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Article (Accepted version)
(Refereed)

The Diffusion and Impact of the Corporation in 1910

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With new and comprehensive data on the international spread of listed and unlisted corporations before the First World War we show the prominence of common law and Scandinavian civil law in the process. We interpret this association as demonstrating the strong contribution of liberal (laissez-faire) industrial stances. We confirm an extended version of Rajan and Zingales (2003) hypothesis that trade and capital openness are necessary for companies to flourish. Despite the possibilities companies created for fraud and exploitation, countries more extensively using the corporate form before 1914 had higher GDP per capita. Through this process, the benefit of imperialism extended to British dominions but not much, if at all, to British dependent colonies.

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Mr Goldbury: Some seven men form an Association,
(If possible, all Peers and Baronets)
They start off with a public declaration
To what extent they mean to pay their debts.

Though a Rothschild you may be
In your own capacity,
As a Company you've come to utter sorrow -
But the Liquidators say,
"Never mind - you needn't pay,"
So you start another Company tomorrow!…

King. Well, at first sight it strikes us as dishonest,
But if it's good enough for virtuous England -
The first commercial country in the world -
It's good enough for us.

W S Gilbert and A Sullivan *Utopia (Limited) or The Flowers of Progress* 1893

Gilbert and Sullivan's low expectations for the globalisation of the companies in their day were reinforced two years later by the UK Comptroller-General for Bankruptcies. His report complained that many joint stock companies were liquidated simply to defraud creditors[1]. This pessimism about early corporate law is echoed by many historians of Britain but contrasts starkly with pervasive Washington consensus triumphalism in which limited liability companies[2] are a key component of the financial development essential for economic growth[3]. To the extent that the spread of such organisations constitutes new industry entry, they will foster competition and economic growth[4].

In the terminology of Acemoglu and Robinson companies are an economic institution that might be extractive (according to Gilbert and Sullivan) or inclusive (the common present day view)[5]. When they are inclusive they allow wide participation by the population to make best use of their talents, fostering investment, coordination and efficiency. Extractive companies – suggested candidates have included the East India Company, US Steel or some investment bankers today - expropriate resources from the rest of society, by fraud and misrepresentation, by erecting entry barriers, by

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[1] Board of Trade *12th annual report into the Bankruptcv Act.*
[2] We use the terms 'corporation' and 'company' interchangeably, ignoring legal niceties such as whether they all had limited liability. Technically corporations can include some non-profit organisations such as universities and municipalities (which we try to exclude) and the term "company" was commonly used at the time (but is not used here by us) to include partnerships (as is less common in British English today but remains the norm for equivalents in many other languages).
[3] See Cheffins *Corporate ownership and control* and Johnson *Making the market*. Levine 'Financial. development and economic growth': Rajan and Zingales 'Financial dependence and growth': Sylla and Wright 'Corporation formation in the antebellum United States', for triumphalism.
[4] Klapper et al., 'Entry regulation'.
[5] Acemoglu and Robinson, *Why Nations Fail.*

political lobbying or by suppressing or manipulating the functioning of markets. Extractive economic institutions are typically formed or supported by extractive political institutions that concentrate power in a narrow elite and place few limitations on their power.

To identify whether the corporation in 1910 was primarily an extractive or inclusive institution we consider the nature of the supply permitted by political elites, governments and potential lobbyists. In the supply of companies, the extent of investor protection provided by national legal systems may play a role[6]. The advantages of common law have been a prominent centre of attention. In turn legal practice or formulation could well be influenced by more deep seated culture and religion[7]. But political structures and pressure groups can be expected to try to block company developments that impinge on incumbent interests, unless there are countervailing inclusive institutions able to resist[8]. Corporate regulation can be 'captured' by vested interests and company formation suppressed to prevent competition.

Among the most prominent institutions that may have enhanced or detracted from the operation of world markets before the First World War was the British Empire, not least because almost all common law countries (with the notable exception of the United States) were members. If the Empire was a boon for markets it will have stimulated both the international spread of companies and their contribution to economic development. Companies therefore offer an opportunity to examine the supposed extractive institutions of the British Empire, because a large proportion of the countries for which data can be found were then members of the Empire[9].

The present exercise utilises international company data for 1910 to estimate what determines the supply of companies and to assess their impact on economic development[10]. With this new data set, unprecedented in coverage, new light is cast upon the institutional concomitants of economic development. An international cross-section for a single year has some limitations for statistical inference[11]. It might be thought that a panel data set would support more convincing results but panels must span a very lengthy period of time to capture country-level changes in legal system, religion or political system.

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[6] LaPorta et al., 'Law and finance'; Kuran *Islamic law*; Klapper et al. 'Entrepreneurship and firm formation'.
[7] Stulz and Williamson 'Culture, openness and finance'.
[8] Rajan and Zingales 'The Great Reversals'; Pagano and Volpin 'Corporate governance'.
[9] Acemoglu and Robinson *Why nations fail*; Accominotti et al. 'Black man's burden'.
[10] Our sources and data are described in Hannah, 'A Global corporate census' and more fully in its online statistical appendixes.
[11] Luintel et al., 'Financial structure and economic growth'.

In the following section (1) we explain the essential characteristics of the institution on which we focus. We move on in section 2 to describe the bivariate relations between the stock of companies and the various possible contributors to their supply. This approach allows us to maximise the number of countries in the comparison. Then in section 3 we use regression analysis on a necessarily more restricted data set to decide the principal contributors to the supply of companies. In this section we also establish the GDP consequences of companies and thereby calculate the net effect on GDP of exogenous influences-, legal background, industrial policies and the British Empire - nurturing or suppressing this institution.

I

A company or a corporation is a 'fuzzy' concept. At the most general level it is a grouping of persons collaborating to do what they cannot achieve so well separately. In economic terms the boundaries between companies and other institutions for production are not always perfectly clear but, we contend, they are clear enough for operational purposes.

We ignore legal and contemporary niceties, using the modern terms corporation and company loosely and interchangeably. Generally Hannah's global corporate data for 83 countries in 1910 (and hence ours) include all the capitalist organisations known as corporations in the US or UK (in the latter they were more commonly referred to as joint stock companies) and their approximate foreign language equivalents: *sociétés anonymes* in France, *aktiebolag* in Sweden, *kabushiki kaisha* in Japan and so on[12]. In each case these included some public (often listed or traded) and some private (close) companies. Therefore where there were separate legal forms, approximately corresponding to public and private companies (such as AGs and GmbHs in German-speaking countries), both are also included[13]. Some (generally small)[14] wholly or partially limited liability entities, such as *sociétés en commandite* (limited partnerships), are excluded, though we follow contemporary statistical practice by including *commandites* with shares (French *sociétés en commandites par actions* or German *KGaAs*), which tended to be more like corporations.

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[12] Hannah 'A global corporate census'.

[13] As are *Bergrechtiche Gewerkschaften*, a modernised version of a medieval German multi-ownership form for mines, common in German and Austrian heavy industry.

[14] But not all: Solvay - the largest European chemical firm in 1910 - had F40m capital but was then a simple. Belgian *commandite* partnership without shares, so is excluded.

Such boundaries are definitionally fuzzy and though the available national statistics do not always facilitate perfection, they have a rough and ready consistency.[15] The great majority of the organisations included had all, or most, of the classic characteristics of corporate modernity, present in earlier centuries, but substantially developed, standardized and perfected during the nineteenth. These included separate legal personality (allowing them to sue and be sued, own land and/or affix a seal in their own name), perpetual succession (facilitating, though not guaranteeing, continuity even when shares pass by death or otherwise to new owners)[16], entity shielding (creditors could not pursue the company's assets for claims against individual shareholders)[17] and limited liability (shareholders were liable only for the amount they had subscribed).

Some companies had additional privileges: for example, the note issuing powers of central banks (then investor-owned utilities) or the compulsory purchase (in American English eminent domain) rights of railways. There is now a growing literature emphasising that the relative importance of these characteristics was not the same in the nineteenth century as today[18], but by 1910 the world was already well advanced on its modern trajectory. Limited liability, for example, was then a clearly specified characteristic of the great majority of companies, but not of absolutely all of them.[19]

Most companies in 1910 (by number) were private and unquoted (a few had only one stockholder, many had only several) [20], but most corporate capital by value was quoted on stock exchanges or otherwise tradable. Listed companies tended to be more widely held, many with thousands of stockholders, and already several hundred companies numbered their holders in the tens of thousands. Rajan and Zingales confine their discussion to such companies quoted on major exchanges, implying, for example, that St Petersburg was quite close to the New York Stock Exchange (in terms of such corporate values as a portion of GDP), but the US had many more private companies than Russia, as our more inclusive number and value statistics show[21]. Hannah discusses the implications of adopting even more expansive definitions of the company form, but most

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[15] For example, for some countries we necessarily follow national statistical practice by including some incorporated non-capitalist organisations (mutual insurers, learned societies etc).
[16] Blair 'Corporate Law'.
[17] Hansmann et al., 'Law and the rise of the firm'.
[18] Campbell and Turner 'Substitutes for legal protection'; Freeman, Pearson and Taylor *Corporate governance.*
[19] California had proportional rather than limited liability until 1932 and where there was a choice on registration (as In Britain) a few companies chose to be unlimited; some banks had double or reserve liabilities.
[20] Passow *Die wirtschaftliche Bedeutung*, pp. 223-4, gives the example of Krupp.
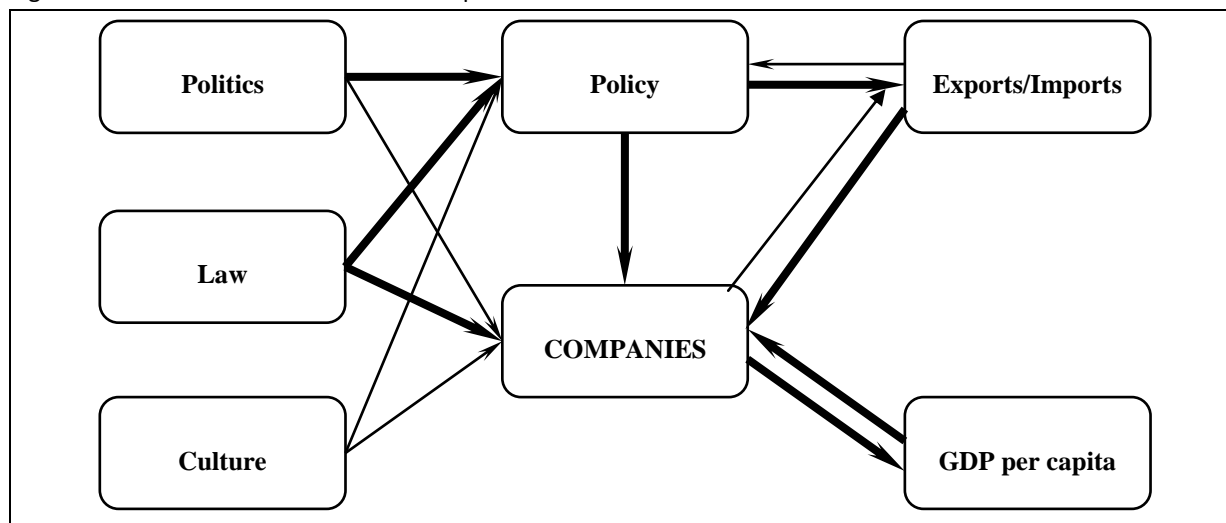[21] Rajan and Zingales, 'The Great Reversals'.

adjustments would be marginal. The main exception would be the inclusion of all *commandites*, on the grounds that, unlike most ordinary partnerships, they had partially limited liability[22].

<center>II</center>

The scheme that we explore in this section considers deep structural influences upon the numbers of companies in a country; culture, law and political regime. These may have direct and indirect effects. The indirect effects include restrictive policies which have consequences for economic openness, especially foreign trade, while foreign trade in turn may affect the density of companies. Ultimately we want to specify a model that allows for companies either to raise or lower GDP per capita, and for numbers of companies to respond to the opportunities created by higher national output and productivity. These relations are sketched in figure 1. On the left are the deep structural variables that must be exogenous to company numbers and other economic influences. On the right and in the centre are variables that are likely to be simultaneously determined;

We extend Rajan and Zingales' (RZ) hypothesis that trade and capital openness are necessary for financial development and for listed public companies to flourish, to all the companies covered by our sample[23]. Incumbent interests are least able to coordinate to obstruct or reverse the spread of companies when RZ's two conditions, openness to trade and high international capital mobility, are fulfilled. 1910 was a good year for international capital mobility but trade openness varied considerably. In figure 1 the hypothesis is represented by the link from policy to companies and from exports to companies, perhaps through policy.

Figure 1: Influences on and effects of companies in 1910

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[22] Hannah, "Organisational menus."
[23] Rajan and Zingales 'The great reversals'.

Circumstances preventing these interests from restricting foreign trade are the same as those lifting their constraints on the development of domestic institutions; export intensity is simply a manifestation - or otherwise. When imports are impeded to suppress competition, domestic resources are diverted to supplying the home market and exports are cut as well, - if trade is to balance. After controlling for 'natural' influences upon national trade openness - particularly the size of the country - trade intensity reflects the extent to which vested interests are inhibiting development. But trade intensity is not necessarily the only appropriate measure of restrictive policies adopted – the political system may be another. The bolder arrows in figure 1 indicate the relationships that we find most important later in this paper. In the remainder of the section with a series of tabulations we describe how the deep structural variables are associated with the numbers of companies per head and the importance of corporate capital related to GDP in different countries in 1910. We also consider the association of the variables with a measure of 'capture' by incumbent interests – exports per head.

English common law, it is sometimes claimed, drives the development of good institutions, including the corporation This legal system supposedly is much superior to French and German civil law systems in its supply of investor protection, essential to avoiding 'agency problems' with joint stock company directors[24]. However, factors that promote securitization (such as common law rights of shareholders or anti-director rights) may have ambiguous effects on corporatization, particularly as measured by the numbers of companies. Weak disclosure requirements or shareholder rights may inhibit stock market IPOs but encourage use of the close corporation, especially in countries where private companies were not exempted from stringent public company regulations.[25]

We adopt non-European (e.g. Islamic) law and mixed systems as the base case and distinguish from this the four categories of Scandinavian, French and German civil law and common law systems. Although England and Wales and many British colonies adhered to the common law tradition, the Scots and French Canadians were different. Nonetheless we count the UK and Canada as common law countries[26]. We do the same for Indian Native States (which used India's company law) and Gambia (because most of its five companies were formed under British law). Matching the company

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[24] LaPorta et al., 'Law and finance'.

[25] For example in Germany AGs (public companies) were required to appoint an Aufsichtsrat (supervisory board) and publish accounts, but GmbHs (private companies) were exempt from these requirements (Krüger, *Das Reichgesetz*, pp. 20-3).

[26] But not Malta, which retained civil law, despite membership of the British Empire.

data with common law yields a sample of 21 countries[27]. Of these in 1910 only one is not British, the United States (table 1 below)[28]. Clearly English common law and Scandinavian civil law countries were far more fecund in companies than the rest; apparently civil law *per se* was not harmful to the spread of the corporation because the Scandinavians were able to generate far more companies per head than common law countries.

On the other hand Scandinavian civil law companies were on average smaller in relation to GDP than those in common law countries. They were little different from those in French civil law countries, but both were more dominant in the economy than corporations in German civil law countries. At first sight common law countries appear to encourage corporatisation (table 1) – though what this contributed to economic growth and development in 1910 remains to be demonstrated.

Under a civil law system, Norway seems to have developed effective corporate governance without any statutory corporate law[29]. Norway had more corporations per head of population in 1910 than any European country[30]. Substantial protections were available to minority shareholders against expropriation by corporate 'insiders'. By contrast Islamic law, it has been contended, was especially harmful for development[31]. We may also note that if common law really did promote the spread of companies, and companies stimulated economic growth, we would expect to find an impact of common law on economic development. A natural experiment in South Africa casts doubt on whether such an effect can be found[32].

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[27] US, UK, Uganda, Straits settlements, South Africa, Sierra Leone, Rhodesia,, Nigeria, Newfoundland, New Zealand, Kenya, Hong Kong, Gambia, Gold Coast, Gibraltar, Federated Malay States, Ceylon, Canada, British India, Indian Native States, Australia.

[28] Adding up the bracketed figures in column 1, table 1 shows that there are 83 countries in the legal system/ company numbers comparison. In contrast there are only 34 countries for which a stock value/ legal system comparison can be made.

[29] Ostergaard and Smith 'Corporate Governance'.

[30] Hannah 'A global corporate census'.

[31] Kuran '*Islamic law*'.

[32] Brunt 'Property rights and economic growth'.

Table 1: Regulatory capture, law and the spread of companies c. 1910

	Companies/population (no. of countries)	Corporate stock value at par/GDP% (no. of countries)	Exports per head (US$ 1913) (no. of countries)
Common law	662* (21)	156* (8)	48* (19)
Scandinavian civil law	1,285* (4)	49 (4)	41 (4)
French civil law	159 (24)	44 (12)	30 (22)
German civil law	103 (10)	32 (7)	10 (9)
Others	147* (24)	25 (3)	18 (8)

Note * signifies significantly different from sample mean at 5% level. These mean values are not weighted by the number of companies in a country.

Both common law countries and Scandinavian law are associated with company intensiveness but what does the correlation signify? Most countries had corporation statutes or commercial codes, so the common/civil law difference lay only in the extent to which judges could modify laws by applying general principles as opposed to simply interpreting the statute. These two categories therefore probably identify nations which adopted 'hands off', liberal or permissive industrial policy, in contrast to those that were highly regulatory (France/Germany) or entirely repressive (some independent poor countries). The *colons* in Saigon sometimes sadly compared their situation with that of British colonists neighbouring Indochina[33]. Scandinavian and common law countries pursued generally liberal industrial policies and this seems to have permitted relatively abundant company formation[34]. Such an interpretation is supported especially if the highly regulatory systems were more prone to capture. Consistent with the Rajan and Zingales hypothesis, French civil law and German civil law countries achieved lower exports per head than the liberal economies (table 1)[35].

Potentially the date of general incorporation legislation is a determinant of the level of corporatization. Except in the case of major wars and revolutions and brief retreats in severe depressions, the annual number of corporate births consistently exceeds the number of corporate deaths in all nations, so an obvious variable to include in a model is the date at which incorporation became easy and normal. For many advanced countries (most US states, the UK, France, Germany) and some others (India, Hong Kong, Orange Free State) this came with general registration laws (eliminating the need for individual legislative or executive approval) in the period 1840-1870, while

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[33] Bulletin Financier.

[34] Frankema 'Origins of formal education' shows the strengths and weaknesses of what a 'liberal' policy meant in practice for the adjacent field of education in sub-Saharan Africa before 1940.

[35] League of Nations *Memorandum on Balance of Payments* p150 table VII.

for others (Russia, Thailand, Greece) even as late as 1910 such liberality still remained in the future. Unfortunately, a date of general incorporation variable proves difficult to define across all countries (early registration statutes were often not truly general but restricted to single industries, small firms or small sub-national areas) and more relevant in some countries than others. In Germany incorporation by simple registration in 1870 led to a substantial increase, as again did its 1892 statute introducing simpler GmbH incorporations. By contrast in the US and UK promiscuous company formation pre-dated simplified registration laws, which therefore less noticeably accelerated what was a more continuously increasing flow of incorporation.[36] General registration dates may have been endogenous to the process of economic development and not exogenous, like legal systems and, perhaps, policy styles.

Possible influences on company numbers include prohibitions of incorporation for certain categories (lawyers, retail shops), or of firms below a certain size. Other discouragements of incorporation were discriminatory taxation, high registration fees, and compulsory notarisation. But the variety of such constraints, and the fact that they were not always incorporated in accessible legislation or codes, make it difficult to summarise them quantitatively[37]. We do not doubt that such variables had some impact on the level of corporatization, so to the extent that such deterrents are not proxied by our measures for 'liberalisation', our model may be under-specified.

National legal traditions relate the legal system to the culture of which they are a partial expression. Hence Stulz and Williamson maintain that differences in culture, proxied by divergences in religion and language, influence why investor protection differs across countries[38]. We examine whether a similar phenomenon affected the spread of corporations by considering official religions for 1910[39]. These religions are not necessarily representative of the populations' practices and beliefs; for instance many colonies, the United States and the Netherlands are recorded as 'secular'. Finland was predominantly Lutheran in 1900 but as a part of the Russian empire this was not the official religion. Similarly the Dutch East Indies (present day Indonesia) are for 1900 recorded with an official religion of the Dutch Reformed Church despite the great majority of the inhabitants adhering to Islam. But if a narrow elite shaped economic institutions, as well as choosing the official religion, then it may be the official religion that matters for predicting economic institutions and thus, performance.

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[36] Foreman-Peck and Hannah, 'Extreme Divorce', p. 1221 for the UK; compare the decadal foundation data for 1909 German AGs in *Statistisches Jahrbuch* 1911, p406.

[37] More generally substitutes for legal protection may have facilitated the growth in the numbers of corporations in some countries; Campbell and Turner 'Substitutes'.

[38] Stulz and Williamson 'Culture, openness and finance'.

[39] Barrett *World Christian encyclopaedia.*

Secular economies were significantly more open than the average in 1910, they were significantly more corporation-intensive and dominated by corporations (par value as percentage of GDP) (table 2). Official Protestants, classified as Anglicans plus Lutherans in table 2 - in conformity with Stulz and Williamson - were corporation-intensive and Islam and Roman Catholicism were not. But then common and Scandinavian law completely overlap the Protestant category. Roman Catholic countries, like Islam and 'others', were relatively closed economies.

Table 2 Religion and regulatory capture c. 1910

	Companies/population (no. of countries)	Corporate stock value at par/GDP (no. of countries)	Exports per head (no. of countries)
Roman Catholic	124 (13)	52 (4)	26 (12)
Secular	613* (20)	163* (7)	51.4* (16)
'Protestant'	1,434* (5)	70 (5)	54.7 (5)
Islam	72 (8)	25 (2)	20.4 (6)
Other	156* (37)	33* (16)	19.7 (23)

Note: * signifies significantly different from sample mean at 5% level.

Political economy considerations in recent times have suggested that majoritarian democratic constitutions may provide more investor protection – and therefore more investment in joint stock companies - than proportional representation[40]. Only a few countries had adopted proportional representation in 1910 and so Pagano and Volpin's representation hypothesis arguably is less relevant than a century later. Here we focus simply on the degree of democracy as defined by the Polity IV index[41]. This index of democracy–autocracy measures regime authority on a 21-point scale ranging from -10 (hereditary monarchy without parliamentary constraint) to +10 (consolidated democracy). The index constructors also recommend a three-part categorization of "autocracies" (-10 to -6), "anocracies"[42] (-5 to +5), and "democracies" (+6 to +10). 6 countries in the present sample receive a score of +10 and are classified as perfectly functioning or 'consolidated' democracies in 1910. They are the US, Australia, New Zealand, Norway, Switzerland and Greece. To increase the coverage of the index, we assume an index number of -6 for colonies otherwise not included.

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[40] Pagano and Volpin 'Political economy of corporate governance'.
[41] www.systemicpeace.org/polity/polity4.htm.
[42] An anocracy is generally a regime where power is vested in elite groups constantly competing for power, rather than in public institutions.

Table 3 shows that democracy and consolidated democracy were clearly associated with high corporate numbers and with a high corporate capital to GDP ratio. Autocracies were linked with significantly low corporate numbers but their average ratio of corporate capital to GDP was not much lower than that for consolidated democracies. The most open countries measured by exports per head were democracies.

Table 3: Politics and regulatory capture c. 1910

	Corporations per mill pop (no. countries)	Corporate stock value at par/GDP% (no. countries)	Exports per head (no. countries)
Autocracy (includes colonies)	133* (46)	69.6 (10)	23.9 (28)
Anocracy	271 (22)	49 (13)	35.1 (19)
Democracy	1,131* (13)	86.5 (11)	47.9 (13)
'Consolidated Democracy'	1,586* (6)	76.8 (5)	51.1 (6)

Note: * signifies significantly different from sample mean at 5% level. 'Consolidated Democracy' is included in the 'Democracy' category.

In the world of 1910 according to Acemoglu and Robinson the imperial framework ensured that 'extractive institutions' were adopted where Europeans did not settle[43]. Allegedly administrators there cared little about aggregate output or the welfare of the indigenous population. Davis and Huttenback's classification of British self-governing colonies correspond with 'good institution' colonies (dominions) while dependent colonies and India coincided with 'extractive institution' colonies[44]. In this latter dependent British Empire, where coercion was available, it has been contended that European institutions and ideals were ignored. The spread or otherwise of the joint stock company to such regions offers a test of these views. We can use the corporations data to provide a simple test of the Accominotti et al. 2010 hypothesis of British Empire repression of non-European settled areas. If indigenously registered joint stock companies reflect 'good' or 'inclusive' institutions, then corporations per head is a measure of institutional 'progress'.

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[43] Acemoglu and Robinson *Why Nations Fail.* Some writers contend that the British were extractive even in dominions; Sylla 'Political economy of financial development'; McQueen, 'Company law as imperialism'.
[44] Davis and Huttenback, *Mammon and the pursuit of empire* Accominotti et al., *Black man's burden*. South Africa, a dominion in 1910, is somewhat problematic because Acemoglou and Robinson identify it as 'extractive', but it was self-governing and less extractive than it was to become. In 1961 miners' wages were 12 percent lower than they had been in 1911 (Acemoglou and Robinson *Why Nations Fail* p268).

Our specification of the Accominotti et al. hypothesis requires that joint stock companies were more abundant in European settled regions and less abundant elsewhere in the Empire. This is of course a simple minded test because other relevant factors may differ between regions – in particular productivity, GDP, and proportion of agriculture - but it is a start.

Indigenous ownership is neither necessary nor sufficient for companies to be inclusive institutions, but may be an indication nonetheless. In India, the cotton mill industry was largely in the hands of Indians, and the greater proportion of paid up capital among Indian registered companies was in cotton and other mills and presses, concentrated in Bombay[45]. The density of companies in India (at 12 per million population) was far higher than China's 1[46]. British India's ratio of equity capital at par to GDP of 24% compares with Austria's 26% and Spain's 27%.

The corporation-intensiveness of non-European settler area Hong Kong, with 1,320 companies per million compared with a sample average of 338 and a UK figure of 1,241 also seems unlikely to have been possible without some native participation. The Hong Kong population was of course small so that the 577 companies recorded yield a very high 'density'[47]. But judging from the names of individual corporate liquidations in the *Hong Kong Government Gazette*, Hong Kong company registration was not just used by the small numbers of the colonial white business elite but also by the native Chinese bourgeoisie. Prosperous examples can be found both in Hong Kong (e.g. Kwong Hip Lung, the Kowloon engineers and shipbuilders registered in 1890) and in mainland China (e.g. Nanyang Brothers Tobacco and Lao Kung Mao, Shanghai cotton spinners). Hong Kong registrations were even utilised by companies operating in Japan (e.g Kirin Beer until 1907) and elsewhere in Asia[48].

The Federated Malay States' Mines Department *Reports* mention numerous corporate tin mines mainly owned by ethnic Europeans and Chinese. The initial impression then is that the British administration of law and order created a more favourable environment for corporate development

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[45] British Parliamentary Papers *Moral and material progress,* p60.

[46] The Tata Iron and Steel Company was formed in 1907 'with a large capital' and began work early in 1912 British Parliamentary Papers, *Moral and material progress* p57.

[47] German South West Africa (modern Namibia) casts a contrasting light to Hong Kong. Here there were a few European settlers backed up by substantial armed force exercised against the indigenous inhabitants. The 116 companies in South West Africa were apparently exclusively formed by Europeans. The colony illustrates the difficulty of using population as the denominator in countries where the native population hardly participated in the modern sector at all. In the deserts of South West Africa, the native population was tiny. It is essentially the denominator, not the numerator that creates the impression of much greater use of the corporate form in South West Africa, where the corporate density was higher than in Germany itself.

[48] Wright *Impressions of Hongkong*. 196-249; Lee 'Chinese Merchants' pp. 61-86; Chung *Chinese Business Groups* pp. 53-5, 171

in the colonies – not exclusively for Europeans - than did the surrounding states. But the consequences of such development remain to be demonstrated.

Consistent with the Accominotti et al hypothesis, table 4 shows first that British Empire areas controlled by European settlers were significantly more corporation-intensive than the rest of the sample average, though on average a little less than the UK. The six countries involved were Australia, Canada, New Zealand, Newfoundland, South Africa and Rhodesia. The inclusion of the last two might be contested – Rhodesia only acquired effective dominion status in 1923 - but the critical element of the Accominotti et al. theory is a substantial body of Europeans in a strong position to bargain. Not consistent with the hypothesis is that, although the British Empire regions not extensively settled by Europeans had a lower mean number of companies than the rest of the world, the difference is statistically insignificant and the mean is far higher than for independent poor countries. For comparison French and German colonial averages are included. The French average is much lower than the rest of the world, significant on a one tailed test at the five percent level, and the figure for France itself (306) is also lower than the rest of the world. The German average is buoyed up by South West Africa (see footnote 47).

Table 4: British Empire Corporatisation in 1910 versus the Rest

	Companies per million pop (no. countries)
British Empire-European settlers control	1,207* (6)
British Empire-Indigenous majority	196 (13)
French colonies	44 (11)
German colonies	279 (6)
Independent poor countries	15 (8)

Note: 'independent poor' defined as under $900 in 1913 GDP per capita as in Maddison 2010; Afghanistan, Brazil, China, Columbia, Ethiopia, Morocco, Nepal, Siam.

The mean corporate stock value at par as a percentage of GDP for the four British Empire European settler countries for which we have data was 103% compared with 162% for the UK. For only two British 'colonies' with an indigenous majority do we have ratios of share capital to GDP, India and Hong Kong. Between them they average 252% which might be interpreted either from the triumphalist view point as the substantial benefits of empire, or from Gilbert and Sullivan's position as a sign of exploitative foreign capital in enclave economies. But the ratio is sharply dichotomous; Hong Kong's 480% hardly compares with India's 24%.

Bivariate associations among 'fundamental' variables thus suggest that some combination of democracy, Protestantism, common or Scandinavian civil law and being a European settler British Empire country provided the conditions for maximum corporatisation. All top scorers on the companies per million population indicator (the US, Canada and Norway) have three or four of these characteristics and other countries that have them are not far behind (New Zealand, Australia).

Whereas culture, law and politics can reasonably be regarded as exogenous to corporatization, trade may be simultaneously determined with it; descriptive associations are therefore less likely to indicate causation. If political and economic elites restrict competition from imports then resources will be diverted to substitute domestic production away from exports. Consistent with their theory, Rajan and Zingales find a positive correlation of trade volume/GDP with publicly listed companies for 1913[49]. Similarly our figure 2 with a much larger sample shows a close relationship between more general corporatisation and export intensity (per head) in this period of high capital mobility[50]. The figure is consistent with interest groups blocking new competition in more closed economies, but also accords with other hypotheses. These include the beneficial effects on productivity and international competitiveness of more companies, and the usefulness of the corporate form for trade over longer distances.

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[49] Rajan and Zingales 'The great reversals'.
[50] In figure 2 the US is an important outlier which, since it accounts for more than 55 percent of global corporations in 1910, might be considered troubling. But we must recognise that more than one variable influences the density of companies. The US was extraordinarily liberal in chartering companies and internal commercial regulation while being extremely protectionist in trade policy.

Figure 2: Exports and the international spread of companies
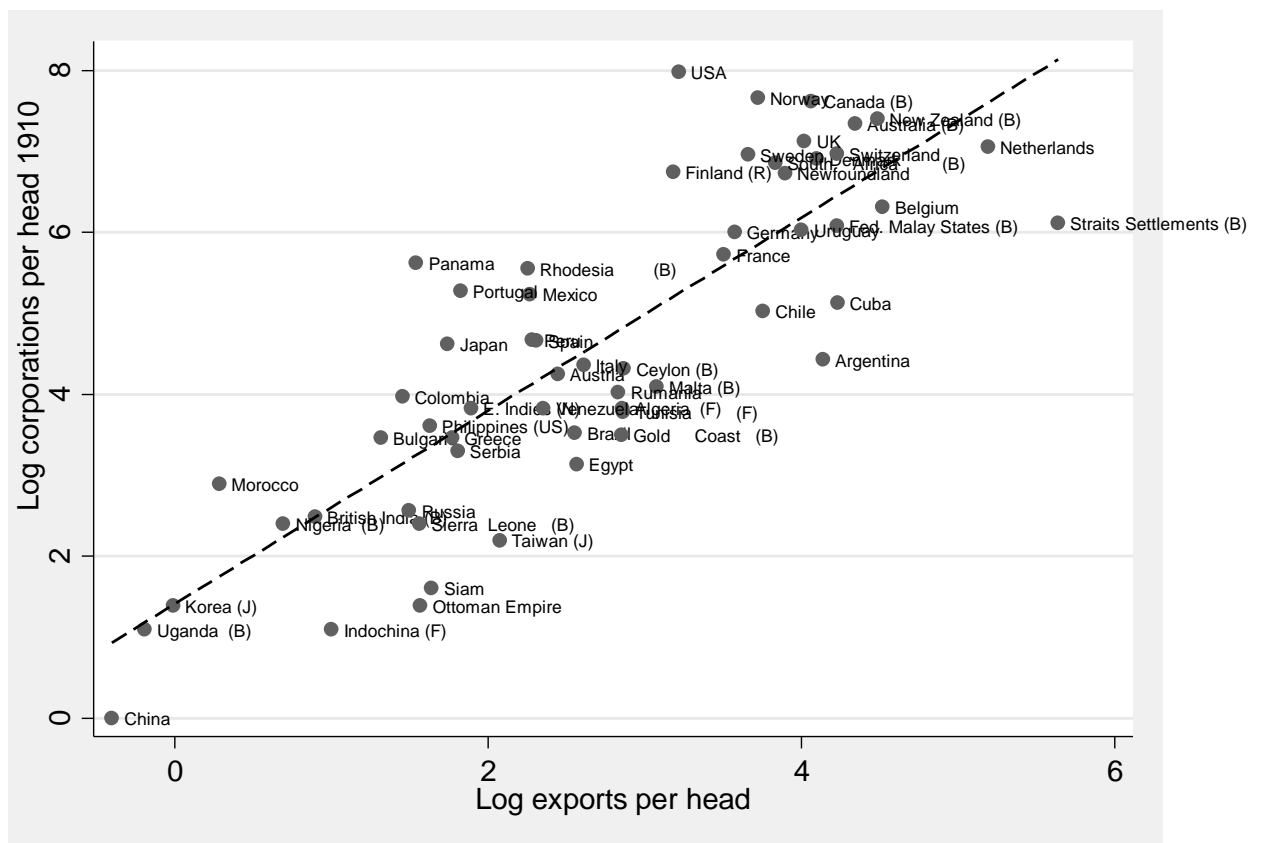
III

To go beyond simple association and establish the nature of the interplay between the variables we have been considering we use a three equation formal model. The stock of companies (C) in a country i might depend on many variables; including culture/religion, law, and politics (all Z_1 in equation 1 below), it is likely to increase as income (Y) expands demand and with exports (X), whether because companies are set up to export or because greater trade intensity limits regulatory capture.

$$C_i = \alpha_0 + \alpha_1 X_i + \alpha_2 Y_i + \alpha_3 Z_{1i} + \varepsilon_{1i} \qquad \ldots (1)$$

Capture of trade policy may be measured by lower exports (X) as a response to trade barriers or restrictive practices. But export intensity is likely to depend on other factors – such as the size of the economy. Smaller countries, measured by population (Pop) and income or GDP per capita (Y), normally trade more relative to GDP. When corporations were as beneficial as western triumphalism indicates then more corporations should have permitted or stimulated greater exports, as in equation 2 with $\beta_1 > 0$. Other, institutional or political factors are included in Z_2.

$$X_i = \beta_0 + \beta_1 C_i + \beta_2 Pop_i + \beta_3 Y_i + \beta_4 Z_{2i} + \varepsilon_{2i} \qquad \dots (2)$$

If corporations were important contributors to economic well-being, they would influence an economy through the volume and productivity of the savings that they transform into investment and future output. This in turn would raise long run national income or output per head, Y, in which case in equation 3 $\gamma_1 > 0$[51]. In addition to the channelling of capital to productive uses, human capital is widely believed to matter for utilising equipment efficiently. The best measure we have for a wide range of countries in 1910 is literacy (Lit). All other measurable influences are covered by Z_3

$$Y_i = \gamma_0 + \gamma_1 C_i + \gamma_2 Lit_i + \gamma_3 Z_{3i} + \varepsilon_{3i} \qquad \dots (3)$$

In the above equations $\varepsilon_1 \dots \varepsilon_3$ are independent, normally distributed random disturbance terms with zero means.

Matching all the variables specified in the model across countries restricts the number of economies that can be considered to a minimum of 51, using the Maddison GDP figures[52]. This means our British colony cases are restricted to Ceylon, Malaya, Gold Coast, India and Straits Settlements. But the representation of Africa can be increased by utilising Prados de la Escosura's GDP estimates[53]. These allow us to include Nigeria, Sierra Leone and Uganda in the corporations and export equations (1 and 2) as well, shifting the centre of colonial gravity away from Asia. The colonial results accordingly are somewhat sensitive to the two variables. The complete data set is in online appendix A.

Consistent estimates of the coefficients of this model require that the error terms of the estimating equations be uncorrelated with the explanatory variables. If equations 1, 2 and 3 are, in practice, simultaneously determined (all coefficients are non-zero), this condition will not be fulfilled. We therefore adopt instrumental variable methods, with both single equation (2SLS) and system (3SLS) estimates.

Table 5 displays estimates of model equation (1). At around 80 percent the explained variances of the equations are high for international cross-section data, indicating that systematic explanation of the international spread of companies in 1910 is quite complete. Equation 5.1, estimated by OLS,

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[51] With this model we cannot say anything about induced changes in income distribution, which is also potentially relevant to assessing the contribution of companies.
[52] Maddison 'Statistics'
[53] Prados de la Escosura 'Pre-Independence Africa', table B3.

covers 51 countries. The apparent GDP elasticity is a little above unity and statistically significant, while the export elasticity is less than half of the GDP elasticity. Scandinavian civil law shows a consistently high propensity to host companies even when incomes and exports are controlled. The propensity is considerably higher than that indicated by the nonetheless large and significant common law countries' coefficient. That they are both important influences on the stocks of companies despite different legal systems suggests a common factor between these two groups of countries other than the legal system. The likely factor is the ease with which companies could be created, in contrast to French and German civil law countries or independent poor economies (none of these variables were significant at the 5 percent level when included in the OLS model, equation 5.2. Surprisingly, no other bivariate association of section 2 (political regime, official religion) is generally statistically significant (equations 5.3, 5.4). Instrumenting of GDP and exports is undertaken with equation 5.5[54]. In fact the coefficients differ little from the OLS estimates of equation 5.1.

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[54] Instruments are the log of population, consolidated democracy, literacy, and the official religion of Islam. Hanson's J statistic is consistent with instrument validity, the absence of correlation with unmeasured determinants of the spread of corporations, and the KP LM statistic is highly significant in rejecting the null of under-identification. The weak identification statistic indicates that the instrumented variable coefficients may be only slightly biased (between 5 and 10% maximal relative bias).

Table 5: Determinants of the International Spread of (log) Corporations in 1910

	(5.1)	(5.2)	(5.3)	(5.4)	(5.5)	(5.6)	(5.7)
Estimation	OLS	OLS	OLS	OLS	2SLS	2SLS	OLS
ln GDP p.c. (ly)	1.223***	1.200***	1.213***	0.870**	1.268***	0.844**	1
	(5.69)	(4.90)	(4.87)	(3.06)	(4.53)	(2.77)	(imposed)
export intensity (lx)	0.530***	0.575***	0.525**	0.584***	0.655***	0.806***	0.600***
	(4.00)	(4.22)	(3.48)	(4.53)	(3.45)	(4.18)	(6.45)
Scand. civil law	1.687***	1.995***	1.781***	1.731***	1.499***	1.574***	1.759***
	(4.89)	(4.55)	(4.92)	(5.72)	(4.41)	(5.11)	(5.35)
common law	0.982**	1.283**	0.714*	0.937**	0.804**	1.581**	1.660**
	(3.33)	(3.24)	(2.28)	(3.17)	(2.64)	(2.90)	(3.33)
Fr. civil law		0.259					
		(0.73)					
German civil law		0.742					
		(1.88)					
independent poor		0.105					
		(0.20)					
Roman Catholic			0.0210				
			(0.06)				
secular			0.654				
			(1.56)				
Islam			0.0273				
			(0.06)				
democracy				0.282			
				(0.93)			
autocracy				-0.344			
				(-0.99)			
consolidated democracy				0.244			
				(0.97)			
British dominion						-0.373	-0.195
						(-0.62)	(-0.35)
British colony						-1.499*	-1.329*
						(-2.17)	(-2.53)
N	51	51	51	51	51	51	51
R-sq	0.825	0.837	0.839	0.837	0.817	0.835	0.722
instrumented					ly, lx	ly, lx	
excluded exogenous					literacy, consol, islam, pop		
weak id. stat.					11.53	9.424	
id. stat. (prob.)					9.595 (0.022)	10.47 (0.015)	
Hansen's j stat. (pr.)					2.761 (0.251)	1.537 (0.464)	

Note: robust t statistics in parentheses, $p<0.05$ ** $p<0.01$ *** $p<0.001$*

To test our version of the Accominotti et al. hypothesis indicators of British dominion or colony status are added in equation 5.6. The negative British colony coefficient is almost exactly cancelled out by the positive common law coefficient. This suggests that these colonies were neither precocious nor backward in forming companies; the advantages of common law or liberal regimes were offset by the disadvantages of colonial status, once the effects of GDP and exports have been controlled. Dominion status, on the other hand, conferred the advantages of common law or a liberal regime without other disadvantages.

A DWH test of exports indicated that the null of exogeneity could not be rejected[55]. Then, since the unconstrained elasticity is not significantly different from one, a unit elasticity may be imposed on GDP per capita and the company equations estimated by OLS (5.7). Equation 5.7 confirms the result that export elasticity is about 0.6 and the common law and British colony coefficients are about equal and opposite. According to the RZ hypothesis the responsiveness of company numbers to exports reflects the reduced chances in a more open economy for agreements in restraint of trade. But as noted above there are other- not mutually exclusive- explanations, for the association. Re-estimating table 5 with the three extra African observations does not affect the coefficient estimate significantly (the British colony coefficients are-1.580 and 1.446 in the last two equations).

Estimates of model equation 2 are in table 6. If as suggested in the preceding paragraph, exports are exogenous to companies, then companies should not be a significant influence on exports and the coefficient on companies in an OLS exports regression (such as 6.1) will reflect reverse causation. Instrumenting should render the coefficient small and insignificantly different from zero, as is apparent in equations 6.2 and 6.4. β_1 in model equation 2 can be regarded as zero.

The income elasticity of exports is significantly greater than one, once company numbers has been dropped from the specification (6.3 and 6.5). The population control for 'natural openness' has the expected highly significant negative sign in all export equations. All equations show that, after controlling for population and GDP, British colonies are significantly export-orientated, unlike dominions. Consolidated democracies are significantly averse to exporting (equations 6.4- 6.6) which, bearing in mind the Rajan and Zingales hypothesis, may imply that these polities are especially prone to special interest lobbying. A corollary may be that the opposite was true of British colonies. The coefficient on British colonies in 6.5 and 6.6 of 1.11 implies that they exported 200

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[55] Using as instruments log of population and literacy for log export intensity in specification 5.5;
H0: Regressor is exogenous
  Wu-Hausman F test: 0.80789 F(1,45)   P-value = 0.37353
  Durbin-Wu-Hausman chi-sq test: 0.89946 Chi-sq(1)   P-value = 0.34293

percent more than did other jurisdictions (exp(1.11)-1)*100). This result is reversed by adding in the three African colonies by using the Prados de la Escosura GDP series (equation 6.7); the larger British colonies group are no longer statistically significant exporters after GDP and population have been controlled. One reason may be that the African colonies were recent acquisitions compared with India, Ceylon and the Straits Settlements and the full export effects of colonial administration had not yet transpired.

Table 6: Determinants of (log.) Export Intensity

	(6.1)	(6.2)	(6.3)	(6.4)	(6.5)	(6.6)	(6.7)
Estimation	OLS	2SLS	2SLS	2SLS	2SLS	OLS	2SLS
ln. GDP p.c. (ly)	0.989***	1.364**	1.406***	1.329***	1.537***	1.539***	1.610***
	(3.88)	(3.10)	(8.99)	(3.49)	(10.00)	(10.97)	(11.25)
ln. corporations (lc)	0.210*	0.0175		0.0871			
	(2.47)	(0.13)		(0.72)			
ln. population (lpop)	-0.270***	-0.329***	-0.334***	-0.323***	-0.348***	-0.348***	-0.347***
	(-4.39)	(-4.61)	(-6.27)	(-5.60)	(-7.01)	(-6.61)	(-6.12)
British colony	0.973**	1.112**	1.129**	1.033**	1.115***	1.116**	0.493
	(2.84)	(3.02)	(3.27)	(3.03)	(3.39)	(3.15)	(1.29)
British dominion	0.0164	0.240	0.256	0.349	0.428	0.427	0.239
	(0.05)	(0.60)	(0.57)	(1.02)	(1.02)	(0.95)	(0.88)
consolidated democracy				-0.689***	-0.696**	-0.698**	-0.669**
				(-3.33)	(-2.90)	(-2.89)	(-3.15)
N	51	51	51	51	51	51	54
R-sq	0.811	0.791	0.787	0.825	0.809	0.809	0.782
instrumented		lc ly	lc	lc ly	ly		ly (Prados extended)
excluded exogenous		common law, scand civil law, literacy					As in 6.2-6.5
weak id stat		5.992	142.2	5.672	108.1		101.5
id stat		8.165	24.17	8.864	21.69		21.88
id prob.		0.0169	0.0000231	0.0119	0.0000758		0.0000692
Hansen's j stat.		0.113	0.113	0.866	1.146		0.690
j stat. prob.		0.737	0.945	0.352	0.564		0.708

*Note: Constants included but not reported. Robust t statistics in parentheses; * p<0.05 ** p<0.01 *** p<0.001*

In table 7 are estimates of versions of equation 3 of the model. Corporations and literacy are highly significantly associated with GDP in all of them. Equation 7.1 combines the basic specification with legal systems and shows that Scandinavian and German civil law have adverse impacts on income. While the second variable sign is consistent with the excessively repressive operation of German legal influenced administrations, the first suggests the Scandinavian liberal legal tradition may have erred in the opposite direction. In equation 7.2, unlike 'consolidated democracy' or 'autocracy', 'democracy' exercises a statistically significant effect on GDP but in equation 7.3 a selection of religious variables do not. (When 'democracy' is combined with the two significant legal measures it ceases to be significant, equation not tabulated). Equation 7.4 instruments corporations, bringing down the corporations elasticity a little from the OLS estimate[56]. In equation 7.5 the British dominion and colony variables are added but neither are statistically significant influences on GDP. Using the larger data set the only substantive change is that the corporations' elasticity of GDP rises and the negative effect of British colonial status on GDP increases, but remains non-significant at the 5 percent level (equation 7.6)[57]. Replacing the company numbers with a company stock value variable in the final (OLS) equation (7.7) gives greater weight (to more often) quoted big firms than does the number of companies [58]. Stock value to GDP yields a rather higher elasticity of 0.13, with 29 observations, but finding suitable instruments for the equation proved problematic. The most defensible estimate of the effect of companies on income then is the elasticity of 0.095 in equation 7.4. That is, an economy with double the number of corporations per head of another would have GDP per head higher by 9.5 percent, other things being equal.

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[56] The diagnostics indicate these instruments are valid and relevant. The weak identification test (Kleibergen-Paap rk Wald F statistic) implies there is a less than 10% maximal IV size bias.

[57] In both smaller and larger samples when the 'independent poor country' variable is introduced it is not significantly different from the British colony coefficient (larger regression sample independents are Brazil, China, Columbia, Ethiopia, Morocco and Nepal).

[58] In the US our measure will be about 550% of NYSE capitalisation (and 250% of all quoted firms), while in some countries it is only 120% of stock market capitalisation.

Table 7: Determinants of (log) GDP per head

	(7.1) OLS	(7.2) OLS	(7.3) OLS	(7.4) 2SLS	(7.5) 2SLS	(7.6) 2SLS ly4	(7.7) OLS
Estimation							
ln. corporations (lc)	0.133***	0.114***	0.131***	0.0948***	0.131***	0.144***	
	(5.17)	(4.64)	(4.76)	(3.57)	(4.18)	(3.39)	
literacy	0.0148***	0.0123***	0.0147***	0.0162***	0.0144***	0.0149***	0.0189***
	(11.25)	(7.25)	(9.28)	(12.63)	(8.51)	(6.80)	(11.05)
common law	-0.0846						
	(-0.72)						
Scand. civil law	-0.504*			-0.481**	-0.520**	-0.550**	-0.361
	(-2.38)			(-2.63)	(-2.93)	(-2.95)	(-1.53)
Fr. civil law	0.0592						
	(0.50)						
German civil law	-0.271*			-0.312***	-0.306***	-0.276***	-0.273*
	(-2.28)			(-3.88)	(-3.93)	(-3.41)	(-2.19)
democracy		0.211*					
		(2.44)					
autocracy		-0.0307					
		(-0.25)					
consolidated democracy		-0.0405					
		(-0.22)					
secular			-0.0291				
			(-0.34)				
Protestant			-0.198				
			(-0.85)				
Roman Catholic			0.153				
			(1.05)				
Islam			0.174				
			(1.40)				
British dominion					-0.0748	-0.107	
					(-0.37)	(-0.64)	
British colony					-0.159	-0.178	
					(-1.72)	(-1.93)	
ln. corp. stock value.GDP							0.133**
							(2.87)

N	53	53	53	53	53	63	29
R-sq	0.870	0.828	0.835	0.865	0.869	0.866	0.870
instrumented				lc	lc	lc	
excluded exogenous			Common law, ln. population				
weak id stat				20.70	16.60	14.83	
id stat. (pr.)				10.52 (0.005)	8.782 (0.012)	9.336 (0.009)	
Hansen's j stat. (pr.)				1.108 (0.293)	0.703 (0.402)	1.195 (0.274)	

Note: constants included but not reported. Robust t statistics in parentheses, *p<0.05 ** p<0.01 *** <0.001

For comparison with the 2SLS estimates of tables 5 - 7 we also estimated a specification of the model by 3SLS (online appendix B)[59]. This confirms the overall qualitative conclusions that openness encouraged companies, as did higher incomes. In the first equation common law and Scandinavian law regimes were highly conducive to a bigger stock of companies but in British colonies (unlike dominions) the common law effect was largely or completely offset by some other characteristic. British colonies were unusually open but their coefficient in the (second) export equation is no longer statistically significant in the slightly larger sample, as in the 2SLS estimates of table 6. Consolidated democracies were the opposite of the British colonies in their trade behaviour but, in contrast to the 2SLS results, the effects are not statistically significant. The third (GDP) equation estimates a higher GDP per elasticity of companies (0.014), and finds adverse impacts of Scandinavian and German civil law systems but no significant effect for British colonies. This implies that these colonies, in the smaller sample only, experienced slightly higher GDPs than if they had not been colonies because of the export boost to corporations (which may have been an administration effect) operating through a larger stock of companies. By contrast the dominions received a bigger lift from the common law legal system which was not offset by other administrative features. Extending the data set with the three extra African economies, diminishes the significance of the export effect as with the 2SLS estimates, so it is possible to maintain with this model that the colonial British empire made no gains as well as no losses for members. One interpretation of these results is that the Asian colonies gained and the African colonies lost.

The three equations of the model interact so that the effect on numbers of companies (C), or through numbers of companies and openness to GDP per capita (Y), of an exogenous variable such as common law is not identical to the coefficient in the estimated equation. Since we have found

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[59] 3SLS is more efficient than 2SLS in that it uses information from the covariance matrix of disturbance terms but if one equation in the system is mis-specified, all the coefficients will be biased and inconsistent, whereas with 2SLS only the one equation is affected. Moreover with 2SLS the instruments can be used more selectively, which can be advantageous.

that $\beta_1=0$, the model can be solved for companies and GDP in term of exogenous variables as below (ignoring constants and control variables population and literacy);

$$C = [\alpha_3 Z_1 + \alpha_1 \beta_4 Z_2 + \gamma_3(\alpha_1 \beta_3 + \alpha_2)Z_3]/(1 - \gamma_1(\alpha_1 \beta_3 + \alpha_2)) \quad\quad \dots (4)$$

$$Y = [\gamma_1 \alpha_3 Z_1 + \gamma_1 \alpha_1 \beta_4 Z_2 + \gamma_3 Z_3]/(1 - \gamma_1(\alpha_1 \beta_3 + \alpha_2)) \quad\quad \dots (5)$$

Z_1 includes common and Scandinavian civil law[60], Z_2 includes consolidated democracy[61], and Z_3 includes Scandinavian and German civil law.

We have established that plausible values are $\gamma_1=0.095$, $\alpha_1 =0.6$, $\beta_3= 1.5$, $\alpha_2= 1$, and $\alpha_3=0.8$ for common law. Hence the common law effect on companies is 0.8/0.819=0.98. Since C is in logs the effect is to raise company numbers by (exp(.98)-1)*100 percent=166% (table 8). But the number could be larger given the variability of $\alpha_3 Z_1$ in table 5. The four institutional and political regimes offer all possibilities of response to corporations and effects on them (table 8). Common law regimes, as the bulk of the literature implies, were the most favourable both to numbers of companies and to GDP per capita generated as a consequence. Three of the six consolidated democracies also adhered to common law. Table 8 shows that the common law system much more than offset their economic disadvantage (which we attribute to special interest lobby power).

Table 8: Contribution of institutional arrangements and political system to company numbers and thereby to GDP per capita on the eve of the First World War

	Percentage change in company numbers	Percentage change in GDP per head
Common law regime	+93	+6.4
Scandinavian law regime	+70	-25
German civil law regime	-23	-20
Consolidated democracy	-27	-3

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[60] It also includes British colonies but as we have noted this effect is cancelled out by that of common law.
[61] The ambiguity about the British colonies' effect stemming from currently available small sample sizes here warrants their exclusion from the following exercise for the moment.

British dominions adopted common law regimes and therefore attained benefits from empire through this channel. British colonies, however, do not seem to have gained nor did they through their export orientation, at least when sufficient African colonies are included in the sample. The surprise is Scandinavian civil law regimes which, controlling for their large numbers of companies, have lower GDPs, perhaps because the companies were insufficiently regulated, the opposite to German civil law regimes. Some Norwegian opinion believed that Norway suffered from having no statutory company law because people (especially foreign investors) were unsure of their legal standing. Indeed that was why Norway introduced a corporate statute in 1910. Our estimated equation implies that Scandinavian civil law administration put these countries approximately on a par with (higher income) France. With four times as many companies Scandinavia would have had a GDP per capita almost 40 per cent higher than France's for this reason, had it not been for some offset. The coefficient on Scandinavian civil law pulls back Scandinavian GDP per capita the level that would have been attained without this negative coefficient but with French numbers of companies per capita.

<center>IV</center>

We have shown that the international spread of numbers of corporations in 1910 can be well explained by a few influences – GDP, legal regime and export intensity. For interpreting this last we adopt Rajan and Zingales' hypothesis that the extent of trade openness is an indication of administrative openness, and lack of policy bias towards incumbent interest groups[62]. We have extended Rajan and Zingales' conclusions for quoted companies to a larger range of countries, measuring both quoted and unquoted companies before the First World War. Combined listed and unlisted corporations on average promoted economic development by their mobilisation of capital. On average there they were not captured by fraudsters or incompetents so that the capital was stolen or wasted, as Gilbert and Sullivan feared. This is consistent with corporations being an 'inclusive' or 'good' institution: their international spread by 1910 was associated with development across much of the world.

Official religious adherence, or political systems, did not show the predicted direct effects on corporatisation in multivariate tests, because these factors are highly correlated with the fundamental ones identified here: legal system, trade openness and level of development. But we establish that it is not common, in contrast to civil, law that matters for the international spread of

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[62] Rajan and Zingales 'The great reversals'.

companies, as might be inferred from LaPorta et al.[63]. Instead we interpret the role of the Scandinavian civil law and common law variables as reflecting liberal (laissez-faire) industrial policies that allowed corporations to flourish, consistent with Musacchio and Turner's position.[64] These groups of countries clearly gained substantially from their politico-legal regimes, although Scandinavia would perhaps have benefitted from a less laissez-faire stance. Trade openness may have lowered predispositions, or reflected reduced tendencies, to protection of incumbent interests that inhibited company formation. The consolidated democracy adverse impact on exports is consistent with interest group capture, pursuing the Rajan and Zingales approach, partly offsetting the effects of a liberal legal regime. This will have been especially significant for the United States where so many of the world's corporations were to be found in 1910.

The explicit test of our version of the Accominotti et al. hypothesis about the repressive effects of the dependent British Empire, in contrast to the settler controlled British Empire, finds support from our analysis[65]. This is consistent with colonies being more exploitative/less developmental than dominions in other areas than company formation. Company law is a public good: almost non-excludable and with low marginal costs per company after set-up. The extra costs of admitting those of subordinate status to company law (as opposed to, say, educating them) was small and excluding or limiting them was apparently never contemplated by Britain[66].

The positive impact of corporatization in 1910 on GDP suggests that the eventual massive expansion of the corporate form in both civil and common law countries – corporate numbers multiplied about one hundred-fold in the century after our cross-section of 1910 – was probably also growth-enhancing. Gilbert and Sullivan were wrong: the World Bank and western triumphalists still draw less audience applause, but –at least in this area –are nearer the mark.

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[63] La Porta et al., 'Law and finance'.
[64] Musacchio and Turner 'The test of history'.
[65] Accominotti et al., 'Black man's burden'.
[66] Although it was the policy of Japan in Korea and Taiwan until 1920 and 1923 respectively.

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