownership. In contrast, there was little ownership diffusion between 1836 and 1877, with shareholder numbers and number of issued shares both increasing by 50%.⁵² This dilution of ownership is apparent from the fall over the 1877-1914 period in the average and median number of shares owned. Notably, the standard deviation has also dropped dramatically, suggesting that more shareholders have holdings close to the mean.

Table 2. Ownership of Ulster Bank shares in 1877, 1892 and 1914

	<u>1877</u>	<u>1892</u>	<u>1914</u>
Number of Shares	120,000	180,000	200,000
Paid-up capital (£)	300,000	450,000	500,000
Number of shareholders	1,444	3,914	7,014
Average number of shares	83.0	45.9	28.4
Median number of shares	27.0	20.0	15.0
Standard Deviation	210.7	107.5	54.3
Maximum	3,240.0	2,808.0	1,500.0
Minimum	0.5	0.33	0.33
% of investors with <10 shares	21.9	31.9	40.8
% of investors with 11 to 30 shares	31.1	33.9	35.4
% of investors with 31 to 50 shares	13.4	13.4	11.7
% of investors with 51 to 100 shares	14.9	10.8	6.6
% of investors with > 100 shares	18.8	10.1	5.5
% held by top 10 shareholders	16.9	8.4	4.2
% held by top 20 shareholders	24.8	12.5	6.6
% held by top 30 shareholders	30.9	15.6	8.7

Sources: see text.

From Table 2 one can also see that there is a rise in the number of small shareholders over the period, with the percentage of shareholders owning 30 shares or less rising from 53.0 per cent in 1877 to 76.2 per cent in 1914. At the other end of the ownership spectrum, there is a significant fall in the percentage of owners with more than 51 shares. Furthermore, there is a fall in the concentration of ownership with the percentage of stock held by the largest owners falling substantially over the period,

indicating a much more diffused ownership following the introduction of limited liability. Notably, during its time as an unlimited bank, ownership had actually become increasingly concentrated.⁵³ This trend was only reversed with the coming of limited liability.

Overall, the evidence in Table 2 suggests that after the introduction of limited liability, ownership was opened up to a wider spectrum of investors, with smaller investors (and by implication less wealthy investors) now welcome to own shares as liability was no longer unlimited. Additionally, under reserve liability, an owner's liability is directly correlated with the number of shares they own. Therefore, one would expect to see smaller and more diffuse shareholdings after the bank converted from unlimited liability. Indeed, the correlation between liability and number of shares owned may also explain the large fall in ownership concentration after the move to limited liability.

From Table 3 one can see that the occupational and social backgrounds of Ulster Bank shareholders had changed substantially by 1892. The main categories which diminished both in terms of proportions of share capital and investors were professionals, gentlemen and merchants. In particular, the proportion of capital owned by gentlemen fell by over seven per cent. The main groups which experienced an increase in the proportion of share capital were farmers and spinsters. Furthermore, by 1892, the number of spinsters investing in Ulster Bank shares had risen so much that they constituted 26.9 per cent of all investors.

As can be seen in Table 3, from 1892 to 1914, there were further falls in the percentage of shares held by professionals, gentlemen and merchants, with gentlemen again experiencing the largest fall. The gentlemen category fell from the position of holding approximately 20 per cent of the bank's stock in 1877 to less than 7.5 per cent

by 1914. However, this result may be partially explained by the demise of the gentry as a social group in wider society. The spinster and farmer groups show slight increases in their percentage of bank capital between 1892 and 1914. However, the one group which dramatically increased its share of ownership and its share of total shareholders between 1892 and 1914 was wives. The absence of wives from the shareholders' return in 1877 is due to the fact that until 1883, married women could not own real or financial property in their own right. However, the Married Women's Property Act (1882) granted married woman the same the same property rights that were enjoyed by males and unmarried women.⁵⁴

Table 3. Occupational and social status of Ulster Bank shareholders in 1877, 1892 and 1914

		<i>% of share capital</i>			<i>% of total shareholders</i>		
		<i>1877</i>	<i>1892</i>	<i>1914</i>	<i>1877</i>	<i>1892</i>	<i>1914</i>
Male	Professionals ^a	19.69	15.26	13.46	14.61	11.42	10.21
	Gentlemen	19.26	11.99	7.52	12.26	9.86	6.46
	Merchants	17.87	15.61	11.46	12.88	9.35	8.14
	Farmers	9.54	14.92	15.67	16.48	17.35	18.04
	Tradesmen ^b	1.96	2.36	2.83	4.22	3.22	2.91
	Semi-professionals ^c	1.76	2.22	2.46	2.22	3.07	2.20
	Teachers	0.92	1.28	1.02	1.32	1.25	1.45
	Bank Clerks	0.65	1.40	0.96	1.18	1.20	1.00
	Other ^d	1.97	2.82	3.49	2.43	2.66	1.79
Female	Spinsters ^e	14.94	20.57	21.75	21.75	26.90	28.12
	Widows	11.41	11.08	12.68	10.87	12.37	10.61
	Wives	0.00	0.45	6.69	0.00	1.48	9.08

Notes:

^aThe professional category mainly consists of solicitors, doctors, bank managers and clergymen. However, also included in this category are accountants, auctioneers, bankers, barristers, chemists, designers, engineers, insurance agents, managers of public and private sector organisations and stockbrokers.

^bTradesmen include bakers, bank porters, bleachers, book binders, builders, butchers, caretakers, carpenters, drapers, embroiders, gardeners, mechanics, servants, stone masons, blacksmiths, tailors and tanners.

^cThis category includes bookkeepers, commercial travellers, clerks, muslin agents, land agents and jail wardens.

^dThis category consists of manufacturers, army and police officers and males with no occupation reported.

^eIncluded in this category is one nun.

Sources: see text.

After the introduction of limited liability, the main change to the social make-up of Ulster Bank shareholders was the rise of female investors, who moved from controlling just over 25 per cent of the bank's stock in 1877 to just over 41 per cent in 1914. In 1877, just under one-third of shareholders were female, but by 1914, females constituted nearly one-half of total shareholders. In addition, farmers also emerged as an important group of owners after the move to limited liability. The ascendancy of female investors and farmers would tend to suggest that less wealthy individuals were becoming shareholders after the introduction of limited liability. This may have occurred because of a perception that after the move to limited liability, bank shares were a less risky investment for such individuals. Alternatively, the ascendancy of these types of shareholders may have occurred as a result of Ulster Bank directors lowering the minimum wealth levels necessary to become a shareholder after the demise of unlimited liability.

Table 4 and Figures 1 and 2 show the wealth statistics of shareholders who died and bequeathed wealth in the 1877 to 1914 period. Table 4 splits the sample into those shareholders who died before and after 1883, as this was when the bank moved to limited liability. Notably, the average and median wealth are lower in the period after the move to limited liability. Also, as can be seen from Table 4, there is a higher proportion of individuals bequeathing small amounts of wealth after the move to limited liability. Furthermore, the trend lines in Figures 1 and 2 both show that the annual mean and median wealth of deceased shareholders decreases markedly over the period. All this evidence would suggest that an increasing number of less wealthy individuals became Ulster Bank shareholders after the move to limited liability. Unsurprisingly, as can be seen from Table 4, there were still many wealthy shareholders owning Ulster Bank shares after the move to limited liability.

Table 4. Wealth of Ulster Bank shareholders, 1877-1914

	1877-1883	1884-1914
Mean (£)	5,941.77	4,286.33
Median (£)	2,178.22	1,675.30
Standard deviation (£)	9,854.46	8,011.43
% shareholders bequeathing <£500	10.43	20.01
% shareholders bequeathing <£1000	27.61	35.39
% shareholders bequeathing <£2000	44.79	55.38
% shareholders bequeathing £2,000 to £10,000	41.10	35.58
% shareholders bequeathing £10,000 to £50,000	12.88	7.80
% shareholders bequeathing > £50,000	1.23	1.24
N	163	1050

Notes: The difference in the means is statistically significant with a p-value of 0.0212. Seven outliers were removed from the sample in order to calculate the means and medians. The outliers were all over £100,000, and therefore influenced the statistics.

Sources: see text.

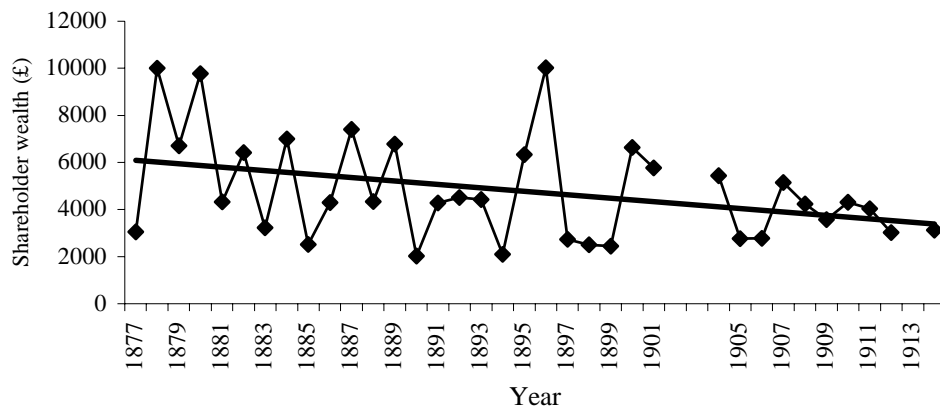


Figure 1. Annual average bequeathed wealth of Ulster Bank shareholders, 1877-1914

Notes: see notes to Table 4.

Source: see text.

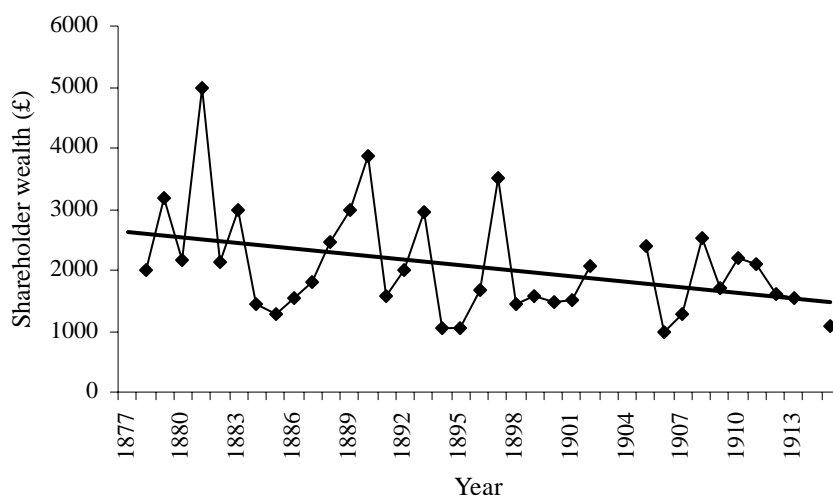


Figure 2. Annual median bequeathed wealth of Ulster Bank shareholders, 1877-1914

Notes: see notes to Table 4.

Source: see text.

After moving to limited liability, the Ulster Bank had reserve liability, which meant that a shareholder was liable for up to another £10 for every share they owned. For every shareholder who bequeathed wealth in the sample period, the number of shares they owned the year they died was obtained from the bank's annual shareholder registers. This permits one to examine whether or not an individual shareholder had adequate wealth to cover their potential liability in the event of reserve liability being called upon. Notably, in the sample period, no shareholder bequeathed wealth less than their potential maximum liability.⁵⁵ Indeed, for the period 1884 to 1914, the ratio of bequeathed wealth (nominal) to potential liability had a mean of 17.34 and a median of 5.48, and only 18.8 per cent of shareholders had a ratio less than two.⁵⁶ Also, over the 31-year period, there is no deterioration in this ratio.⁵⁷ Therefore, although the bank directors did permit lower-wealth individuals to become shareholders, it appears from the evidence that they were successful in excluding individuals with inadequate wealth to cover any calls upon reserve liability.

Evidence was presented above suggesting that the proportion of the bank's capital owned by farmers, spinsters and wives increased after the move to limited liability. Notably, when wealth is categorised along occupational groups, spinsters, wives and farmers have very low median (or average) wealth compared to gentlemen, merchants and professionals.⁵⁸ Furthermore, there is a large difference in the groupings with respect to the percentage of shareholders who bequeath less than £1000, with 76.9 per cent of wives, 46.1 per cent of spinsters and 38.6 per cent of farmers bequeathing less than £1000. Whereas only 22 per cent of merchants, professionals and gentlemen bequeathed less than £1000.

It is possible that the reduction in shareholder quality that has been discovered was a trend that began before 1877. However, evidence gathered from share transfer journals suggests that this is not the case.⁵⁹ This adds weight to our argument that the reduction in shareholder quality occurred as a consequence of liability being limited.

Table 5 shows the geographical dispersion of shareholders for each of the three sample years. In 1877, the bank's heartland of Belfast, Antrim and Down contained 57.3 per cent of the bank's owners, holding 63.3 per cent of the bank's capital. By 1914, only 41.3 per cent of shareholders, owning 45.1 per cent of the bank's capital, lived in Belfast, Down and Antrim. In terms of share capital, shareholders in the other seven Ulster counties held 33.6 per cent in 1914, compared to 21.0 per cent in 1877. As is also apparent from Table 5, there was an increase in the amount of share capital owned by shareholders from overseas and other Irish counties over the period. Interestingly, the increased geographical dispersion of ownership was not necessarily related to an increased number of branches in particular areas. Indeed, only the non-Ulster Irish counties experienced a significant increase in the number of Ulster Bank branches, with the number of branches

increasing from 14 in 1877 to 28 in 1914, and the number of agencies increasing from 24 to 44.⁶⁰

Table 5. The geographical dispersion of Ulster Bank shareholders in 1877, 1892 and 1914

	<i>% of total shareholders</i>			<i>% of share capital</i>		
	<i>1877</i>	<i>1892</i>	<i>1914</i>	<i>1877</i>	<i>1892</i>	<i>1914</i>
<i>Cities</i>						
Belfast	20.15	13.59	13.07	30.67	22.31	18.34
Dublin	4.16	3.93	4.45	5.79	4.76	4.94
<i>Province of Ulster</i>						
Down	20.36	18.68	16.30	17.73	16.46	15.95
Antrim ^a	16.76	14.82	11.90	14.85	15.10	10.77
Tyrone	11.15	10.45	11.90	6.64	6.78	9.19
Armagh	7.48	8.15	7.13	9.39	8.95	7.01
Londonderry	3.95	5.90	6.70	2.53	4.41	6.21
Fermanagh	1.39	2.30	1.71	1.06	1.45	1.39
Monaghan	0.83	2.53	3.02	0.50	2.34	3.03
Cavan	0.69	3.63	5.26	0.42	2.97	4.12
Donegal	0.55	1.94	2.75	0.42	1.39	2.65
Other Irish counties ^b	8.93	10.48	11.05	6.49	8.28	10.06
Overseas ^c	3.53	3.42	4.69	3.51	4.18	6.63

Notes:

^aThe figures for County Antrim exclude Belfast.

^bThe figures for the other Irish counties exclude the city of Dublin.

^cThe majority of overseas shareholders are from England and Scotland.

Sources: see text.

The above evidence does suggest that some geographical dispersion of share ownership took place following the move to limited liability. Assuming that directors had less information on individuals living outside of the bank's heartland of Belfast and its environs, one explanation for this finding is that directors gathered significantly less information on prospective shareholders than they did when the bank had unlimited liability. A complementary explanation is that the bank's capital increases required a wider spectrum of shareholders, which was only possible by targeting investors outside of its traditional heartland. Notably, all the counties from which much of the new investment came were rural districts, and as noted above,

many of the new shareholders in the Ulster Bank in this era were farmers.⁶¹ Furthermore, as can be seen in Table 6, the shareholders from Tyrone, Cavan and the non-Ulster counties typically were less wealthy, and a larger proportion of the shareholders in those counties bequeathed less than £1000.

Table 6. Shareholder wealth by place of residence, 1877-1914

	<i>No. of shareholders with bequeathed wealth</i>	<i>Median wealth (£)</i>	<i>Shareholders bequeathing < £1000 (%)</i>
Dublin	55	3,227.4	16.4
Belfast	190	2,556.3	27.9
Monaghan	35	2,290.2	28.6
Londonderry	51	2,253.2	33.3
Donegal	20	1,868.7	30.0
Armagh	81	1,813.8	34.6
Non-Ulster counties	143	1,806.2	35.0
Down	274	1,633.7	33.9
Fermanagh	21	1,506.7	38.1
Antrim	173	1,490.0	37.0
Overseas ^a	4	1,317.9	0.25
Tyrone	127	1,201.0	43.3
Cavan	39	543.6	58.9

Notes:

^aUnsurprisingly, we were unable to obtain very few probate records for shareholders who were residents outside of Ireland.

One of the greatest perceived benefits of limited liability is that it facilitates efficient portfolio diversification. An indirect way of trying to assess the impact of limited liability on portfolio diversification is to measure the proportion of wealth that individuals had invested in Ulster Bank shares, and observe whether this changes over time. Using the market price of Ulster Bank shares, obtained from the relevant issues of the *Investors' Monthly Manual*, we were able to calculate what proportion of their bequeathed wealth an individual shareholder had invested in Ulster Bank shares. Figure 3 shows the average and median ratio of the market value of deceased shareholders' Ulster Bank shares over their bequeathed wealth. The trend lines for both the average and median slope downwards, but once the ratio for 1880, which is

abnormally high, is omitted, there is no downwards slope.⁶² Even when the sample is sub-divided into high and low wealth shareholders, the results do not change. The results in Figure 3 suggest that throughout the period of this study, investors had a substantial proportion of their wealth tied up in Ulster Bank shares, and that this didn't change much after the move to limited liability. Although this evidence suggests that the portfolio-diversification benefits of limited liability may be overstated, another explanation is that there may have been a lack of alternative investments. This may have been the case for Ireland in this period as the Irish stock market was dominated by the securities of banks and railways.⁶³ However, it would have been relatively easy for Irish investors in this period to invest in the London market.

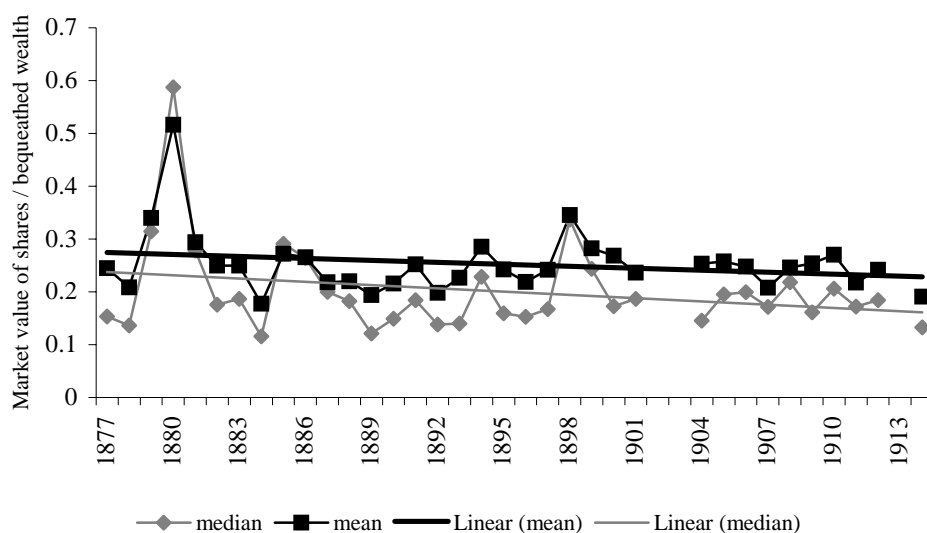


Figure 3. Annual average and median ratio of the market value of deceased shareholders' Ulster Bank shares over their bequeathed wealth , 1877-1914
Notes: Excluded from these figures are 85 shareholders who had a ratio which exceeded one.
Source: see text.

To ascertain how the control of the bank changed after the move to limited liability, shareholding information and bequeathed wealth was gathered for those men who were directors and members of the shareholders' committee in the three sample years. We were able to obtain the bequeathed wealth of nine of the eleven directors and committee members in 1877, and eight in each of the two other sample years.

From Table 7 one can see that there is a significant decrease in the number of shares held by directors and committee members between 1877 and 1914. Once the increase in share capital in the period is considered, this fall translates into a very substantial decline in control from 11.51 per cent to 3.51 per cent. Given that after the move from unlimited liability, a shareholder's liability is now correlated with the number of shares they own, it is not maybe surprising that directors and committee members held fewer shares.

It is also notable from Table 7 that by 1914, directors were less wealthy than those of the previous generation. When a bank has unlimited liability, it is optimal that the wealthiest shareholders should also be the directors and committee members, as they have the best incentives to prevent low-wealth individuals entering the bank.⁶⁴ However, once a bank becomes limited, liability is no longer joint and several, implying that wealthy individuals have dramatically reduced incentives to participate in management.

Notably, three of the four directors in 1877 had no practical banking experience prior to becoming managers. For example, William Allen, an original shareholder of the bank, was a barrister who was appointed director in 1860.⁶⁵ Francis Lepper, a graduate of Trinity College Dublin, was appointed a director in 1869, succeeding his deceased uncle.⁶⁶ Henry McCance was a linen merchant who was appointed a director in 1868.⁶⁷ Only James Carr, who was elected to the board in

1873, had any practical banking experience, entering the bank in 1846 as a learner and becoming general manager in 1868.⁶⁸ Indeed, the only previous director to have had practical banking experience was Carr's brother-in-law, Thomas Ringland. On the other hand, all the new directors after the move to limited liability were men with practical banking experience. For example, James Blackwood had entered the bank as a learner in 1853, and was appointed chief accountant in 1862 and secretary in 1870, before becoming a director in 1884.⁶⁹ Stanley Ferguson became the Ulster Bank solicitor in 1894, and he was elected as a director in 1908.⁷⁰ David Hoy entered as a learner in 1865, became a branch manager in 1876, was appointed an inspector of branches in 1885, and became chief inspector of branches and secretary in 1901, before being appointed a director in 1910.⁷¹ Consequently, the board in 1914 consisted of four men with considerable experience of practical banking. Indeed, it was said of Blackwood that "his experience in banking practice made him a very valuable member of the board", and Hoy was noted for his "outstanding knowledge of practical banking".⁷²

From the evidence, it appears that after the move to limited liability, the main qualification for a director was not how wealthy they were, but their experience of practical banking. It appears that the decoupling of wealth and control may have led to greater stress being placed upon managerial capability and professionalism. However, this decoupling may also have reduced the incentives of bank governors to act in the interests of shareholders. Furthermore, the reduction in the number of shares held by directors and committee members would have increased the separation of ownership from control, possibly further weakening managerial incentives.

Table 7. Wealth and ownership characteristics of the Ulster Bank's directors and members of the shareholders' committee 1877, 1892 and 1914

	<u>1877</u>	<u>1892</u>	<u>1914</u>
Part A: Ownership			
<u>Directors</u>			
William Allen	2,650	-	-
James Carr	1,200	1,712	1,500
Francis Lepper	840	1,518	-
Henry McCance	2,019	1,526	-
James Blackwood	-	550	600
Stanley Ferguson	-	-	500
David Hoy	-	-	500
Total shares of shareholders' committee	7,107	5,984	4,330
Total shareholding of directors and committee	13,816	11,290	6,530
Percentage of share capital	11.51	6.27	3.27
Average shareholding	1,255.95	1,026.27	593.64
Part B: Wealth (£)			
<u>Directors</u>			
William Allen	53,170	-	-
James Carr	70,024	70,024	70,024
Francis Lepper	229,165	229,165	-
Henry McCance	54,559	54,559	-
James Blackwood	-	49,237	49,237
Stanley Ferguson	-	-	4,234
David Hoy	-	-	1,029
Total wealth of committee members who left wills	203,520	182,779	124,445
Mean wealth of directors and committee	67,715	73,095	27,663
Median wealth of directors and committee	53,170	54,625	12,431

Notes: There were four directors and seven committee members in each of the three years. The wealth figures are all in 1877 pounds.

Source: see text.

IV

This article finds that after the Ulster Bank moved to limited liability, share ownership became more diffused and the shareholding constituency broadened to include less wealthy members of society. However, the evidence also suggests that the influx of less wealthy individuals did not diminish the value of the bank's reserve liability, as the bequeathed wealth of every individual in our sample exceeded their maximum

liability in the event of bankruptcy. Overall, the evidence would tend to suggest that limited liability allowed this bank to raise more capital by broadening its shareholder base. It is likely that the Ulster Bank's low share price made it easier for this bank to broaden its shareholder base in comparison to its main rivals. One interesting result that emerges from this article is that Ulster Bank shares as a proportion of shareholder wealth did not decline after the move to limited liability, suggesting that Ulster Bank shareholders did not take advantage of the supposed portfolio-diversification benefits of limited liability.

Following the limitation of the Ulster Bank's liability, there is a change in the incentive structure of its management. Firstly, the bank's governors own fewer shares, both relatively and absolutely. Secondly, members of the board and shareholders' committee have significantly less wealth. One possible concern is that after the introduction of limited liability, there may have been a weakening of the alignment between the incentives of shareholders and those of bank governors. On other hand, one could argue that after the introduction of limited liability, a more professional and experienced board of directors arose as wealth was no longer a major consideration for board membership.

Although this article has only examined one company, the evidence suggests that the introduction limited liability had costs as well as benefits. Although the Ulster Bank was able to raise more capital by permitting a wider spectrum of individuals to become shareholders, the introduction of limited liability may have weakened the corporate governance of the bank. It may be that limited liability "little deserves the panegyrics so often bestowed upon it"⁷³, but further research is required to throw more light upon this important issue.

Footnote references

Alchian, A. A. and Woodward, S., 'Reflections on the theory of the firm', *Journal of Institutional and Theoretical Economics* 143 (1987), pp.110-136.

Anon., 'Callable capital in banks', *Bankers' Magazine* 96 (1913).

Barrow, G. L., *The emergence of the Irish banking system, 1820-1845* (Dublin, 1975).

Carr, J. L. and Mathewson, G. F., 'Unlimited liability as a barrier to entry', *Journal of Political Economy* 96 (1988), pp.766-784.

Carr, J. L., Glied, S. and Mathewson, G. F., 'Unlimited liability and free banking in Scotland: a note', *Journal of Economic History* 49 (1989), pp. 974-978.

Checkland, S. G., *Scottish banking: a history, 1695-1973* (Glasgow, 1975).

Clapham, J., *The Bank of England: a history*. (London, 1944).

Crick, W. F. and Wadsworth, J. E., *A hundred years of joint stock banking* (London, 1936).

Dun, J., 'The banking institutions, bullion reserves, and non-legal-tender note circulation of the United Kingdom statistically investigated', *Journal of the Statistical Society*, 39 (1876), pp.1-189.

Easterbrook, F., Fischel, D., 'Limited liability and the corporation', *The University of Chicago Law Review*, 52 (1985), pp.89-117.

Forbes, K. F., 'Limited liability and the development of the business corporation', *Journal of Law, Economics, and Organisation* 2 (1986), pp.163-177.

Hall, F. G. *The Bank of Ireland 1783-1946* (Dublin, 1949).

Halpern, P., Trebilcock, M., Turnbull, S., 'An economic analysis of limited liability in corporation law', *University of Toronto Law Journal* 30 (1980), pp.117-150.

Hansmann, H. and Kraakman, R., 'The essential role of organisational law', *Yale Law Journal* 110 (2000), pp. 387-440.

Hicks, J., 'Limited liability: the pros and cons', in T. Orhnial, ed., *Limited liability and the corporation*, (London, 1982), pp.11-21.

Hickson, C. R. and Turner, J. D., 'Trading in the shares of unlimited liability banks: the Bagehot problem', *ESRC Centre for Business Research, University of Cambridge, Working Paper No. 241* (2002).

Hickson, C. R. and Turner, J. D., 'Shareholder liability regimes in English banking: the impact upon the market for shares', *European Review of Economic History*, 7 (2003), pp. 99-125.

Hickson, C. R. and Turner, J. D., 'Trading in the shares of unlimited liability banks in nineteenth-century Ireland: the Bagehot hypothesis', *Journal of Economic History*, 63 (2003), pp. 931-958.

Hickson, C. R. and Turner, J. D., 'The genesis of corporate governance: nineteenth-century Irish joint-stock banks', *Business History*, 46 (2004), forthcoming.

Hickson, C. R. and Turner, J. D., 'The rise and decline of the Irish stock market, 1865-1913', *Queen's University manuscript* (2004).

Hunt, B. C., *The development of the business corporation in England 1800-1867* (Cambridge, MA, 1936).

Jeffreys, J.B., 'The Denomination and Character of Shares, 1855-1885', *Economic History Review*, 16 (1946), pp.45-55.

Jensen, M. C. and Meckling, W., 'Theory of the firm: managerial behaviour, agency costs and capital structure', *Journal of Financial Economics*, 3 (1976), pp.305-360.

Knox, W.J., *Decades of the Ulster Bank, 1836-1964* (Belfast, 1965).

Kraakman, R., 'Unlimited shareholder liability', in P. Newman, ed., *The New Palgrave Dictionary of Law and Economics*, (London, 1998), pp.648-654.

Manne, H.G., 'Our two corporation systems: law and economics', *Virginia Law Review*, 53 (1967), pp.259-284.

Mitchell, B. R., *International Historical Statistics: Europe 1750-2000* (London, 2001).

Ó Gráda, C., *Ireland: a new economic history* (Oxford, 1994).

Ó Gráda, C., 'Should the Munster Bank have been saved?' *Centre for Economic Research Working Paper Series, University College Dublin*, WP01/15.

Ollerenshaw, P., *Banking in nineteenth century Ireland: the Belfast banks, 1825-1914* (Manchester, 1987).

Paget, J. R., 'The Married Women's Property Act, 1882', *Journal of the Institute of Bankers*, 3 (1882), pp.541-548.

Posner, R. A., 'The rights of creditors of affiliated corporations', *University of Chicago Law Review* 43 (1976), pp.499-526.

Pownall, G. H., 'Some modern tendencies in banking', *Journal of the Institute of Bankers* 34 (1913), pp.163-86.

Pownall, G. H., *English banking: its development and some practical problems it has to solve*, (London, 1914).

Rae, G., *The Country banker: his clients, cares, and work from an experience of forty years* (London, 1885).

Shannon, H., 'The limited companies of 1863-1883', *Economic History Review*, 4 (1933), pp.290-316.

Simpson, N. *The Belfast Bank 1827-1970* (Belfast, 1975).

Sykes, J., *The amalgamation movement in English banking, 1825-1924* (London, 1926).

Thomas, W. A., *The stock exchanges of Ireland* (Liverpool, 1986).

Weinstein, M. I., 'Share price changes and the arrival of limited liability in California', *Journal of Legal Studies*, 32 (2003), pp.1-25.

Wilson, A. J., *Banking reform: an essay on the prominent dangers and the remedies they demand* (London, 1879).

Winton, A., 'Limitation of liability and the ownership structure of the firm', *Journal of Finance*, 48 (1993), pp.487-512.

Woodward, S., 'Limited liability in the theory of the firm', *Journal of Institutional and Theoretical Economics*, 141 (1985), pp.601-611.

¹ Thanks go the Public Record Office of Northern Ireland for access to the archives of the Ulster Bank. We also greatly appreciate the permission granted by the Ulster Bank to access post-1900 records. This paper was presented at the Economic History Society conference at Royal Holloway University, April 2004. We are grateful to the comments of participants, especially Larry Neal and Stephen Quinn.

² Volume 13 (1855). Cited in Hunt, *Development*, p. 116.

³ *The Economist* on December 18th 1926 stated that “the economic historian of the future may assign to the nameless inventor of the principle of limited liability, as applied to trading corporations, a place of honour with Watt and Stephenson, and other pioneers of the Industrial Revolution. The genius of these men produced the means by which huge aggregations of capital required to give effect to their discoveries were collected, organized and efficiently administered.”

⁴ *The Economist*, Dec. 23rd 1999. Notably, an early-nineteenth-century banking theorist believed that “perhaps no other factor has been of equal importance in producing the enormous and sustained propensity of the country as the law of limited liability” (Pownall, ‘Modern tendencies’, p.164).

⁵ Easterbrook and Fischel, ‘Limited liability’; Forbes, ‘Limited liability’; Halpern, Trebilcock and Turnbull, ‘Economic analysis’; Hansmann and Kraakman, ‘Essential role’, pp.423-7.

⁶ Hicks, ‘Limited liability’, pp.11-12.

⁷ Jensen and Meckling, ‘Theory of the firm’.

⁸ Hickson and Turner, ‘Shareholder liability’ examine the impact of moving to limited liability upon the risk of English bank shares in the 1880s. Weinstein, ‘Share price’ examines the impact of the introduction of limited liability in California during 1929-31 upon share prices. However, Californian firms were moving from a *pro rata* form of unlimited liability, not a joint and several form.

⁹ See Jeffrey, ‘Denomination’.

¹⁰ Rae, *Country Banker*, p.233; Sykes, *Amalgamation*, p.38.

¹¹ Pownall, *English Banking*, p.27; Anon., ‘Callable capital’, p.465.

¹² According to Hall, *Bank of Ireland*, p.266 ‘the question as to whether or not the liability of holders of Bank of Ireland stock was limited had been a matter of considerable doubt ever since the Bank was established’. However, after taking legal counsel, the issued a notice declaring that the liability of its shareholders was limited.

¹³ 21 & 22 Geo. III, c.16 (Ir).

¹⁴ 6 Geo. IV, c.42.

¹⁵ For the details of the failure see Barrow, *Emergence*, pp.108-119; Hall, *Bank of Ireland*, pp.158-171; Hickson and Turner, 'Genesis'.

¹⁶ See Hickson and Turner, 'Bagehot hypothesis'.

¹⁷ The reason the Agricultural and Commercial Bank may have failed is that its directors were far from wealthy, and therefore had little incentive to prevent low-wealth individuals owning shares. See 'Agricultural Bank of Ireland', *The Banker's Magazine*, 1845, May, p.67.; S.C. on Joint Stock Banks (P.P. 1837), Q. 2509; S.C. on Joint Stock Banks (P.P. 1838), Q. 518.

¹⁸ 21 & 22 Vict. c.91.

¹⁹ Ó Gráda, *Ireland*, p.362; Ó Gráda, 'Munster Bank'.

²⁰ Notably, this argument has been made with respect to Scottish banks, which were also reluctant to adopt limited liability at this time (See Carr *et al.*, 'Unlimited liability').

²¹ Wilson, *Banking reform*, p.69. A similar view is given in Crick and Wadsworth, *Hundred years*, p.31.

²² Clapham, *Bank of England*, vol. 2, p.406 states that following this crisis "both in Scotland and England, it was supposed that for a prominent concern to register as a limited company would be a suggestion of weakness that might impair its credit".

²³ The two banks failures were the European Bank Ltd. (1864) and Union Bank of Ireland Ltd. (1866).

²⁴ Dun, *Banking institutions*, pp.18,55.

²⁵ Rae, *Country Banker*, p.257.

²⁶ Hall, *Bank of Ireland*, p.265.

²⁷ Checkland, *Scottish Banking*, p.471.

²⁸ 42 & 43 Vict., c.76.

²⁹ Rae, *Country Banker*, p.258.

³⁰ See Simpson, *Belfast Bank*, p.140-3.

³¹ The ratios for the seven banks were as follows: Belfast Bank (4), Hibernian (2), National Bank(3.33), Northern Bank (4), Provincial Bank (4), Royal Bank (3) and Ulster Bank (4). Data from *The Banking Almanac* (1885).

³² Manne, 'Two corporation', p.262; Posner, 'Rights of creditors', p.501; Halpern, Trebilcock and Turnbull, 'Economic analysis, p.137; Easterbrook and Fischel, 'Limited liability', p.90.

³³ Hickson and Turner, 'Trading', p. 4.

³⁴ Alchian and Woodward, 'Reflections', p.121; Carr and Mathewson, 'Unlimited liability', p.769; Forbes, 'Limited liability', pp.165-6; Woodard, 'Limited liability', p.602; Winton, 'Limitation', p.500.

³⁵ Hickson and Turner, 'Bagehot hypothesis', pp.952-3.

³⁶ Easterbrook and Fischel, 'Limited liability', p.94; Kraakman, 'Unlimited shareholder liability', p.694.

³⁷ Ollerenshaw, *Banking*, p. 46

³⁸ Special meeting of shareholders' committee 18th September 1883 - Public Record Office of Northern Ireland (hereafter PRONI), Ulster Banking Company's Committee and General Meeting Minute Book, D/3499/AA/3.

³⁹ See Hickson and Turner, 'Genesis of corporate'.

⁴⁰ Deed of Copartnership of the Ulster Banking Company, p.16, section 14.

⁴¹ Hickson and Turner, 'Bagehot hypothesis'.

⁴² In terms of branches, the Ulster Bank had 48, 56 and 77 in 1877, 1892 and 1914 respectively. The median number of branches for Irish banks in 1877, 1892 and 1914 is 38, 44 and 61 respectively, implying that the Ulster Bank was at the upper end of the distribution in terms of size of branch network. Indeed, in each of the three snapshot years, it is the second largest bank in terms of size of branch network.

⁴³ Ollerenshaw, *Banking*, p. 183.

⁴⁴ Notably, Jeffreys, 'Denomination', p.49 suggests that the same held true for the early limited liability companies.

⁴⁵ Quoted in Simpson, *Belfast Bank*, pp.185-6.

⁴⁶ PRONI, Ulster Bank Return of Shareholders, D/3499/CB/2, 7, 21.

⁴⁷ The clause forbidding joint ownership of shares in the original deed of copartnership was repealed in a general meeting on the 24th September 1868 (PRONI, Ulster Banking Company's Committee and General Meeting Minute Book, D/3499/AA/3).

⁴⁸ PRONI, Ulster Bank Return of Shareholders, D/3499/CB/2 - 21. Unfortunately, the Return of Shareholders for 1913 hasn't survived.

⁴⁹ PRONI Will Calendar books.

⁵⁰ A Consumer Price Index obtained from Mitchell, *International*, p.864 was used.

⁵¹ Hickson and Turner, 'Bagehot hypothesis', p. 944.

⁵² In 1836, there were 916 shareholders, but only 80,000 issued shares.

⁵³ In 1836, the ten largest shareholders owned 9.64 per cent of the bank's stock, the twenty largest owned 15.4 per cent, and the thirty largest owned 20.6 per cent.

⁵⁴ See Paget, 'Married' for the impact of this Act upon banks.

⁵⁵ There were 85 individuals whose bequeathed wealth was less than the market of their shares. Due to this anomaly, these individuals were omitted from this analysis.

⁵⁶ The standard deviation is 46.1.

⁵⁷ The median ratio is as follows: 4.30 (1884-88); 5.86 (1889-93); 5.69 (1894-98); 5.19 (1899-1901); 5.81 (1904-08); 5.49 (1909-14).

⁵⁸ The median of the different groupings is as follows: Wives (£442), Spinsters (£1,152), Farmers (£1,449), Professionals (£2034), Gentlemen (£3,499), Merchants (£3,694).

⁵⁹ See Hickson and Turner, 'Bagehot hypothesis'.

⁶⁰ The figures for branches and agencies were obtained from the Ulster Bank's annual reports. PRONI, Ulster Banking Company's Yearly Reports, D/3499/AE/1,3,6.

⁶¹ Percentage of shareholders in 1914 who were farmers: Tyrone (28.6), Cavan (24.4), Monaghan (21.7), Non-Ulster counties (16.3), Londonderry (16.2), Donegal (14.5).

⁶² 1880 is an outlier with only eight shareholders dying and several of them having abnormally high value of shares / wealth ratios.

⁶³ Although many new types of firms came to the market (Thomas, *Stock Exchanges*, pp.135-60), in terms of issues and market capitalisation, banks and railways dominated the market (Hickson and Turner, 'Rise and Decline').

⁶⁴ Hickson and Turner, 'Bagehot hypothesis'.

⁶⁵ Knox, *Decades*, p.58.

⁶⁶ Knox, *Decades*, p.78.

⁶⁷ Knox, *Decades*, p.77.

⁶⁸ Knox, *Decades*, p.98.

⁶⁹ Knox, *Decades*, p.118.

⁷⁰ Knox, *Decades*, pp.139-140.

⁷¹ Knox, *Decades*, p.141.

⁷² Knox, *Decades*, pp. 118 and 141.

⁷³ Shannon, 'Limited Companies', p.307.