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The Corporate Economies of America and Europe 1790-1860.¹

by Leslie Hannah

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“America appeared rather late in the field but she is already a chief leader in it.”

Marshall, *Industry and Trade*, p. 327.

ABSTRACT

Although early corporate data are sparse, the statistics of individual incorporations by special act in 1790-1860 assembled by Sylla and Wright leave no doubt that new creations of corporations proper in the US rapidly outstripped those in France, Prussia and the UK. However, other limited liability entities - notably *commandites* (with and without shares) - were earlier and numerous in continental Europe and the numbers of *extant* companies, and particularly their aggregate paid-up share capitals, were closer together in 1860. It was the UK, not the US, which continued to lead corporatization as measured by the ratio of corporate share capital to GDP and it was not until the twentieth century that the US caught up, while both France and Germany lagged. UK corporate business by the mid-nineteenth century had more capital because of its access to large integrated markets, a rich menu of corporate forms and low interest rates. Thus, while the distinctive feature of US corporations was that they were small and numerous, UK corporations were larger, more capital-intensive, less prone to disappear and had more dispersed ownership.

The new database of US special incorporations to 1860, assembled by Richard Sylla and Robert Wright, projects welcome sunlight on a statistical dark age of American corporate history. In “Corporation formation in the antebellum United States in comparative perspective” (*Business History*, online publication, January 2013, hereafter “Sylla-Wright”), they describe their findings with their customary scholarly skill, presentational verve and enthusiasm for American “exceptionalism.” Showing that corporations were created more numerous in America than in major European states in the first half of the nineteenth century, they suggest that the laggards - (common law) UK and (civil law) France and Prussia - resembled each other more than the (common law) US leader. They

¹ An earlier version has been improved by suggestions from Kristine Bruland, Carsten Burhop, Eric Hilt, Robin Pearson, Richard Sylla, John Wallis and Robert Wright. They are not responsible for the interpretation or remaining errors.

conclude that developmental US political culture (rather than the legal “family” emphasised by others) is the driving force behind divergence. The idea that America was doing something quite new goes back at least as far as Francis Lieber in the 1830 *Encyclopaedia Americana*² and there must have been something special happening across the ocean in the nineteenth century because by 1910 the US had more than half of all the half-million corporations in the world.³ This comment on, and amplification of, the seminal Sylla-Wright article suggests that they may, nonetheless, have over-egged their pudding.

Their observation that regional differentials *within the US* in the degree of corporatization were related to the development of secondary and tertiary industries and urbanization raises the obvious question of why this (apparently) did not apply internationally. How was the UK - the “First Industrial Nation” - able to industrialize and urbanize (more than the US) without as wholeheartedly embracing the new general purpose technology of the corporation that was critical to modernizing the urban, financial and transport infrastructure and (modestly) raising scale in manufacturing? For Ron Harris the answer was that England struggled to raise living standards while industrializing and really would have been better off following the canonical American model sooner⁴ and Sylla-Wright and many others have implicitly or explicitly agreed. However, I will suggest that nations resembled each other more than the existing literature implies; in particular, their aggregate extant stocks of capital in corporate or limited liability entities around 1860 were not massively different. Contrary to the consensus in the literature, moreover, the “First

² Maier, “Revolutionary Origins,” p. 52. See also Evans, *Business Incorporations*, p. 21 for an early comparative statement.

³ In 1910 the US had 2,913, the UK 1,241, Germany 403 and France 306 corporations per million people (Hannah, “Global Census”), though they were closer together by the size of their corporate capital stocks, compare Table 3 below. The earlier contrast is, however, sometimes ludicrously exaggerated. Oscar Handlin (“Development,” pp. 2, 7) absurdly told the American Enterprise Institute in 1981 that “by 1800 there were many more corporations in the United States than in all of Europe” and that, thereafter, “American corporations proliferated, whereas the corporation in Europe remained a very rare and specialized form of enterprise, almost until the end of the nineteenth century.” By contrast, Sylla-Wright’s conclusions that all four nations had “similar institutional arrangements” (after a lag) and that those in the US were only “marginally better” are more cautiously expressed.

⁴ *Industrializing*.

Industrial Nation” in 1860 did not lag the US in corporatization; on the contrary, the UK was still ahead by the commonly-accepted metric of the ratio of corporate capital to GDP (as one would expect in a leader of industrialisation). What was impressive about early US corporate development was *not* the early and abundant offering of limited liability to finance large-scale corporations, especially in the transportation sector. Similar companies were also - sometimes more, sometimes less - generously capitalised in Europe. Rather the New World led in the promiscuous creation of many *small* corporations over a wider range of businesses and tolerance of higher corporate bankruptcy rates than was still the norm in the Old World.

Is the “Corporation” the same everywhere?

Sylla-Wright believe that the US soon had more “corporations” than anywhere else and that, measured by their minimum “authorized capital,” American companies also out-paced Europeans. These terms are an immediate pointer to some problems of interpretation. The American English term “corporation” soon became shorthand for the business corporation, though the word’s origins on both sides of the Atlantic were identical. It included other bodies corporate (such as municipalities, universities etc), but everyday linguistic usages rapidly diverged and the transatlantic cable struggled to re-unite them (as television and Hollywood later achieved in other fields). Even after the cable linked their stock exchanges, the term “corporation stock” on the LSE meant municipal bonds, while in New York the same phrase usually meant company shares. The British sometimes use the preferred American term (as in the UK’s modern “corporation tax”) but their favoured term remains “company,” also still used in the US. Since in Victorian English (and, indeed, in many other languages: *société*, *sociedad*, *Gesellschaft*, *kaisha*, etc) that word included partnerships and other multi-owner business forms,⁵ it was usually adjectivally qualified (by joint

⁵ Such terms universally mean, in their widest connotation, “any group of people.” In everyday modern British English usage, company is (like corporation in American English) shorthand for the limited-liability, joint-stock, company, though dictionaries in both countries naturally allow multiple, more eclectic, usages. I use

stock, chartered, limited, unlimited, sole, public, private, statutory, cost-book, sixty-fourth, guaranteed, deed-of-settlement, co-partnery, etc) to clarify the precise form being alluded to. On the other hand, America's omnibus term "corporation" allowed ambiguity about which of these (in some cases optional or even - in America - unavailable) aspects of "corporate-ness" the described entity possessed. Contemporaries saw equivalences in corporate and non-corporate forms and had to resort to lawyers to understand the finer points, as still helps today if we want to get beyond everyday usage. Lawyers themselves still debate the issue of corporate nominalism (treating corporations as an abbreviated way of referring to their constituent individuals) versus corporate realism (in which the legal personality of the corporation reflects a real separate existence) and it is not hard to see that American conceptions in the early nineteenth century tended to be emblematic of the latter, with some European views nearer to the former.⁶

The Sylla-Wright phrase "authorized capital" is problematic in a different way. Why on earth should businesspersons need to have their minimum (or, for that matter, as charters also commonly specified, their maximum) capital authorized by the state?⁷ Should entrepreneurs not have known how much capital they needed to implement their business plan, modifying that from time to time, as they gained experience, and contracting for more funds from investors, partners or suppliers as and when required? What value added did legislators bring to authorizing any particular amount? Sylla-Wright's answer is that this was the condition for achieving what was originally a privilege and soon became a right: some combination of separate legal personality (including the ability to sue and be sued, a corporate seal and the right to own land collectively), perpetual

"corporation" (in the casual American sense to include only business corporations) or "corporation proper" for emphasis, and "company" equivalently in the similarly casual modern British sense, except where the context makes clear that I am using the broader business connotation to include partnerships.

⁶ Iwai ("What") makes the point that today it is Japanese rather than American corporations that better encapsulate the realist view.

⁷ Even where the state was not involved in individually chartering corporations, promoters sometimes included a minimum and/or maximum authorized capital figure as a corporate governance device: the issue would not go ahead if there were insufficient subscriptions; and shareholders' consent by majority or super-majority was sometimes required before new capital was raised above the ceiling.

succession (the ability of the business to continue even if ownership changed), entity shielding (creditors could not have recourse to business assets for individual shareholder' debts) and limited liability (shareholders were liable only for what they had contributed or some other clearly defined amount). One might call this assembly "corporate-ness." A further reason was the need for statutory powers of compulsory purchase (in American English "eminent domain"), essential for some enterprises. There were good reasons for seeking some or all of these aspects of corporate-ness, but the latter especially drove canals, turnpikes and railways to the statutory route.

Beyond railways and their like, Americans embraced political oversight of these business decisions for a wider range of enterprises than European legislators or autocrats.⁸ This was partly a matter of the shared and inclusive developmental ideology fostered by independent nationhood: Americans were not as averse to politicians' fingers in the developmental pie as they later became.⁹ America's tendency to "socialism" concerned early nineteenth century British politicians who (as the Sylla-Wright's opening quotation from Lord Liverpool suggests) were otherwise generally admiring of the progress of their transatlantic cousins.¹⁰ Political authorization of business capital decisions was also facilitated by America having numerous legislators with time on their hands. The British Empire had one legislature at Westminster (for several hundred million people);¹¹ the small, new and hastily-federated republic started with fourteen legislatures and by 1860 had three dozen of them -

⁸ Most obviously in manufacturing. 15% of the special charters and 10% of the minimum authorized capital in the Sylla-Wright database in 1790-1860 were for manufacturers, while among UK companies noted as existing in 1844 or newly registered by the Companies Registrar between 1844 and 1856 only 5% were (Shannon, "First," p. 420; Levi, "On Joint Stock," pp. 24-5) and in Prussia before 1870 only 8% of AGs with 2.5% of their capital were (Engel, *Die erwerbstätigen*, p. 10). Although more capital-intensive than US equivalents (Field, "Land Abundance"), UK manufacturers were more content with the partnership form until the second half of the nineteenth century.

⁹ Handlins, *Commonwealth*.

¹⁰ Hansard NS, vol.XVI, cols.256-9, 278, 1826) speech by William Huskisson, Liberal Tory M.P. for Liverpool and President of the Board of Trade. However, when backwardness required it (as in their subsidies to Irish and Indian railways), British politicians were themselves willing to indulge in "socialism."

¹¹ There were some colonial legislatures, but they were subject to the imperial parliament, and the originally separate Scottish and Irish parliaments had been merged with Westminster in 1707 and 1800 respectively.

most with smaller constituencies than a British municipal corporation¹² - looking for something to do (though the federal Congress only rarely chartered anything). Large European unitary states simply could not match that devolved legislative manpower (and legislators everywhere were mainly part-timers). The results were perhaps predictable. One of the reasons for the UK's company legislation of 1844 (establishing a new procedure for registering companies administratively without involving parliament) and 1845¹³ (standardising the corporate governance and capitalisation rules for the numerous companies still authorized individually by statute) was that a centralised parliament was visibly no longer able to cope with the weight of private bills (temporary huts had been constructed next to the houses of parliament to handle the excess work). On the other hand, one of the reasons for general registration replacing individual chartering in the US was to limit corruption among numerous state legislators.¹⁴

But there was another way forward to the modern world of corporations - more common in Europe - which did not necessarily involve legislators at all. Businesses could simply contract for some or all of the characteristics of "corporate-ness" in private legal agreements, though that was usually too exposed to the risk of individual hold-up (without the reserve power of compulsory purchase) in the case of land acquisition for railway-building in densely-settled countries. Modern libertarians have argued vigorously that the state is, in principle, quite unnecessary for the creation of corporations,¹⁵ but that doctrine did not commend itself to many US judges and legislators of the early nineteenth century. Only later were such enlightened gentlemen converted

¹² Although technically some UK municipalities had chartering powers, in practice these were no longer used in the nineteenth century (unlike in some German free cities).

¹³ The Companies Clauses Consolidation Act of 1845 and the related clauses acts for railways and compulsory purchase have been overlooked by some historians of the corporation but were arguably more important than the 1844 act, because they clearly conferred limited (rather than, as in the 1844 Companies Act, merely a form of proportional) liability and applied to most UK corporate capital until near the end of the century. The statutory form was the dominant choice of companies quoted on stock exchanges and required much tougher corporate governance rules than for companies registered under the 1844 and subsequent Companies Acts.

¹⁴ Glaeser and Goldin, eds., *Corruption*. European politicians were, of course, also susceptible to corruption.

¹⁵ Hessen, *Defense*; Anderson and Tollison, "Myth." For the contrary view of corporations as necessarily politicized, see Alborn, *Conceiving Companies*.

to the older European view that nothing more than mutual agreement (and perhaps registration) might be required for the establishment of some aspects of “corporate-ness” for the likes of hundreds of limited partnerships or even (as in New York from 1811) small manufacturing corporations. Proto-libertarian views about liberal, virtually state-free chartering were occasionally championed at the time by the *Economist* and in the US by Freeman Hunt’s *Merchant’s Magazine*.¹⁶ However, many (especially large) corporations proper, which attracted some suspicion from both monarchical and republican oligarchs and legislators as potential challengers to their power, usually had to wait a little longer. The shift from anti-corporatism and anti-charter sentiment in the US (similar to the British campaign against “Old Corruption”) to promiscuously chartering a (less worrying) multiplicity of competitive corporations took some time.

Yet traditional European commercial polities less frequently indulged the American urge for re-constituting a new world in written political constitutions and corporate charters, so it was Americans, not Europeans, who, on some dimensions, lagged in offering organizational options. Europe had well-established precedents in the medieval *Lex Mercatoria*, partnership contracts, and trust law that enabled the private ordering of some of these matters, without the intervention of the legislative (or executive) arms of government. American corporate lawyers either were ignorant of such options or feigned ignorance to pad their wallets as supplicants to state legislatures: in any event it is clear that America went its own distinct way in corporate law more spectacularly quickly than in other fields of law.¹⁷ In Europe, by contrast, earlier precedents were abundantly used, sometimes even without registration and publicity: state power was sometimes involved only in recourse to the judicial branch in the event of disputes between the

¹⁶ The *Economist*, 27 January 1855, p. 4; Coquelin, “Commercial Associations.”

¹⁷ Angell and Ames, *Treatise*; Dodd, *American Business Corporations*, p. 196. Handlin (“Development,” pp. 7, 11) favours lawyer ignorance in a traditional, agrarian society as the explanation: “They had had no experience of how to draw up charters, with what went on within the corporation, or with how to resolve the various problems relating to the contract of the corporation with the state,” contrasting this with “England, where they knew how to do it.”

contracting parties or between them and third parties. The country exemplifying this libertarian¹⁸ alternative most clearly is Norway,¹⁹ which had escaped the Napoleonic embrace and thus also his 1807 civil code that mildly restrained earlier freedoms enjoyed by multi-owner enterprises in much of Europe (and seriously restrained corporations proper, such as French SAs or German AGs). Norway simply carried on traditional, centuries-old, commercial practices and had *no* corporate statute law in the nineteenth century. Norwegian businessmen could, of course, go to the state for special privileges required to build a railway (and when they first did in 1854, the state also - as was common in the US - was willing to provide modest supplementary capital), but most Norwegian businesses simply freely and privately contracted for the degree of corporate-ness, liability rules, amount of capital and governance rules which seemed to them (and their investors) appropriate to their circumstances. It turned out that they had ideas on such matters that were at least as good (and possibly better) than politicians prescribed elsewhere.²⁰ Things did, it is true, become a little more bureaucratic later in the century: in 1874, and especially from 1890, Norwegian corporations were required to register their existence and some basic corporate information publicly. But Norwegian businesses apparently achieved a kind of limited liability, perpetual succession, the right to sue and be sued in the corporate name, entity shielding and sensible corporate governance rules to protect shareholder rights, simply by enjoying the advantage of politicians who did not take as

¹⁸ The nineteenth century term for libertarianism was, of course, anarchism, though its leftist connotations are discomfiting to some modern American libertarians. "Liberal" was the more commonly used contemporary political term for moderates favouring causes like free markets and free incorporation, a meaning equally alien to modern American English, but commonly understood in European languages (including British English).

¹⁹ Denmark and the Hanse cities were initially similar, but adopted statutory corporate law sooner.

²⁰ Ostergaard and Smith, "Corporate Governance." They make no mention of liability rules and the literature on Norwegian nineteenth century enterprise (at least in English) is also largely silent on the matter. This may be interpreted as another contribution to the burgeoning literature on the unimportance of limited liability to early corporate development, though Dag Michalsen (email to the author of 23 January 2013), professor of law at the University of Oslo, notes that, although the 1814 constitution envisaged the drafting of a corporate law, none was implemented, so article 5-1-2 of the 1687 law on freedom of contract (similar to Denmark's 1683 law) prevailed and the supreme court accepted legal constructions, unfavourable to third parties, which would not have been accepted elsewhere. Professor Knut Sogner of the Norwegian Business School (BI) points to the example in 1895 of the formation of And. H. Kiær & Co *Ltd.*, presumably expecting their self-limited liability to be respected (email to the author, 21 January 2013).

negative a view of such private contracting as those in America, Britain and elsewhere and pass laws forbidding it or directing it.

The result by 1910 (when Norway finally accepted the tide of legislative fashion and introduced its first corporation statute)²¹ was impressive: without any legislative blueprint, the entrepreneurs of this tiny (and still quite modestly developed) country had by then created more corporations per million people than any country outside the USA.²² The paradox that the most libertarian and the most state-controlled systems could each produce proportionately more corporations than anywhere else is simply explained. The US was already by the 1830s and 1840s so promiscuously and cheaply promoting special chartering that it was almost indistinguishable from a free regime, even before simple registration with minimal specified conditions rather than legislative approval became the norm (at an unknown date: some years after 1860, judging by Sylla-Wright's statistics). It was cheap and easy to form a company in both polities. Note that achieving this was as easy in a civil law regime like Norway (though its living standards were only half America's, its investment capacity more limited, and company organization actually slow to take off) as under US common law. The important variable (as Sylla-Wright suggest for America) was the political will to move to prolific incorporation (or, in the case of Norway, beneficent political inaction leading to the same result).

In Prussia, France and the UK in the first half of the nineteenth century, corporate law was located somewhere between these two polar extremes: near-absolute liberty in Norway²³ and

²¹ Dupuichault, *Loi norvégienne*.

²² Hannah, "Global Census." In 1910 the US had 2,913 corporations per million people, Norway 2,117, the UK 1,241, Germany 403 and France 306.

²³ I say "near-absolute" because one should resist a-historically portraying Norway as a doctrinaire libertarian paradise. Export saw mills needed a government concession to operate before 1860 and the *Norges Bank* from 1816 had a note issuing monopoly. "Discounting commissions" - effectively state-owned commercial banks - dominated the banking market until the later nineteenth century. Later, the Venstre (radical liberal) party wanted corporate laws, to secure a more socially-responsible capitalism, while others were convinced a more normal law would encourage foreign investment.

near-absolute state control in America.²⁴ The results for such halfway-house countries were mixed, and, of course, not clearly foreseen by legislators, as they struggled with the dilemma of the obvious injustices to creditors of limiting liability, the practical necessity to do so for many desirable purposes, their different tastes in state direction of development and a generally increasing appetite for liberalised markets, in which such decisions were left to business players. But in *none* of the three European countries was it the dominant practice around 1800 (as in the US) to go to the legislature to obtain some aspects of corporate-ness. Like Norwegians, other Europeans used traditional forms of multi-owner enterprise that did *not* require state authorization and these were tolerated, or even sometimes encouraged, even for new enterprises in states which required corporations proper to apply for individual statutory authorization.

The most common alternative was the *commandite* partnership, descended from the medieval *commenda* and usually formed, like other partnerships, by simple legal agreement, though, in civil law countries, they were often also required to register their existence and terms with the local magistracy or other public officials (much like American businesses under their later general acts).²⁵ The *commandite* form was distinguished from ordinary partnerships by offering its “silent” or “sleeping” partners (or shareholders, if it chose to issue shares to these investors) the same limitation of liability as was offered by (some) corporations, though *commandite* shareholders had to be careful not to interfere in the management, or that might make them liable, with the

²⁴ I say “near-absolute” because some American unincorporated “business associations” were similar to English deed-of-settlement companies. Livermore (*Early American*, pp. 215-42 and see also Burns, “Joint Stock”) provides examples in real estate, banking, and manufacturing and, perhaps with too much scholarly contortion and not enough quantification, elevates them above the special incorporations studied by Sylla-Wright as the true *fons et origo* of America’s later general chartering statutes. That case can be more convincingly made for the UK: such associations in the US do not appear to have been as numerous (nor as large) as English equivalents, nor as creative in limiting shareholder liability, nor to have provided so direct a blueprint for general legislation. Sylla-Wright consider the 1720 “Bubble Act” damaged the UK, yet its principle - that only the legislature could authorise the corporate form - was actually more consistently enforced in the early nineteenth century US than in the UK, by judges causing difficulties for unchartered associations and legislatures banning unincorporated banks from note issue. Thus, in the US, unauthorized companies became an antiquarian footnote, while in Europe companies not authorized individually by legislatures - many with limited liability - were mainstream in the early nineteenth century.

²⁵ Lastig, *Accomendatio*.

general (managing) partners, for the *commandite*'s debts. These and similar partnerships had been widely used in shipping and trade and had also been used by French nobles wishing to invest in trade or manufactures while keeping their identity secret. They had existed for centuries but the Napoleonic code of 1807 (which applied in western parts of Prussia as well as in France and some other countries) laid down formal procedures by which they could continue to be created with minimal state involvement. Guinnane at al have pointed out that such limited partnerships were often also preferred to corporations in French civil law jurisdictions for other reasons than simplicity of registration, for example because they had more appropriate governance rules than the US corporate form for small concerns with modest numbers of proprietors. Similar business organizations were not unknown in America but US states extended this form of limited liability - which long pre-dated the Napoleonic codification - only with a considerable lag.²⁶ As Sylla-Wright note, Louisiana offered legal respectability to its inherited French limited partnership tradition in 1808, but the first American state of the Anglosphere to do so was New York in 1822.²⁷

There were alternative European routes to aspects of corporate-ness. In the UK, the shipping sector continued to benefit from being subject to the ancient Court of Admiralty, which resulted in many multi-owner shipping companies, often divided into sixty-fourths, that were corporations "for practical purposes, though the lawyer may dislike use of the term."²⁸ Some US maritime cities, too, retained admiralty courts that recognised this multi-ownership form and in

²⁶ The *Kommanditgesellschaft* and the *stille Gesellschaft* in Germany offered partially limited liability in different ways. The UK was a longer holdout, though limited partnerships were permitted in Ireland from 1782 (for partnerships with less than £50,000 (\$250,000) capital) and deed-of-settlement companies were a form of (sometimes partly limited) partnership. The Partnership Amendment Act of 1865 clarified that a contract to lend money in return for a share of the profits (not at fixed interest) did not make the lender a partner, so sleeping partners with no liability became possible (effectively a *commandite* by common law contract), but managing partners could not avoid liability until 1907 (even then only 553 such partnerships were registered in 1908-13, which does not suggest high suppressed demand: the flexible private company option served perfectly well for decades before).

²⁷ Hilt and O'Banion, "Limited Partnership."

²⁸ Davis, *English Shipping*, p. 103.

Germany, also, *Mitreeder* owned *Schiffsparten*.²⁹ The *Bergrechtliche Gewerkschaft* was widely used in German mining and (on a smaller scale) so was the similar “cost-book” mining system in Britain.³⁰ They shared some aspects of corporate-ness with AGs, but other rules were different. In particular the holders of *Kuxe* (parts, the equivalent of *Aktien* or shares in an AG) in a *Gewerkschaft* could be called upon to subscribe additional capital when more investment in the mine was needed, though they had voting rights to limit such demands by managers. It was not unusual for ownership to be dispersed among dozens of investors and in some cases there were hundreds and they traded their *Kuxe* on stock exchanges.

In the UK the main vehicle for forming multi-ownership businesses without individual government approval was a distinctive extension of the traditional partnership using trust law, variously referred to as a deed-of-co-partnery (in civil law Scotland) or a deed-of-settlement (in common law England, Wales and Ireland). There was a reluctance (except in Ireland where the developmental need was strongest and local resources limited)³¹ to allow small *commandite*-like partnerships to trample on the property rights of creditors for fear of compromising the competitive position and introducing moral hazard for the great mass of honest unlimited partnerships (which, for example, dominated early British banking and manufacturing). Attitudes were more tolerant where multiple ownership to promote urban and commercial infrastructure suggested a more relaxed view. The shareholders forming the small Gloucestershire Dursley Gas Light & Coke Company in 1836 resolved “that the Company do take upon itself all risk and responsibility of acting without authority of Parliament,” as did many others wanting to avoid parliamentary fees for

²⁹ Passow, *Wirtschaftliche Bedeutung*, p. 3; Jantzen, *Freiwillige Veräusserung*.

³⁰ Bartlett, *British Mining*, pp. 21-37. After 1844 the opening of a registration office in Truro encouraged English companies using the cost-book system subject to the Stannaries Court to convert to the standard corporate form. The Prussian state mines administration also loosened its controls over all mining enterprises (both AGs and *Gewerkschaften*) from 1851, but as rules for AGs were tightened up an increasing advantage of the *Gewerkschaft* was its freedom from AG rules such as having to publish accounts.

³¹ Limited partnerships were permitted in Ireland from 1783 (*Return of Partnerships (Ireland)*, 1863 (BPP, LXVIII, 1863) and the government also subsidized some Irish railways (Casson, *The World's First*, p. 224).

incorporation.³² The London Stock Exchange, its historians note, “by long tradition was distrustful and even contemptuous of Acts of Parliament” and its listing committee cheerfully accepted non-parliamentary companies which met its own standards.³³ It has long been understood that such joint stock forms spread in Scotland (even in banking) and operated for long periods serenely oblivious of the Bubble Act,³⁴ but the recent publication of *Shareholder Democracies?* by Freeman, Pearson and Taylor, clarified how significant and pervasive this form was in all four united kingdoms. Legislators by 1843 were telling those urging more state control of such companies that this would be “very difficult of adoption in this country after the degree of practical countenance which joint stock companies have received, and the manner in which they have become interwoven with the commercial habits of the people.”³⁵ It is true that extended partnerships lacked some features of corporate-ness beyond perpetual succession and powers to sue and be sued and govern themselves, but, as Freeman et al show, some did attempt to achieve wider corporate characteristics, even including limited liability. For example, insurance companies wrote limitations in all stockholder and policyholder contracts, so their owners and managers remained only (negligibly) exposed to *third party* liability claims. These companies were neither authorized by the state nor generally persecuted by it,³⁶ and they included many hundreds of businesses, dozens of the larger among

³² Quoted in Freeman et al, *Shareholder Democracies*, pp. 51-2. Levi (“Joint Stock,” p. 14) estimated the cost of a simple special incorporation in the UK at £402, but some turnpikes paid as little as £51 and some banks and railways more. Such fees were trivial compared with many corporate capitalizations or compared with £750 for a French SA, with on-going costs of £400-500 annually (Freeman, *Joint Stock*, p. 139). In the USA fees, taxes and other imposts varied: some were massively higher, many as trivially low as official fees for UK company registrations from 1844 (or lawyers’ fees for unauthorized companies earlier).

³³ Morgan and Thomas, *Stock Exchange*, p. 93.

³⁴ Christie, “Scottish;” Campbell, “Law.”

³⁵ Sir William Clay in the 1843 Select Committee on Joint Stock Companies, quoted in Taylor, *Creating*, p. 141.

³⁶ See also note 21, above, on the problems of the Bubble Act. Sylla-Wright cite the upswing in company formations after its 1825 repeal as an indicator of earlier baneful persecution under the Act, but that upswing arguably (as in the US) stemmed from other causes: new railway investments, general industrial and urban development, freer banking laws and the growing public taste for tradable corporate securities, with the growth of stock exchanges. This is not to deny that British politicians might have done well to rein in anti-incorporation judges by earlier repeal in 1810/12 (the exceptional period in which the Act appears to have been rigorously enforced, rather than merely creating a general whiff of legal uncertainty); nor that Americans

them quoted on stock exchanges, some with over a thousand shareholders. Indeed, the sample of 224 deed-of-settlement companies in the Freeman et al database of companies formed between 1720 and 1844 averaged 2.7 times the nominal capital of the 290 authorized by parliament in that database, thus accounting for more than twice as much capital as statutory and chartered incorporations combined.³⁷ Their sample aimed to be representative but possibly in this case exaggerates,³⁸ yet the significance of such deed-of-settlement companies can no longer be doubted. So widespread and well understood was the deed-of-settlement form that it was adopted both in the 1826 Banking Act and the 1844 Companies Act as the constitutional form for the new corporate registration procedures they introduced (only in 1856 did the British term for a corporate charter and by-laws - the “memorandum and articles of association” – replace the familiar “deed-of-settlement” for newly registered companies). Deed-of-settlement companies had then become technically illegal if they had more than twenty-five partners (shareholders), but some established deed-of-settlement companies carried on regardless for decades longer.³⁹

It might be argued that these many alternative company forms that more commonly appeared in Europe had less “corporate-ness” than American (or European) corporations proper. However, this was true only in some respects:

- A) Corporate personality. This was an inherent characteristic of corporations proper, but *de jure* or *de facto* also of some of the others, for example by use of the trust device in deed-of-settlement companies.

might profitably have abandoned anti-corporation prejudices (of the kind that twice destroyed the Bank of the United States and inhibited other developments) earlier.

³⁷ Author’s calculation from the Freeman et al project database deposited in the University of Essex UK Data Archive. Of course, “royal” charters, like statutory corporations, had long been authorized by the king’s ministers in parliament, not by the monarch personally.

³⁸ There is a preponderance of post-1825 banks and insurance companies (with high nominal capitals only partially paid-up) among deed-of-settlement companies, and four large statutory/chartered companies formed before 1720 are omitted.

³⁹ As can be seen by their continued presence (e.g. among insurance companies) in later nineteenth century editions of *Burdett’s Official Intelligence*.

- B) Entity shielding. This was clear for corporations but sometimes also *de facto* or *de jure* achieved by some partnerships, even (for example, in Germany), by ordinary partnerships (in the sense that creditors had to exhaust the debtor's own assets before pursuing those within the partnership). Hansmann et al ("Law") have argued that entity shielding was more important than limited liability for early corporations.
- C) Limited Liability. Many early corporate charters did not explicitly provide for this and there is a consensus that it was not considered as important in early nineteenth century corporations proper in the Anglosphere as it later became (though it was normal for AGs and SAs).⁴⁰ But all *commandites* by definition had it and some of the other forms in practice or in principle did. In deed-of-settlement companies creditors were well advised to pursue claims through the company: effectively resulting in a form of proportional liability (and this was legally required after the 1844 act for deed-of-settlement companies registered under it).⁴¹ Proportional liability often worked similarly to limited liability (it was, for example, the only form of corporation allowed in California between 1859 and 1931 and by 1910 that state had more corporations per million people than any other US state).⁴² Moreover, if there was a distinct advantage of limited liability for publicly-held companies it was not confined to corporations: *commandites* with shares, *Gewerkschaften* and deed-of-settlement companies were all quoted on stock exchanges. *Per contra*, multiple ownership was a necessary condition of *commandites* and deed-of-settlement companies, but not of corporations: some statutory corporations were "corporations sole," with one owner.⁴³

⁴⁰ Livermore, *Early American*, pp. 258-71, 282-94

⁴¹ From 1834, deed-of-settlement companies could also apply to the Board of Trade for letters patent indisputably conferring limited liability, but few bothered or succeeded.

⁴² Commissioner, *Report*, p.81.

⁴³ For example, some lighthouse companies in the UK were "corporations sole": lighthouses needed statutory powers even if one owner could finance their building, in order to collect lighthouse dues levied on ships entering ports. One-man companies were not usually allowed for registered companies (national laws typically specified a minimum between two and ten shareholders) but they could be achieved by registering "dummy" holders. Among the 282 extant New York companies of 1826/7, Hilt ("When did," p. 664) found the smallest

- D) Perpetual Succession. This (together with a corporate seal) is sometimes considered legally distinctive to corporations, making them immune to the death of a shareholder (or indeed any transfer of ownership). Blair ("Locking in") has argued that this locking-in of capital was a key contribution of early corporations. Yet partnerships could survive the death of a partner by using trustees and there were transferable shares in many deed-of-settlement companies and *commandites*; conversely some corporations limited the transferability of their shares, even on the death of a holder. In the more casual sense, of long business life, many corporations had a fixed term (renewals were possible, but were occasionally denied) and, even if that were not the case, there was, of course, no guarantee they would survive the death of a key founding entrepreneur. On the other hand some *Gewerkschaften* had already survived for centuries and some *commandites* and deed-of-settlement companies also survived over several generations of owners and managers. There was, arguably, nothing fundamentally new here.
- E) Compulsory Purchase. This does seem to have been almost entirely confined to corporations proper, presumably because if you had to go to the legislature to obtain such rights you might as well ask for the full corporate form, including limited liability, at the same time (and in the case of the UK the standard statutory clauses for private acts required it). On the other hand, in the case of French railways, compulsory purchase and initial construction was often undertaken directly by the *Ponts et Chaussées* and the roadbed - route, bridges etc - then leased to private railways to construct the track.

It is easy to project the present onto the past and imagine that the limited liability corporation was a *sine qua non* of scale. Yet there is now a consensus that the limitation of liability was considered less important when corporations were first widely used and some evidence that dispersed shareholders were willing to accept double liability, reserve liability, or even completely unlimited liability, for

numbers of shareholders (three) in a turnpike company and, for a New York railroad corporation with a single proprietor, see n.178, below

example in well-managed banks.⁴⁴ One should remember, moreover, that, in large-scale manufacturing, internal investment by traditional unincorporated and fully-liable entrepreneurs remained until the later nineteenth century (and sometimes into the twentieth) perfectly adequate to build even the biggest firms in all four countries. In the emerging iron/steel/armaments industry, for example, national champions like Krupp, Vickers and Carnegie long remained sole proprietorships or unlimited partnerships, though their French equivalent, Schneider, was the first to become less personally owned, with outside shareholders having limited liability: it was a *commandite par actions*. In locomotive manufacturing, the five largest global firms of 1860 (Stephensons and Hawthorns in Newcastle, Beyer Peacock in Manchester, Borsig in Berlin and Baldwins in Philadelphia) long remained sole proprietorships or partnerships: the high profits made by these innovators (and/or bank loans) were presumably sufficient to finance their enormous engineering and assembly works employing several thousand workers.⁴⁵

So where does this lead us? The choices among measuring all multi-owner entities (except, perhaps, small unlimited partnerships), or all limited liability entities (including *commandites*) or only full corporations proper (AGs, SAs etc) will obviously produce different results, but there is no one clearly right choice: that depends on the question one is asking. If one believes it is important for passive investors to have limited liability to encourage the supply of funds to enterprises with economies of scale beyond the means of individuals, the *commandite* serves perfectly well, though it arguably lowered the quality of corporate governance by making shareholders liable if they became involved in managerial decision-making. On the other hand, if one believes that managers/directors also need limited liability to encourage them to take risks, the corporation with fully limited liability clearly better serves their needs. It was not just continental

⁴⁴ An early sceptic of the importance of limited liability was Heckscher (*Mercantilism*, I, p. 367). See also Acheson et al. "Does Limited Liability Matter?"

⁴⁵ By 1860 each of these engineering firms had made more than 1,000 locomotives (Lever, *Railway*, p. 86). Hawthorns incorporated in 1886, Stephensons in 1899, while the other three remained partnerships into the twentieth century. Probably the largest *corporate* locomotive manufacturer in 1860 was the LNWR, which had integrated backwards into locomotive manufacture at its enormous Crewe works.

Europeans but also many wise Anglo-Saxons like John Stuart Mill who saw much merit in the *commandite* form: limiting the liability of shareholders but also enforcing full responsibility for collective debts where it really lay, on the active managers. Yet it is not difficult to imagine why many active managers in America and Britain - those usually in the driving seat on such matters - were less enthusiastic about Mill's ideas and preferred the corporation proper to the *commandite*.

Table 1 summarises when the options other than incorporation by special act (on which

Table 1. Liability and Corporate-ness: some Legal Milestones in Four Countries.

Country	<i>Commandite</i> or Limited Liability Partnerships	<i>Gewerkschaften</i> , deed-of-settlement companies etc.	Limited Liability by Simple Registration ⁴⁶
Prussia	traditional	traditional/numerous	1870
France	traditional/numerous	rare?	1863 ⁴⁷ /67
US	Louisiana 1808 NY 1822 many states later	modest numbers/discouraged	Connecticut 1837 ⁴⁸ major states by 1850s ⁴⁹ California 1931 ⁵⁰
UK	Ireland 1783 Britain 1865	traditional/numerous ⁵¹	1855 ⁵² 1858 (banks) 1862 (insurance)

⁴⁶ Of some generality: e.g excluding New York in 1811, which applied only to selected manufacturing industries of small scale (up to \$100,000 capital) or the similar early laws on British shipping.

⁴⁷ Until 1867 only for SAs with up to F20m (\$4m) capital.

⁴⁸ Connecticut accounted for 2% of the US population.

⁴⁹ Some states retained size and industry exceptions; for example, in Pennsylvania wholesalers could not register under the 1872 general law until 1895, nor retailers until 1901 (Evans, *Business Incorporations*, p. 33); while UK banks were excluded from the general 1855/6 laws until 1858 and insurers until 1862.

⁵⁰ Under the 1859 California law, liability was proportional; this also meant that any corporation chartered in another state technically did not enjoy limited liability for any California operations until 1931.

⁵¹ And formally recognised by simple registration for banks from 1826 and other companies from 1844, though a further special act or letters patent were required for limited liability (as opposed to proportional liability or substantially limited liability by contractual exclusion of claims).

⁵² in England, Wales and Ireland; 1856 in Scotland.

Sylla-Wright focus) were available. It will be evident that there is no clear pattern of precedence here: one can make a case for each one of these four countries lagging on some dimension.⁵³ The US is particularly difficult to rank because of wide variations in timing between states and only France had *no* regional variations. For the UK various critical dates have been identified – 1783, 1825, 1826, 1844, 1855, 1856, 1858 - but there is no room for debate after insurance companies were finally allowed to register in 1862: *any* legal business could then register with limited liability in all four kingdoms. In the US Wright (adopting the view that any registration process, even if limited to small companies or specific industries, is “general”) says that most states had general acts by 1850;⁵⁴ Berle and Means, adopting a harsher standard, say the process was only “approximately complete” even at the end of the nineteenth century.⁵⁵ The case that America was in the lead thus has to be based on corporate numbers, particularly numbers of special acts. Such incorporations were available - often with fully limited liability - in all four countries for the whole period Sylla-Wright consider.

Counting New Incorporations

In practice the availability of data also constrained Sylla-Wright’s choice of what could be measured, but it is worth re-examining their statistics with these alternative perspectives in mind. The strongest element in their comparative view is that within their period (broadly 1790-1860, though a little earlier or later for some European data) the numbers of new incorporations proper were greater in the US than in any of the three European powers they examine.

They appear most seriously to underestimate Prussia, reporting the number of new charters for Prussian corporations (AGs) as 285 in 1770-1867, only a few per year, compared with an annual average of several hundred in the US. Unfortunately this clearly omits the overwhelming majority of Prussian corporation-like entities, including many with limited liability, for half a dozen

⁵³ The notion that the UK generally “lagged the international frontier” (Sylla-Wright, p. 10), because a few companies used French law before 1855, is simplistic.

⁵⁴ *Corporation Nation*, p. 243.

⁵⁵ *Modern Corporation*, p. 137.

reasons. They acknowledge only one of these, the exclusion of all railways and turnpikes (which are major components in their statistics for the US), suggesting that railways might increase their Prussian corporate capital figure by 103m thalers, nearly half as much again as their figure for non-railway corporations.⁵⁶ This is too low. The Prussian government statistician, Dr Ernst Engel, recorded 27 railways chartered in 1826-50 alone with 142.6m thalers capital⁵⁷ (and by 1870 they had merged into 19 and raised their capital by 402.2m thalers) and a further 20 with 574.1m thalers capital chartered in 1851-70. By 1870 there were 39 with 716.8m thalers capital, 70% of all AG capital authorized in Prussia to that point.⁵⁸ Turnpikes were smaller but more numerous: 41 were formed in 1843-50 alone.⁵⁹ So it seems quite possible that in the 1770-1867 period targeted by Sylla-Wright for Prussia these additional transport companies alone would more than quadruple the numbers of new incorporations that they report.

For AG's alone, Bösselman, detecting misprints in Engel's figures and other understatement, suggests there were at least 418 formations with 1,036m thalers capital by 1870.⁶⁰ That is without counting the AGs operating in Prussia but not chartered there, for, since 1834, German AGs chartered outside Prussia (some *Zollverein* members being more liberal incorporators) in principle could (and sometimes did) operate in Prussia.⁶¹ Also Berlin's gas supply, started in 1826,

⁵⁶ Thieme, "Statistische Materialien," p. 292.

⁵⁷ Engel, *Die erwerbstätigen juristischen*, pp. 10-11, 63, 83. Bösselman (*Entwicklung*, p.201) says that by 1850 28 Prussian railways had been chartered, two of which had merged, so there were 27 in 1850, with 103,043,100 thalers share capital and 51,703,700 thalers bonds.

⁵⁸ The lower figure presumably eliminating merger duplication and depreciation. Fremdling (*Eisenbahnen*, p. 28) has higher figures of M457.3m (T152.4m) in 1850 and M2,445.7m (T815.2m) in 1870, but this is all cumulative capital invested including some financed by bonds.

⁵⁹ Bösselman, *Entwicklung*, p. 179, n. 1.

⁶⁰ *Entwicklung*, pp. 179-82. Thieme (p. 285, n.3), the source used by Sylla-Wright, seems unaware of Bösselman's earlier correction of Engel's printing error which understated the capital in AGs chartered in 1826-50 by 100m thalers.

⁶¹ For example the *Bank für Handel und Industrie* (popularly the *Darmstädter Bank*) was chartered in the latter city in 1853, having failed to get a Berlin or Frankfurt charter, and opened branches in Prussia and elsewhere using the *Kommandit* form (Riesser, *Die deutschen Grossbanken*, 1910, p. 40, 52). It was listed on the Frankfurt exchange from 1853 and Berlin from 1855 (Gommel et al, *Deutsche Börsengeschichte*, p. 146).

was the work of Imperial Continental Gas, a London company operating throughout Europe. Inter-state corporate mobility existed in Europe before it was legally underpinned - against the wishes of some states - within the US initially in 1839 and, more decisively, by *Paul vs Virginia* in 1868.⁶²

Sylla-Wright also exclude all Prussian *Gewerkschaften*. Engel noted in 1875 that 776 *Gewerkschaften* (with 854 plants) formed under the old law survived and a further 336 under the new 1865 law, so it seems likely that *Gewerkschaften* outnumbered AGs before 1870.⁶³ Engel also considered many other organizational forms which resembled corporations in possessing separate legal personality, but we can perhaps ignore multi-owner entities like cooperatives and savings banks (which were usually organised on a mutual, communal or not-for-profit basis, though similar enterprises in the US often took the corporate form).⁶⁴ There is a stronger case, if one is interested in capitalist businesses with limited liability, for including *Kommanditgesellschaften*. There appears to be even less statistical information on these, but, as in France, they were available initially under customary law and later (from between 1807 and the 1840s, varying regionally) in statutorily standardised forms, with shares (*auf Aktien*, KGaAs) or without (simple KGs). Their limitation of liability required only private contract and local registration, not individual sanction by the state. Some were quite small, but others were not: for example, two Berlin banks formed as KGaAs in 1856, the *Disconto-Gesellschaft* and the *Berliner Handelsgesellschaft*, had paid-up share capitals of 10m thalers (\$7.5m)⁶⁵ and 3.74m thalers (\$2.8m), respectively, which placed them among the larger

⁶² Though some European states were soon restricting it, by requiring foreign corporations to register their existence before operating extraterritorially.

⁶³ Op. cit., p. 4. Even as late as 1887 after a long period of free incorporations, Kocka and Siegrist ("Die 100," p. 81) found, among the 100 largest German industrial firms, that there were still only seven times as many AGs as *Gewerkschaften*. The oldest survivor was probably the *Mansfeld'sche Kupferschieferbauende Gewerkschaft* in Saxony: one of the larger firms quoted on German stock exchanges, founded around 1300.

⁶⁴ There were, for example, in 1860, 471 savings bank branches in Prussia (Bösselmann, *Entwicklung*, p. 32, n.3). Pargendler and Hansmann ("New view") argue that many early European and American corporations were, in effect, consumer cooperatives, with voting structures nearer those of modern co-operatives (one shareholder one vote) than modern corporations (one share one vote).

⁶⁵ I have followed Sylla-Wright in converting £s sterling at a standard \$5, thalers at \$0.75 and francs at \$0.2, ignoring temporary exchange rate fluctuations.

American and British banks at that time.⁶⁶ Even larger were two quasi-state enterprises, the *Preussische Bank* and the *Seehandlung* trading company and bank, also omitted by Sylla-Wright,⁶⁷ being privileged corporations chartered outside the AG rules; both of them naturally discouraged the chartering of AG competitors. The *Preussische Bank* alone in 1860 had 16.2m thalers (over \$12m) share capital at par (7% of which was state-owned) and 20.9m thalers (\$15.7m) at market, 1,568 shareholders and 113 branches and agencies.⁶⁸

KGs remained large and significant later in the nineteenth century after the general incorporation statute of 1870 made AGs as simple to form as KGs (by registration), but were surely more pervasive earlier.⁶⁹ If KGs and KGaAs were founded at even a fifth of the level achieved by their equivalents in France in the early nineteenth century, they would probably have outnumbered

⁶⁶ Riesser, *Deutschen Grossbanken*, pp. 56, 63, 599. The Prussian state retained control over note issue and new entry into Prussian banking was only grudgingly conceded. The average US corporate bank in the Sylla-Wright database had an authorised capital of only \$194,122, that in Bodenhorn's database ("Voting Rights," p. 47) \$179,280; and only a few of these had more than \$5m authorized or paid-in capital (van Fenstermaker, *Development*, gives examples in the 1830s with \$6m and \$4m capital). In 1860 the Bank of England had £14.553m (\$73m) paid-up share capital, the Bank of Ireland £3m (about \$14m), the Royal Bank of Scotland £2m (\$10m), the Oriental Bank £1.26m (\$6m) and eight other London and Edinburgh banks £1m (\$5m) paid-up capital each (Evans, *Banking*, pp. 136ff). There were more with *authorized* or *subscribed* capitals of £1m+: many British banks held uncalled capital in reserve, an alternative to America's double liability rule.

⁶⁷ Although Thieme (the Sylla-Wright source) lists 16 AG banks formed to 1867, 13 of which survived, these are mainly small, local banks. Compare Schauer, *Preussische Bank* and Radtke, *Preussische Seehandlung*. The distinctly-non-defunct *Preussische Bank* resembled the thrice-defunct Bank of the United States (which only appears in the Sylla-Wright database once on its third - Pennsylvania – re-incarnation: they omit the earlier federal charters). From the 1847 quasi-privatisation of the long-established Prussian royal bank, the *Preussische* engaged in normal banking business as well as note issue, like the (first two) Banks of the US, but unlike the entirely investor-owned and formally independent Bank of England.

⁶⁸ Schauer, *op. cit.*, pp. 32, 63-4.

⁶⁹ Rauchberg, *Berufs- und Gewerbezahlungen*, p. 310. When the comprehensive German business census of 1895 reported the legal form of all enterprises, AGs predominated (their number had risen from only a few hundred at liberalisation in 1870 to 4,749, with an average of 169 employees), 1,117 KGs came second (with an average of 81 employees), 440 *Gewerkschaften* third (with an average of 300 employees), and 334 KGaAs fourth (with an average of 129 employees). KGs (with or without shares) were surely of greater relative importance earlier because some had by 1895 converted to other forms. Since 1892 it had also been possible to form private (close) corporations (GmbHs), of which there were already 1,028 (with an average of 64 employees) and these had somewhat usurped the traditional position of KGs (Guinnane et al, "Pouvoir"). There were also numerous state, municipal and cooperative enterprises and of course individual proprietorships and ordinary (unlimited) partnerships still overwhelmingly dominated enterprise numbers. The five most company-like categories (AGs, *Gewerkschaften*, GmbHs, KGs and KGaAs) still collectively accounted for only 1,132,402, 40% of all the 2,831,697 employed in multi-owner enterprises and most Prussian employees were still in single-owner enterprises.

Prussian AGs and *Gewerkschaften* combined. AGs were the norm for railways, but KGs were common in banking and commerce and *Gewerkschaften* in mining and heavy industry. Stock exchanges were well developed, though the exchange in the free city of Frankfurt (annexed to Prussia only in 1866) was still bigger than Berlin's and funnelled substantial German investments to the US rather than Prussia, as well as attracting French investment to Germany.⁷⁰ Nonetheless by 1870 Prussia's own long-established stock exchange in Berlin listed 60 railway shares and 55 bank and industry shares (fewer railways than the NYSE - as Engel's figures suggest, Prussia's smaller railway capital was also more concentrated - but similar numbers for non-railway shares).⁷¹

We simply do not know how many multi-owner entities with some corporate characteristics were formed in Prussia, but it was an order of magnitude more by number and perhaps 1,200m thalers (\$900m) by capital of multi-owner entities with corporate characteristics formed up to 1870; this conjectural figure would certainly be nearer than Sylla-Wright's \$159m figure. Moreover, because of the extreme conservatism of Prussian chartering and entry regulation in some industries,⁷² a higher proportion possibly survived at the end of the period than in the US.⁷³

The Sylla-Wright statistics for France are more plausible because they do include multi-owner entities (especially *commandites*) beyond corporations proper (*sociétés anonymes* or SAs, the French equivalent of AGs). Private turnpike corporations are not a problem in France since national (and some departmental) roads were primarily operated by the government *Ponts et Chaussées*, though that arguably needs to be allowed for when comparing the numbers of corporations with those in other countries with a less professional state engineering corps. French mine-owners used

⁷⁰ Gommel et al., *Deutsche Börsengeschichte*, pp. 144-6.

⁷¹ Idem, p. 147. There were also 115 railway bonds listed in Berlin.

⁷² Another issue is whether such prices at par reflect true values. Because of stricter oversight of capitalization and discouragement of new entry, German share prices often exceeded par (for example, at the 1856 peak 293% above par, Gommel et al, *Deutsche Börsengeschichte*, p. 148); US stock prices were often below par.

⁷³ Thieme (*Statistische Materialien*, p. 288) suggests only 62 (21%) of Prussian AGs had abortive formations or failed by 1867, significantly lower than Sylla-Wright's estimate of 50-67% for US corporate failure. However, some other German corporate forms (particularly KGs) were smaller and their survival rate was probably nearer American levels.

the SA form and were less wedded to medieval precedents, though, as in Prussia, there were hundreds of savings banks not taking the form of SAs. The Sylla-Wright statistics of 542 SAs and nearly 7,000 *commandites par actions* are not strictly comparable to their American data because they omit those formed before 1808 (SAs) or 1826 (*commandites par actions*). They also omit all *commandites simples* (which were what American limited partnerships most resembled), which outnumber the other types of multi-owner firm that they do count: there were 9,375 in 1840-1860 alone.⁷⁴ In annual per capita terms this implies a higher formation rate for *commandites* in France: nearly double the per capita rate for the 1,098 limited partnerships in New York state in 1822-58 that they report (and the average US state probably used this form less than New York). It therefore looks as if France came closest to America in the creation of limited liability entities;⁷⁵ it was far behind both the US and the UK only in the creation of corporations proper (SAs). However, French SAs probably had a higher survival rate than American corporations: as in Prussia, a government “picking winners” was perhaps more likely to discourage speculative formations and protect incumbents from new entry.⁷⁶

Some of their UK statistics are also clearly undercounts. They note that they omit turnpikes, which developed much earlier in Britain and Ireland than in the US and only issued bonds not equity. English-style turnpikes were introduced to Ireland from 1727 and to the US from 1792, so Ireland’s 1,300+ mile network was almost complete before the first US turnpike opened.⁷⁷ There were several thousand private acts for UK turnpikes and over a thousand of the resulting (usually multi-owner) entities survived to the mid-nineteenth century. They also omit UK limited partnerships, though these were formed in trivial numbers compared to continental Europe or the

⁷⁴ Jobert, *Entreprises*, p.106.

⁷⁵ A problem in achieving greater precision on this dimension is that an unknown proportion of early US and UK incorporations did not clearly confer limited liability, while most SAs (and all *commandites*) appear to be limited.

⁷⁶ A government survey of extant companies in 1898 (Anon, “Les sociétés”) suggests higher SA survival rates over the period 1808-98 than Sylla-Wright suggest for the US in a shorter period.

⁷⁷ Broderick, *First Toll Roads*.

US. They are under the impression that the Bubble Act inhibited parliament from authorizing special incorporations by statute before its repeal in 1825, though, of course, the UK parliament (being its own supreme court) could - and in thousands of special acts did - cheerfully neglect the earlier legislation when it wished.⁷⁸ They also quote numbers for companies known on the London market in 1824 (156)⁷⁹ and a little more broadly in 1843 (717) or choosing to register their existence in 1844 before the new act took effect (947), though these numbers were only a fraction of the companies in existence at these dates.⁸⁰ Nonetheless their final estimate of less than 10,000 companies formed in the UK by 1860 (compared with their estimate of around 30,000 formed in the US) is in the plausible range. My own unpublished estimates suggest around 12,000 (subject to considerable possible margins of error in both directions) for the sum between 1790 and 1860 of all new statutory corporate enactments, royal charters, deed-of-settlement and similar “unauthorized” foundations,

⁷⁸ As Erskine May remarked of the combination of powers in the UK’s unwritten constitution “This union of the judicial and legislative functions is not confined to the forms of procedure, but is an important principle in the inquiries and decisions of Parliament upon the merits of private bills. As a court, it inquires and adjudicates upon the interests of private parties; as a legislature it is watchful over the interests of the public” (May, *Treatise*, p. 385). This non-separation of powers meant that the legislature did not suffer the inconveniences that their supreme courts inflicted on US legislatures (e.g. the Dartmouth College judgment of 1819).

⁷⁹ They would surely hesitate before concluding that the number of stocks quoted in New York (69 in 1825 and 112 in 1840, see Banner, *Anglo-American Securities Regulation*, p. 255) was the number of American companies in existence.

⁸⁰ Sylla-Wright are in high-class company: see North et al, *Violence*, p. 219. If one traces the three lists - 156 in 1824 (England’s list), 717 in 1843 (Spackman’s list, covering more non-London securities than England’s) and 947 in 1844 (the Registrar’s list) - back to their sources and compares the names of the firms in each and in the new list available in the 1720-1844 database for the Freeman et al book, it is striking how little overlap there is. It is likely that the lists underestimate the number of companies by between two-thirds and nine-tenths. The lack of overlap suggests that they are all samples of a population of firms in existence sometime between 1720 and 1844 that is even larger than the total of at least 1,500 estimated by Freeman et al (pp. 15-16). Moreover, their sample explicitly excludes companies formed before 1720, those with less than 13 shareholders or non-transferable shares, and turnpikes, in which four categories alone there were a greater number than 1,500. Their count, being based on surviving records, is also likely to underestimate the many short-lived and stillborn companies included in the US data: for example, their sample covers only 50 (8%) of the 624 they note from another (itself only partially complete) source as formed in 1824-5 (p.31), most of which were abortive or soon failed. If these lists were all independently drawn random samples of the same population, we could estimate the total population reliably from the degree of overlap, but as three of the four (i.e all except Freeman et al) were not even nearly-random samples, that approach would yield a seriously downward-biased estimate. In the (admittedly exceptional) case of turnpikes we know that there were only seven named in any of these lists (the few quoted on the London Stock Exchange), while parliament had authorized well over a thousand.

plus companies registered under the (general) Companies Acts from 1844 and show the US possibly overtaking the UK in numbers of new companies formed as early as the 1830s.⁸¹

Table 2 summarises the discussion so far on the flow of new companies formed in

Table 2. The Flow of Corporations or Similar Entities formed, ca 1790-1860.

Country	Number of Corporations proper (corporations, AGs, SAs, turnpike trusts etc) individually chartered	All corporate-like or limited liability entities created (includes traditional forms like <i>Gewerkschaften</i> , limited partnerships, deeds-of-settlement plus incorporations under general legislation, all of these being excluded from the previous column)
Prussia	at least 418 (1770-1870)	not known, but much larger than col 1
France	542 (1808-67)	above 16,867 (1808-67) ⁸²
US	22,419 (1790-1860)	above 31,098 (1790-1860) ⁸³
UK	not known, but in the hundreds before 1790 and thousands 1790-1860	ca 12,000 (1790-1860) ⁸⁴

periods including the years 1808-60, plus a variety of earlier and later years (determined by the data presented). Sylla-Wright are fully aware that the higher figures, in particular, include many companies that were stillborn or soon bankrupt (and their suggestion of a 60% survival rate in the UK, compared with 33-50% in the US, is probably too generous to the UK, suggesting higher numbers

⁸¹ These are based on reasonably accurate counts of private acts (arbitrarily discounted for duplications) and company registrations, with an estimate for other forms based on the lists in note 63, above.

⁸² This includes the SAs in col 1, plus “nearly 7,000” *commandites par actions* (which we interpret as 6,950), plus 9,375 *commandites simples*. It excludes all *commandites par actions* formed before 1826 and all *commandites simples* formed before 1840 or in 1861-7.

⁸³ Includes the special acts in col 1, plus Sylla-Wright’s central estimate for all additional incorporations under general and quasi-general acts, but only 1,098 limited partnerships: those registered in New York from 1822-58.

⁸⁴ Subject to wide margins of error, because only the (small number of) Irish limited partnerships are firmly known. While the numbers of special acts are known (Williams, *Historical*) not all of these created new corporations (rather than modifying existing ones); many of the provisional registrations under the 1844 act existed on paper only (Levi, “On Joint Stock”); and the estimates for deed-of-settlement, deed-of-co-partnership, cost-book and similar companies are likely to be understated because of the non-random nature of the sampling (see n. 80, above)

extant in the UK than are plausible).⁸⁵ But essentially we remain in the dark about the numbers still extant in any of these countries until much later dates. Although there remain many unknowns, none of my mild qualifications challenges the basic Sylla-Wright conclusion: the US was almost certainly ahead of all three of these European countries (France, just possibly, might have run it close) even on an expansive definition of numbers of new businesses *with some corporate characteristics* formed. The US was clearly very well ahead if we exclude all *commandites*, *Gewerkschaften*, deed-of-settlement companies and their like and measure only *flows* of new statutory incorporations rather than *stocks* of surviving ones.

Counting the Corporate Capital Stock ca 1860

The metric used by Sylla-Wright for the amount of corporate capital - the flow of that authorized - is more troubling. For example, in the UK £893m (\$4,465m) was authorized in new companies registered under the Companies Act between 1862 and 1868.⁸⁶ One might admire this achievement: it was, after all, as much in *seven* years as had been authorised by special act over *seventy* years in the US according to Sylla-Wright. Yet this is misleading because the UK registrar was notoriously lax: one year later, he registered one company with £100m authorized but only £250 paid-up capital. Contemporary statisticians were well aware such published statistics were absurd⁸⁷ and some companies seem more appropriately placed in the file “losses from corporate fraud” than in “contributions to productive investment.” Fly-by-night flotations, and avaricious promoters’ dreams which never even get that far, have less impact economically than solid enterprises which

⁸⁵ Levi (“On joint stock”) for registered companies after 1844. There is some information earlier for individual sectors. For example, Wright notes 314 insurance companies chartered in America in 1790-1830, probably a larger number than in the UK (compare Walford, “On Fires,” pp.394-6; Andras, *Historical Review*, p. 101ff) , but there appear to have been more large and surviving UK offices (Stalson, *Marketing*, pp. 717-9, 748-53 for life offices).

⁸⁶ Levi, “On Joint Stock,” p. 11.

⁸⁷ Levi, op. cit, p. 11; Burdett, *Official Intelligence 1882*, p. ix.

last. Where - as in some countries, and with variations over time too⁸⁸ - the costs of charters (or taxes) increased with the amount authorized, capital figures were less likely to be fictitiously high. Also in UK *statutory* companies⁸⁹ - subject to tougher regulation under the 1845 Companies Clauses Consolidation Act, with many of the larger ones also vetted by the London Stock Exchange listing committee - the authorized and paid-up capitals were closer together.⁹⁰ Registration procedures for corporations proper were also generally tighter in the civil law systems of the European continent than in the Anglosphere, though Sylla-Wright themselves point out the wide-gap in the French *commandite* data between the amount authorized and paid-up. The Fabian principles of LSE lecturer H A Shannon, who published a series of articles in the 1930s exposing the high failure rate of early registered British companies, made him a firm admirer of the more restrictive German registration system.⁹¹ Many of the multi-million dollar capitalisations authorized in the US in the 1850s were competing schemes by promoters of transcontinental railroads - dreams which never saw the light of day - so the share of railway capital in Sylla-Wright totals may be exaggerated. US states' registration procedures differed considerably in their rigour, so inter-state differences may also not be accurately reflected.⁹² It appears that in the nineteenth century about half of all companies

⁸⁸ As was the case in some US states and in the whole UK a decade later.

⁸⁹ The UK distinction between statutory and registered companies parallels what Sylla-Wright describe as special versus general acts in the US: statutory companies required individual parliamentary approval (or, latterly, a provisional order from the executive, which only took effect if no member of the legislature objected). In 1845-60 2,300 companies were registered under UK general acts (Levi, "On Joint Stock") and there were 2,861 private acts (Williams, *Historical*, pp. 59, 125-6), not all of which resulted in new corporations. The numbers chartered individually by letters patent etc were smaller.

⁹⁰ Burdett (*Official Intelligence 1884*, p. cxxiv) for the relationship, disaggregated by sector, of authorized and paid-up capitals in 1853, 1863, 1873 and 1883 for officially-listed companies, most of which were statutory not registered.

⁹¹ Shannon, "Coming;" idem, "First Five Thousand;" idem, "Limited Companies." Shannon's statistics are on numbers of failures; since large firms were less likely to fail than small ones, his loss ratios exaggerate the capital losses from failures.

⁹² When the IRS in 1909 examined state registers in order to administer the new federal corporate excise tax, they found tens of thousands of non-existent companies registered in some states.

chartered in the main European countries survived to the end of the century while in the UK nearly two-thirds failed and in the US the failure rate was even higher at about three-quarters.⁹³

Given these variations - over time and between countries, states and categories - in the degrees of fiction in the authorized capital data as well as in corporate survival rates, it makes sense to focus on the extant stock of paid-up capital.⁹⁴ For the US, Sylla-Wright report a flow figure of \$4.5 billion for the minimum authorized capital of all special incorporations to 1860 and optimistically suggest that this is probably an *underestimate* of capital actually paid in, noting also that it excludes the capital in the (minority of) corporations formed under general acts and of limited liability partnerships. It is also a gross flow figure: making no allowance for disappearances. Yet total US net new domestic investment⁹⁵ in the 1850s - including all investments in reproducible capital stock by government, in housing and farms, and by individual proprietorships and partnerships (which remained the business form of choice) - was only double the figure they give for that decade. What still impressed Charles Morrison, a young British plutocrat with extensive US investments, during his visits from 1843 onwards was how much American wealth was still tied up in real estate rather than secondary and tertiary activities, in which corporations were more common.⁹⁶ It is

⁹³ Author's estimates based on the flow of new companies and the stock existing in the early twentieth century. Of course, bankruptcy did not lead to the social loss of all capital: some was re-cycled to corporate or other businesses. Countries differed in their tolerance of such churn: following liberalization in 1870, Germany briefly experienced US corporate failure rates during its *Gründerboom*, resulting in a moral panic and progressive re-regulation of the company formation process.

⁹⁴ This is less likely to be a work of fiction, though is not entirely devoid of problems. Some American "paid-up" common stock was issued below par or even without any payment being made, as a "bonus" for subscribers to preferred stock. The monitoring of shares issued in payment for existing assets (rather than for cash) appears to have been tighter in France and Germany than in the UK or US. On the other hand, paid-up capital in some cases understates the resources available to firms: for example, some US banks had double liability and for some UK banks and insurers with subscribed capital only partly paid-up, the capital authorized may better represent their capital backing, typically at this time quadruple the amount paid-up (Burdett 1884, p. cxxiv).

⁹⁵ Gallman's estimates of domestic capital formation in 1860 prices, from *Historical Statistics of the United States*. This is not defined in the same way as corporate capital (which may, for example, additionally include promoter's profits, the purchase of land or simple "watering" of stock), but there is a good deal of overlap.

⁹⁶ Gatty, *Portrait*, pp. 241-3.

plausible, but only barely, that most domestic US investment in the mid-nineteenth century took the corporate form.⁹⁷

Reliable figures for the number and paid-up capital of all extant corporations are not available for the UK or Germany before 1883/4, for France before 1898, or for the US before 1909/10, but data are available for some sectors. Henry Varnum Poor measured US railway capital systematically in this period and his annual data imply a figure for the common and preferred stocks⁹⁸ of the (several hundred) railways extant in 1860 of \$720.4m, or 17% of GDP.⁹⁹ Poor was well-informed and is likely to have missed only a few small, private railways, yet his figure is less than a third of the Sylla-Wright figure for the minimum authorized capital of \$2,298.6m in 2,603 railroad charters from 1825 (when railway chartering began in the US) to 1860. It is clear that the Sylla-Wright data include a high rate of stillborn and defunct corporations, speculative chartering of entities which had yet to see an iron rail, fictional capital that was never paid-up, and/or duplication in charters for merged railways.¹⁰⁰ Since railways account for just over half of all their 1790-1860 capital authorized, this throws considerable doubt on any suggestion that \$4.5b is a minimum estimate of capital actually paid-in, though they do point out that banks (which account for just over 10% of their capital flows) did better, with about half (rather than around a tenth, as in railways)

⁹⁷ It is a reasonable simplifying assumption that all railway investment was corporate (and accounted for 15% of US investment outlays in 1849-58, Fishlow, *American Railroads*, p. 101f) and none in agriculture and housing. We know the portion in banking by mid-century, but we do not have data on the share of corporate ownership in insurance until 1889, in manufacturing until 1899 or in mining until 1902 (Schwartz, "Gross Dividend," p. 415) though the latter (p. 428) estimates that nearly a third of the manufacturing capital stock (\$311m), 50% of mining capital (\$32m), and all gas-light (\$27m), canal (\$42m) and street railway (\$13m) capital was in corporations in 1859.

⁹⁸ Common and preferred stocks only, excluding bonds (in order to match the Sylla-Wright database which is for stocks alone).

⁹⁹ *HSUS* gives Poor's figure for total railway capital as \$1,149m (which is 26% of GDP). For an exhaustive discussion of the capital invested in railroads see Fishlow (*American Railroads*, pp.341-401): he increases Poor's figure for the cumulative cost of all capital invested to the end of 1860 by only \$2m (p. 358). If the proportion in bonds was 37.3% (the average of that known for 1855 and 1867), Poor's figures suggest \$720.4m in corporate stock. Taylor and Neu (*American Railroad*) count 210 extant railroads in 1860, but exclude short lines; I estimate there were 90 of the latter, making 300 in all.

¹⁰⁰ Robert Wright tells me the later rail figures are distorted by a number of very large, but abortive, trans-continental railroads.

their bank corporations surviving to 1860. In fact banks did even better than that in terms of capital: the value of all US bank capital at the end of 1860 was reported by the US Treasury as \$396.426m, perhaps \$400m or so, rounding up for the omission of 11 Louisiana banks.¹⁰¹ Sylla-Wright's figure for bank capital authorized between 1790 and 1860 was \$471.716m (and allowing for the few pre-1790 banks, the few hundred under general legislation and the federal charters for the two Banks of the United States might bring that to nearer \$550m), so perhaps around three-quarters of authorized bank capital survived. Larger banks, it seems, had a better chance of surviving than small, but even in banking the amount of extant capital was well below that authorized: either it was lost or never paid-in.

Estimating the size of the surviving capital for the 17,386 non-rail, non-bank corporations authorized with \$1,810m capital in 1790-1860, or for general charters, poses problems. Given that these corporations were smaller than banks and railways, one might expect higher attrition rates. If we, more generously, assume the same weighted average attrition rate as for the two sectors for which the rate is known, the surviving capital for the remaining corporations would have been \$712m, plus an allowance for the surviving capital of general charters, so say \$750m.¹⁰² The Treasury produced an estimate of the paid-up capital in 106 large, extant, nonbank, non-rail corporations (insurers, industrials, gas, canal companies etc) in 1853 of just over \$65m;¹⁰³ and if that figure bore the same relation to 1860 totals for the railways and banks they reported, it would have amounted to \$150m by 1860. This would leave \$600m of the \$750m estimate for the many thousands of less conspicuous corporations (and, as we know that firm size distributions are highly skewed, this is not implausible). Figures for New York State for corporate earnings in 1867 suggest

¹⁰¹ Weber ("Early State Banks") reports 1,345 incorporated banks in existence at the end of 1860. The slightly higher figures in *HSUS* (1,562 with \$422m capital) presumably include some private banks. The figure I have used for capital is given for 1,396 banks in March 1861 in Secretary, *Banks*.

¹⁰² Wright (*Corporation Nation*, pp. 241-2) notes \$191m minimum authorized capital in general charters by 1860, with data for some states missing; however, banks (and perhaps a few railways) need to be deducted and, as the average size was smaller than for special charters, they were probably more likely to fail.

¹⁰³ Secretary, *Report*, p. 53.

that 80% (\$600m/\$750m) might be enough to capture the ones we have not measured directly.¹⁰⁴

So our best guess about the surviving US corporate capital in 1860 in all sectors would be around \$1,871m, or 43% of the GDP of \$4,325m. Anna Schwartz estimated on the basis of later civil war tax data and other sparse information that in 1859 US corporate dividends totalled \$92.2m, which would imply a dividend yield on our (1860) capital stock at par of just below 5%.¹⁰⁵ The risk-free interest rate (on US government bonds) in 1859 was 4.7 %, ¹⁰⁶ so the implied dividend rate is implausible, unless stocks were quoted well below par,¹⁰⁷ or unless, say, two-thirds of profits were distributed and one-third re-invested, producing reasonable expectations of capital gains. Alternatively our capital figure is too high or Schwartz's dividend figure too low. Further research on corporations might produce capital figures of, say, a half lower or higher than my central estimate for the affected firms, but would hardly touch the three-fifths of the overall estimate based on more reliable information (for banks and railways). My estimate for all US corporate capital in 1860 is therefore better expressed as probably in the range 36-52% of GDP, with 43% as the central guesstimate.

Similarly incomplete information is also available for the UK in 1860. The annual parliamentary railway returns report paid-up capital, which (for railways, at least) was nearer to authorized capital than in the US.¹⁰⁸ They show £266.241m (\$1,331m) extant rail share capital in the

¹⁰⁴ \$600m is 32% of our estimate for total corporate capital. The sectors we have fully covered (rail and banks) accounted for 48.3% of corporate net earnings in New York state in 1867 and the ones partially covered by our \$150m figure (insurance, canals and gas) another 42.7%, leaving as omitted only 0.7% of earnings in express companies, waterworks, turnpikes and bridges and 8.3% in miscellaneous (including manufacturing) (Schwartz, "Gross Dividend," p. 412, n. 17).

¹⁰⁵ Schwartz, op. cit., p. 417.

¹⁰⁶ 1859 is more representative of normal expectations than the (higher) 1860 rate, which was affected by international investor perceptions that America was about to descend into civil war.

¹⁰⁷ Schwert's index (*HSUS*, Cj808) shows the dividend yield on US corporate stocks that were traded as 5.2% in 1859.

¹⁰⁸ Hawke and Reed, "Railway capital," p. 271.

UK in 1860, which is 33% of GDP.¹⁰⁹ This is 85% more than in the US in absolute terms and double the US level expressed as a proportion of GDP in current prices,¹¹⁰ a finding compatible with Field's contention that - facing cheaper costs of capital than the US - railways in the UK adopted more capital-intensive methods, as in other British industries at that time.¹¹¹ It is hard to see any corporate lag here: on the contrary the fashionable accusation against Britain's railways is that they should have been smaller, building fewer, better-planned trunk routes rather than multiple competitive lines.¹¹² It may seem surprising that the rail system of a couple of small islands (albeit with a largely completed trunk network by 1860) had cost more than that of a continent which had overtaken the UK's railroad mileage in the 1840s, but building American railways (many in the wilderness) was both slower and cheaper than in the UK, which had developed capital markets, high land prices and carved some railways out of densely populated areas, requiring high quality, fast service (passenger trains dominated the traffic). It took America's first railroad, the Baltimore & Ohio, a quarter century to complete its full eponymous 379 miles westwards to the Ohio River, a snail's pace relative to the development of Stephenson's London & North Western Railway (LNWR), which had consolidated the lines linking England's three major provincial cities to London by 1846. With fast links on the company's steamers to Irish cities and its trains running on associated companies' tracks from the border through to major Scottish cities, by 1860 the LNWR alone had £17.2m (\$86m) paid-up share capital, more than the NY Central, Pennsylvania, Erie, Philadelphia & Reading and Baltimore & Ohio combined.¹¹³

¹⁰⁹ As in the US, we omit railway bond and loan capital, which would add £81.889m, bringing total rail capital to £348.130m (43% of GDP).

¹¹⁰ There were also £81.889m (\$409m) railway bonds; including them would bring the ratio to 43% (compared to 26% including rail bonds in the US).

¹¹¹ Field, "Land Abundance," p. 409.

¹¹² Casson, *World's first railway system*; Foreman-Peck and Millward, pp. 13-28.

¹¹³ Poor, *History*, pp. 226, 421, 580.

We have less information on banking and other corporate sectors in the UK. London Stock Exchange listings accounted for 71% of all UK rail capital in 1853, falling to 61% in 1863, but in other sectors it was generally recognised that the rapidly growing provincial stock exchanges and other less formal local markets¹¹⁴ traded a higher portion of the thousands of financial and industrial securities and that there were also many private (close) corporations (though not in railways).¹¹⁵ The nearly £80m (\$400m) of shares of around 230 non-railway corporations listed on the LSE in 1860 suggested by Burdett's data would thus only be a fraction of the total public company shares traded on the provincial exchanges, plus capital invested in private companies.¹¹⁶ The 51 local companies traded in Edinburgh's share market in the later 1820s had perhaps twice the capital of the 67 New York companies then traded in Wall Street.¹¹⁷ Most of the provincial capital even in 1860 was still in such statutory, chartered and other companies not registered under the Companies Acts of 1844-56. These newer - and generally smaller - registered companies perhaps still accounted for less than £40m (\$200m) of corporate capital in 1860, some quoted on London, some in the provinces and some private.¹¹⁸ We know that in 1843 (before *any* such registered companies) there was well over

¹¹⁴ Burdett (*Official intelligence 1884*) later listed more than 2,000 UK companies with traded securities, a substantial majority not officially listed in London and there were many more infrequently-traded companies.

¹¹⁵ We have combined the data for all domestic railway stocks and bonds, since it is unclear how Reed and Hawke (our denominator) treated the leased railways listed by Burdett for 1853 and 1863 in *Official Intelligence for 1884* (our numerator).

¹¹⁶ Burdett reports £66.8m of paid-up capital at par in listed securities in January 1853, rising to £85.2m in January 1863. This excludes the Bank of England and Bank of Ireland, but includes some foreign companies and all corporate bonds (though at this time the totals for both were small outside the rail sector) and preference shares. Hickson et al ("Rate of Return") estimate the market value of domestic non-rail equities (excluding preferences, debentures, the Bank of England and infrequently-traded shares) on the LSE as £81.3m in 1853, £83.3m in 1860 and £119.6m in 1863, figures which - by comparison with Burdett - suggest non-rail equities were generally above par.¹¹⁶ They also report 322 equity securities (229 of them non-railway) of 266 companies (non-railway not separately enumerated) officially listed on the LSE in 1860. The number of non-railway companies listed would be lower than 229 if some issued two types of equity and higher if some only issued preference shares or debentures. Such securities, though common in railways, were still relatively rare elsewhere.

¹¹⁷ Michie, *Money, Mania and Markets*, pp. 39, 44-5; Hilt, "When did," p. 675.

¹¹⁸ In 1864 the par value of the paid-up capital of the 2,479 limited liability companies formed under the 1856 act by 1862 was £31.31m, of which 16.5% was then in companies dissolved or being wound up (Shannon, "Coming," p. 379) and 512 companies formed in 1861-2 need to be deducted from this figure (Shannon, "First Five Thousand," p. 421), while 966 need to be added for companies registered under the 1844 Act, which were

£100m (£33m more than on the LSE alone in 1853) of non-railway corporate capital; and that would no doubt have increased in the seventeen years to 1860. We very conservatively estimate the thousands of non-railway shares not quoted on the LSE as having equivalent share capital (£80m) to the few hundred quoted there, though it was almost certainly higher.¹¹⁹ We also need to add the share capital of the Bank of England and Bank of Ireland (£17m), both entirely investor-owned and doing a normal banking business in their many offices, but classed as government securities by Burdett. With railways, this gives a total value for all UK corporate share capital of £523m (\$2,615m) or 64% of the UK's 1860 GDP of £812m. This ratio is higher than Harris's published figure (53% of GDP for England alone)¹²⁰ for 1843, as one might expect after sixteen years of simplified incorporation by registration, the largest rail boom in UK history, and many special acts, though the nationalization of the South Sea and East India Companies and the conversion of many turnpikes run by trusts into free publicly-maintained highways was beginning to stem the rising tide of corporatization.¹²¹

This should be considered a minimum. Both estimates required some guesswork but the UK minimum (64%) is above the top of the probable US range (52%) in 1860 and it is unlikely their positions would be reversed by further research. More reliable British statistics on the stock of

probably larger. Levi ("On Joint Stock") gives a figure of £96m for the "nominal" (authorized) capital of the 1,655 new companies formed under the 1856 Act in 1856-60, but paid-up capital would have been less.

¹¹⁹ If we applied the same assumption to relate the known large ones to the generality as in America, the multiplier would be five, not two, but as public capital markets were probably less centralised and developed in America a larger multiplier there might be appropriate.

¹²⁰ Harris, *Industrializing*, p. 195, following Harris's convention that England was 80% of the UK. Sylla-Wright cite Harris's data, not noting how close his total is to their figures for the US *flow* in all special incorporations in 1790-1843, which surely overstates the extant US stock at the latter date. They suggest deducting from Harris's figure the capital of three "old, moneyed companies," presumably the Bank of England (\$54.6m), South Sea Company (\$18.3m) and East India Company (\$30m) - without explaining what they have against old money - but this would only reduce the ratio slightly, to 51%.

¹²¹ Privately-funded turnpike trusts had taken over 17% of the road network from parishes by the 1830s, though there was then a gradual drift back to local government control (Bogart, "Did turnpike trusts..," p. 440). In Ireland, where the system had peaked at 1,300 miles, there were only 325 miles left in 1858 when turnpike trusts were abolished and the roads reverted to grand jury control (Broderick, *First Toll Roads*, pp. 240, 272).

existing corporate capital are available only from 1884,¹²² and American ones not until 1910, but even at the latter date there is still room for doubt about whether the American ratio had yet caught up with the UK's.¹²³ For 1860, if the lower American figure is correct and our UK minimum too low, the degree of corporatization in the UK might have been double America's. With the top of the suggested range for the US and the minimum figure for the UK, the British lead is nearer to what one might expect given the higher share of agriculture in US GDP (farms were rarely incorporated anywhere).¹²⁴ Either way the search for explanations of American leadership in corporate capital seems misconceived, though it is not difficult to explain an American lag. The US economy of 1860 was less nationally integrated than the UK, so its firms were smaller and tended to serve local markets: smaller firms were less likely to require incorporation (for example, after the demise of the Bank of the United States, the US had no central bank nor large banks and discount houses operating nationally and internationally). Associating them with mercantilist domination, Americans were congenitally averse to embracing the free trade policies that were already making the UK the world's consumer of last resort (rather like the US today). Isolated from the European core and intent on its own development with little regard for its neighbours, the US was little exposed to international trade and less inclined to invest abroad, so lacked corporate multinationals such as Britain's Hudson's Bay, Imperial Continental Gas or the Oriental Bank. With a lower level of industrialisation and urbanisation (most of its population lived on farms), it had more need of kerosene and candles than gas utilities and of drilled wells than water utilities and lower demands also for long-distance shipping and insurance than Britain's cosmopolitan importers and exporters. And - short of capital

¹²² This was when the registrar began publishing annual figures for the surviving stock of registered companies and we have data on the accumulated capital stock of statutory companies (Clifford, *History*, pp. 266, 492), leaving only royally chartered and remaining unauthorized companies to be estimated. My estimate for UK corporate share capital for that year is 110% of GDP (148% including bonds).

¹²³ Hannah ("Global census") suggest that, though at par US corporate share capital (173% of GDP) had overtaken the UK's ratio (162%), at market prices the UK remained ahead. All our calculations for earlier years are in par values. Casual inspection of 1860 stock prices suggests that they were a little below par in the UK and further below par in the US, so it is possible that our analysis at par flatters the US. Fishlow (*American Railroads*, p. 354) notes that a lot of railway stock had been sold at less than par in the 1850s. Hilt ("When did") also shows NY market prices below book values in 1826.

¹²⁴ See n. 144, below.

but with abundant natural resources to develop - the US had high interest rates, discouraging the adoption of capital-intensive methods. If American politicians were more developmentally orientated and more favourable to corporations than the British, all these factors presented formidable obstacles to their efforts succeeding as impressively as British private enterprise.

How is it, then, that so many historians - Sylla-Wright are not the first - have felt it necessary to explain a supposed British corporate lag? This seems to have happened because of historians' unconscious tendency to extrapolate economists' observations from the mid twentieth-century backwards for a century and a more conscious effort to exaggerate the early restraints on incorporation in the UK relative to the US. No historian of the British corporate economy has paralleled the Sylla-Wright work by tallying British (non-railway) special statutory incorporations, so statistical discussion has tended to be misleadingly confined to the registered company sector, which began in 1844 but for many decades excluded most large, quoted companies (which were chartered or statutory not registered). Historians are markedly reticent about naming Britain a "corporation nation" and invariably describe the figures for the growth of registered joint-stock capital as modest and showing the continuing strength of traditional sole proprietorships, partnerships and family firms in the old country.¹²⁵

Yet it is clear that the implicit standards applied in identifying "high" or "low" national levels of corporatization lack any serious common calibration and encompass some capricious judgments. Davis and North develop an interesting model that explains why "the British transport network had been developed without limited liability" before the 1860s,¹²⁶ but unfortunately their characterization of reality is two centuries and a few thousand UK turnpikes, canals, docks, railways and steamship companies with limited liability adrift. They are not the only distinguished culprits.

¹²⁵ Cottrell, *Finance*, pp. 75, 105; Jefferys, *Business*, pp. 57-8, 75, 105, 118-9, 142; Hannah, *Rise*, p. 19; Alborn, *Conceiving Companies*, pp. 129, 203-4; Smart, "On Limited Liability;" Johnson, *Making*, pp. 122-6.

¹²⁶ *Institutional Change*, p. 138n. They appear to have been misled by the fact that in the UK limited liability by simple registration was available only from 1855, not realizing that other means of limiting liability were available to thousands of transport companies earlier.

There is scant justification for the assertion of Jürgen Kocka that “joint stock companies played a more important role in the German industrial revolution than in the English,”¹²⁷ unless by “importance” is meant scarcity value in conditions of underdevelopment. Ron Harris developed good quantitative estimates for England’s corporate capital but - in the mainstream tradition - presented them as symptomatic of England’s lag behind America (not feeling it necessary to quantify the latter in the same way). Yet the evidence we have presented suggests that the US may have had a lower level, even seventeen years *after* Harris’s last estimate. His figures suggest an English ratio of 26% of GDP in 1759/60, rising to 31% in 1810/11 and as much as 53% in 1843 (the year before the first general registration law), as the industrialising economy became both more capital-intensive and more corporate. As even the latter figure (being based on Spackman) omitted some companies, the true figures were probably higher and after the 1840s railway boom certainly would have been.¹²⁸

What about corporatization during Germany’s industrialisation? It is not clear whether Kocka is referring only to “joint stock companies” in the literal German sense (that is, AGs), but, if so, the earliest estimate for the extant *stock*¹²⁹ of German AGs (for 1880, ten years after the general registration law of 1870) suggests there were 440 with M3,904m capital, only 26% of Germany’s GDP, the same as England’s ratio in the mid-eighteenth century.¹³⁰ This 1880 figure omits KGs,

¹²⁷ Kocka, “Entrepreneurs,” pp. 538-9. It is possible that he had in mind only, say, the textile industry, but in all countries the contribution of corporatization to nineteenth-century industrialization was overwhelmingly in creating the financial, transport and urban infrastructure. In 1880, for example, railways accounted for 41% of German AG share capital, banks for 30% and textiles for only 1% (Van der Borgh, *Statistische Studien*, pp. 83, 217). Moreover, even in the British textile industry there were a few dozen early nineteenth century incorporations: an 1844 list shows 25 (Shannon, “First Five Thousand” p. 420) and other lists show some that were not on that list. However, as in Germany, partnerships and sole proprietorships dominated until a later stage of industrialisation.

¹²⁸ Harris, *Industrializing*, pp. 195, 222. GDP figures from www.measuringworth.com, following Harris’s convention that England was 80% of Britain.

¹²⁹ This suggests my conjectural Prussian estimates for an approximately 1,200m thaler (M3,600m) flow of new incorporations before 1870 in Prussia (which had slightly more than half Germany’s population) may perhaps be too high, or perhaps a large portion was lost or absorbed in later AGs.

¹³⁰ Van der Borgh, *Statistische Studien*, p. 217. I have added M120m to his (and other) totals to allow for the Reichsbank (an investor-owned utility, which had replaced the Preussische Bank in 1875). This is not much higher than Bösselmann’s (*Entwicklung*, p. 179) figure for Prussia alone of 418 AGs with 1,036m thalers (M3,108m) capital chartered by 1870, but, of course, that is a *flow* figure: not all would have survived to 1870.

Gewerkschaften and some AGs which did not publish balance sheets and is depressed by early railway nationalisations in 1879, yet even as late as 1910, when the UK ratio had risen to 162% (115% excluding railways), Germany's corporate capital/GDP ratio (*after* adding all *Gewerkschaften*, KGaAs and GmbHs to AGs and so covering 25,346 German companies) still remained (at 44%) below England's ratio of seven decades earlier.¹³¹ Contrary to Kocka, the remarkable feature of German economic catch-up is how much could be achieved with only modest levels of corporatization in a culture that had arguably inherited too much from Prussia and not enough from the liberal Hanse cities which shared England's commercial spirit.

For France we do not have a reliable estimate for the stock of all corporate share capital until a government survey at the end of 1898, more than three decades after the liberal incorporation law of 1867, but as that suggests a range of 45-49% of GDP - about the ratio attained in the UK in the 1830s and in the US around 1860 - it is reasonable to suppose that French share capital was below both US and UK levels in 1860.¹³² Indeed, it might have been below 30%, if its *commandites simples* are not included.¹³³ France appears to have been ahead of Germany: its 1898

Wagon, *Finanzielle Entwicklung*, p. 4 gives a figure of 1,311 AGs with M3,918.7m capital for 1883, which suggests Borghot omitted many small AGs not publishing balance sheets, plus the effect of further rail nationalisation; GDP from the Groningen Growth Project website, assuming 1880 prices were 84% of 1913's. Wagon's figures for the 3,712 AGs of 1896 (*idem*, p. 6) are M6,800m, or 30% of GDP (on similar price assumptions). Both figures are depressed by the extensive nationalisation of railways in Germany between 1879 and 1890: in 1880 van der Borghot reports 55 railways with M1,546m share capital, but by 1883 there were only 50 railways left in private hands with M623m capital and in 1896 only 114 with M424m capital (Wagon, *op. cit.*, p.161).

¹³¹ Hannah, "Census."

¹³² Anon ("Les Sociétés") reports the 1898 survey. Taking the nominal value of all reported share capital (of 6,324 SAs and *commandites par actions*) and the market value of no-par and founders' shares, produces a total of 44% of the 1898 GDP of F31,900; taking all at market values (including the values reported to the tax authorities for unquoted shares) would raise this to 47% and adding 1,615 *sociétés par parts d'intérêt* would add another percentage point. Adding the Banque de France (which, though government-controlled was investor-owned) would add F182.5m at par, F684.4m at market, see Théry, *Valeurs*, p. 97), bringing the totals to 45% (par) and 49% (market) of GDP. We have excluded bonds and loans (to facilitate comparison with the US and UK figures for share capital alone), though French companies (especially railways) had unusually high leverage: including bonds would more than double the French 1898 ratios. No figures are given for *commandites simples*.

¹³³ Securities quoted on the Paris bourse in 1859 totalled only F8,980m (Hautcoeur and Gallais-Hamonne, *Marché*, p. 227) and around three-fifths of these were corporate and government bonds, leaving about F3,592m for corporate equities (20% of 1859 GDP). There were also provincial bourses and unquoted shares so this would be a minimum.

corporate capital/GDP ratio was only attained by Germany after 1910, though the extensive nationalization of German railways in 1879-1890 partly drives that result (French railways remained in the private sector until the 1930s).¹³⁴ It is probably better to consider the two civil law countries as having a roughly equal degree of corporatization outside the rail sector in the later nineteenth century. Both countries were clearly behind the common law countries, though that does not necessarily mean their civil law systems were the primary cause: varying roles of the state and of banks, entrepreneurial traditions, available savings, the size of the urban middle class, literacy or other cultural factors and the relative prices of capital, labour and land in the four countries might also have had a hand in that outcome.

For around 1860 we can provide precise figures for all four countries only in the rail sector. Albert Picard reported the total capital invested in the main French railways at the end of 1858 as F4,124m (\$825m) or 22% of GDP: in the same ballpark as the US in 1860 but well below the UK (which, though less extensive than the hexagon, had built substantially more railway mileage).¹³⁵ Prussia's railway capital stock was lower in 1860 - at 383.9m thalers (\$288m) - but with less than half France's population and lower incomes, it was near the French level as a portion of GDP (19%).¹³⁶ Yet all these countries differ only by degrees in their railway capitals, while they differ by orders of magnitude in the flow of all new incorporations proper. That was because they all had politicians able to see the economic (or military) potential of railways, with few inhibitions about chartering

¹³⁴ However, because the French state guaranteed railway bonds, French railways were heavily leveraged, so their *share* capital was quite small.

¹³⁵ Picard, *Chemins de fer*, p.16. This appears to be cumulative expenditure and so would include that financed by bonds (and not allow for depreciation). So – if we include railway bonds for all countries - the French level of 22% of GDP is a little below the US level of 26% and well below the British level of 43%, before further deductions for depreciation.

¹³⁶ von Schreiber, *Die preussischen*, p. 87 gives lower figure of 352m thalers; I use Fremdling's (*Eisenbahnen*, pp. 28, 184-5) upward adjustment. US and UK GDPs at current prices from www.measuringworth.com. France F20,684m GDP in 1860 at current prices from Groningen website. It is possible that German railways were more highly valued by stock exchanges (see e.g the figures in Engel, *Die erwerbstätige*) than US and UK ones and correcting for this would bring the Prussian figures nearer British levels, though it is a moot point how to interpret this (the par value may be nearer to actual cost and the high stock market values might show the lower levels of competition in Germany which followed from its lower investment in competing railways than the US and UK).

corporations with both the compulsory purchase rights needed to acquire land and the limited liability required to attract investors to large railway enterprises. Transatlantic travellers in 1860 were impressed by the ubiquity of railways in America and Europe, not by their absence, though they still felt inconvenienced by gaps in long-distance networks (Europe's east and the American west remaining frustratingly inaccessible).

Table 3 summarises the estimates of corporate capital stocks. Unlike Table 2, all cells

Table 3. Stock of Corporate Capital as a Ratio (%) to GDP.

Country	All Rail Capital at par 1860		All Corporate Share Capital at par 1860	All Corporate Share Capital 1910	
	inc bonds.	shares only		at par	at market
Prussia ¹³⁷	19 ¹³⁸	13 ¹³⁹	unknown	44	71
France	22+ ¹⁴⁰	15+ ¹⁴¹	20+ ¹⁴²	51	76
US	26	17	36-52	173	173
UK*	43	33	64+	162	256

*earlier ratios (for England only, all corporate share capital at par) are: 26 (1759/60), 31 (1810/11) and 53 (1843).

Sources: cols 1 and 2: see text (US and UK GDP from www.measuringworth.com; French GDP from Groningen Growth Project website); cols 3-4, Hannah, "Global Census of Corporations 1910." Earlier English ratios from Harris (*Industrializing*) for numerator and www.measuringworth.com for denominator (for an alternative estimate of £160-200m in unincorporated companies alone (i.e. excluding the statutory and royally chartered companies that dominate Harris's figures) in 1825, a third or more of GDP, see Burns, "Joint-stock companies," p. 411).

¹³⁷ All Germany for 1910. Author's estimate for Prussian GDP of 2,000m thalers in 1860 (compare Hohorst, *Wachstum*, pp. 131, 276).

¹³⁸ 383.9m thalers (Fremdling, *Eisenbahnen*, p.28).

¹³⁹ On the assumption that one-third were bonds.

¹⁴⁰ Relates to 1858; the + sign is used to indicate the ratio was probably higher in 1860, the year used for other countries.

¹⁴¹ In 1856 31.7% of French rail securities were bonds; we assume it was one-third in 1858.

¹⁴² Estimate for Paris Bourse only in 1859, see n. 133, above.

in this table exclude most *commandites* (and accordingly understate limited liability capital in France and Prussia especially). The most reliable and complete figures are for all corporations in 1910 and for railways only in 1860 (and, in column 1 of this table, we have also included railway bonds for all four countries: at this date most corporate bonds were in this sector and some countries' railways were more leveraged than others).¹⁴³ In 1860, expressed as a percentage of GDP, the degree of railway corporatization places the UK distinctly ahead, with the US, France and Prussia all lagging. In other sectors the data are crudely estimated and the margins of error (roughly indicated by the ranges and minima given) make comparison difficult, but it appears likely that the UK and the US probably led France and (if its railways are indicative) Prussia. However, farms were rarely incorporated anywhere and, if we remove value added in agriculture from the GDP denominator, the four countries again appear much closer together.¹⁴⁴ We also know that in 1910 market prices can affect the comparison: although we do not have broadly representative market-par ratios for 1860, they also might reduce the measured differences.¹⁴⁵ Comparison of the 1860 estimates with the more reliable 1910 data suggest that in the next half-century both common law countries pulled clearly (and probably further) ahead of the civil law ones by this measure of corporatization.

¹⁴³ The Sylla-Wright estimates for the flow of authorized capital refer to shares, so we focused on this for comparative purposes. The US's somewhat higher leverage derives from foreign investors' requirements, given their difficulties of influencing railway governance and dividend policy directly and the clarity of the bond interest contract. Following the French commercial panic of 1857, the government agreed to guarantee the interest on new railway bonds in 1859 and within a decade French railways (which had previously funded two-thirds of their capital with shares), overwhelmingly relied for their expansion on bonds which were almost as highly-rated as government *rentes* (in 1856 only 32% of rail capital was in bonds; by December 1869, the capital of French railways on the Paris bourse was 72% in bonds at par, 75% at market).

¹⁴⁴ Mitchell (*International Historical Statistics*) gives the share of GDP generated in agriculture around 1860 as 45% in Germany, 40% in France and 18% in the UK; for the US the earliest figure he gives is 21% for 1869. The share of the US labour force in agriculture was much the same at both dates (over 50%), so the US was probably nearer to the UK in 1860 than it was to the continental European agrarian states. It is a moot point whether one should make such an adjustment, for the UK did *not* consume less agricultural produce, but rather procured its beaver skins from Hudson's Bay, tea from Bombay, wheat from Stettin and Odessa, wine from Bordeaux, cotton from New Orleans, and so on, through (substantially British-owned) supply chains (including trading companies, commodity exchanges, insurers, ships, railways, ports and banks) that were more capital-intensive and more corporation-intensive.

¹⁴⁵ Casual inspection of newspapers and share indexes suggest that 1860 was generally a low point for share prices, with American stock prices below par and continental European ones above and the UK somewhere in between.

It is hardly surprising that the UK performs impressively when corporatization is measured by the extant *stock* of paid-up capital (Table 3), while the US dominates the numbers for the *flow* of new incorporations (Table 2). After all many large nineteenth century British corporations - New River (London's first water utility), Bank of England, Bank of Scotland and Hudson's Bay – date from the seventeenth century and some others - London Assurance, London Lead and Royal Bank of Scotland - from the early eighteenth, so appear in the flow figures decades before Sylla-Wright start counting. It is also no mystery why America did not have many such companies or, rather, why companies like Massachusetts Bay and Virginia no longer operated in their original form (though their ratio of corporate capital to the GDP of the colonists in their first weeks must have been quite high). It is equally clear why the US was forming new corporations faster than anywhere else. The population of an empty, resource-rich continent was growing by immigration and natural increase more rapidly than a densely-populated Europe closer to the Malthusian check: at its first census of 1790 the US had fewer than four million people (well below Ireland's), while by 1860 it had grown to more than 31 million (ahead of Britain *and* Ireland combined and almost as populous as France). Moreover, the relationship between corporatization and wealth is probably two-way: while investment in corporations plausibly causes growth, rich societies have more savings to finance such capital investments. Americans had higher incomes than their colonial masters before the Revolution, though were more reluctant to pay taxes. The war of independence set them back, but they again caught up with, indeed probably overtook, British living standards before 1860, though more convincingly in the north than the south.¹⁴⁶ Both Anglo-Saxon countries were distinctly richer than the French and *a fortiori* than the Prussians,¹⁴⁷ so the GDP used in Table 3 is a more appropriate scalar than population. All four countries are closer together by this metric than Sylla-Wright's treatment suggests.

¹⁴⁶ This is contested terrain. I follow Lindert and Williamson ("American Incomes") rather than Maddison on US living standards.

¹⁴⁷ Maddison (*World Economy*, pp. 436-7) puts the French GDP per head in real terms in 1860 at 67% of the UK's, Prussia's at 58%.

COMPANIES LARGE AND SMALL

There is one statistic implicit in Sylla-Wright which they ignore: the average company in Prussia had \$557,895 capital, in France \$1,561,619, in the UK \$1,322,176, but in the US only \$204,309.¹⁴⁸ Their emphasis (in pages 3-4 of their article) on economies of scale thus appears to lack support from their own data, but, of course, this fails to take into account all the omissions to which we have drawn attention. Many of these were smaller than the inclusions so would reduce the European averages, though in the case of Prussia many were larger.¹⁴⁹ Yet we should not dismiss this clue to nature of American “exceptionalism.” In fact, the obvious way of reconciling some apparent anomalies - particularly the UK incorporating fewer companies than the US (Table 2), but registering a higher ratio of corporate capital to GDP (Table 3) - is that UK corporations were not only older but bigger than those in the US. Of course it is hardly surprising that numbers of companies and average sizes are inversely related, so we also need to look at the upper range of companies before concluding from the means alone that US companies were not particularly large.

The statistics on average corporate size are not perfect or complete. Sylla-Wright register a slight increase in the average capital authorized in US special charters from \$170,917 in 1790-1809, to \$213,722 in 1810-29 and \$231,902 in 1830-44, with the medians a constant \$100,000.¹⁵⁰ The database of Freeman et al for the UK shows higher and more rapidly rising figures for statutory and chartered companies alone (equivalent to special acts in the US): the UK means rise from £112,259

¹⁴⁸ Based on their stated capital values for 22,419 companies in the US, 717 in the UK, 265 in Prussia and 642 in France. The inverse relation between numbers and average size is a natural characteristic of firm size distributions, empirically confirmed by an 81-country sample in 1910 (Hannah, “Global census”).

¹⁴⁹ As is suggested by the first figure for the extant stock of German AGs in 1883, which gave an average of M,2,989,069 (\$747,267) paid-up capital. Before free incorporation in 1870 and the nationalization of major railways (the largest contemporary companies) in the previous five years, the mean would presumably have been larger, especially if we exclude turnpikes.

¹⁵⁰ Sylla-Wright kindly facilitated this comparison by providing this series omitting turnpikes (which are excluded from the British data and were generally small) and for appropriate dates (email from Robert Wright, 29 February 2012).

(\$561,295) in 1790-1809, to £134,511 (\$672,555) in 1810-29 and £282,962 (\$1,414,810) in 1830-44, with the medians, as in the US, showing no trend and levels 50-150 % higher than the US (£60,000, £30,000, £60,000).¹⁵¹ The companies set up under general legislation were usually smaller, so would lower the US average; on the other hand, UK deed-of-settlement companies in the Freeman et al database were larger than statutory companies: including these the UK companies of 1720-1844 were ten times the size of the Sylla-Wright companies of 1790-1830 and fourteen times the size of Hilt's New York companies of 1826. When legislation permitted incorporation by simple registration, the sparse published statistics tell the same story. In 1863-66, when we have data for Massachusetts and New Jersey, the average capital of all companies registering under their general legislation was, respectively, \$203,674 and \$173,369, while during the same period in England the average was £185,270 (\$926,539).¹⁵²

The average sizes of companies reported at specific dates confirm this picture. Henry English reports the paid-up capital of 156 London companies in 1824 as averaging £211,961 (\$1,059,805) and Spackman has 755 companies in 1842 averaging £165,585 (\$827,923),¹⁵³ while Eric Hilt reports the mean paid-up capital in 282 New York companies extant in 1826/7 as only \$169,687 and Sylla-Wright the mean minimum authorized capital of the 500 *largest* US corporations

¹⁵¹ Author's calculation from the Freeman et al database. The non-statutory companies in the database were actually larger than statutory ones, especially after 1825, while some US general acts (such as New York's for manufacturing) limited incorporation by registration to those below \$100,000, so, to this extent, the British lead in corporate size will be understated. However, this is still not conclusive because Sylla-Wright is a full population, while Freeman et al is a sample, and the survival of archival and published references from which they draw it may be biased to larger companies.

¹⁵² Author's calculation from the data in *HSUS* and Hunt, *Development*, p. 146, based on 469 companies in Massachusetts, 52 in New Jersey and 3,503 in England, though the capital actually paid-up was less than that nominally registered (see n. 87, above). Most of the UK companies were not offered to the public: for the 876 that were, the mean size of their capital was higher: £426,062 authorized and £306,115 offered. In Massachusetts the mean capital of new charters was only \$51,225 in 1851, peaked in 1864 at \$252,172, but by 1889 had fallen to \$45,705 (Falkner, "Statistics," pp. 60-61). Some earlier UK companies were also surprisingly small: the average size of the 2,479 UK companies registered between 1856 and 1862 was only £12,630 paid-up (Shannon, "Coming," p. 379).

¹⁵³ Excluding insurance companies with more than £25m capital whose numbers are not given by Spackman (Morgan and Thomas, *Stock Exchange*, p. 279).

authorized by 1812 as \$253,400.¹⁵⁴ All of these populations except Hilt's are biased towards larger companies.

Similar relativities are also observed in individual sectors and in all four countries. The average Prussian railway of 1870 had 18,378,815 thalers (\$13.8m) share capital, the average French railway founded in 1847-59 F74,342,500 (\$14.9m), the average UK railway in 1860 £2,662,410 (\$13.3m) and the average US railway in 1860 only \$2.4m.¹⁵⁵ If, as argued by Frank Dobbin,¹⁵⁶ British railway policy "differed markedly from American policy" in that it "aimed to maintain the autonomy of small firms," at least one of the two governments was spectacularly unsuccessful! In other utilities it is difficult to identify US companies as big as London's West India Dock, capitalised at £2.9m (\$14.5m) on the LSE in 1825, the Trent & Mersey Canal, capitalised at £5.46m (\$27.3m) in 1825, or Imperial Continental Gas, a British utility founded in 1825, operating Europe-wide, and capitalised by 1870 at £3.9m (\$19.5m).¹⁵⁷

UK corporations also achieved larger scale in banking and since there were so few French and Prussian incorporated banks and some had multiple branches it is probable that they did

¹⁵⁴ *English, Complete View*, p. 31; Hilt, "When did," p. 663. Both are biased to the major commercial centre and so may overstate the national average, but English's data are more seriously biased by including only companies with traded or publicly offered shares.

¹⁵⁵ Freedeman, *Joint Stock*, p. 82 for France; earlier text figures for Prussia, UK and US, estimating there were 300 US railroads and 100 in the UK in 1860. Sylla-Wright's data for railroad incorporations 1825-60 suggest a lower mean US railway size below \$0.9m. Hickson et al ("Rate of return") report the average LSE-traded rail security 1825-70 had an even higher market value of £3.61m and some railroads issued more than one equity security. For larger sizes at the top of the distribution, see n. 113, above.

¹⁵⁶ *Forging*, p. 25.

¹⁵⁷ Equity market capitalizations from Hickson et al, "Rate of Return," p. 37. In the US Treasury list of 1853 the largest gas company, Manhattan Gas Lighting, had \$1.3m paid-in share capital (of \$2m authorized) and the Chesapeake & Ohio Canal \$8.2m paid-in capital (the Erie was state-owned and financed by bonds). By the 1860s things had begun to change. Western Union (the 1865 merger of Morse systems, with the equivalent of £8m share capital and £1m bonds, see *Economist*, 2 October 1869, p. 1164) was bigger than the largest British cable company (Submarine Cable, which had laid the cross-channel cable in 1853, capitalised at £6.6m in 1870), though the UK government had nationalised all *domestic* telegraph corporations in 1868-70, so only international traffic was open to the private sector in Britain (and most of Europe).

too.¹⁵⁸ Sylla-Wright take a dim view of the early Bank of England monopoly of joint-stock banking, quite justifiably. However, after English de-regulation in 1825 and the spread of freer banking laws in the US too, the English bank corporations grew fastest, emulating the multi-branch joint-stock banking model pioneered in Scotland and Ireland rather than the American system of small, unit banks. By 1850 there were 824 US commercial banks (some private but most - 666 - incorporated, though with few (147) branches, and those mainly in the south).¹⁵⁹ In the UK there were fewer banks (only 459, still mainly private banking partnerships with one office) but the minority of joint stock banks (around 130) had well over a thousand offices, the largest having dozens of branches each.¹⁶⁰ The UK's incorporated banks were fewer but larger (with more offices than US incorporated banks, absolutely and per capita), even without allowing for the lower capital ratios on which British banks operated.¹⁶¹

The situation in manufacturing and mining is less clear because representative populations are difficult to define. Among manufacturing and trading firms first offering their shares to the UK public in 1863-66, the average authorized capital was £299,501 (\$1,497,703), while in

¹⁵⁸ Freedman (*Joint Stock*, pp. 82, 118) shows bank and insurance SAs formed in France in 1847-59 averaged F4,794,340 (\$958,868) capital and banks formed in 1860-66 averaged F34,181,181 (\$6,836,364), compared with the average bank capital in the Sylla-Wright database of \$194,122. On some German and British banks around 1860, see n. 66, above. The Prussian state had inhibited the formation of banks but the new chartering freedom of 1870-1874 resulted in the foundation of 103 German banks in four and a half years with an average of M8,135,922 (\$2,033,981) capital (Wagon, *Finanzielle Entwicklung*, p. 145). Although the *Economist* started publishing its half-yearly banking supplement on 6 April 1861, early versions were incomplete (only 42 banks initially), so that cannot be used as a source for average capital at par until later, but the average bank traded on the LSE in 1825-70 (Hickson et al, "Rate of Return," excluding the Bank of England) had an equity market capitalisation of £640,000 (\$3.2m).

¹⁵⁹ Weber ("Early State Banks") for incorporated banks and branches, *HSUS* for all banks.

¹⁶⁰ Collins, *Money*, pp. 52-3. For post-1855 data on England and Wales alone see Nishimura, *Decline*, p. 80.

¹⁶¹ Collins, *op. cit.*, p. 102; Bodenhorn, *State Banking*, p. 292. The *Economist* (4 August 1860, p. 842) noted as an "ordinary commercial fact" which "English vanity" refused to celebrate that seven principal joint-stock banks in London (with £14.7m subscribed capital, of which only £3.6m was paid-up, i.e effectively shareholders had quadruple liability) alone had £47m of deposits, while all New York banks had only £21m deposits. In 1860 there were 306 New York banks with \$112m (£22.4m) capital (Secretary, *Banks*, pp. 168, 306). Most of the latter appear not to have had double liability before the 1864 banking act: the high capital requirements reflected the fact that American banks extensively used their own capital to finance lending (such financial institutions were more usually described as merchant banks or investment trusts in the UK and excluded from the commercial bank statistics).

Prussia in 1870 manufacturing corporations averaged 449,295 thalers (\$336,971) and mining corporations 1,532,884 thalers (\$1,149,663) and the five French manufacturing SAs formed in 1847-59 for which Freedeman could find data averaged F1,692,000 (\$338,400) capital. Manufacturing corporations in the Sylla-Wright database averaged only \$137,771 minimum authorized capital, and mining firms only \$252,511.¹⁶² Visiting European engineers in the 1850s were impressed with the emerging “American system of manufactures” in the federal Springfield Armoury, but in the capitalist sector what struck them as special about American manufacturing corporations was how “remarkably small” some were.¹⁶³ In the classic industry of the first industrial revolution, cotton spinning, the largest ten UK firms had significantly more spindles than similar US mills (though initially a smaller portion was corporately-owned).¹⁶⁴

The modest size of American corporations - on average and at the upper end - is also reflected in their shareholder base: smaller companies naturally had fewer shareholders. Some were publicly-quoted and traded; others - particularly manufacturers and turnpikes - were spread among stable holders by kinship, local and professional networks and rarely traded. In New York in 1826 the average corporation for which shareholder lists have survived had only 74 shareholders and for 26% of investors there was another investor in the same corporation with the same surname.¹⁶⁵ Others, in terms of the spread of ownership and tradability, were not much different from the sole trader or the partnership, though the private (in American English “close”) corporation appears to have been rarer in France and Germany than in the US or the UK (though no doubt it was very common among

¹⁶² Hunt, *Development*, p. 150; Engel, *Die erwerbstätigen*, p. 10; Freedeman, *Joint Stock*, p. 82. The capital actually offered to the public by the UK companies was lower than that authorized at £229,339 (\$1,146,694) per company; we do not have equivalent figures for the other countries. Even if we assume that British manufacturers incorporating but not offering shares to the public (i.e. that remained private, close companies) numbered three times as many and each had only £1 capital, the average British manufacturing corporation remains larger. Moreover, the manufacturing firms under US general acts were probably smaller than the Sylla-Wright average: in New York, for example, the general act of 1811 did not permit incorporations with more than \$100,000 capital.

¹⁶³ Joseph Whitworth in Rosenberg, ed, *American System*, p. 338.

¹⁶⁴ For the 1880s see Yonekawa (“Growth”, p. 4); the US did not catch up until around 1913 (idem, p. 10)

¹⁶⁵ Hilt, “When did,” p. 664. This may overstate shareholder dispersion: shareholder lists could be found only for a minority of companies and it is unclear whether survival is size-related.

their *commandites*). As early as 1826 less than a quarter of New York companies (and those mainly financial companies) had stock quotations and one turnpike had as few as three shareholders.¹⁶⁶ As W J Ashley put it, “The appearance of “private” companies is a striking example of the way in which business expediences sometimes take advantage of legal possibilities. Limited liability was originally facilitated by law in order to promote the formation of large capitals by a great number of small contributors; it has been utilised for the advantage of businesses differing in no essential particular, so far as the provision of capital and the nature of the control are concerned, from the old-fashioned firm.”¹⁶⁷

As one would expect from their small size, many American corporations by 1860 were not very widely-held: already some were a cloak for the individual proprietor seeking limitation of liability, the family firm, the crypto-partnership, or the small local turnpike or bank with shares parked privately by directors among their families and acquaintances and rarely (if ever) traded. Economies of large scale were not what such corporations were generally targeting, though such local networks could help even modest businesses start at a more appropriate scale. The social argument in favour of such private corporations is essentially that competitive assortment of a myriad of small corporate foundations driving Schumpeterian creative destruction - multiple innovations and widespread bankruptcies - increases the rate of successful innovation, so politicians are wise to socialize as well as privatize at least some of the associated risks. Desirable as it might be to measure the net benefits of this complex process of creative destruction, it is difficult with the available corporate data. We cannot easily measure the additional investment induced by limited liability;¹⁶⁸ the role of limited liability in disciplining monopoly;¹⁶⁹ the benefits of risky experimentation that would have been shunned by full liability partnerships, against the large social

¹⁶⁶ Hilt, “When did,” pp. 663-4.

¹⁶⁷ Ashley, “Enlargement,” p. 192.

¹⁶⁸ though see Foreman-Peck, “1856 Companies Act.”

¹⁶⁹ John et al, “Limited Liability.”

toll of creditors' (and shareholders') losses from the unpaid debts of corporations, relative to those of principals with full liability.

Of course, economies of scale were a motivation for some large companies in all four countries. All lists of stocks traded on the LSE and NYSE in the nineteenth century suggest significantly more companies were publicly traded in the UK on stock markets and the same story is told by stockholder numbers.¹⁷⁰ The largest company traded on New York in 1826, the Bank of America, had only 560 stockholders, while some British banks and trading companies had several times that figure a century earlier. Even UK provincial markets supported wider shareholding: Cheshire's Ellesmere Canal of 1793 had 1,244 and Dublin's Hibernian Bank of 1824 1,063 shareholders.¹⁷¹ The modestly-sized West Yorkshire Railway attracted 2,041 subscribers in 1845 and the first official survey of UK railway shareholding in 1855 showed that the London & North Western Railway had 15,115 shareholders, two others above 10,000 and thirty more above 1,000.¹⁷² In France, the four largest railways in 1860 had 14,488, 8,726, 8,253 and 5,876 registered shareholdings.¹⁷³ Everywhere shareholding in stock exchange traded companies was largely confined to the top 5% of the population and to only a minority of those.¹⁷⁴ The first corporation to be mainly owned by working-class shareholders was probably the Sun Mill in Chadderton, Lancashire and construction of that had only just started in 1860; the mills in Fall River, Massachusetts, by comparison, remained

¹⁷⁰ London companies can be traced in the twice-weekly *Course of the Exchange* and later, more comprehensively, in *Burdett's Official Intelligence*. US companies can be traced in local newspapers, from which Sylla is assembling an impressive additional database.

¹⁷¹ Evans, *British Corporation Finance*, p. 26; Thomas, *Stock Exchanges*, p. 140.

¹⁷² Wortley, *Returns*, pp.4-5; Anon, *Return*.

¹⁷³ Neymarck, *Ce qu'on appelle*, p. 8. This understates the totals by excluding bearer shares.

¹⁷⁴ It was probably not until the early twentieth century that the number of stock-exchange traded companies' shareholders first exceeded a million: that was about 1% of the US and 2% of the UK population (Hannah and Rutterford, "When did").

closely held by a bourgeois oligarchy.¹⁷⁵ Historians of the US extolling its “wide” dispersion of shareholdings in this period are usually talking about numbers in the hundreds,¹⁷⁶ though, in 1847, the Pennsylvania Railroad was proud of the 2,600 subscribers to its first stock issue and the average shareholding was as small as in the LNWR and raised locally.¹⁷⁷ In 1853, the New York Central merged 8 railroads, each having between one¹⁷⁸ and 947 stockholders, so America’s largest company listed on the NYSE still had only 2,445 stockholders.¹⁷⁹ The divorce of ownership and control had thus possibly already advanced further in the UK in the 1850s than in the US (as is suggested also by the relative sizes of their many stock exchanges) and this remained clearly the case before 1914.¹⁸⁰

There is a well-established tradition, going back through Chandler, Landes, Kocka and Gerschenkron to Schumpeter, Lenin, Weber and beyond, which emphasises the merits of scale in large, bureaucratic corporations and banks: islands of managerial planning in a sea of capitalist markets. Some aspects of the story of the corporation can plausibly be told that way. Yet the American economy in 1860 distinctively consisted of numerous diverse corporate entrepreneurs who knew many little things but had no overall plan. There is an increasing consensus - shared by Sylla, Wright and myself - that it was such a wide spread of “democratic” ownership and a strong middle class that was critical in promoting the symbiotic and increasingly inclusive growth of economies and political democracy.¹⁸¹ Benefitting from limited liability, Americans experimented in

¹⁷⁵ Yonekawa, “Growth,” p. 26. On the other hand, there is evidence of quite widespread shareholding in (mainly unlisted) companies in Pennsylvania, Massachusetts and elsewhere in the early days of the republic, and much of that continued in local US banks and utilities.

¹⁷⁶ E.g. Wright, “Bank Ownership.”

¹⁷⁷ *First Annual Report of the Directors of the Pennsylvania Railroad Company*, p. 10.

¹⁷⁸ One had been municipally-owned by the city of Troy, which had sold it to one of the merger negotiators in 1852.

¹⁷⁹ Stevens, *Beginnings*, p. 352.

¹⁸⁰ Foreman-Peck and Hannah, “Extreme divorce.”

¹⁸¹ North, Wallis and Weingast, *Violence*; Acemoglu and Robinson, *Why*; Hoffman. Postel-Vinay and Rosenthal, *Surviving*; Wright, *Corporation Nation*.

numerous, mainly small, corporations and quickly liquidated the ones that proved unprofitable. Thereby, the US performed better than the centralising state bureaucracies of Prussia and France, still tending to “pick winners” when chartering corporations and pin less hope than liberal incorporators on fostering diversity. The US thus grew rapidly, *despite* being less capital-intensive than the UK and investing less in large-scale corporations which significantly divorced ownership from control.¹⁸² De-centralised market competition and disciplined pluralism - together with high interest rates - forced Americans to economise in their uses of capital. The antebellum US, being desperately short of *both* capital and labour but possessed of apparently unlimited natural resources, was probably wise to make such choices. There is nothing wrong with being an economy of smallish corporations, diverse, primary-resource-intense, somewhat short of capital and market-orientated. Indeed there is at least one country known to have that character in 1860 that - after a woeful 1860s - became even larger, more successful and, eventually, more capital-intensive and corporation-intensive, than the UK.

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¹⁸² For a persuasive rebuttal of the persistent strand in the literature projecting back modern relative capital-output and capital-labour ratios onto nineteenth century US and UK business, see Field, “Land Abundance.”

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