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Ownership and Control in the Twentieth Century: Ambiguous Trends in Marriage and Divorce. (Revised Draft)

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ABSTRACT

In 1900 US business corporations were dominated by plutocratic family owners, not outside stockholders, and New York was only a modestly sized metropolitan stock exchange. At that time, British and French quoted companies showed much higher levels of divorce of ownership from control, and the London and Paris stock exchanges supported the widest ownership of equities. The average level of divorce of ownership from control among both domestic and overseas companies quoted on the major west European exchanges was high in 1900 for two major reasons: distinctive European "democratic" corporate governance rules and London's unusual listing requirement of large free floats. Allowing for contrasting trends within and outside the USA, the phenomenon of ownership separated from control was possibly not significantly higher globally by the end of the twentieth century than at the beginning. "Marriage", arguably, had as large a role as "divorce" in the, diversely structured and sometimes reversed, twentieth century relationships of investor owners with management controllers.

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> "The divorce of ownership from control…almost necessarily involves a new form of organization of society."
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> Preface to Berle and Means, *The Modern Corporation and Private Property,* 1932.
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> "The theoretical literature may emphasize the American experience because it is largely American."
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> Peter Temin, "Comment," in Raff and Lamoreaux, eds., *Coordination and Information*, p. 317.

One of the key stylized facts of twentieth century business history is the increasing divorce of management control from shareholding ownership. Since the theme was developed in the 1930s for the USA by Berle and Means, scholars in many countries have debated both how far it has gone and whether it has really fundamentally changed capitalism, though few have questioned that ownership did become increasingly divorced from control. Inevitably a concept so easily linked to "modernity" (in the Weberian tradition that has so strongly influenced leading business historians) has also been pressed into service as a tool for understanding the rise and decline of nations. The enthusiastic embrace of these aspects of modernity by Germany and the United States has been confidently identified as a prime source of their business and technological dynamism. By the same token, historians of France and Britain have gravely diagnosed the survival of family ownership and delayed management professionalisation as a source of their economic retardation.

Participants in the metropolitan capital markets of the early twentieth century would have found these perspectives somewhat puzzling, since they were aware that ownership was already substantially divorced from control in the leading businesses of western Europe. They considered Paris and London the premier international stock markets, with New York and Berlin having more limited local roles. They would simply have been amused by the implied suggestion that share-ownership was more widespread in America and Germany than in Britain and France. However, as avid readers of colorful newspaper sagas of the personal capitalism of the Vanderbilts, Harrimans and Rockefellers they would, perhaps, not have been surprised to hear a forecast of the spread of less plutocratic ownership structures (that were already familiar in Europe) to the New World. It is easy for us to forget that, to a French financier of 1900, Alfred du Pont was the well known head of one of France's largest quoted mining companies, while his distant American namesake (whose unquoted family partnership ran an illegal American explosives cartel) was unknown. Moreover, many businessmen at the turn of the century, like Adam Smith before them, considered the divorce of ownership from control to be a potentially worrying problem requiring careful attention, rather than a solution to the political or management problems of capitalism that some social democratic commentators and business historians later pronounced the supposedly new phenomenon to be.[1]

This paper explores why the perspectives instinctive to contemporaries differ so much from those of some moderns, by examining where and why ownership was most divorced from control at the beginning of the twentieth century. It will be confirmed that Britain and France led in the divorce of ownership from control, notably in the railway, utility and financial sectors. In the industrial sector, it is true, French businesses were in 1900 typically personally owned by board members (usually, then, founding entrepreneurs or inheriting families), but the same was true of American and German companies; personal ownership was, if anything, least common among British industrials. The rate of change over subsequent decades in the various countries is difficult to track because of incompatible data sets and measures used, but a plausible case can be made that ownership was not significantly more divorced from control *among quoted companies globally* at the end of the twentieth century than at the beginning. However, the countries where ownership is most and least divorced from control, the role of the quoted company and the techniques of acquiring and maintaining control have mutated significantly, with Britain remarkable among large countries for maintaining control substantially divorced from ownership throughout the twentieth century.

FOUR MAJOR STOCK MARKETS IN 1900.

On Tuesday 2nd January1900, the main stock markets of the world opened for business in a new century.[2] Domestic equity markets opened with the market capitalizations shown in Table 1.[3] These equity valuations are based on the previous weekend closing prices of ordinary (common) stocks and shares.[4]

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[1] Crosland, *Future; and Dahrendorf, Society,* for the political response; Landes, "French Entrepreneurship;" Kindleberger, *Economic Growth;* Chandler*, Scale,* for representative historians. Many of the latter were connected in the 1950s with the Research Center for Entrepreneurial History at Harvard, a source of powerful influences from Weberian and Parsonian sociology.

[2] Properly, the biblically literate Victorian consensus identified 1901 as the beginning of the twentieth century, though the contrary intuition of 1900 (by the 2000 millenium almost universally accepted) had its advocates even then.

[3] In the table and text all currencies have normally been converted to 1900 $US at contemporary exchange rates, though the $5=£1 rate (rather than $4.867) rate is used where a rounded figure is more appropriate, for example in describing £10 shares as worth "around $50".

[4] Although they then had separate, different and changing technical meanings in various countries, I use the terms "stocks" and "shares" interchangeably in the modern mid-Atlantic sense, and use the term "equity" as a shorthand for common stocks/ordinary shares alone (though fixed interest preferred stocks are technically also equity not debt).

Table 1

Stock Market Values of Domestic Corporate Equities quoted on Major National Exchanges at the beginning of 1900.

Country (and Stock Exchange)	Number of listed companies	Value of domestic equities at market prices			Sector Shares		
		Total	Per capita	Ratio to GDP	Rail.	Finance.	Other
		($M)	($)	%	%	%	%
UK (London)	744	4,300	104	49	49	17	34
France (Paris)	429	2,139	55	34	43	26	31
USA (New York)	123	2,860	37	15	63	7	30
Germany (Berlin)	719	1,110	20	14	9	45	47

Source: Hannah, "Corporate Finance," Table 1.

(In a later version it may be possible to split "other" into "utilities and other services" and "mining and manufacturing.")

The national aggregates in the table only include *domestic* companies officially listed on the appropriate *national* exchange.[5] (We will return later to the overseas equities and free-standing companies operating overseas and to regionally quoted and unlisted enterprises). London - capital of a country with just over half the USA's GDP - was still, in absolute terms, larger than New York, even for domestic corporations alone. Paris - with a national GDP only one third the USA's - was not much smaller, and, again, larger if its quoted international equity is considered; and it was also nearly twice the size of Berlin. The puzzlingly small size of Berlin (comparisons of the final columns suggest) is partly explained by the relative insignificance of rail issues there, while a similar gap - financial issues - appears in the New York market. These "missing" equities are, of course, largely the result of government actions. Germany had nationalized its major railways and their fixed interest

[5] The higher US figures in Rajan and Zingales ("Great Reversals") appear to be based on sources like Goldsmith, which refer to the stock of all corporations whether listed or not. Since the overwhelming majority of US corporations were not quoted on the NYSE (nor, indeed, elsewhere), whereas a large portion of German AGs were quoted, this is not a good way of measuring the relative penetration of stock exchanges in the two countries.

indebtedness therefore now appeared as government, not corporate securities. In the USA, branching was substantially banned, so the thousands of American banks were mainly too small for a NYSE quotation, while European banks were larger and often quoted.

The third and fourth columns of Table 1 provide the most convenient way of making international comparisons of the apparent penetration of corporate equity in the various economies, but should be interpreted with care. The column showing quantity per head of population, for example, cannot be interpreted as an average holding within the country. As so many New York listed equities were then held in Europe, the average US citizen's holding of NYSE-listed equities was certainly lower than this figure. Given, in addition, the prevalence of foreign corporate equity listed on London but excluded from the table, the average UK citizen's holding of London equity was certainly higher than three times the level of American holdings of NYSE-listed equity (shown in column 3).[6] Indeed, it is rather striking that at this time the value of all British investments in the United States alone– $2.6 billion, though that included unquoted investments, preferred stock and bonds - was about the same as the value of all the equity listed on the NYSE.[7] (Of course, neither of these two figures was a very large number when compared to the massive accumulated capital stock of the American economy, that had been financed by individuals, families, partnerships, non-equity securities and other financial intermediaries.)[8] The "equity culture" was not fully developed anywhere at this time, but was more widespread in Britain and France; western Europe also clearly had the more experienced and sophisticated investors.[9] Moreover, given Germany's foreign holdings, it would be rash to conclude, solely on the basis of this evidence, that the USA had a more developed metropolitan equity culture even than Germany.

Other things being equal, it seems likely that France and Britain - the two countries with the largest metropolitan stock exchanges for domestic corporate equity relative to their economic size - would exhibit the larger degree of divorce of ownership from control that such markets facilitate. Shareholding habits were, of course, still generally confined to the wealthier classes everywhere.[10] Yet, the typical share bargain size in London (around $500) compared with New York ($10,000) is consistent with somewhat wider share ownership in Britain.[11] In France stock purchases even as low

[6] Bacon, "American International Indebtedness," p.276, estimated overseas holdings in 1899 of US securities of $3.33 billion, but this included bonds and non-NYSE securities; comparable US holdings overseas were only $0.5 billion.

[7] Davis and Cull, *International Capital Markets,* p.38.

[8] Goldsmith (*Comparative NationalBalance Sheets,* p. 326) estimates the total value of all US assets in 1900 at $150 billion.

[9] Ibid., p.71; Anon, "Sociétés," pp. 394-99.

[10] The thousands of working men in England who owned shares in Lancashire textile mills were a rare exception and not paralleled in Fall River, Massachusetts, see Thomas, *Provincial Stock Exchanges,* p. 147; Yonekawa, "Comparative Business History," p. 79, 92.

[11] London stockbrokers typically dealt in units of ten shares, many of which had £10 par value (though lower value shares were also common); American shares were typically dealt in in hundreds and had a par value of $100 (though a few stocks had lower par values and specialist "odd lot" brokers would deal in smaller amounts). Jobbers in London, quoting a dealing price to brokers, were not compelled to deal in more than 50 shares at that price (if the shares were priced above £1, 100 shares if less than £1), see Ingall and Withers, *Stock Exchange,* p. 58.

as $100 were perfectly acceptable to a Paris broker or bank.[12] American observers were amazed to find that in France small lots of shares traded for more than large lots (reflecting substantial excess demand from small investors), whereas in America the reverse was true (reflecting the adverse cost structure of small "odd-lot" – below $10,000 – deals, in a stock market dominated by plutocrats)[13].

Minimum share sizes (nominal or par values) are also suggestive of a more "democratic" market in Britain and France. In Britain, there was no legal minimum and £1 (about $5) shares were quite normal, though France did not adopt the suggestion from an official enquiry that similar 25 franc shares should be legal for all companies there (shares of that size were permissible from 1893 only for small companies, with 100 francs ($20) being the minimum for medium-sized ones and 500 francs ($100) for large companies). In Germany, the minimum share size of 100,000 marks (about $25,000) was reduced in 1884 to the still unusually high minimum of 1,000 marks ($250); this became the effective norm for new companies.[14] In the USA almost all companies adopted a $100 norm, with only a few widely-held corporations like the Pennsylvania Railroad offering $50 common stocks.

It also appears that, while American plutocrats had most of their wealth invested in corporate securities, European plutocrats not only had less accumulated wealth, but were less inclined to invest it in their nation's corporations.[15] Where European and American shareholdings in the same company can be distinguished, American shareholdings were usually larger.[16] Investment trusts, enabling smaller investors to spread their risks, were well established in Europe, but almost unknown in the USA in 1900.[17]

Such observations are indicative, but not in themselves decisive, in establishing more widespread share-ownership in western Europe and more plutocratic concentration of share-ownership in America. There are several possible reasons why the relative sizes of metropolitan stock markets in Table 1 might not reflect breadth of stockholding. Some among these countries might have relied more on non-voting fixed-interest bonds, that even more clearly divorced ownership from control than wide equity ownership.[18] It is also possible that the domestic equity market sizes of both the UK and the USA are exaggerated by the figures in Table 1 by factors such as British companies

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[12] Leroy-Beaulieu, *L'Art,* p.56.
[13] Greenwood, *American and Foreign Stock Exchange Practice,* p.773.
[14] Gőmmel, "Entstehung," p. 151.
[15] In 1914, IRS statistics indicate that 74% of US annual incomes exceeding $1 million were derived from stock ownership; in Paris in 1911, less than 50% of franc-millionaire inheritances (i.e. a significantly lower threshold of wealth) were invested in the stock exchange and most of these were in foreign and government securities rather than French corporates: French industrial shares and bonds together accounted for only 17% of noble estates and 23% of wealthy bourgeois estates (Rubinstein, *Wealth,* pp. 108, 227.) Rubinstein, *Men,* pp. 187-89 suggests from a sample of 44 Scottish millionaires and half-millionaires (closer in wealth to the American group) that large holdings in corporates (family firms and portfolio investments) were more common than in France, but does not give precise figures.
[16] Even in the Illinois Central, known for encouraging small shareholdings, particularly by its employees, the average American holding was higher than the average British holding, see Huebner, "Distribution," p.65.
[17] Veenendaal. *Slow Train,* pp. 155-63; Burton and Corner, *Investment Trusts*.
[18] Hannah, "Corporate Finance," suggests the United States had the least reliance on equity and the most on debt securities, followed by the UK, France and Germany in that order.

having most overseas direct investments (inevitably included in their domestic capitalizations) or by significant double counting in the listed market values of, then extensive, American inter-corporate shareholdings.[19]

However the more important distortions seem likely to arise from two factors. First, although the metropolitan stock exchanges were perhaps those on which ownership was likely to be most widespread, they were at this time supplemented by many regional exchanges and informal stock trading markets, which were probably of more importance in a federal monarchy like Germany or a federal republic like the USA than in (politically and financially) centralized Britain and France. Second, the "free float" of shares in listed companies that were in the hands of the general public may have been larger in some countries than others: the shares closely held by families or directors – though normally included in the market valuation totals – could be correspondingly less important there. The evidence on these issues is far from perfect, and it is clear that they – and ownership patterns generally - differ by sector, so the next sections will examine these separately for the four countries in 1900.

RAILWAYS: PIONEERING MANAGEMENT CONTROL

The railway sector was the largest component of 1900 equity capitalizations (see the fifth column of Table 1), and Berle and Means described it as the pioneer in the United States of the divorce of ownership from control, so it is the obvious starting point. The first issue to be resolved is what to do about Germany, where most of the railway system had been nationalized. Berle and Means, being good New Deal Democrats, were inclined to treat publicly-owned US utilities (like New Jersey transit companies) as an advanced form of the divorce of ownership from control, implicitly seeing citizens, voters or taxpayers as owners, who did not directly exercise control.[20] Extending that treatment to the many railways (not to speak of gas, water and electric utilities, telephones, telegraphs, shipyards, tobacco factories and the like) that in 1900 were owned by local and central governments in Europe would tend to show European countries with more divorce of ownership from control than the USA (which had one of the smallest government-owned sectors). On the other hand, not doing so biases the result in the opposite direction, since the industries that were often state-owned in Europe, like the telephone companies or the railroads, led the move to wider share ownership in the USA.

There is no obviously right answer to this conundrum, so I have simply opted for the latter bias: arbitrarily confining this study to the quoted company sector, however that was constituted in the different countries, and ignoring state-owned companies throughout. This also means that many significant sectors with extensive family ownership – like agriculture and retailing – are largely excluded. So, indeed, are entirely personally-owned firms like Krupp (a sole proprietorship), Carnegie

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[19] Jones, *Evolution,* p. 30; Hannah, "Multinationality." ?/

[20] Berle and Means, *Modern Corporation,* p. 17.

Steel (a partnership) and the W D & H O Wills tobacco enterprise (an unquoted company), to name the largest industrial firms in these countries that were not, at the beginning of the twentieth century, quoted, though I will, from time to time, refer to such examples also.

The problem of regional stock exchanges being more important in the USA (and Germany) is less serious in the case of railways than any other sector: it is clear that most of the stocks of the leading railway companies (where they were not nationalized) were quoted on the major metropolitan stock exchanges shown in Table 1. Dozens of the European railways that were not state-owned had, by the late nineteenth century, tens of thousands of shareholders each. In Britain in 1902 it was calculated that there were perhaps, in all, 700,000-800,000 separate railway shareholdings, owned by 500,000 shareholders (1.2% of the British population). Neymarck reckoned the holders of railway shares and bonds together in France numbered 700,000 as early as 1895 (1.7% of the population). Data on individual railroad companies also suggests widely dispersed shareholding. In Britain, the London & North Western Railway (the largest company by equity capitalization listed on any of the exchanges in Table 1) alone had 36,349 ordinary stockholders, the Midland Railway 46,661 and 8 others had more than 10,000 stockholders.[21] The situation was very similar in the six major French railway companies: the Paris-Lyon-Méditerranée (P-L-M) railway in 1900 had 29,522 shareholders with nominal certificates plus many holding bearer shares. Only four P-L-M shareholders owned as many as 500 shares, worth, at 1900 values, only $135,000: so the largest 4 shareholders held less than 0.2% of the shares.[22]

There were only 500,000 common stockholders in the United States in 1900 (0.7% of the population) in *all* enterprises: a lower proportion than for domestic railway stockholders alone in Britain and France.[23] American railways typically numbered their stockholders in thousands rather than the tens of thousands common in Europe. The known exceptions in 1900/01 were the Pennsylvania with 29,000, the Atchison, Topeka & Santa Fe with 13,147, the Union Pacific with 12,450 and the New York Central with 10,320.[24] Many other large roads, however, numbered their stockholders in the hundreds rather than thousands and were more personally controlled: the Southern Pacific, the Erie, the Northern Pacific and the Southern were all so classified by Huebner. The average US railroad stockholding in his 1900 sample of large railroads was $21,890 (58 years' earnings for an average US employee of the time); elsewhere the average holdings were lower: $5,229 for the UK and $3,474 for France.[25] As American stockholders took over from Europeans in

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[21] Board of Trade, *Return Showing Holders of Debentures, Preferred and Ordinary Stocks of Railways in the UK, 16 December 1902.*
[22] Neymarck, "Statistique," p. 134.
[23] Hawkins, "Development," p. 145. The higher figures sometimes quoted can usually be traced to unsupported contemporary imagining or to Warshow, "Distribution," whose methodology is obviously flawed and who explicitly acknowledges double counting.
[24] Huebner, "Distribution," pp. 66-68, 77.
[25] All nominal values. Ibid., pp. 66-68; Neymarck, *Le Morcellement,* p. 31. The British figure is for 1902, the French for 1895.

many American railroads in the 1890s, the average U.S. railroad stockholding increased by 42%, at a time when average railway stockholdings in Europe were getting smaller.[26]

A key difference between many European and American railroads affecting control issues – and hence, indirectly, ownership dispersion - was in their corporate governance rules. Generally the main providers of capital – the holders of bonds and preference shares – did not have significant voting power anywhere, except in the case of default. However, in Europe even large ordinary shareholders were usually in a similar position, because of what Colleen Dunlavy has called "democratic" rules of corporate governance: one vote per shareholder (rather than per share), or reduced voting weight per share, as the number of shares held increased. This was the norm in the main railway companies and prevented, or at least strongly inhibited, the emergence of plutocratic control: large holders' votes simply counted for less.[27] The boards of directors and professional managers in European railways were therefore very securely entrenched operators of what were essentially public service utilities: even the ordinary shareholders were virtual *rentiers*, not controlling owners. Occasionally sons followed fathers as railway directors, but only rarely do directors with the same surname serve concurrently in British or French railway boards: these were not family-dominated companies, but public, widely-held firms controlled by elite business and political networks.[28]

There was little point in the directors on such boards having a large shareholding, unless it happened to suit their personal investment needs. In Britain's largest quoted company, the London & Northwestern Railway (LNWR), a director was required to own only £1,000 (nominal values, about $5,000) of stock, though the actual holdings of the 23 directors at the turn of the century varied from that minimum (held by a recently elected Irish MP-director) through the chairman's £2,440 up to the largest director stockholding of £65,000, the latter being in the portfolio of the Duke of Sutherland, one of the wealthiest men in Britain. Collectively the 23 directors held only £225,422: well below 1% of the stock outstanding in 1900.[29] The LNWR's voting rules – which since an 1845 Act had become standard in British railway companies – gave ten votes to any director owning the qualifying £1,000 block (actually one vote per £100 of stock held), but each further £500 up to £10,000 commanded

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[26] Ibid., pp. 70-71. Neymarck, "Statistique."

[27] Dunlavy, "Corporate Governance." Jordan and Gore-Brown (*Handy Book,* p.25), say that it was possible to subvert such provisions by registering the additional shares in the name of nominees "and this cannot be prevented." I have not found significant examples of this happening in western Europe, though the US manufacturing company, Singer, did use nominees to subvert the intention of a similar Russian law and maintain voting control of its Russian subsidiary, and such tactics were occasionally used by major shareholders in Japan to subvert similar provisions (Miwa and Ramseyer, "Corporate Governance," p.199.)

[28] The main British exceptions are in small local lines, such as the Liverpool, Southport and Preston Junction Railway. In France, there were multiple Rothschild family directors of the Nord.

[29] Calculated from the qualifying stockholdings disclosed in annual reports (exceptionally by the LNWR candidate directors) when up for re-election 1894-1906, with the largest disclosed at any date taken as the actual 1900 holding.

only one vote and, beyond that, there was only one vote per ₤1,000 of stock.[30] An outsider buying up a majority of the ₤42 million (nominal) stock (which, at 1900 market prices, no one person in Britain - and only one or two in America - were rich enough to do) could only take control of the company, if she also had the support of small shareholders, who had the overwhelming majority of votes. In practice, because the voting structure prevented a takeover bid coalescing small shareholders' actions, the incumbent directors held effective control. Except when the board completely lost shareholder confidence, any significant holders of railway shares were reduced to using voice or exit to influence board policy.[31]

In France the voting power of railway shareholders was slightly different: in the P-L-M railway, for example, there was no vote for holders of under 40 shares, then one vote for every 40 shares, with an overall maximum of ten votes.[32] This pattern – typical of many French companies - discouraged the nuisance of small shareholder attendance at annual meetings and was something of a charter for the merely comfortable bourgeois against the true plutocrat: both more and less "democratic" than the typical British structure. Any shareholder with less than 40 shares in the P-L-M (worth about $10,800 in 1900) was deprived of the vote, while any shareholder owning more than the maximum (worth about $108,000) simply could not vote the excess shares. However, the practical effect was identical to that of the British voting structure: to entrench control by a self-selected and self-perpetuating board and the professional railway managers they co-opted, and to prevent any contestable market in corporate control developing. In both countries, railway boards consisted of bankers, politicians, merchants and industrialists – with some promoted railway engineers and managers – who brought a range of expertise and varied consumer and professional views to their deliberations, and only rarely had significant ownership stakes. Ēdouard de Rothschild was on the board of the Compagnie du Nord, only tangentially as a result of the large financial interest his family had earlier had (and no one now had) in the railway, but mainly because of his accumulated, expert knowledge of finance and administration.[33]

In the USA, by contrast, most railroad common stocks (or voting preferred stocks) had one vote irrespective of the number held: what Dunlavy terms a "plutocratic" governance structure, that is now the corporate norm. Hence, control could be obtained by a large shareholder, even – given high leverage and pyramiding – one owning a relatively small portion of total corporate capital.[34]

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[30] *Stock Exchange Official Intelligence*, 1901, p. 310. This was also the voting structure in the (optional) model clauses of the British Companies Acts, though most industrial companies struck them out and substituted a one-vote-per-share rule.

[31] An example is the AGM lobbying of the LNWR directors to adopt some American railway practices around 1902 by an investment trust-led shareholder pressure group, extensively reported in the contemporary press.

[32] *Stock Exchange Official Intelligence 1901.*

[33] Caron, *Histoire,* pp. 275-77. By 1911/1912, the largest 10 shareholders in the Nord company held less than 3% of the shares

[34] Lyon, *Capitalization,* pp. 129-35. Berle and Means (*Modern Corporation,* p. 184 n. 18) suggest that the growth of holding company pyramiding was particularly prevalent after 1910. An earlier device criticized when the Rock Island Railroad directors used it to entrench their control was to give some stock higher votes: $13.5 million (9%) of its $150 million stock was then sufficient to secure control, see Pratt, *Work,* p. 69.

In Britain (or France), the difficulty of gaining control of large railway lines by buying a majority shareholding required that the consolidation by merger of complementary or competing lines be primarily a parliamentary and legal process.[35] In the USA, though public policy also had a role, something like the modern takeover was the normal form of corporate consolidation and reorganization.[36]

Railway management at a US road like the Pennsylvania appears almost as securely entrenched as its French and British counterparts, given its unusually dispersed stockholding and large size.[37] One well-informed observer commented that "The company's finances have been conducted on principles more English than American."[38] However, even the Pennsylvania board later felt it wise to deprive their stockholders of the vote, to ensure things stayed that way.[39] Other railroads in which European investor interest had been strong also tended to have wider shareholding. Leland Stanford and Collis P. Huntington had been able to maintain control of the Central Pacific Railroad, until it was folded into the Southern Pacific in 1899, with less than 2% of the stock between them, largely, it seems, by using the proxies of a majority of European shareholders concerned at the absence of limited liability under California law.[40] New England roads tended to have more dispersed shareholding than western and southern ones.

Yet, many American railways were under personal control. In the Southern Pacific itself, Huntington owned 34% of the stock when he died in 1900.[41] The pioneer developer of Florida, Henry B. Plant, owned practically all of the stock of the Savannah, Florida & Western Railroad, linking Tampa to Charleston.[42] George Gould, the leisured and barely competent son of Jay, also still ruled a rail empire, with 26% of the stock of the Missouri Pacific (Gould family members had four of the 13 board seats) and ambitious expansion plans for extending their Rio Grande interests with the Western Pacific.[43] As Van Oss, the leading interpreter of American railroads to British investors, pointed out, the culture of American railroad management was quite distinctive: "it is much more autocratic than in

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[35] In France this had already led to the creation of six geographical monopolies in the 1880s; in Britain the process ended with the publicly enforced creation of four regional monopolies by 1921; in 1900 the largest ten railway companies already owned 59% of UK track length, as a result largely of consolidation by private act of parliament.

[36] The main difference between the modern take-over bid and the turn-of-the-century US railroad version was that there was no formal bid to all shareholders simultaneously and equally: the technique was to approach known large holders for their shares and/or to buy in the market. Stockholder inertia sometimes rendered the latter ineffective, making direct negotiations with the board the favored recourse, see the details of the 1900/01 takeover of the Burlington and Quincy in Meyer, *History,* pp. 16-17.

[37] The suggestion in the *Economist* (9 August 1902, p. 1250) that the Pennsylvania was controlled by the Vanderbilts appears exaggerated, though they collaborated in restricting competition between eastern lines.

[38] Van Oss, *American Railroads,* p. 236.

[39] By setting up a voting trust in the 1920s, see Berle and Means, *Modern Corporation,* p. 73.

[40] Veenendaal, *Slow Train,* pp. 24-25.

[41] Klein, *Union Pacific,* p. 87.

[42] Dozier, *History,* pp. 145-46.

[43] *Manual of Statistics 1901,* p. 156. Ripley, *Railroads,* p. 523; Klein, *Union Pacific,* pp. 88-89, 169. The Goulds were the least successful of the leading early twentieth century railroad bosses, many of their lines entering receivership in 1909; this financial crisis also led to the Goulds relinquishing control of Western Union.

Europe…. Nearly all lines are governed by a clique or one single person. Occasionally the clique or individual own a majority of the shares; sometimes the majority of their shares is not absolute, but large enough to render opposition impossible."[44] He attributed this to the more competitive business environment of American railways requiring personal, autocratic control, together with the prevalence of takeover tactics, corners and speculation on Wall Street: he, apparently, did not understand (or discounted the significance of) the distinctive American voting rules in stimulating the latter.

Promoters and constructors of newer US railroads had often financed most of the cost by bond issues, retaining most of the equity for themselves and only gradually releasing it to the market.[45] This pattern of equity ownership and control being united in individuals persisted. Pyramiding and leveraging enabled capitalists with relatively modest resources, like the owners of the Atlantic Coast Line Co, to control a number of, nominally separately listed, railways by bare majorities. For example, in 1902, owning only $6.5 million of the $12.6 million capital, and a barely controlling interest in the (separate) Atlantic Coast Railroad Line Co, they bought a controlling 51% interest in the larger Louisville & Nashville in 1902, paying for it by the issue of $35 millions of collateral trust bonds secured on the L & N's stocks and dividends.[46] Similar transactions meant that by 1906, the owner of quite a small proportion of the capital controlled 11,000 miles of line with a total capitalization of $725 million.

Railroad politics around the turn of the century suggest a lively market for corporate control, with Harriman, Morgan, Vanderbilt, Gould, Hill and Rockefeller vying for personal control of further major lines.[47] It was usually reckoned that, since fewer than three-quarters of votes were present or proxied at meetings, a holding of 30% was sufficient to obtain control of a line, and contemporary stock exchange manuals routinely referred to such shareholdings as a "controlling interest." James J. Hill had only a 10-12% interest in the Great Northern in 1900, though with the support of another 27% of friendly stockholders represented on the board, like Morgan and Schiff, he reckoned to have control, and Hill family members occupied a third of the board positions.[48] He reckoned without Harriman and the Union Pacific: their epic takeover battle for the Great Northern in 1901 indicated the critical importance, when control was contested, of having more than 50% by the appropriate rules.[49] Hill eventually prevailed, but by 1906, Edward H. Harriman controlled 25,000

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[44] Van Oss, *American Railroads,* p. 11.
[45] Ibid., p. 12; Ripley, *Railroads,* pp. 41-41.
[46] Ripley, *Railroads,* pp. 144, 434-36.
[47] Of course, with a widely dispersed shareholding control could be obtained with less than 50%. Moody referred to a 27% shareholding in the Baltimore & Ohio as a "controlling interest." (Moody 1903) It is clear that this active takeover market went back several decades, see, for example, Van Oss, *American Railroads,* p. 223.
[48] Pyle, *Life,* pp.142-53. Meyer (*History,* p. 12) agrees that less than a dozen of the 1,800 stockholders in the 1890s held about one-third of the shares. Hill's interest in the Northern Pacific was by 1901 around $19 million of the common (24%) and Morgan's around $7.5 million (9%)
[49] Cleveland and Powell, *Railroad Finance,* pp. 272-321, is a clear discussion of corporate control and consolidation in pre-war US railroads. After the battle and further consolidations, the stockholder body widened, rising from only 212 in 1892 to 15,000 in 1916 (Hidy et al., *Great Northern Railway,* p. 135.)

miles of line outright, had substantial holdings in 30,000 miles more and investments in 16,000 additional miles, giving him influence over one-third of U.S. railroad mileage.[50] Hill and Harriman were both efficient managers and substantial owners, but sometimes professional managers were pushed aside by plutocratic bidders who thought they could do better. At the Rock Island Railroad, the effective and professional Warren Purdy was displaced by the Moore syndicate buying a majority of the stock in the market in 1901 and installing William Leeds, one of their number, to manage the railroad in his place.[51]

Thus, although, in European, and some American, railways, shares were widely held and ownership and control were increasingly divorced, in the USA, in the NYSE's biggest equity sector, there remained distinctly stronger elements of personal ownership and control.[52] Of course, some European elements penetrated to America and vice-versa. European bankers and bond trustees had sometimes been concerned by the instability of US railroad management caused by the fluid market in corporate control and, to counteract it, formed voting trusts, which temporarily (typically for five years, renewable) deprived shareholders of the vote. This gave the professional managers they installed time to drive through technical and financial reconstructions. After the extensive railroad bankruptcies of the 1893 crisis, this became something of a Morgan specialty. The Erie Railroad, for example, was controlled by three voting trustees: J Pierpoint Morgan, Louis Fitzgerald and Sir Charles Tennant, while Morgan also headed the voting trust that controlled the Reading Co.[53]

Just as such trusts could replicate the effect of European voting rules in protecting a stable professional management team against marauding plutocratic corporate raiders in the United States, some companies in Europe, bereft of the European governance structure, became personally controlled in the American manner. In 1901, the American Charles Yerkes and the Speyer investment bank formed a syndicate to take over and re-organize the Metropolitan District Railway (one of the London underground railways that, exceptionally, had a plutocratic voting structure) by buying a majority of stock in the market.[54] The tendency to personal ownership and takeover bids was, however, distinctly more pronounced in the United States, and, even after the First World War, one American plutocrat could casually remark to another that he was thinking of buying a railroad, a concept that generally did not exist in Europe.[55]

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[50] Leonard, "Decline," p.2. I have not yet found precise percentages for Harriman shareholdings. There are many US railroad histories, though they tend to anthropomorphise the road and it is often unclear whether, for example, Harriman or the Union Pacific is the owner in question. Perhaps this is in itself a further indicator of US personal capitalism in railroads.

[51] Hayes, *Iron Road,* pp. 151-52.

[52] It is sometimes said that a market for corporate control did not develop until after World War II (a much-quoted delinquent is Hannah, "Takeover Bids", but the error is general). This is not strictly true; there were occasional cases in both Britain and Germany at this time, but the clearest exception is US railways in this era, see, for example the contest for control of the Louisville & Nashville between August Belmont and John Gates in 1901 (Meade, *Corporation Finance,* p. 278.)

[53] Mott, *Between the Ocean,* p. 201.

[54] Lowenfeld, *Investment,* pp. 35-36; Barker and Robbins, *London Transport,* p. 60.

[55] Baruch, *My Own Story,* p. 166.

THE FINANCE AND UTILITIES SECTORS.

Railways often started large of necessity, but banks, insurance companies and other financial firms could start relatively small and grow organically, so partnerships and personally owned enterprises remained more common in this sector than in railways, and could attain substantial size without public issues. Merchant or investment banks were often not even incorporated: well-known examples include the Rothschilds (with branches of the family running interlinked partnerships in Vienna, London and Paris, the latter being the largest), Barings in London, or J. P. Morgan & Co in New York (each of these firms also having related partner banks also on the other side of the Atlantic). In the United States, Morgans were the largest bank (the partners' capital in 1900 was $200 million, whereas the equity value of the largest incorporated banks was only a tenth of that) and undertook some of the functions of a central bank (for example in the crises of 1893 and 1907). Many US commercial banks also remained in private hands. In Europe, however, a metropolitan stock exchange quotation was the norm for central banks (which, except in Tsarist Russia, were then investor-owned) and for almost all large commercial banks by the later nineteenth century.

European banks sometimes had similar "democratic" shareholder governance rules to railways.[56] The central banks typically had thousands of shareholders, though their role in appointing directors was often limited by government reservation of powers to appoint governors or a portion of the board. A striking exception was the Bank of England, in which stockholders with at least £500 of stock had one vote and no one had more than one vote. This was the largest 1900 quoted company (equity capitalisation $238 million) that could trace back quite widely dispersed shareholding for two centuries.[57] In 1900 it may have had around 10,000 stockholders, and only 191 of them owned more than £4,000 nominal of stock.[58] The Banque de France had 27,136 shareholders in 1900, with an average holding of 6 ½ shares worth $4,767; the Reichsbank had 8,071 shareholders, with an average shareholding of 5 shares worth $1,920.[59]

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[56] The voting rules of France's – and arguably the world's - biggest commercial bank, Crédit Lyonnais, for example, provided for one vote per 20 shares (worth about $3,840) with a maximum of 20 votes (Anon., *Documents,* vol. 1, p. 4.)

[57] It had 1,903 stockholders by 1701 and 3,294 by 1751, see Clapham, *Bank,* pp. 273, 279, 283. The New River Company in England, Saint Gobain in France and the Mansfeld copper mine in Germany went back even further than the Bank's 1694 foundation, but these had smaller, initially less dispersed shareholdings.

[58] Nominal value of minimum holding required for election as governor (such stockholders being identified by name in Anon, *List*): the market value was nearly 3.4 times this. The stockholders' registers for 1892-1902, together with the supplementary registers for 1899-1902 (Bank of England archives, Acc 27/553-556) list just under 20,000 stockholdings. Not all of these would have been concurrent, though jobbers' holdings (likely to have seen the most rapid turnover) are excluded. The published list of stockholders, as of 3 April 1900, with at least the £500 nominal of stock that was the voting qualification (Anon, *List*) includes around 5,200 names.

[59] Neymarck, "Statistique," p. 138; *Bulletin de Statistique*, 1902 p.374, increasing next year to 12,324 with shares split to 1,000 marks from 3,000.

European commercial banks were also typically widely held, particularly those that had expanded by acquiring other banks and building branch networks. As early as 1885, there were four commercial banks in Britain with more than 5,000 shareholders; by 1902 four exceeded 10,000 and, by 1912, four had more than15,000 shareholders.[60] In the larger retail banks, shareholdings by directors could be almost as low as on railways, despite the widespread (and by 1900 exceptional) survival of unpaid liabilities on bank shares, which might have been expected to deter small shareholders. The London, City and Midland Bank had exceeded 5,000 shareholders in the 1890s and reached 14,200 by 1908. In 1911 – the first year for which comprehensive director shareholding data can readily be collated – the Midland had 17 directors with total holdings of only 3,938 shares: 1.2% of those outstanding. The chairman and managing director since 1898, the self-made Sir Edwin Holden, held only 265 shares (£3,312 nominal paid-up value), and, as he built up the bank by sequential acquisition, insisted that large shareholders in acquired local banks take cash rather than shares in payment, limiting the extent of other large shareholdings to well below 1%.[61] In France, the Crédit Foncier had 39,510 shareholders as early as 1900, their average holding of eight and a half shares being worth $1,208.[62]

In contrast, family ownership dominance through large stockholding blocks remained the norm in quoted American banks. The Stillman family, for example, owned 20% of the common stock of the National City Bank of New York (president: James Stillman) and the Baker family owned 25% of the common stock of The First National Bank of New York (president: George Baker), with much of the rest of the stock concentrated in large, friendly hands, represented on the board.[63] In Britain's largest quoted banks, the top several dozen shareholders were needed to achieve a similar quarter share of the capital. Even in canonical British cases, known for extreme levels of family ownership, like Barclays Bank (unquoted around 1900, with 650 shareholders), the chairman, F. A. Bevan's, holding was only 6% and it took the aggregate of several families' holdings to equal *normal* American quoted bank board ownership levels. As late as 1919, the Stillmans eased out the over-ambitious professional banker, Vanderlip, seeing his aspirations for enhanced, personal stock ownership as excessive.[64]

If personal control of the board was the norm in the largest US banks, whose stock traded in the nation's financial center, it is likely to have been encountered also in the more typical, small American community banks, quoted on regional stock markets or traded "over-the-counter." Even in New England, where, by 1895, boards of directors of Boston banks typically held as little as

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[60] Jefferys, *Business Organisation,* p.387; Cassis*, Banquiers*, pp. 87-91.
[61] Holmes and Green, *Midland,* pp. 101, 118; Midland Bank archives, Acc 0591 031-044; letter from Edwin Green, HSBC Group Archivist, 21 February 2006. The figure for directors' shareholdings excludes holdings of relatives (e.g. the estates of two directors' fathers held a further 922 shares) or any joint holdings where the director is not the first-named. Felix Schuster, of the National Provincial, also resisted large stockholdings.
[62] Neymarck, "Statistique," p. 138.
[63] !913 data in Pujo Committee, *Report,* pp. 66, 72.
[64] Cleveland and Huertas, *Citibank,* pp. 90-104.

10% of the stock, much of which was held by other savings institutions and smaller holders, the development of takeover bids around the turn of the century led to some bank directors and New York financial interests buying up more of the stock to maintain or acquire control.[65] In Germany, a higher proportion of millionaires were engaged in finance than in Britain, and personal ownership of banks – other than the Deutsche Bank and similar large quoted *Grossbanken*, which seem to have had shareholdings as dispersed as the major French and British banks – appears to have remained more common there too.[66]

Large, controlling stockholding blocks were also found in US insurance. James Hazen Hyde, son of the founder of Equitable Life and its vice-president in 1900, owned 50.2% of the shares.[67] There were similar, though rarely so dominant, family influences on European insurance companies, but many British insurance companies had been established by broader shareholder affinity groups with a professional or local focus, wishing to promote economical and impartial professional insurance management. Such companies deliberately specified widely dispersed shareholding in their articles: Britain's Legal & General, Caledonian, Provident Life, Norwich Union, Clerical, Medical & General and Equity and Law insurance companies, for example, limited the maximum individual shareholding to a low level, varying from 0.8% to 2.5% of the issued voting shares, and these shareholding restrictions applied equally to board members. In such companies, management control was contested, if at all, through means other than ownership.

European utilities and other service companies resembled banks, having widely dispersed shareholdings, though usually not as dispersed as the largest railways. Their tradition of professional engineering and administrative management often went back many years. For example, London's oldest corporate security in 1900 was probably the New River Company, a water utility dating back to 1619. Cable, gas and water utilities were the largest in 1900, though the newer telephone and electric utilities were growing rapidly. Shipping companies tended to be much smaller than their major transport rivals, the railways, though some of the related canal and dock companies were quite large and had dispersed shareholdings and, sometimes, "democratic" voting rules.

The largest "European" utility, the Compagnie Universelle du Canal Maritime de Suez was quoted on many European exchanges, with a capital value for its listed shares of $219 million at the beginning of 1900, and more unlisted shares owned by the British government (worth, at market prices, $104 million), making a total equity value of $323 million.[68] Though the listed shares

[65] Lamoreaux, *Insider Lending,* pp. 135-150.
[66] Augustine, *Patricians,* p. 30.
[67] Sobel, *History,* p. 183; the Armstrong investigation of the insurance companies in 1905 showed extensive plutocratic influence over this and other closely controlled insurance companies and insider lending abuses.
[68] Thery, vol 2. However it was only two thirds the equity capitalization of Standard Oil (America's largest corporation by equity capitalization), though its enterprise value (including bonds of $60 million) was 79% of Standard's. Of course, both Suez and Standard Oil were arguably, like railways, then better described as transport monopolies than industrials. A striking feature of late nineteenth century capital markets in both Europe and America, contrasting strongly with modern

were very widely held throughout Europe, it was primarily the product of French enterprise and had a similar voting structure to French railways: one vote for 25 shares, but with a maximum number of ten votes, which meant stockholdings above $169,000 had no vote.[69] Small shareholders held most of the capital as pure *rentiers* and did not control the self-selecting board.[70] The example of Suez was repeatedly drawn on to underline how initially risky investments could become safe and secure sources of *rentier* income, yielding massively increased dividends and capital gains for the thrifty bourgeois.[71]

Among smaller companies in these utility and transport sectors, the degree of divorce of ownership from control was a weaker reflection of the national patterns on the railways. For example, some of the shipping and gas companies with public utility characteristics (like Britain's Peninsular & Oriental or the Gas Light & Coke Company) had railway-style "democratic" voting rules that encouraged quite wide share ownership. Yet other British shipping firms had "plutocratic" voting and concentrated family ownership was the norm in these.[72] In the United States, plutocratic family ownership was also common, for example, in the Pacific Mail Company and in some local utilities, where ownership stakes in neighboring systems were built up by entrepreneurs wishing to promote economies of integration.

INDUSTRIALS: BASTION OF FAMILY CONTROL

It is clear that in all countries personally owned or family firms at the beginning of the twentieth century were still the norm rather than the exception in the "industrial" sector, that is mining and manufacturing. In this sector, "plutocratic" voting rules were standard everywhere and there was accordingly more convergence between the Old and New Worlds in ownership dispersion than in

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ones (dominated by globally competitive industrials as well as service companies), is the overwhelming dominance of companies – like these and the railways - with (usually geographically confined) monopoly power.

[69] The main shareholder, the British government, had only ten votes at the general assembly of shareholders, but won the right to nominate three members of the *conseil d'administration* of 32, one of whom was a member of the *comité de direction* of five,by diplomatic pressure. British ship-owners (along with other national "stakeholder" groups) also nominated seven directors, see Hallberg, *Suez Canal,* pp. 140-42, 403 n. 1; Lesage, *L'Achat,* pp. 201-08*.* Because it mainly operated overseas it is excluded from the French total in Table 1.

[70] I have not been able to ascertain the number of Suez Canal shareholders around 1900, but it was probably similar to French railways: many shareholders were said to own only one or two shares (and there were 400,000 basic 500F nominal shares), but larger blocks were also part of wealthier portfolios, see Charles-Roux, *L'Isthme,* p. 293. There had been 21,000 initial subscribers (that is an average of 10.6 shares per subscriber) to the undersubscribed IPO of 1858, 48 of whom took more than 200 shares, with the Egyptian government taking up the 44.5% unsubscribed (later selling most of it to the British government). There was no dividend until 1875, and the payback period extended to 1890, so this was patient capital, but massively profitable in dividends and capital gains in the longer run. Suez was probably the most widely held *global* equity in 1900 and, in terms of shareholder numbers, was possibly not far behind national favorites like the Midland Railway or, allowing for bearer shares, the P-L-M, nor, a few years' later, US Steel. By the time of nationalization in 1956 (when the number of shares had doubled to 800,000), there were more than 100,000 Suez shareholders (Bonin, *Suez,* pp. 55-56, 64, 176*).* Bonds and founders' shares were also issued.

[71] Neymarck, *Finances Contemporaines,* p. ?

[72] P & O had a maximum of 20 votes for ₤2,000 of stock. The Gas Light & Coke Co had tiered voting , starting at 1 vote for ₤250, with a maximum of 10 votes for ₤10,000.

other sectors.[73] The most natural yardstick against which to measure deviations from the high norms of director control in this sector is the listing rule of the largest contemporary stock exchange, London, which required that in any public issue at least two-thirds of any security should be placed in the hands of the public: in other words, the "vendors" (usually, at this time the founders or inheritors of the firm, or merged group of firms, being floated) were allowed to retain ownership of a maximum of only one-third of any issue.[74] This longstanding London rule ensured that there was a sufficiently large free float to guarantee a liquid market for the shares and inhibit "corners", and was particularly important in a market like London with a lot of relatively small issues.[75]

The London "two-thirds" rule was copied in Shanghai (where expatriate Britons founded the exchange), but does not seem to have been general.[76] The New York market had less need of such a formal, quantitative rule, because its minimum issue size was larger (the average size of New York listed companies was three times that on the leading European exchanges). Two exchanges known later to have similar rules fixing the public's proportion – the New York curb and the Brussels bourse – both adopted less stringent free float requirements: that only 25% and 30%, respectively, must be placed in the hands of the public.[77]

Of course, all markets were concerned to have a large free float (that was their business), but their listing committees apparently adopted more *ad hoc* standards, which we have to deduce from individual cases.[78] It is clear, for example, that the NYSE routinely accepted much smaller free floats, especially for very large corporations. They listed the small, but publicly undisclosed, proportion of International Harvester stock that the controlling families were prepared to sell in 1908, but baulked at the (presumably lower, but also unspecified) free float the Du Pont family wanted around the same time. Pierre Du Pont was undaunted, resolving the issue by listing only the bonds and preferred stock on the NYSE in 1909, at the same time depriving the preferred stock – on which he proposed to concentrate public issues - of the vote, compensating the holders with a dividend increase from 5% to 6%. (Du Pont family control was worth a 20% increase in capital costs:

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[73]There appears to be little public discussion of the reasons for the differentiation in corporate governance rules in Europe by sector. Although "democratic" rules still governed most quoted capital in Britain and France, "plutocratic" corporate governance norms were rapidly catching up as industrial businesses were floated: plutocratic voting was standard for most new non-utility companies. The actual boundary chosen (variously by legislative mandate or by promoters of companies), suggests a differentiation of enterprises where some broader stakeholder interest was acknowledged (railways, utilities, banks, mail ships) from those where proprietary capitalists could legitimately focus more narrowly on private interests, though not all the "democratic" companies were regulated and their shareholders routinely urged in company meetings that directors maximise profits, subject to appropriately recognised stakeholder constraints.

[74] For London listing rules, see Jordan and Gore-Brown, *Handy Book,* pp.229-34, 272-74; and *Stock Exchange Official Intelligence 1903,* pp. 1931-36.

[75] London's settlement system was also said to be more discouraging of corners. The system of special settlement of new and as yet unlisted shares (a function provided by the curb in New York) also took place under stock exchange supervision in London.

[76] Thomas, *Western Capitalism,* p. 74. However, the main UK provincial exchanges followed London practice, see Thomas, *Stock Exchange,* p. 158, for Dublin.

[77] Bernheim and Schneider, *Security Markets,* p. 256; Goyens, *Opérations,* p. 9.

[78] Huebner, *Stock Exchange,* pp. 135, 138.

not a problem for a monopolist). The common stocks, which now had exclusive voting control, were then traded on the curb and listed on the, less fussy, San Francisco Exchange: in fact, only a small proportion were traded, the controlling block remaining owned by Pierre, his family and associates.[79]

There is nothing particularly meritorious in the London rule, requiring an extremely high initial "free float" of two-thirds of the stock.[80] Indeed, its objective of creating liquid trading conditions could logically better be attained by the specification of a minimum aggregate value (rather than minimum proportion) of securities to be listed, an alternative that would only have obliged boards of *smaller* firms to surrender a voting majority. This alternative is, after all, the listing formula that most world bourses, including London, now adopt. Yet the rule was, historically, of some significance: both because it influenced domestic and (non-American) overseas issues for many decades in the world's largest stock market; and, coincidentally, it now offers a tool for the historian estimating the dimensions of the divorce of ownership from control in what is otherwise a statistical dark age.

Inspection of the files of the London listing committee suggests that the one-third limit was strictly interpreted and enforced.[81] Sir William Armstrong wanted to list his, successful and profitable, integrated steel and shipbuilding business in 1889, but was turned down, being forced to agree two years' later to reduce the vendors' share below the one-third limit, as the committee

[79] Dorian*, Du Ponts*, p. 169; Chandler and Salsbury, *Pierre S. Du Pont*, pp. 53, 211,-13, 252-54, 294-95. It is surprising how much of Chandler's *detailed* writing supports views very different from the purely subjective opinions he expressed in *Scale and Scope*. The way he reached those conclusions is opaque, but one aspect of his classification scheme is clear: American and German firms - as with Du Pont - are "professionally managed corporate hierarchies", even with top management stuffed full of family members and family majority voting control of the stock; while British firms with inherited family ownership below 33% and employing extensive numbers of professional managers (or even, in some striking cases, firms headed by self-made/ professional managers, who own a small proportion of the capital, but are suspected of having a mother and a father) are classified as "family owned and managed." Chandler also has many passages of thick description suggesting the extensive survival of family ownership in America or Germany and the successful creation of professional management hierarchies in Britain. Yet, in his grand attempts at comparative analysis, he simply ignored his own careful definition of personal capitalism and the necessity of representative statistical samples to support generalizations, substituting repetitive assertion of imagined differentials in national characteristics. Unfortunately, it is these latter, quite ridiculous and unsupported, assertions that have entered the literature as solid fact, without even the fig leaf of Chandler's alibis in thick description, see De Long ("Did J P Morgan's Men," p. 229) for an egregious example.

[80] Unless, of course, one is of the opinion that majority family ownership dominance was, as Sellars and Yeatman would have put it, a *very bad thing.*

[81] Guildhall Library, London, manuscripts section MS 18000, covering 1850-1954. I searched over a hundred files from 1890-1910 both randomly and with a view to selecting companies identified in the literature as owner-controlled. The only exception I found was when the concessionaires of the Bechuanaland Exploration Company in March 1892 were allowed to issue only 60.5% (rather than the specified 66.7%) to the public; no reason for the exception is apparent in listing file 18000/30B/86. Among the targeted searches, I checked Barclays Bank, where some dozens of formerly private banking families shared ownership of what, after its 1896 merger, was one of Britain's largest unquoted financials. It obtained a London listing in 1902, to enable it to satisfy the continuing requirements for negotiable securities of shareholders in a small quoted bank that it acquired, but the several hundred original family shareholders continued to own a majority shareholding in the now listed bank until World War I. The listing file does not mention a need for exemption, perhaps because, as there was no new capital issued to the public but simply an exchange of shares, and as the overwhelmingly dominant family shares themselves were not listed and tradable (only the small numbers issued to the acquired company's shareholders), the rule did not apply? But the file is simply silent, rather than expressing the reasoning of my conjecture.

required.[82] Moreover, many British limited companies had distributed shares privately among friends, relatives, managers, suppliers or customers before the initial public offering (and the listing committee considered these to be "vendors" as much as the directors themselves), so the listing restriction often meant that the proportion of shares retained by the board was, in practice, nearer 25% than the theoretical level of 33%.[83]

With a widely-dispersed public shareholding, 25% was, of course, usually still sufficient for the board to retain *de facto* voting control, but this represented an unusually low degree of family control for industrial companies at this time in any country. For example, historians have spoken of *higher* levels of director shareholding in the USA at this time (found in firms like General Electric) as typifying the striking contemporary beginnings in America of the divorce of ownership from control.[84] What was the London Stock Exchange's routine expectation of British quoted companies was, in NYSE-listed companies like GE, worthy of special remark, suggesting possibly greater prevalence of plutocratic family ownership among the largest US corporations.

There were, however, several ways around the London ownership restriction that limited its impact. The simplest was to list in the USA first: the listing committee accepted listing on a major foreign exchange, like New York, as sufficient, without further investigation. This permitted the London exchange to take a share of new issues or listings of American-registered corporations like International Harvester - a valued part of its business - even though they preserved the majority family ownership that the normal rules for British issues proscribed.[85]

For British-based entrepreneurs, this New York loophole was not available. The favored avoidance mechanism in such cases was to create different classes of capital, to each of which the 33% rule was applied independently. The directors could, for example, retain all the ordinary shares for themselves, issuing to the public only preference shares and/or debentures, with limited or no voting rights. In such cases, it was quite common for a family to retain absolute voting control with only one third of the securities: two-thirds could be issued to the public as bonds and preferences, with the family retaining all the ordinaries. (Such dual voting structures for shareholders had been outlawed in German AGs in 1884, but they were perfectly legal in most other jurisdictions and were to

[82] Listing file, 18000/29B/147.

[83] For example, when R Waygood, the leading British lift manufacturer, was floated in 1901, there were 185 "vendors" of preferences and 75 "vendors" of ordinaries; the chairman's shareholding was only 13% of the ordinaries, with other directors typically owning a few per cent each, see listing file 18000/73B/69.

[84] Lazonick, "Controlling the Market," pp. 449-51; Farrell, *Elite Families,* p. 155; Charles Coffin, the president of GE between its formation in 1892 and 190?, alone held 25% of the stock, by virtue of his ownership of the Thomson-Houston half of the 1892 GE merger, and most founding directors were also substantial stockholders (Passer, *Electrical Manufacturers,* p. 323.) Despite being singled out as a global pioneer of the divorce of ownership from control, GE had only 2,900 stockholders in 1900 and did not reach the levels of shareholder numbers achieved in 1900 in the most widely-held British and French financial and industrial companies (i.e. above 20,000) until the 1920s (Berle and Means, *Modern Corporation,* p. 327).

[85] Although New York was increasingly self-sufficient, London and other European exchanges still took significant tranches of large early twentieth century issues from New York houses like J P Morgan, including US Steel, AT & T, and International Harvester.

become so in Germany later; and, of course, German families were still free to retain control with minority ownership by issuing only non-voting bonds or by pyramiding). The British literature stresses this dual capital structure as the means by which business families retained control: it was, for example, the norm among brewing companies and all but a quarter of even the largest British quoted breweries adopted it.[86] Using these techniques, breweries floating new issues in 1895-99 had issued only 49% to the public, with the vendors retaining the majority of securities, and, in most cases, voting control.[87] Yet the equivalent breweries in America – including the largest, like Pabst in Milwaukee (whose family owners had rejected promoters' advances from both New York and London) - were usually unquoted or quoted elsewhere. No US breweries were in 1900 listed on the NYSE, though some were quoted on London and regional American exchanges.

Matters were very different among large British quoted companies in other industries: four-fifths of these issued voting ordinary shares to the public.[88] Their boards - the majority of Britain's largest quoted domestic industrials – were constrained by the two-thirds rule to exercise only minority

[86] In Payne's list of 17 large breweries ("Emergence, " p. 542), the only ones that issued ordinaries to the public were Guinness, Allsopp, City of London and Threlfall. Much of the literature suggests other control structures encouraged moribund family management. This is an odd deduction. It is true that the owners could use their absolute voting control of ordinaries to choose themselves (or others) as managers, and that they got a lot of money from issuing vote-less preferences and debentures (money which could be reinvested in the firm, or in more diversified investments at home or overseas, or used to found a new business, or spent on a country house or parliamentary career: we know little about the choices that were actually made, though, whichever choice was made, it is always possible to find a "declinist" historian who is certain that that choice was a *very bad thing* for the British economy.). But such conclusions do not logically consider the effect of these capital and voting structures on incentives (nor indeed on very much else). Prior to security issues that created such leverage, if mismanagement halved profits, the family income had been halved; after such issues to the public for cash (depending on the ratios of the different classes of capital and the degree of interest/dividend cover), a halving of profit might wipe out *all* the family dividend income from the business. This is not obviously an incentive to mismanagement; and there was a corresponding gearing on the upside, to encourage good performance. It is perhaps not too surprising that there are remarkably few stories of firms that adopted this leveraged structure – Lever Brothers, Imperial Tobacco, Bass - performing badly. Indeed poor outcomes, as agency theory predicts, may have been more common when the public *had* been admitted as majorities: among breweries, Allsopps came perilously close to it under the incompetent Percy Allsopp, who was booted out by shareholders after nearly bankrupting the firm.
[87] Gourvish and Wilson, *British Brewing Industry,* p. 263.
[88] The exceptions in 1905 (other than 13 of the 17 breweries) among the 54 quoted companies in the extended Payne list were Imperial Tobacco, Lever Brothers (the soap manufacturer), Waring & Gillow (the up-market furniture manufacturer) and British Westinghouse (George Westinghouse retained voting control for his US electrical company, while raising fixed interest capital in London). These firms issued preferences and/or debentures to the public, retaining the ordinaries in the hands of the original owners (usually the continuing directors). An esoteric alternative to using non-voting preference shares was to issue special shares to the management with higher voting power: the only example in Payne's 1905 population is Maple & Co, the furniture manufacturer and retailer, which had 200 management shares with a (controlling) one vote each and 750,000 ordinary shares with only one vote per 5,000, that is 175 in all. It is noteworthy that, in *all* these cases of what is known in the literature as "typically British family firm behavior," the four firms were either American-owned (Westinghouse) or, as with brewing, in firms that in America were unquoted (furniture firms), or the US equivalent's board also held majority voting control of the common stock, with a minimal free float (Procter & Gamble, American Tobacco). There is thus not a single instance of this type of "family control" in the large British industrial companies, where something very similar cannot also be observed in contemporary American equivalents. The same cannot be said in reverse (for example, companies like Deere & Co, and Jones & Laughlin listed only debt or non-voting stock, while British equivalents were fully quoted and only minority-controlled). It is difficult to conclude otherwise than that American firms were more "typically British" than the British!

control. It was permissible for determined vendors to restore their share to above a third by buying back shares in the market after an IPO, but, given issue costs and normal post- flotation premiums, this would usually be at a considerable net capital loss, so was presumably not a widespread practice.[89] Another possibility was that, if acquisitions subsequent to the IPO brought in more board members with a share interest, the board ownership could go above a third again; but, as Franks, Mayer and Rossi have pointed out, the normal result of acquisitions in Britain was the opposite: to further dilute family control by wider shareholding.[90] Thus we can reasonably conclude that a majority of large quoted British industrials by the early twentieth century had family or director shareholdings of no more than 33%.[91] Indeed, a sample of companies newly floated in 1897-1903 (which would

[89] A case of buying back occurred when the Guinness family floated the biggest brewery in the world in 1886 and, despite the higher price, bought back enough to bring their holding up to just above 50% by 1888. This family holding was later cut back and early in the twentieth century professional managers took over senior positions from the family, see Dennison and MacDonagh, *Guinness,* pp. 16-23, 30.

[90] Franks, Mayer and Rossi, "Spending." Hunter ("Archibald Coats," pp.330-31) suggests that "the family" still held half of J & P Coats in 1913. Yet the Coats family were subject to the one-third maximum in their 1890 IPO and did not participate in some, new post-IPO share issues, so it is not easy to see how this could be so. The actual figures Hunter gives for the money amounts of Coats family shareholdings (each individual holding he specifies numerically constitutes only a few per cent of the total issued shares: Archibald Coats, the chairman, when he died in 1912 is shown as having £744,635, but that is only 1.3% of the equity capitalisation then) suggest he may simply have been mistaken. Clearly other family members could have had more substantial shareholdings: three other millionaire Coats died in 1912-13 and six more in 1918-30 (Rubinstein. *Men,* p. 84.), but their total shares could still have been well below a third. However, if Hunter defined family to include the Clarks, Brooks and Chadwicks (whose family undertakings Coats acquired in 1896, issuing 24% of the then ordinaries and 20% of the preferences to them, and some of whom joined the board) or the professional managers they employed (who also owned shares), as well as the Coats, it is perfectly possible the board or a limited number of families did still own 50% in 1913. Whatever the 1913 situation, they seem to have gradually reduced their holdings, as was very common for once dominant families. If we generously assume that all 50 ordinary shareholders of 1941 with more than 10,000 shares were family members, their total holdings then amounted to only 26% and that of family *board* members would presumably have been less (Parkinson, *Ownership,* pp. 108, 115). If the issuing intermediaries both subscribed for the cash issue and joined the board (as in the case of bankers joining the Guinness board in 1886, see Dennison and MacDonagh, *Guinness,* p. 201), this could also take the board shareholding above 33%, but this practice seems to have died out faster in Britain than in America.

[91] William Lazonick's assertion that British firms from the turn of the century were "much more under the control of family ownership" ("The Anglo-Saxon Corporate System," p.21.) is possibly true, if family control is defined as the presence on the board of a second or (much rarer) third or fourth generation chairman or director, though, as far as I know, even that has not been formally demonstrated. But this arguable point – a natural consequence of Britain's pioneering the industrial revolution and experiencing a tiny portion of , in some cases progressively larger, firms being passed on in each business generation (a normal pattern later repeated in the USA, France and Germany) - is very easily confused with his assertion in the next sentence that "ownership was separated from control" in the United States, but not in Britain (an assertion which presumably includes first generation owner-founders and implies some quantitative measure of control): this latter assertion is simply unsustainable. It is interesting that the British contributor to Chandler and Daems, eds *Managerial Hierarchies* (who should have known better) actually *measured* the proportion of boardrooms with at least one personal owner or family director of the top 200 British companies at 55%, while the German and US contributors simply *asserted* that this was rare in Germany and the USA! A check of the larger firms in their lists against the *Handbuch der deutschen Aktiengesellschaften* and *Moody's Manual* suggests that their assertions would probably not survive a quantitative test. An excellent, critical discussion is Crouzet, "Business Dynasties." For similar reasons of priority in industrializing, the British had more family inheritors in boardrooms than the French or Germans in 1907, though the German family owners were more numerous by 1927, see Cassis, *Big Business,* pp. 130-31.

perhaps have had *stronger* family shareholdings than more seasoned listed firms) suggests that around a half had family shareholdings *below 25%*.[92]

A similar benchmark is not available for the USA, because there was no similar free float rule on the NYSE. What is clear is that the number of United States industrials that can be confidently identified as having less than a 25-33% board shareholding in 1900 is rather small, but grew thereafter. Contemporary US opinion on the level of share dispersion and board control varied considerably. One lawyer-promoter testified to the Industrial Commission in 1899 that "every large corporation in this country has thousands of stockholders," while another considered that "nine-tenths of the corporations are controlled by boards of directors which either own or absolutely represent a large majority of stock."[93] I have been able to identify only one American, non-railway stock - among around 50 for which stockholder data for 1900 are available - with more than 10,000 stockholders.[94] Curiously, this firm – American Sugar - is routinely described as being under Havemeyer family control, though in fact the family had secretly sold most of its dominating stock interest in the firm very soon after its formation in 1891. Henry Havemeyer nonetheless continued to run it like a family fiefdom, employing his relatives, though, when he died, in 1907, his son was too young to secure the anticipated family "inheritance" (if that is the correct term for nepotistic succession to something one does not own!). The presidency of American Sugar actually went to Washington B. Thomas, who held only 2.5% of the common, enough to make him the largest stockholder: there were then 9,200 holders of its preferred and 9,800 owners of common.[95] I have not been able to identify other American manufacturing corporation in 1900 with a similarly widely dispersed stockholding, though at Pullman – arguably as much a railroad operating stock as a manufacturer – board ownership was also possibly below 25%.[96]

Using Warshow's sample survey of 39 US industrial companies - assembled by a corporate treasurer intrigued by the changes taking place in the 1920s - I calculate an average of

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[92] Franks, Mayer and Rossi ("Spending," Table 2) suggest 18 out of 40 (45%) had below 25%, though they also show 14 of the 40 with above 75%, presumably because some of those floated in 1901-03 were still completely unquoted in 1900. Omitting these 14 would put the proportion with below 25% vendor share ownership to 69%, rather than 45%.

[93] Industrial Commission, *Report,* pp. ??

[94] Warshow, "Distribution, " p. 24, and see n. 000 below. Other figures above 5,000 for 1900 are AT&T (7,535), Western Union (9,134), American Car & Foundry (7,747); and several railroad companies. National Biscuit had 7,000 stockholders in 1906, Pullman 7,744 in 1901. On the basis of the high level of stock turnover, registered in the *Commercial & Financial Chronicle* for 1899, other possible NYSE-quoted candidates for shareholdings around the 10,000 level, for which I have not been able to find shareholder numbers would be US Leather, Pacific Mail, American and Continental Tobacco, Anaconda, People's Gas & Electric (Chicago) and Tennessee Coal & Iron, though trading in some of these may have been heavy that year because they were being bought up by board insiders, prior to a stock manipulation , not because they were widely held (e.g. the tobacco stocks by the Duke interests and the Anaconda stock by Rockefeller Amalgamated Copper interests: in both cases it is known that insider shares of voting common soon exceeded 50%).

[95] Eichner, *Emergence,* p.266.

[96] George Pullman had owned only 16% of the shares when he died in 1894 and they were then dispersed among his heirs, see Buder, *Pullman,* p. 210. However, the board was full of plutocratic railroad and banking names and the company was later spoken of as under Vanderbilt or Mellon control. It is conceivable these members of the board already had large shareholdings in 1900.

2,653 stockholders per company in 1900 (or in years up to 1907 when earlier data is not available), holding an average of 140 shares each.[97] Assuming these stocks were the normal $100 stocks, the average par value of a stockholding would be $14,000, though the market value in 1900 would typically have been less than that. This is a sample of, mainly large, firms, chosen to illustrate the growing divorce of ownership from control, but few of them show more than the few thousand shareholders that were then routine among large UK industrials (the largest British manufacturer, Coats, had 25,000 shareholders as early as 1896). Britain's medium sized firms also often had wider stockholdings than American equivalents. The Linotype Co Ltd, a British offshoot of the American printing machinery firm, separately quoted in London since 1891, had as many as 7,753 shareholders ten years later, more than all but three large American industrials in Warshow's list.[98] Its NYSE-quoted American counterpart, Mergenthaler Linotype, with the Mills and Dodge families as major stockholders and directors, had only 2,000 stockholders in 1901 and 2,770 in 1910[99]

The 1900 sample excludes the great US Steel merger of 1901, which created the first US industrial corporation to have the same order of magnitude of equity holders as the most widely dispersed European industrial and financial firms: it had 15,887 common stockholders, or a total of 54,016, if preferred stockholders (who in this case had the vote, though no equity interest in increased profits) are also included. Yet, because the merger was so massive, adding its average stockholding (both types), at $15,392, would actually raise the 39-company US average stockholding.

Other large NYSE-listed firms often had strong board stockholding blocks above the London norm. In an extreme case of pyramiding and leverage, James Duke and his fellow directors had secure voting control of the American Tobacco holding company with 56% of the company's $44 million par common stock issued, but that was only 9% of the company's total issued securities (including the preferred stock and debt that the public largely held), and also gave effective control of pyramided subsidiaries beyond that, like Reynolds, American Snuff, American Cigar and BAT.[100] A further 21% of the American Tobacco common was held in friendly hands, that is by four non-director stockholders who had co-operated with Duke in earlier stock manipulations, leaving only 23% of the common stock with the general public.

[97] Calculated from data in Warshow, "Distribution," p. 24. The list omits some of the largest industrials and it might be thought that this omission would bias the result against wide stockholder dispersion, and in Europe – or the USA when stockholding developed further - that would certainly be so (check). But the US corporations omitted were the massive Standard Oil (its average stockholder held $25,430 par), the unusually closely held Singer (with $66,666 par per stockholder) and the highly variable Carnegie Steel/ US Steel (which went from 6 stockholders of its largest part in 1900 to 15,887 in the whole merger of 1901, or 54,016, if preferred stockholders are added, see ibid., and Means, "Diffusion," p. 593). The lowest possible figure for US Steel, taking the latter figure including preferred, would be an average stockholding of $15,931 for 1901, though some of the constituents may in 1900 have had lower average stockholdings. Warshow also surveyed nine utilities (including, AT&T, Western Union, Consolidated Gas and Commonwealth Edison) finding a similar average stockholding of 145 stocks.

[98] letter to shareholders, 17 July 1901, bound with company reports in Guildhall Library.

[99] Dreier, *Power,* pp. 51-52; Warshow, "Distribution," p. 24.

[100] 1906 data from Commissioner, *Tobacco,* pp. 119, 202.

One pioneer American listed industrial, Procter & Gamble, had such strong instincts of privacy that the post-1895 NYSE requirement to publish accounts led to its de-listing. When the original, long-established, six-man partnership had been incorporated in 1890 and listed on the NYSE in 1891, William A. Procter, the son of the founder, was its first president; his son, William Cooper Procter (after a Princeton education and 20 years' in the company) was to succeed him in 1907. The majority of the board and corporate officers were also Procters or Gambles and they were careful to control public subscriptions so that they kept most of the common stock to themselves and close associates, raising new capital by issuing bonds and preferred stock to the public, though even in these the market was thin. They published accounts initially, but in 1895 announced to stockholders that they would cease to do so because of (unspecified) "indiscreet" use of such information. The NYSE engaged in lengthy correspondence, ineffectively attempting to persuade the board to change its mind, but dealings in the supposedly listed stock soon dried up and in 1903 the NYSE formally de-listed them.[101]

Most of the top 100 American industrials were not listed on the NYSE until as late as 1914 (whereas in Europe the metropolitan stock exchanges already quoted most large industrials in 1900).[102] After its 1903 delisting, Procter & Gamble was listed on the Cincinatti exchange and also traded on the curb. Other large US industrials that were dealt in on the curb, listed regionally or traded "over-the-counter" often also had tight board control. Stock in the Singer Manufacturing Company ($57 million equity capitalization in 1900) was one of the most difficult to get hold of on the curb and was quoted with a very wide bid-ask spread.[103] Two of the six Singer directors, E. S. Clark and W. F. Proctor, were the founders' successors: their families and the senior managers held most of the shares.[104] There were only 150 stockholders: as the *New York Herald* commented in December 1900, Singer was "even more of a closed corporation than Standard Oil."[105] Although Standard was the world's largest company by equity capitalization in 1900 – with a market value of $481 million (only a little below the total for *all* Berlin-listed industrials) - it also traded only on the curb. Its new 1899 stocks (issued in exchange for the old trust certificates that had been distributed to pay for companies acquired, and initially traded among managers, suppliers, customers, families and friends) were held by about 3,500 stockholders, though the 91 of these – mainly founding families - who were represented at the meeting to approve the new stock arrangement held more than two-thirds of the

[101] Schisgall, *Eyes,* pp.51-57. The board eventually relented, publishing accounts again from 1913.
[102] Hannah, "Corporate Finance." Of course, the proportion would be smaller, if smaller and unquoted firms were included in the denominator: one estimate was that two-thirds of all corporate bonds and three-quarters of all corporate stocks in 1915 were not quoted on the NYSE (Pratt, *Work,* p. 89, check)
[103] I have valued it at the ask price; at the bid price it was worth $15 millions less. See Davies, "International Operations," pp. 62-63; Davies, *Peacefully Working,* pp. 95,. On the curb, see Markham, *Financial History,* p. 6-7.
[104] Proctor was the son-in law of Isaac Singer, who was an equal partner with Edward Clark in the 1851 company.
[105] 15 December 1900, as quoted in Davies, *Peacefully Working,* p.108.

stock.[106] John D. Rockefeller – with 25% - was Standard's largest stockholder and president. Other members of the Rockefeller, Flagler and Harkness families, who had financed the original Standard Oil Company in Cleveland in 1870, together with nine other large stockholders and several manager-directors constituted the rest of the board, which still held 39% of the stocks – again above the London norm - as late as 1911.

Companies coming to a new NYSE listing in the early twentieth century also often had stronger vestiges of family ownership than London-quoted firms. A 10-year voting trust was established, when the McCormick and Deering families agreed to the International Harvester merger in 1902, "to retain control in the hands of the old harvester families."[107] There was no public issue on the company's formation, though J. P. Morgan & Co. did put in $10 million of private equity (gaining an 8% stock interest) and, by 1908, 747 employees owned stock.[108] The president, Cyrus H. McCormick, and chairman of the board, Charles Deering, whose families together owned 67% of the stock, held majority control anyhow, but were joined by George W. Perkins of J.P. Morgan & Co as a third trustee to arbitrate in cases of disagreement (the remaining 15% of the stock went to the other merging families, but they were represented in management, not in the voting trust). This limited voting structure prevented either of the two dominant owning families separately forming a controlling majority with smaller merging business owners and the outside stockholders, but George Perkins held the balance and used it to affirm McCormick management control from 1906. The voting trust continued to control the company when its common and preferred stocks were first listed on the NYSE in 1908 and London in 1909. These listings were apparently to enable the directors and families to release an unspecified (but presumably significant) amount of stock: there was no formal IPO, though full accounting disclosure was agreed and stocks changed hands. Even when the voting trust expired in 1912 , the McCormicks kept board control for many more decades, by the more normal (but less certain) processes of self-perpetuating board renewals, facilitated by their - initially large, but eventually tiny - minority interests.[109]

In the copper industry it is hard to say whether personal capitalism was increasing or decreasing around the turn of the century. Anaconda had been quite widely held, but the Rockefeller interests gained control of a majority of the stock by 1900 through their Amalgamated Copper vehicle, and they still dominated the board of the controlling company a decade or so later. The Guggenheims retained large portions of their publicly quoted metal mining and processing companies, like American

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[106] Hidy, *Pioneering,* pp. 310, 313, 322, 628, 756 n 14, 757 n. 23. Shareholder numbers increased from 3,500 in 1899 to 6,078 by 1911, but ownership remained concentrated for some time longer: the 91 represented at the 1899 meeting held 68% of the shares and in 1911 the 110 largest holders held 75%.

[107] McCormick, *Century,* p. 118.

[108] Bureau of Corporations, *International Harvester,* pp. 5-9, 19-20, 82, 86-87, 158, 162; listing file 18000/125B/821; International Harvester, *Annual Report,* 1908, p. 20.

[109] *Commercial and Financial Chronicle,* 13 June 1908, p. 1470. In 1975, Brooks McCormick was head of International Harvester, but owned just 0.5% of the voting stock (Herman, *Corporate Control,* p. 53.) Cases such as this (or Havemeyer in 1900) underline the point that the conflation in the literature of family succession with family ownership can be misleading, a point also emphasized by Franks, Mayer and Rossi, "Spending."

Smelting and Refining and Nevada Consolidated, with continuing board domination, though not always a majority of votes[110]. Their consolidation of the industry involved beating the Rockefellers in highly personal negotiations with family owners of other copper mines.[111] The partners in Phelps Dodge – also engaged in consolidating the copper industry - moved toward incorporation and a listing in 1908, but the Dodge, James, McLean and Douglas families continued to dominate the board and held most shares (there were, in 1909, only 133 stockholders).[112] The partners in the Baldwin Locomotive Works followed them, incorporating in 1909 and making a public issue, listed on the NYSE in 1911, but the owning families continued to dominate the board for another two decades.[113]

Even for companies that issued substantial amounts of voting stock to outside investors, the proportions sold to the public were typically below the London norm. Goldsmith's analysis of the industrial and miscellaneous common stock issues on the NYSE and elsewhere, reported in the *Commercial and Financial Chronicle* suggests that for the years 1905-1914 the proportion sold to the public was only 34%.[114] Even in a widely-held firm like American Car & Foundry (no manufacturing firm except American Sugar had more than its 7,747 shareholders in 1900 in Warshow's list), the proportion of the equity first issued to the public in 1899 (and oversubscribed) was only 50%, and so below the London minimum for a free float. It is difficult to conclude otherwise than that the American firms of the early twentieth century that had ownership as widely dispersed as the *typical* large British industrial company were a minority of US firms. It was perfectly normal for the boards of large American industrials personally to own more than one third of the stock and in many cases their holdings were much higher.

There is a puzzle in these and similar arrangements for those schooled in standard agency theory: why should any minority shareholder believe that the family directors, plutocrats or bankers who controlled such firms would not use their majority of the votes to act in their own rather than the stockholders' interests? Further, why should any controlling owner switch from a majority to a minority position and expose themselves to similar jeopardy? Burkart, Panunzi and Shleifer have suggested that corporate governance systems that fail to protect minorities will, as in many underdeveloped financial markets today, have a higher level of family ownership, and that may indeed be one reason why family ownership was so tenacious in turn-of -the-century America.[115] But Gomes has also modeled a multi-period dynamic game in the presence of moral hazard and asymmetric information that will result in effort by family directors to develop a reputation, so that they can more profitably

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[110] Hoyt, *Guggenheims,* pp. 193-94, 207-09.

[111] Baruch, *My Own Story,* pp. 196-99.

[112] Cleland, *History,* pp. 12, 151, 155, 275.

[113] Brown, *Baldwin Locomotive Works,* pp. 97, 123, 216.

[114] Goldsmith, *Study,* p.501. The data on p.0 above suggest an even lower proportion, but in the 1897-1903 period to which that relates the residual was very largely churned, already quoted, assets absorbed in mergers; in the quieter period of 1905-14 this is less likely to be a problem: probably most of the residual here is retained by vendors and promoters.

[115] Burkart et al., "Family Firms." The protection of minorities was perhaps strongest in German company law: holders of 10% had the right to ask a court to appoint independent accountants to investigate transactions and a group holding 20% could requisition a shareholders' meeting, while all shareholders had to have equal votes.

divest their holdings in the longer run (which is what, in fact, happened in many cases.)[116] The reputation effects of longer run Morgan oversight of some of these firms may also have helped, in a period when American stock exchange practices more resembled modern developing economies than current US corporate governance practice, at least in its protections for minority rights and shareholder information.[117] As John Coffee has argued, the norms of professional, fair and reasonable behavior may also have a role in explaining why some countries (though he did not specifically have in mind 1900 America) can operate well with poorly articulated securities laws.[118]

In respect of the divorce of ownership from control in industrials, continental Europe was often nearer to America than to Britain, with more pervasive and persistent insider ownership by directors and their families of more than 33% of publicly quoted companies. There were two large French exceptions, though, as with American cases, they show that a large shareholding is not always necessary for "family" control. At St Gobain, there were in 1900 only 4,600 shares (worth an astronomical $6,304 each). The board collectively owned only 260, or under 6% of them, and the number of shareholders increased from 375 in 1862 to 1,400 in 1907. Despite this modestly expanding public shareholding, almost 80% of directors between 1830 and 1930 were recruited from a coterie of ten families: control and ownership were clearly divorced, if not quite in the classic Berle and Means sense![119] Similarly, the Schneider family had started their reign at Le Creusot with only 5% of the shares, but had the backing of two substantial shareholders: these were still present on the board a century later.[120] The De Wendel family concerns did not call on outside capital until 1908 and then raised it in Germany rather than France.[121] The large coal mines of the Pas de Calais were in the nineteenth century under the control of a limited number of local families, though their shares were quoted on the Lille exchange and after 1900 became so widely held that it was said there were as many shareholders as coalminers, that is tens of thousands.[122] Yet Casimir Périer, sufficiently a member of the financial establishment to be a director of Suez, was still referred to as the "proprietor"

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[116] Gomes, "Going Public." See also Zingales, "Insider Ownership," for a model distinguishing between selling cash flow rights and control rights in the decision to go public.

[117] De Long, "Did J P Morgan's Men."

[118] Coffee, "Do Norms."

[119] However, it should be noted that what the French here, self-deprecatingly, define as continuing family control – 80% of board members drawn from only ten families in 1830-1930 – was possibly a higher degree of multi-family recruitment than many US corporations of this period!

[120] Lévy-Leboyer, "Large Family Firm," pp. 215, 231 n. 5; ibid., "Saint Gobain," p. 453. Confusingly, Levy-Leboyer also gives a figure of 60,000 St Gobain shareholders in 1900, an implausible figure if there were only 4,600 shares. For 60,000 to be correct, St Gobain would also be the widest-held stock of 1900, more widely held than any British, American or French railway (though they were many times its size), so I have assumed he is mistaken. The value of the 1900 St Gobain shares is being checked: it may be higher. The precise shareholdings of the Schneiders in 1900 are not stated. The device of issuing (non-voting) preference shares to preserve family control was little used in France before the twentieth century (a requirement for unanimous approval by shareholders, which effectively outlawed it, was not rescinded until 190?)

[121] Ibid, p. 53.

[122] Freedeman, *Triumph,* p.95; Bouvier et al., *Mouvement,* p.273..

of the Mines d'Anzin.[123] Franck also classified the large Béthune and Courrières companies as owner-controlled, with Bruay and Lens being widely-held.[124]

More generally, Leroy-Beaulieu warned French shareholders intending to go to company meetings that they would usually find the directors had a majority of the votes, so American-style plutocratic ownership, with board shares of 50% and above, may have been common in France.[125] The widespread share ownership characterizing the French stock market was focused on railways, financials and the Suez Canal, and it was the contemplation of those sectors that caused contemporary Frenchmen to wax lyrical about the democratization of share-ownership. Yet the market capitalization of Paris industrial equities in 1900 (see Table 1 above) was actually more than a third larger than that of Berlin, so (even allowing for stronger regional bourses in Germany) the traditional story of the persistence of French family firms in *industry*, at least relative to Germany, may have been exaggerated in the telling.[126]

In Germany, industrial firms quoted on the Berlin Stock Exchange were also still majority controlled by plutocratic families to a degree that would have fallen foul of stock exchange rules in the UK, though, as most German shares were bearer shares, it is difficult to report precise shareholding data, except where it was disclosed for separate purposes. As everywhere, the directors of companies in Germany around 1900 were often plutocrats. Three quarters of the 502 German businessmen worth more than $1.44 million in 1911 ran privately owned firms and partnerships or owned more than 50% of the stock in a company.[127] Typical, except in its large size, was the Siemens electrical enterprise: majority-owned by the Siemens family. The new 9.5 million mark share issue of 1900 preserved this: 53% to the family and 47% to the public. When Siemens took over Schuckert in 1903, care was taken to adopt a complex pyramid structure that still preserved the family majority, despite the large increase in outside capital required.[128]

Many German entrepreneurs may have remembered what Fritz Krupp had done to Hermann Gruson in 1892: Krupp, secure as the absolute owner of his own personal enterprise, turned up at the newly floated Gruson AG meeting, having bought the majority of that quoted company's shares on the market, and simply kicked the former owner out.[129] In a small sample of German quoted companies issuing prospectuses in the 1890s and 1900s (including the widely held Deutsche Bank), Franks et al report only 22 voters at the average shareholders' meeting in the first period and 32 in the second, though some of these would be banks or others voting as proxies for a wider range of individuals. However, the directors of these companies alone had 70% of the votes in

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[123] Bonin, *Suez,* p. 76.
[124] Franck, "La Politique."
[125] Leroy-Beaulieu, *L'Art,* p. 295
[126] Landes, "French Entrepreneurship."
[127] Augustine, *Patricians,* p. 32.
[128] Siemens, *History,* pp. 192-97, 329-30.
[129] Manchester, *Arms,* p. 207. The modern German view that hostile takeovers are an unprecedented American import appears slightly overdrawn.

the 1890s sample and 61% in the 1900s sample. The largest *single* shareholder in these companies – who surely would have sat on or at least been represented on the *Aufsichtsrat* (supervisory board) if not the *Vorstand* (management board) - *alone* averaged more than a third of the votes, that would have been the normal British limit for the whole board.[130]

There is also direct evidence of shareholdings above the London limit in many individual German industrials. When Fritz Krupp, facing exposure in the social democratic press of his gay paedophilia in Capri, unexpectedly committed suicide in 1902, his will specified that the family's enterprise – Germany's largest after the Post Office and State Railways - should never be quoted on any stock exchange, though, as his heiress was an adolescent girl, he was perhaps lucky to get his way.[131] Yet the Kaiser arranged for Bertha Krupp to marry an imperial diplomat who could adopt the family name and head the "family" firm: it was many decades before any of the ordinary shares created on incorporation in 1903 were issued to the public. August Thyssen also owned all the shares of Gewerkschaft Deutscher Kaiser and Thyssen & Co.[132] The Haniel family in Gutehoffnungshűtte, and the Hoesch and Stinnes family in their coal and steel enterprises, also maintained effective control, as "Herr im Haus." The Mannesmann family had lost control of their steel tube enterprise in 1893, but the Siemens and … families had significant sharehodings and board representation.[133] In BASF, the Siegle and Knosp families of Stuttgart still held a controlling majority of the shares, until the 1925 merger diluted it[134]. In AEG, Germany's largest quoted manufacturer, there was wider shareholding, though the Rathenau family still held strong minority stakes.

CALIBRATING NATIONAL AND CHRONOLOGICAL DIFFERENCES.

The foregoing discussion by sectors now permits an overall characterization of the two largest equity markets shown in Table 1: they encompassed the contemporary extremes of substantial divorce of ownership from control (London) and persistent personal capitalism (New York). After allowing for the fact that the London Stock Exchange was much more dominant nationally than the NYSE, the quoted corporate equity sectors in the two countries were much closer than the data in Table 1 – based solely on NYSE and London listings – suggest. All American exchanges and the curb together certainly already quoted more domestic corporate equity than London alone, though the UK overall still had more quoted domestic equities relative to population or GDP. By the end of the twentieth century there were more quoted companies, but the penetration of equity shareholding in business activity was already quite high in 1900. The ratios of domestic equities (quoted on domestic exchanges) to GDP reported in Table 1 above encompass the range considered typical by the World

[130] Franks et al., "Origins," p.38.
[131] Gall, *Krupp,* pp. 283, 286; Manchester, *Arms,* pp. 240,
[132] Fear, "August Thyssen," p. 192.
[133] Information from Prof Horst Wessel, Mannesmann Archive.
[134] Abelshauser et al, *German Industry,* pp. 34, 118-19.

Bank a century later – around 55% for "high income" countries and 15% for "low, middle income" countries, though no countries then attained the levels now achieved in the US and UK.[135]

The disparities in equity penetration between countries showed through in the prevalence of the divorce of ownership from control, both then and now. In the largest quoted sector in 1900, railways, share ownership was often widely dispersed, but board control through dominant shareholdings of a significant railroad remained normal in America and rare in Britain because of voting structures. It seems reasonable to suppose that directors controlled no more than 2% of a typical British railway's votes, though the figure in the USA was possibly nearer 25%.[136] Personal control was also more common in US banks, both because small banks were more prevalent there and because of voting structures: an average board share of 30% of stockholder votes in the USA and 5% in Britain is not implausible for quoted banks. Utilities figures are least good, but the mixed voting structure would suggest national levels and relativities very similar to those in the financial sector. Among large industrials, plutocratic family ownership (often with directors owning a majority of common stock) remained more common in America, where families retained control by methods such as voting trusts, limiting the free float, or issuing non-voting stock or bonds. The latter method was also permitted by British listing rules. London-quoted status was the norm in Britain for a tail of hundreds of medium-sized companies of the type that tended to remain unquoted or only locally traded in America.[137] For quoted companies, the 33% London limit was exceeded for directors' *votes* in many such cases, because of the use of the devices we have described, but this was possibly outweighed by the large firms with more widespread shareholdings, so the benchmark of 33% seems reasonable as a *typical* British level of board voting control in industrials in 1900.[138] The range of

[135] Demirgűç-Kunt and Levine, *Financial Structure,* p. 93. Now, as then, there remain significant differences among advanced countries, with no regression to the mean: Britain and Germany maintained their extreme positions, while the USA "over-converged" to well above the mean, while France regressed from a leadership position to below the mean. Early 1990s ratios are: Australia 71%, Austria 12%, Belgium 36%, France 33%, Germany 24%, Great Britain 113%, Japan 79%, USA 80%.

[136] A 1922 study of 44 US steam railroads found an average level of common stockholding by directors and officers of only 1.2% (the lowest in any sector), but Berle and Means show an increase of 246% in the number of stockholders in a sample of ten roads in 1900-1928 and, in 1929, very many large railroads (their sample is confined to railroads that were among the 200 largest non-financials) with board (or dominant stockholder) voting majorities or significant minority controlling interests (*Modern Corporation,* pp. 48, 86-105, 328). It is hard to explain the discrepancy unless dominant stockholders in 1922 nominated directors other than themselves OR the 1922 sample was biased to lines with widespread shareholdings but modest capitalizations: an odd combination. I have therefore ignored this evidence and based my estimate on Huebner's data.

[137] The *Commercial and Industrial Chronicle Quotation Supplement,* 6 January 1900, lists the equities of only about 650 firms as quoted anywhere in the USA compare Table 1 for NYSE listings accounting for a quarter of these. The London Stock Exchange alone had 744 official listings, with provincial exchanges hundreds more.

[138] This still allows for a rapid increase in the divorce of ownership from control (a consequence particularly of the massive 1920s UK merger wave) over the following decades, indicated by Florence's first authoritative statistics for the UK (*Ownership,* p. 104.) He estimated median levels of board ownership in 1936 at only 2.8% of ordinary shares in 92 very large industrial and commercial companies (of which only 12 had shares higher than 20%) and of 20% in 10 large breweries (half of them with shares above that level: this was still the favored preserve of British family firms). Of course, the level of board ownership would have been higher in 1936 in smaller quoted companies. The rough comparison of

examples we have found, and the paucity of cases below the London limit, suggests that a comparable representative figure for quoted American industrials at the same time was plausibly as high as 50% board ownership.

Weighting these crude estimates of typical sectoral levels of board voting control in the US and UK, by the sector proportions quoted on leading national stock exchanges in Table 1, suggests a representative level of director voting control on their leading exchanges in 1900 of 13% in the UK and of 33% in the USA. Making the appropriate additional allowance for the much higher US level of industrial and financial stock not officially listed on the NYSE – even without allowing for likely higher levels of director ownership in the smaller firms quoted on regional exchanges - would lead to a higher figure for the USA; the corresponding British adjustment would be small. On the other hand, no plausible modification of these guesstimates could produce a higher figure for the USA than the UK: we can have some confidence in the ranking, though the precise levels are subject to wide potential error.

A similar exercise is also possible for France and Germany, but precision is even more inappropriate. France was similar to Britain in railways, finance and utilities and to America in industrials: applying the same weighting by sector would give a typical French level for 1900 of 17% board ownership. Germany had few quoted railways (and those that were quoted were small and less likely to have wide shareholdings than the large French and British railway companies), but it had a large financial sector which was more widely held than American banks (and than many American railways), so it may plausibly be reckoned as around the American level – that is, 33% board ownership - overall. Combining these four counties' figures, in the ratio of their relative equity capitalization totals in Table 1, suggests a typical level of board ownership on the four largest domestic equity markets of 1900 of around 22%

Neither these relative country rankings, nor the existence of significant sectors with ownership substantially divorced from control, would have surprised contemporaries. It might be objected that, if that were so, a European author would have written Berle and Means earlier. There

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Berle and Means' 1930 categorization of 44 of the 106 largest US industrials as management-controlled, to which we can add 2 more they identify as owner-controlled but with a below 20% stock-holding (43% overall) with Florence's equivalent, the proportion of boards with less than 20% of the votes (that is 85 out of 102 UK companies, or 83%), confirms the expected continuing higher degree of divorce of ownership from control in Britain in the 1930s. Gordon later calculated that officers and directors in the median of 115 large American industrial corporations owned an average of 3.49% of the voting stock, 2.33% of it by non-officer directors (Florence, *Logic,* pp. 208-09). If some board members in Britain (but not in America) were share-less nominees of families with large shareholdings but not themselves on the board, this would overstate the relative level of divorce in the UK. However, this is unlikely to explain such a large discrepancy, and, as the British companies were considerably smaller than the American ones, these observations are still very striking: other things being equal, one would expect the larger American firms to exhibit greater divorce. In fact, arguing that Berle and Means classified companies like Swift and Firestone as management-controlled, when they were plainly family-controlled, Burch (*The Managerial revolution)* makes a convincing case that it is the American divorce rate that is over-stated. The strongest evidence for the widespread contrary view that Britain had less divorce than America in the 1930s is that median largest shareholder in the large British companies, with 10.3% of voting shares, did own more than the median largest stockholder in these companies in the USA (6.0% of common), see Florence, *Logic,* p. 190.

are several explanations for this apparent lacuna. One is that contemporaries did not remark on the phenomenon because it had for long been the norm in European joint stock enterprises and was gradually evolving, while pundits only write of rapid, noticeable changes: such as the remarkably fast retreat from personal capitalism in the 1920s USA that Berle and Means chronicled. Yet contemporary Europeans did write about the phenomenon, albeit less ostentatiously. In 1877, for example, Edwin Phillips bemoaned the inability of British shareholders' committees (of which he had experience) to control railway company boards; while, in France, Alfred Neymarck celebrated the democratization of share ownership in dozens of popular and academic articles.[139] By the early twentieth century, references to the separation of ownership and control were the common currency of European economists and businessmen. Berle and Means were not internationally aware, but even they approvingly referenced the treatment of the issue in Walther Rathenau's 1918 book *Von Kommenden Dingen,* written by a second generation manager of AEG. Keynes' 1924 lecture, *The End of Laissez-Faire*, did not claim originality when he expatiated on the difficulty of evaluating the consequences of the well known phenomenon of the separation of ownership from control.[140]

If contemporaries would not have been overly surprised by my findings, why do they shock some modern economic historians? The explanation is to be sought mainly in the latter's focus, training and psychology. The prevailing view of historians of Britain and France as the home of the family firm is mainly based on the experience of manufacturing, where, as we have seen, the four countries were much closer together than in the rail, finance and utility sectors, which were then the dominant constituents of all major equity markets. It is easy to see, in areas like manufacturing, where the British probably had only a slight lead in the divorce of ownership from control, how a, probably erroneous, belief that America led in divorcing *industrial* ownership from control could take root. Chandler's key mistake, for example, is not in diagnosing personal ownership in British industrial boards, but in imagining that it was not more prevalent in the USA and Germany. Many historians of Britain – the recent critiques of "declinism" have plausibly alleged - are programmed to discern the causes of decline in everything, and, since the divorce of ownership and control appeared to go along with modernity and professionalisation, it was an obvious candidate for the usual treatment. Historians of British manufacturing firms thus enthusiastically, in case after case, diagnosed something they felt was old-fashioned and inefficient: that is, family control (and they simply ignored the non-conforming evidence). Also more frequently noted now is the Panglossian, Whig perspective of much work on American business history.[141] Although this is the polar opposite of the British professional deformation, it is no less misleading: everything is relentlessly pressed into service to explain the USA's modernity and success, with the perfect certainty of hindsight.

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[139] Phillips, *Railway Autocracy;* Neymarck, *Finances Contemporaines*, and regular articles in *Le Rentier*

[140] Berle and Means, *Modern Corporation,* p. 309; Keynes, *End,* pp. 42-45; see also Liefmann, *Unternehmungsformen,* pp. 52, 87-88. Berle and Means did, however, firmly establish the tradition of substituting "divorce" for "separation", and tell the story with statistical underpinning and arcane legal detail for the USA.

[141] Hannah, "Marshall's Trees;" Lamoreaux et al., "Against Whig History."

In the worst cases, both deformations conspire to produce quite imaginary history: as I have shown for example, in the case of early twentieth century tobacco manufacturing.[142] American Tobacco and Imperial Tobacco are agreed, by American "Whigs" and British "declinists" alike, to be symptomatic of powerful national differences: the first corporation a modern, integrated management hierarchy under the professional, American leadership of James Duke, the latter company a loose federation of British firms under the inefficient, inherited family control of the Wills and the Players. This is then held to explain why the Americans were able to succeed in an archetypal modern industry like mechanized cigarette production and brand marketing, while the benighted British families naturally failed to make the canonical "three-pronged investments" in production, marketing and management. It is an engaging fable, compellingly told, but unfortunately it parts company at most critical points with reality. Family management and control were ubiquitous in tobacco manufacturing on both sides of the Atlantic and, remarkably (and contrary to the fablers' baseless assumptions), the tobacco statistics show that Imperial Tobacco was massively more successful than American Tobacco in converting addicts to the cigarette, while British tobacco productivity overtook America's in the early twentieth century! My choice of a product that, with hindsight, both nations would actually have been better without, is whimsical, but it illustrates the fundamental poverty of explanations depending on the alleged link between family governance and failure Neither the explicandum nor the explanation have to be established for the committed devotees of these fables to believe they have uncovered a critical causal link. Theirs is a rooted belief, akin to Hollywood History, in which facts are prettily re-arranged to confirm stereotypes, not a hypothesis advanced for refutation or confirmation.

These false comparative perspectives at least have the merit that their protagonists genuinely have something to explain: the British economy really did start off roughly on a par with America around 1900 (by measures such as GDP per head or economy-wide productivity), but performed somewhat less impressively in the twentieth century. The desire of historians of France to press similar factors into service to explain why the French did less well than the Germans is more mysterious, since the French actually outperformed the Germans in the twentieth century in growth in GDP per head (though not in the production of babies, hence population growth). But the Freudian diagnostics required here risk taking me further into professional forensic psychology than I wish to go.

The equities of companies excluded from Table 1 – quoted in 1900 on the many smaller world bourses or quoted on London, Paris and, to a lesser extent Berlin, but mainly operating abroad – were probably worth at least as much as those shown in the table.[143] It might be thought that enterprises operating in the less advanced economies would tend to be more personally owned, but such evidence as we have suggests that they did not emulate the distinctive contemporary American

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[142] Hannah, "The Whig Fable."
[143] Hannah, "Corporate Finance."

model of personally controlled enterprise. In Japan, for example, although most enterprises in 1900, including the very largest like Mitsui and Mitsubishi, were still unquoted family partnerships, in the few sectors like cotton and railways where companies *were* quoted, they were at this stage widely held.[144] In Belgium, the Brussels bourse shared many characteristics of French companies – for example, some Belgian companies had "democratic" voting rules - but Brussels was less constrained by regulation, and may have encoraged more dispersed shareholding.[145] In India's largest quoted company, the Great Indian Peninsula Railway, and other railways in the developing world financed from London, Paris and elsewhere in Europe, the voting structure often followed the Anglo-French "democratic" rather than American "plutocratic" model. The large numbers of overseas banks quoted on London and Paris, like the Hongkong & Shanghai Banking Corporation, typically had extensive shareholdings, and sometimes "democratic" voting structures.[146] Accordingly, ownership in such "Third World" companies was likely as widely divorced from control as on domestic French or British equivalents. In the British South Africa Company's London IPO of 1892 - essentially a start-up - the concessionaires received less than 10% of the shares, the rest being issued (for cash) to 8,000 new public shareholders.[147] . One sample of 260 British share registers suggests that foreign and colonial companies actually had slightly more shareholders than domestic ones, on average; they were also somewhat larger; and they rarely included manufacturing firms (in which family ownership was everywhere more common).[148] There were exceptions to this pattern: the Sassoon family's dominant 30% shareholding in the Imperial Bank of Persia was nearer to the American than British banking model, while the Samuel family retained tight voting control of Shell Transport & Trading, the London-quoted oil company, with largely overseas operations.[149] Nonetheless, the balance of evidence suggests that, if any modification is to be made to the estimate of the global 1900 degree of ownership and control, based on the four large countries in Table 1, it is more likely to be in a downwards than an upward direction, since America's high levels of personal ownership and low free floats were not as commonly encountered among companies quoted elsewhere.

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[144] Miwa and Ramseyer, "Corporate Governance," p.180; Miwa and Ramseyer, "Banks," p. 143. However, as Japan developed a much larger and vigorous equity market in the interwar years, its zaibatsu more closely resembled early twentieth century America, with dominant family shareholding blocks in many newly quoted companies.

[145] The Banque Nationale de Belgique, for example, had one vote for every ten shares, with a ten-vote maximum. The ratio of the total Brussels market equity capitalisation to GDP was higher than France's

[146] King, *Hongkong Bank,* I, pp. 115, 117, 134-36, 156, 433, 436, 498, II, p. 19; Hongkong & Shanghai Banking Corporation, *Report for the half year to 31 December 1899;* Bank of Queensland, *Report,* June 1900; Jones, *British Multinational Banking,* p. 41.

[147] Listing file 18000/30B/87. Unlike most domestic issues, this was a substantial (£1 million) new venture and the few existing assets were some land plots and the Lobengula concession; it is likely the concessionaires/board/ vendors also subscribed some of the cash issue themselves. Unlike modern stock markets, London (and Paris, Brussels and Berlin) in the nineteenth century were also venture capital and start-up markets, at least for large overseas mining and public utility ventures. While the "Randlords" often had plutocratic control of the large African mining ventures, their shareholdings were also subject to the London two-thirds rule and thus possibly lower than equivalent plutocratic Rockefeller and Guggenheim interests in US mining

[148] Davis and Huttenback, *Mammon,* p. 196, 202-03.

[149] Henriques, *Marcus Samuel,* p. 00; Jones, *Banking,* pp. 26-31.

These approximations for 1900 are difficult to compare with the more reliable data on the divorce of ownership and control towards the close of the twentieth century. For the most important home of large listed corporations today, the United States, Holderness, Kroszner and Sheehan report figures for board shareholdings in a sample of 4,200 firms listed on three major American exchanges in 1995.[150] They report a mean of 21% and a median of 14%, underlining that the boards of giant firms have less dominant shareholdings; they also calculate an alternative – and arguably more representative – figure, weighted by firm size, of only 6% board shareholdings.[151] These modern figures are, of course, based on very full samples of reliably reported data, and are very much more dependable than my crude estimates for 1900, of the generality perhaps somewhere below 22%, with Britain at 13%. These figures, which I variously termed a "typical" or "representative" level of board shareholding, can, moreover, not be directly compared with any of the three modern measures of central tendency given by Sheehan et al. My "typical" level is a crude approximation of the mean in three separate sectors (so is partly akin to their first figure of 21%, though based on quite inadequate samples), weighted by a more precise measure of relative sector size (not weighted by individual firm size as with their third figure of 6%, though my weighting has a similar, but less considerable, depressing effect on the means). What the juxtaposition of these figures does establish is that the true figure for some 1900 markets may be in the same ballpark as the USA today. It is possible that ownership is now significantly more divorced from control in the dominant stock market of today than it was in the dominant stock market of 1900, but that proposition is not as self-evident as is generally assumed.

There are a few markets today – London and Tokyo being the most important – in which, by some measures, the divorce of ownership from control is similar to the modern US level, but in most countries high levels of director ownership are now the norm.[152] The adjustment of the modern US data on director control for a wider global sample would certainly therefore have to be in an upward rather than downward direction. Overall, therefore, the modern, global level of divorce of ownership from control is not clearly greater than the representative figures calculated for the early twentieth century. There has, globally, not obviously been a marked twentieth century convergence on increased divorce of ownership from control. Indeed, in some countries, like France, the long-term trend seems to have been in the reverse direction, while modern emerging markets may be substantially less prone than nineteenth century ones (with the exception of the, then rapidly

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[150] Holderness, Kroszner and Sheehan, "Were the Good Old Days," pp. 441-2.

[151] This relationship probably also held in Europe in 1900, but, as we have seen from the nonconforming case of the three largest American industrials in 1900, there were exceptions.

[152] La Porta, Lopez-de-Silanes and Shleifer, "Corporate Ownership," pp. 492-95. Only by one definition - 20% control among the top 20 firms by market capitalization – do Japan and the UK rank as having more widely-held firms than the USA: all these firms in the UK, 18 in Japan and only 16 in America qualify as widely-held, with the number being lower in the other counties. At the 10% control level or for medium-sized firms, there are more widely-held firms in the United States than anywhere. See also Faccio and Lang, "The ultimate ownership."

developing, USA) to divorce ownership from control. Even in the late twentieth century USA, where studies of the phenomenon with many (incompatible) definitions and data sets have proliferated most remarkably, there is considerable support for the view that the recent trend has been in the reverse direction: toward increased owner-control.[153] It is not impossible that the phenomenon of ownership divorced from control peaked some time in the first half of the twentieth century, or, indeed, in the nineteenth, before the USA, in particular, and the quoted industrial sector, in general, with their initially strong propensities to family control, became significant components of global stock markets.

The purpose of this survey is modest: to sow doubt on the powerful conventional wisdoms that have dominated historical thinking, confusing the divorce of ownership from control with modernity and success. Estimating more precisely the rate of change and the overall levels of divorce, and the changing implications, as they evolved over the nineteenth and twentieth centuries is well beyond its scope. Yet it is clear that there have been two key drivers of the twentieth century changes: events in America (which are well covered in the literature) and the decline of the quoted transport sector (which began the century as substantially management-controlled, but has received little attention in this context). The increasing dominance of the USA in global GDP, especially in the first half of the century, and the even more marked dominance of New York's equity capitalization in global stock markets, especially in the second half, are well known phenomena, that inevitably make what happened to the divorce of ownership and control on the NYSE a critical part of the global picture. Since the USA began the century with an unusually low degree of publicly quoted shareholding and ended it with an unusually high degree, it is likely that this was the major force pushing toward higher levels of divorce of ownership from control globally. The change to more dispersed ownership in manufacturing and mining – which everywhere had ownership rather closely allied to control at the beginning of the century – was particularly evident, and it is, in fact, the (possibly abnormal) experience of this sector in the USA that were most noticed in the first half of the century, notably by Berle and Means.[154] By 1940, the top five executives in America's largest

[153] The average ownership of votes by the board rose from 13% in 1935 to 21% in 1995 in the USA, see Holderness, Kroszner and Sheehan, "Were the Good Old Days." If one can assume that the Federal Trade Commission's calculation of the proportion of common stock - 10.7% - held by "officers and directors" in a 1922 sample of 4,367 companies (Berle and Means, *Modern Corporation,* p. 50) represents board voting shares, it would appear that management control was also declining as early as 1922-35. However, Berle and Means (pp. xxx, 357-9) argued on the basis of Larner's study replicating their results for the top 200 non-financial corporations in 1963, that the trend had continued 1929-1963. Herman (*Corporate Control,* p. 66), on the basis of a re-working of data and definitions and of smaller samples of US large non-financial corporations for the earlier years, argues that management control increased from 23.8% in 1900-01 to 40.5% in 1929 and 82.5% in 1975; he sees the main early change as a reduction in "financial" control from 31.3% in 1900-01 to 11.8% in 1929 and 0.5% in 1975. One might expect competition to ensure that the rate of return on surviving owner-controlled firms would be equal at any time to those of surviving manager-controlled firms. In fact, one is likely to find differences as the economy moves to such an equilibrium slowly. Owner-controlled firms in the USA, appropriately, performed better than manager-controlled ones in this period when their role was apparently increasing, see Monsen, Chiu and Cooley, "The Effect of Separation." Jensen, "Eclipse," also describes some of the forces, like leveraged buy-outs, that were later at work to increase owner-control.

[154] Berle and Means, *Modern Corporation,* on US trends 1900-1929; Florence, *Ownership,* on UK trends 1936-1951. Interestingly, Berle and Means excluded financial companies, and Sargant Florence excluded both financial and transport

manufacturing corporations held only $1.2 million of stock each: as a proportion of all corporate stock, as low as the stockholdings of many British and French railway and bank directors at the beginning of the century.[155] This transformed industrial sector was also, by mid-century, the dominant sector on the major exchanges, overshadowing earlier dominant sectors.[156]

The main countervailing trend, the decline of the railways, was initially (and in America almost exclusively) driven by economic and technological factors: the competition of more efficient transport modes. However, in Europe, the widely-held railways were prematurely removed from equity markets by the political choice of nationalization: in France in 1936 and in Britain in 1947. Some of the transport innovations that eventually displaced rail travel everywhere, like airlines, were quoted, but many of them (and many of the roadways that superseded rail permanent way) were state-owned, while other new competitors were often unquoted: they were of modest scale (trucking) or operated by households (the family car). Whole economies were also nationalized in Russia in the 1920s and China and eastern Europe in the 1950s, taking some quoted railways and other corporations with widely dispersed shareholdings off global capital markets. History is written by the winners, so the group of companies – largely in transport – with ownership most divorced from control at the beginning of the twentieth century, accounting for around half of all global equity capitalization then, that did not generally survive the century, has been little noticed in this context. Yet, as this sector was the most precocious and extensive practitioner of the divorce of ownership from control, its decline was clearly the strongest countervailing force to rising divorce elsewhere. It is possible that the completeness of the railways' decline reflects weaknesses in their strikingly divorced governance structures, though it is more obviously the result of their technological obsolescence.

Some historians have (studiously ignoring such classic cases) equated the divorce of ownership from control with modernity and success, but it is clear that this perspective is as naïve and incomplete as Adam Smith's view that joint stock companies must always be inefficient compared with personally controlled enterprises. Modern agency theory, like Smith, stresses the serious problems of shareholding owners who do not manage their enterprises directly. It is difficult to exaggerate either the enormous challenges that this posed to nineteenth century owners and managers or the range and complexity of the solutions they attempted, with varying degrees of success[157]. One way that America (and, perhaps, Germany) initially sidestepped these agency problems was by not having them in as acute a form as France or Britain. The commanding heights of the United States' corporate economy were in 1900 overwhelmingly personally owned.

Skepticism on the Whiggish idolization of the new "professional managers" has received widespread empirical support among European scholars in refutations of the simplistic equation of

companies: much of the weight of their interpretation rests on industrials, which were a growing proportion of large corporations in the period to the 1960s, after which service companies again began to dominate (see Gospel and Fiedler, forthcoming).

[155] Lewellen, *Ownership Income,* pp. 105-06. It was little more than 1% of outstanding stock.

[156] Dimson et al., *Triumph,* pp. 24-27.

[157] See the fuller discussion in Hannah, "The Art.''

family ownership with inefficiency.[158] It is not difficult to find confirming US evidence of the superior performance of entrepreneurially-owned relative to publicly-quoted companies. The personally-owned Carnegie Steel, for example, seems clearly more efficient and profitable around 1900 than Morgan's contemporary NYSE-quoted steel mergers, like Federal Steel under Judge Gary.[159] Carnegie's lieutenant, the 39-year old Charles Schwab, became the first president of U.S. Steel on its formation in 1901, but was like a duck out of water in a bureaucratic enterprise under Gary's and Morgan's supervision. He was much happier and much more successful, when he bought a controlling interest in Bethlehem Steel and became the steel colossus's most effective competitor, again achieving impressive results[160]. The Guggenheims' private smelters also seem to have been more profitable than smelters quoted on the NYSE.[161] The shrewd sponsorship of business incubation by companies like Brush Electric in Cleveland or Singer manufacturing in New Jersey may have been more efficient in promoting innovation than the R&D labs of US publicly quoted firms, or, indeed, the (temporary) European bias to stock-exchange financed start-ups.[162]

There is a considerable modern literature on transition economies suggesting that where legal systems are primitive (a plausible description of the relevant New Jersey or Delaware, relative to European, corporate laws around 1900) concentrated ownership structures may be more efficient.[163] The possible perils of uninformed and inadequately monitored finance – the allocative inefficiencies caused by the contemporary, highly developed British stock market - have also received some attention in the literature.[164] If such views were endorsed, it could be argued that the New York had the best of both worlds: its leading stock exchange, through bonds, railroad stocks and a limited selection of large industrials, provided the money market liquidity that banks and other large investors required for their risk management, intermediation and maturity transformation activities; while many industrial equities were kept in safer, committed owner-controlled hands and not traded on the most liquid markets.[165] Given the informational inadequacies of US accounting at the time, it may even

[158] Church, "Family Firm;" Colli, *History;* Hannah, *From Family Firm*; Rose, "The Family Firm;" Jones and Rose, eds., *Family Capitalism;* but compare Okazaki, "" and Miwa and Ramseyer, "Corporate Governance," p. 201.

[159] Warren, *Big Steel,* pp. 11, 17.

[160] Ibid., p. 27; Hessen, *Steel Titan,* pp. 123-88. Schwab's disdain of corporate bureaucratic empires was matched by Carnegie's, but his capacity to spend matched that to earn; he died insolvent.

[161] Hoyt, *Guggenheims,* pp. 123-26. However, later legal cases suggested this might be because of transfer pricing aimed at stock manipulation, rather than true efficiency advantages.

[162] Lamoreaux et al., "Financing Invention;" Bruland, "Babcock."

[163] La Porta et al, "Law," p.1113; Bergloef, "Corporate Governance," 81-82. American law in 1900 was arguably bifurcated: strong on contract enforcement and creditors' rights, but weak on corruption, accounting, minority shareholders' rights and commercial banking.

[164] Kennedy, *Industrial Structure.*

[165] Using more recent international comparisons, Levine and Zervos ("Stock Markets") argue that it is stock market liquidity, rather than stock market size as such, that is correlated with economic growth. In 1901 the NYSE traded three times the par value of stocks listed on the exchange, with railroads having the highest turnover, see Pratt, *Work,* p. 45.

have been a positive that the contemporary norm of insider dealing by informed directors, who owned large amounts of common, gave useful market signals.[166]

On the other hand, the fact is that the "backwardness" of New York in stock exchange matters *was* gradually (but spectacularly) remedied. Slowly, but surely, America's leading industrial firms *did* list on New York: Carnegie Steel (reborn as the core of US Steel) in 1901, Du Pont in 1909, Standard Oil in 1920, Procter & Gamble in 1929, Gulf Oil in 1943, Alcoa in 1951.[167] Berle and Means really *could* by the 1930s celebrate America's having caught up with, indeed probably overtaken Europe as a whole in the divorce of ownership from control.[168] A complex and long drawn-out process of financial reconstructions (Westinghouse and Seiberling), merger (Studebaker), career changes to philanthropy (Carnegie and Rockefeller) or to politics (Harriman, Mellon), family squabbles (Du Pont, Hartford, Guggenheim), antitrust dissolution (Duke), dissipation and divorce (Vanderbilt), childlessness (Eastman), multiple suicides (Ryan) or lack of interest or skill in business (Procter and Armour) did, to a remarkable degree, replace American plutocratic entrepreneurs by banker and/or professional manager controllers.[169] By 1935, in the typical American quoted company, the managers owned only 13% of the equity, a figure identical to my crude London estimate for 1900.[170] At the same time as the grip of American owning families faltered, the rise in progressive taxation after 1916 increased the relative attraction of stock ownership to non-plutocrats and the 1920s stock boom popularized the equity culture.[171] Morgan's dealings with a few elite institutions and wealthy individuals were supplemented by extensive small investor participation.[172] In 1900 it is hard to trace more than a half dozen US companies that numbered their stockholders in above four figures (but easy to do so in Europe). By the 1930s several corporations (in America as in Europe) had six-figure

[166] Manne, *Insider Trading,* is the classic statement of the general case; see also Banerjee and Eckard, "Why Regulate Insider Trading?" for some relevant contemporary evidence..

[167] By 1952, 73% of the market value of outstanding stock of domestic corporations was quoted on the NYSE, 8% on the American Exchange, 2% on other exchanges and 17% traded over the counter, see Goldsmith, *Institutional Investors,* p. 430.

[168] In Britain, for similarly sized companies, the divorce of ownership from control in the 1930s was still higher than in the USA, but the US had many more large companies. Hitler's control of stock markets and application of the Fűhrerprinzip to German company law in a sense strengthened the divorce of ownership from control, but proved to be an unsustainable interlude in German corporate governance.

[169]However, Herman (*Corporate Control,* p. 72) suggests that the decline in family control in the United States came mainly after 1929. These processes were also at work in Europe, see Mayer for the importance of merger. Of course, there were also some new plutocrats, from Henry Ford to Bill Gates: the modern economy remains quite evenly divided between plutocracy and wide share ownership. Equally obviously, the transitions described are oversimplified: philanthropists did not necessarily, for example, ignore their business interests.

[170] Holderness, Kroszner and Sheehan, "Were the Good Old Days."

[171] Desai, Dharmapala and Fung, "Taxation." Hawkins, "Development,' p.145, though without giving a source, estimates that the number of US shareholders quintupled to 10 million in the decade to 1930.

[172] Smith and Sylla, "Transformation," p. 16.

totals, and AT&T, with 469,801 stockholders in 1929 and 642,180 in 1931, was almost certainly the world's most widely held stock.[173]

America's enthusiastic and decisive acceptance of such changes suggests that a New York stock market that, in some respects, more closely resembled the London of 1900 was not without positive consequences. The pace of change in the USA in the decades following the turn of the century was much faster than that in Europe. That many continental Europeans at the same time turned away from stock markets was not so much due to their markets' own shortcomings, as to the ravages of wars, revolutions and inflations that fatally afflicted their continent and abolished (or destroyed faith in) their originally more developed national equity culture.[174] It was later a short step for those with faulty memories to reconstruct the financial and business past to match the capital market present. Some lawyers and economists even persuaded themselves that the USA had invented this aspect of modern capitalism; or that the disembodied, but no less powerful, spirit of Anglo-Saxon common law, triumphing over the inflexible, continental, Franco-Roman model, had done so.[175] Meanwhile, for some continentals, the equity culture of stock exchanges and widespread

[173] Unless, following the inclination of Berle and Means, state-owned enterprises are considered to be owned by citizens/taxpayers, in which case AT&T was the least widely held of the major world telecoms operators. Other US utilities with large (though, in these cases, substantially vote-less) stockholder numbers in 1930 were Associated Gas & Electric with 190,139 and Cities Service Co, with 459,458; while Middle West Utilities Co (controlled by Insull through pyramiding) had 296,389; only South California Edison, with 119,418 shareholders had, like AT&T, both large numbers of shareholders and manager-control. British utilities were either state or municipally owned or controlled by smaller companies. See Florence, *Logic,* p. 178; Berle and Means, *Modern Corporation,* pp. 86-105. Their statistics suggest non-utilities corporations had similar numbers of shareholders in the US and UK by then: in railways, the Pennsylvania had 196,119 in 1929 and 241,391 in 1931 (though most other US railroads had surprisingly small numbers of shareholders: none above 100,000 and most below 20,000), compared with the LMS's (successor of the LNWR) 214,292 and the LNER's 211,391, both in 1941. US Steel had 182,585 stockholders in 1929 and 174,507 in 1931, General Motors 189,600 in 1929, Standard Oil of New Jersey 104,000 in 1930, compared with Unilever's 210,000 in 1936 (British half only: the Dutch half almost certainly made this Europe's most widely held company (Suez possibly excepted) and the world's most widely held manufacturing stock), Imperial Tobacco's 106,900 in 1925, and ICI's 146,100 in 1942.

[174] Rajan and Zingales, "The Great Reversals." Even France (which suffered less from war, inflation and revolution than Germany, Austria or Russia) saw a massive and permanent drop in its stock market capitalization / national income ratio in the 1920s, see Gueslin, "Banks," pp. 68-73. Outside the USA, only the UK and its offshoots remained strongly committed to stock exchange financing, though the Tokyo market was also then becoming increasingly committed to such Anglo-Saxon ways.

[175] Cheffins, "Mergers," is a complex attempt to explain by legal and other factors why the levels of divorce from control achieved in America around the turn-of the century merger wave were not matched in Britain until around its 1960s merger wave. So powerful are the images of British declinism and American modernity in the literature, that it does not seem to have occurred to Professor Cheffins that he may be assiduously explaining something close to the opposite of what requires explanation. La Porta et al, "Law and Finance," is the *locus classicus* of the legal tradition econometrics. Rajan ("Program report" p. 2) speculates that some third factor correlated with common law explains the finding of La Porta et al. That factor remains elusive. If the factor is the relative absence in 1914-1950 of hyper-inflation, wartime occupation, expropriation and revolution in common law countries with large stock exchanges, this may be a matter of luck or successful warmongering, not legal efficiency. Two obvious objections to the legal tradition argument are Scotland and Louisiana, which contrived within their Roman law systems to have corporations looking remarkably like those common law ones in other states of their respective unions.

share ownership, a culture they had actually pioneered, was reconstructed as an Anglo-Saxon plot to subvert their social order.[176] Both schools would do well to read a little history.

SOME IMPLICATIONS

The discussions here and elsewhere suggest that the stereotypes that have been generated in the business history literature about family firms, professional management, modernity and success, are not only empirically unreliable, but imply relationships among variables that are unconvincingly and incompletely articulated. The diversity of national institutional forms and corporate development paths revealed by the alternative perspectives described here offers a richer palette of variation for historical analysis of financial markets. This is, at least initially, not a convergent world smoothly evolving towards the end of history, in which one ideal model of financial organization and corporate governance is pioneered by one country, eventually revealed as unequivocally superior, and adopted with acclaim by successful follower nations. Metaphors of divorce, which imply (like the concept of revolution) a sudden and decisive transition to a preferred state, also seem rather inappropriate: whatever happened to relations between owners and managers was rather a slow and equivocal evolution. It was also a road apparently strewn with path dependencies, punctuated equilibria and possible wrong turnings. For example, as we have seen, contests for corporate control were common in widely-held US (and, more rarely, in European) corporations at the beginning of the century, but were then suppressed everywhere for decades, before reappearing, in slightly modified form, in Britain in the 1950s and the USA in the 1960s. Countries that pioneered widespread shareholding and the separation of ownership from control, like France or Meiji Japan, later re-appear as exponents of the *noyau dur* or *keiretsu* of strong shareholder control or corporate interlinks.

Any simple equation of any of these institutional mutations with efficient corporate management or with fluid (or, alternatively, committed and stable) capital markets is naïve. The picture is rather one of unseeing, market-driven, but convention-constrained, experimentation, evolving routines of trust, reciprocity and quality certification which sometimes succeed and sometimes fail, and accidental concatenations of war, occupation, revolution, inflation or other disequilibrating forces that lead to profound, sometimes unintended lurches into reverse of financial systems that previously appeared to be working passably well. The differently structured national financial and corporate systems that emerged all had weaknesses as well as advantages. The results, in terms of socially desirable outcomes for growth, productivity, prices and profits, or for the intermediation of corporate capital demands and investor portfolio opportunities, likely depend not only on the degree of divorce of control from ownership (and closely related issues such as the existence of a market for corporate control), but on evolving informational requirements for public companies, changing leverage ratios and their incentive effects, antitrust and securities laws, and

[176] Albert, *Capitalisme*.

wider characteristics of the corporate environment, like the change from quasi-monopolized, regulated (and mainly national) railway and other utilities as the dominant corporate form at the beginning of the twentieth century to the (mainly globally competitive) industrial and service corporations of today.[177] This article raises more questions than it answers, but it does demonstrate that we need to develop a different, and richer, model than that presented in much of the recent literature of business history or financial economics, if we are to make more progress in understanding the complex, microeconomic roots of differential macroeconomic performance.

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[177] Some of these issues are discussed in Foreman-Peck and Millward, *Public and Private Ownership;* and Millward, *Private and Public Enterprise.*

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