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Chapter 3.
State and Private Institutions

Daniel Bogart UCIrvine
Mauricio Drelichman UBC
Oscar Gelderblom, Utrecht
Jean-Laurent Rosenthal, Caltech

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Dborgart@uci.edu, drelichm@interchange.ubc.ca, Oscar.Gelderblom@let.uu.nl, jlr@hss.caltech.edu.

Introduction

Economic historians often view growth as dependent on societies adopting and maintaining a set of institutions. These include both political and economic institutions, such as those that distribute political power and those that enable or constraint individuals in the deployment of their wealth, talent, and effort. By institutions we will mean the rules that constrain human behaviour and their enforcement mechanisms (North 1981, Greif 2006). Obviously some of these rules are enacted by a public process while others will be private; some are explicit (written down as laws or contract) and some implicit; some rely on formal enforcement and others on private third parties; finally, some will be enforced through reputation. Here we will focus heavily on formal rules and on formal enforcement. This is not to say that informal institutions did not continue to play an important role in society or in the economy. Suffice it to remember two examples: many elements of social stratification have never had any formal recognition, and the history of investment banking between 1700 and 1870 could not be told without repeated reference to reputation. But these informal institutions were comparatively less marked by the economic and social transformation of the period we consider, when constitutions were written down in many polities, formal legislative organizations were put in place, and the body of law was reformed. Even in Britain, where no formal constitution was set down, electoral laws were changed and the legislative activity of parliament exploded.

Interest in the role of public and private institutions in economic growth has been long standing in economic history; after a hiatus, it has also revived in development economics (e.g. Acemoglu et al. 2001, Engerman and Sokoloff, 1997 Banerjee and Iyer 2005). Over the past 30 years there has been much emphasis on credible commitments to property rights. In this light, England's early success in achieving sustained economic growth is seen as the result of institutional changes that occurred in the half century prior to 1730, most notably the Glorious Revolution. The broad variety of political and economic, public and private institutions that prevailed in Europe provide a fertile, if treacherous, ground for testing the validity of the largely inductive argument that has been made for Britain. It is fertile ground because the variation in institutions is large., and the archival record makes it possible to examine outcomes both at the macro and micro levels. It is treacherous because over the course of the period we examine nearly all of the polities in Europe considered reform. The institutions that prevailed, *whether archaic or modern,* were the result of a choice. It is also treacherous because in the long run all institutions are sub-optimal; only change can allow growth to go forward. Given that Britain was the most successful economy in the period one tends to use it as a benchmark. Yet one should bear in mind the success of Italian city states, Dutch provinces in the prior centuries and Germany's growth in the twentieth. All of them proceeded with institutions that one would hardly call British. Finally, it is also treacherous because economists have been heavily focused on average output neglecting the variation. The British institutions that permitted and evolved with the Industrial Revolution also accompanied the evolution of the Irish economy. Thus we tread gingerly.

This chapter explores two central questions (1) How important were problems of sovereign expropriation relative to problems of institutional stalemate associated with fragmented authority? (2) To what extent did different parts of Europe adopt different institutions to solve similar problems in terms of property rights, infrastructure investment, and business law? It is also important to note that, if by 1870 the notion of state and nation were probably relatively similar across the continent, this was not the case in 1700. If anything has been contentious over the last three centuries it is the territorial division of Europe into sovereign states. Indeed states have had to fend off both external rivals and the resistance of regions to the centralizing efforts of national politicians. In particular, if in 1869 the territorial boundaries of polities to the west of the Alps and the Rhine resembled relatively closely those of 1700, that was not the case to the east of the same divide. Such instability in the Eastern and central parts of Europe pose obvious problems for our analysis. While we have made our best effort to consider as much of Europe as possible, the process of political change poses serious methodological and quantitative problems. The most obvious is that while taxes were levied everywhere, the entities doing so varied dramatically overtime. One need only consider the polities that were to make up Italy or those that were to come into existence with the retreat of the Ottoman Empire to illustrate the point.

In considering public and private institutions we have been drawn to have a far greater appreciation for international relations than is customary among economic historians. While many of us focus on changes in trade of goods and services, we have been time and again brought to consider the exchange of bullets and cannon balls on one hand and the exchange of ideas about how to design or reform political and economic institutions on the other. Yet the greater interconnection of these societies did not bring about a clear convergence in their economic and political institutions. Although most countries experienced changes that brought about more representation, higher taxes, legal innovation, and infrastructure investment, the mechanisms used to achieve these goals varied considerably. To some extent this is evidence of path dependence, but it was also the result of the desire of politicians to forge a national identity and thus to preserve differences between their institutions and those of their international rivals. We begin with a very broad issue, namely the evolution of political institutions. We then progressively move to a more focused set of problems: taxation, commercial law, and infrastructure investment. While obviously incomplete, these broad topics allow us to highlight the key analytical issues in European institutional development between 1700 and 1870.

3.1 Political Institutions

Between 1700 and 1870 the institutional structure of European political units underwent a series of profound transformations which defy a simple systematization. We shall attempt to gain a birds' eye view of the legacy of this crucial period in European state-building by focusing on the following three broad trends: (1) Absolutism's continued rise from the sixteenth through the eighteenth century, (2) its complex replacement by constitutional regimes in the nineteenth century. (3) The ascendance of the national state over both territorial empires and confederations of small sovereign units.

Territorial empires are the political-military structures through which a ruler or a state exerts control over multiple territorial entities, imposing different combinations of legal, economic and cultural uniformity. At any given time between the Roman period and World War I, Europe counted at least one empire in its territory, and for extended periods empires were the preferred organizational form for rulers who wished to mount a bid for political hegemony. Since the beginning of civilization empires had delivered some of the most stable means of control around the globe; yet in Europe, in the last quarter of the second millennium, they succumbed to the rising tide of national states.

One might well choose the Peace of Westphalia in 1648 as the death knell of European empires. The Habsburg and Holy Roman empires retained the title, but their effective control over territories other than their traditional bases was much diminished. The Ottomans' sway over their European lands was equally frail. The Ottomans and Russia held stronger grips over their other dominions, but these were Asian rather then European polities. Certainly by the outbreak of the War of the Spanish Succession, at the very beginning of our period of interest, national states were gaining the upper hand in Europe.

Charles Tilly (1992) has traced the superiority of national states to their absorption of the fiscal extraction system and the military organizations into the administrative apparatus of the state. Early Modern European states, as most other political units in the world until then, had largely relied on indirect (decentralized) rule for their coercion and extraction needs. While centralization was known to be more efficient, it was also much costlier; Avner Greif (2008) argues that in the Middle Ages feudal lords settled on the cost advantages of indirect rule, an organizational choice that was to prove persistent and place strict constraints on the ability of European rulers to extract resources from their subjects, wage war and control large territories. By the turn of the eighteenth century the tide was turning. Rulers increasingly took control of their fiscal and military structures, either shedding the layers of intermediaries on which they had relied to negotiate with the elites or incorporating them into the state bureaucracy. Sitting representative assemblies, quite common in the preceding five centuries, became rare sights; fiscal operations were wrestled from noble and ecclesiastical control and subject to central oversight; state finance ministries, often exercising a hefty dose of financial repression, increasingly substituted the bankers and capitalists to whom kings had often outsourced their borrowing needs; and professional mercenaries were replaced by standing armies, composed almost exclusively by nationals of the states they belonged to.

While not doing justice to the wide variety of European polities, this rough characterization illustrates what set the new states apart from the political structures they came to replace. The fate of the countries that did not implement them reveals their importance. The agrarian-based nobility of the Polish-Lithuanian Commonwealth based its power on the *liberum veto,* which allowed any member of parliament to nullify its acts and end the current session. As a result there was not much of a state in Poland by 1700. Reform, undertaken in stages between 1764 and 1791, came too late to prevent its partition between the absolute monarchies of Russia, Austria and Prussia. A similar system in Hungary had resulted in the loss of the country to the Ottoman Empire in the sixteenth century. At the turn of the eighteenth, imperial control switched to the Habsburgs, but Hungary did not regain autonomy until 1867, when a weakened Austria was forced to accept the Dual Monarchy arrangement. As a rule, small states incapable of fielding standing armies and dominated by traditional elites were quickly absorbed in the sphere of influence of the great powers; Venice's loss of its thousand-years-old independence to Napoleon being the iconic example of the fate that befell commercial and aristocratic city-states across Europe. Slightly larger states like the German principalities were likewise absorbed into the fiscal-military machines of their more powerful neighbours. The Swiss Confederation, a collection of Patriciate-ruled cantons, was likewise overrun by the Napoleonic armies, although after the Congress of Vienna it managed to re-emerge in enlarged form and having acquired a government that could call itself central in some measure. Despite its loose organization, the Swiss managed to remain independent amidst the tug of war of France and Austria, illustrating the diminishing returns to the imperial model in Europe.

There were also two polities who were at the vanguard of change. Britain distinguished itself from the European norm with the construct of the Crown-in-Parliament and the other institutional innovations of the Glorious Revolution. The grand bargain of 1689 began a process whereby the kingdom acquired a representative assembly, a strong executive, a professional bureaucracy, and financial institutions designed to cater to the needs of the state; these “sinews of power” proved to be remarkably efficient in the consolidation of the state and the projection of military power (North and Weingast; Brewer). Many of these innovations were in fact imported or adapted from the Netherlands, which also traced its own distinctive institutional path as the most successful of the handful of republics that survived in Europe. In the Dutch case, however, the process of change stalled and fiscal centralization, though long debated, did not become a reality until the French forced changes after 1795.

While representative bodies with actual power survived at the extremes of the spectrum of European states in the eighteenth century, the central mass was characterized by a marked shift to direct absolute rule. One of the main dimensions along which absolute monarchies can be classified is their success in eliminating the several layers of intermediaries -- especially the Church, the nobility, tax farmers, and local and regional courts, and assemblies consenting to taxes -- that were associated with Early Modern governments (Finer 1997). The degree to which such concentration of power at the expense of traditional stakeholders was possible varied widely, and was by no means irreversible. The elimination of intermediaries, a part of the enlightenment programme, took root with the most vigour in Prussia, Russia and Austria. These three countries were still in different stages of state-building when they became absolute monarchies, and their central governments encountered relatively little resistance from established stakeholders. Enlightened despots also ruled in Spain (Charles III and his minister Campomanes), Portugal (with the reforms pushed forward by chief minister Pombal), and Sweden (Gustav III); their reforms, however, were largely reversed by their successors. France made some strides under Louis XIV, who succeeding in co-opting the nobility and reducing the power of the *parlements* to block royal edicts. The French venal system, however, stood in the way of deeper reform. Offices were not only private and, by the eighteenth century, largely hereditary property; they also constituted one of the main forms of government debt, making it impossible to eliminate the system in the name of concentration of power. In the face of the resistance of the nobility to accept new taxes, France lacked the guarantor for new debt issues that Parliament had proved to be for England. This handicap eventually determined her mounting losses on the battlefields, and prompted the search for more radical reforms (Bordo and White; Brewer; Ertman).

The French *ancien régime* was the classic example of what Ertman (1997) has called “patrimonial absolutism,” a system in which the different bodies that constitute the state are the private property of individual elites. After the reign of Louis XIV the privileged classes were able to use their control of state institutions, most notably the *parlements*, to defend their special interests against the several attempts at enlightened reform. The confrontation between the Crown and the elites over the distribution of the tax burden would eventually lead to the French Revolution and radical change in political and fiscal institutions.

History has witnessed few moments of creative destruction so encompassing as the French Revolution. From its very outset the National Assembly sought to eliminate the intermediary bodies of the old regime. *Parlements* were dismissed; local assemblies (Etats) abolished along with all feudal privilege; the Church was dispossessed of its wealth and most of its educational and welfare roles; and almost all guilds were dissolved. The National Assembly envisioned the creation of central bureaucracies staffed by civil servants as key to improving the essential functions of government. The Revolutionaries, however, were soon fighting for their lives, and their fortunes waxed and waned with the progresses and setbacks of French armies in the battlefield. The forces that had so completely wiped out all vestiges of the patrimonial regime eventually found themselves unable to give France a stable political order, a task that fell to Napoleon and that involved the re-emergence of an autocratic empire in Europe.

Napoleon's most lasting institutional innovation was the codification of civil law. Reform was necessary to uphold the Revolution's commitment to centralization and to fill the void created by the elimination of provincial and local legal privileges. Carried by French armies across Europe, codified law was also the Revolution's most significant export (to which we shall return in section IV). While the Restoration returned most of their power to the absolute monarchs that had been deposed by Napoleon, only the most recalcitrant ones, like Ferdinand VII of Spain, went to the trouble of completely reversing the legal innovations brought on by the French.

Napoleon was, above all, a brilliant military commander who harnessed the power of citizen armies. These human tidal waves were almost immediately embraced by the all the major powers. The diffusion of conscription on a large scale completed the state's integration of the military apparatus that had begun in the previous century. As with many military innovations, citizen armies came at a price and eventually forced changes in the structure of the state itself. New bureaucratic structures were required to manage the enlarged number of troops. The new type of conflict also carried a much larger cost in terms of lives. The Napoleonic Wars caused almost as many deaths as the Thirty Years' War in less than half the time; if the casualties of the French Revolutionary War are added to the tally, the dead mount to two and a half million, one third of the lives lost in World War I (Tilly 1992, p. 165-6).

Citizens that were asked to lay their lives at the feet of the state needed good reason to do so. Pension systems to compensate the maimed and the families of the dead also had to be set up, and rulers could not turn a completely deaf ear to increasing demand for representation in government either. The second and third quarters of the nineteenth century were thus characterized by what Finer (1997) has called the "constitutionalization" of Europe. Constitutions that survived more than a few years were overwhelmingly granted by sovereigns rather than proclaimed by revolutionary assemblies. Sweden led the way in 1809 (although, strictly speaking, it was reviving the 1772 charter of Gustav III), followed by Norway and a handful of German states in 1814-19 and 1830-34. After the fall of Napoleon new restrictive constitutions were enacted in

France and the Netherlands. Very few states followed until the revolutionary wave of 1848-9, when a large number of countries enacted liberal constitutions, many of which were later revoked or modified to reduce popular representation. S. E. Finer characterizes four types of constitutions. Neo-absolutist charters preserved most of the power of the state in the hands of the ruler; some maintained legislatures, often representing the interest of the nobility and the landed elites, but with limited faculties. Spain (with the exception of its liberal periods), Holland under William I, Naples, Greece between 1843 and 1848, and a number of German states all fall under this category. The two other important types were the constitutional monarchies, in which power was delegated to ministers answerable to the king (e.g. Austria, Piedmont), and the parliamentary monarchies, where ministers responded to elected legislatures (e.g. Britain). The dividing line here is less defined, as most states started as constitutional monarchies but quickly evolved into parliamentary monarchies. For example, Austria was ruled with an iron hand by Metternich, who answered to the emperor alone; the revolutions of 1848 fatally weakened this system, and eventually resulted in the introduction of a parliamentary system in 1867. France oscillated between the two systems, with parliamentary rule between 1830 and 1848, reverting to authoritarianism under the Second Empire, increasing again the role of the legislature towards the end of the 1860s and finally becoming a parliamentary republic, the fourth type of constitutional state. By 1870 only Russia and the Ottoman Empire maintained absolute governments without constitutions.

3.2 Fiscal Institutions

In the eighteenth century European states raised revenue to fight wars. Whether they engaged in offensive warfare, or merely tried to secure the integrity of their territory, rulers had to pay their military (Brewer 1989; Hoffman and Rosenthal 1997). Europe’s most powerful states, France, England, Prussia, and Austria in particular, were able to fund either large standing armies or navies and sometimes both. They did so through a combination of taxation and wartime borrowing–the latter being largely used for the servicing of an ever growing public debt. Governments who lacked sufficient resources were increasingly forced to ally themselves to the Great Powers, or pursue neutrality instead. Thus, Spain and the Dutch Republic, as a direct result of their incapacity to increase public revenues, had to settle for a secondary role in European politics. (Van Zanden and Van Riel 2004; Tortella and Comín 2001)

Rulers were very much aware that taxation was the life blood of international competition, and in turn coloured all domestic political processes. Peter Hartmann (1979) has documented how in the summer of 1764 the French foreign minister, the Duke of Praslin, queried his ambassadors for information about the fiscal system in the countries where they were serving. At the same time Jean-Louis Moreau, Seigneur de Beaumont, *Intendant des finances*, drafted a report on taxation in France. The contents of their reports, combined with data collected by modern historians, reveal the enormous differences in government revenues that existed in the mid-eighteenth century between European countries.

[Table 3.1 about here]

The revenues of European states in 1765 mirror the overwhelming financial strength of the two great powers, England and France (Table *). The annual income of their major rivals, the Habsburg monarchy, Spain, and Prussia was two to four times smaller. Holland, often lauded for its ability to tax citizens, was a distant fifth with total revenues not that much different from Prussia or Sweden. This ranking reflects the political reality of eighteenth century Europe with France and England vying for leadership. It also shows that size mattered. For example, tax revenues per capita in the imperial city of Hamburg were as high as they were in England in 1765. The number of people living in Hamburg (or any other city state, for that matter) was simply too small for the city to play an independent role in European politics.

Yet, precisely because of the differences in size, the revenues reported in 1765 cannot serve as a measure of fiscal intensity. When measured as a percentage of GDP it becomes clear that England extracted far more revenue from its economy than its major rival France (Mathias and O Brien 1976). Between 1665 and 1800 total revenue in England rose from 3.4 per cent of GDP to no less than 12.9 per cent. In France, on the other hand, taxes slipped from 9.4 per cent in the early eighteenth century to only 6.8 per cent in 1788 (White 2001). In terms of fiscal institutions, this put France in a lesser league of nations that included for example Sweden where central government revenues came to between 5 and 10 per cent of GDP for most of the eighteenth century (Fregert et al. 2005) The truly exceptional fiscal regime was that of Holland. Here in the early 1740s government revenues amounted to at least 14 per cent of national income (Fritschy and Liesker 2004; De Vries and Van der Woude 1997)

The divergent ability of eighteenth century states to tax their subjects is confirmed by the measurement of their respective tax pressure as the number of (silver) day wages of unskilled labourers. The available data for the period 1740-1790 once again shows Holland as the fiscal champion with England catching up in the final decades of the eighteenth century (figure *). In both countries in the 1790s the average person paid up to one month worth of daily wages in taxes. France's performance did improve between 1740 and 1770 but the country trailed far behind England and Holland throughout the eighteenth century. The same was true for the Habsburg lands of Austria, Hungary, and Bohemia, where inhabitants never paid more than 13 unskilled day wages to the central government.

[Figure 3.1 about here]

One possible explanation for these differences is the substitution of indirect taxes like customs duties and excises for direct taxes on real estate, revenues from royal domains, or the sale of monopoly rights. England is the cherished paragon in terms of fiscal expansion. In 1765 land taxes brought in less than a quarter of total revenue. The remaining income was generated through import and export duties and taxes on consumer goods. Holland is the other obvious example, but here direct taxes on land, real estate, financial assets, and income still represented 43% of total revenues (Table *). France's direct taxes brought in roughly half of revenues at mid century (Riley 1986: 55-65). Countries like Prussia and the Habsburg Monarchy, on the other hand, relied even more heavily on domain revenues, land taxes, and the sales of monopolies. In 1765 the rulers of the Habsburg lands (16%), the Austrian Netherlands (16%) and Prussia (31%) still drew a considerable part of their income from their own possessions (Hartmann 1979, 318) Spain also conforms to this image. Admittedly, over one third of its revenue came from customs and excises but the remainder stemmed from colonial remittances, monopolies, and land taxes (Tortella and Comín 2001).

But if indirect taxation was so much better, why did not other countries emulate England or Holland? Surely, it was not for lack of trying. European rulers were very aware of the financial policies put in place by their competitors, and they made a continuous effort to ameliorate their own fiscal systems (Bonney 1995, 428-430). After 1700 all the major players, and many of the minor ones, instituted central bodies to monitor tax revenues, they improved the registration of wealth holdings, and appointed specialists to consider tax reforms (Fritschy and Liesker 2004; Capra 1995; Irigoin and Grafe 2006). In the seventeenth century most states had levied excise duties on some scale, and in the eighteenth century experiments with incidental income taxation were undertaken by all main contenders in the European power struggle (O'Brien 1988;White 2001; Tortella and Comín 2001; De Vries and Van der Woude 1997, 112). By 1720 most rulers had understood the detrimental effects of the debasement of their currencies.

The actual collection of taxes may not have been the problem either. The vast majority of European rulers farmed out the collection of a large part of their taxes. Tax farming offered both short term credit and a steady stream of income. The downside to tax farming was the overhead cost. For Spain in the seventeenth century it has been estimated that as much as 40 per cent of revenues stuck to the fingers of the farmers (Tortella and Comín 2001). Tax collection by government officials could be much cheaper. In Holland, for example, direct collection in the second half of the eighteenth century cost between 8 and 9 per cent of total revenue (Fritschy and Liesker 2004, 57-62). Yet it would seem unlikely that rulers settled for too high deadweight loss. Indeed the cost of tax collection in France in the late 18th century may have been as low as that of England (Norberg 1994; Lindert 2004).

Following the seminal work of Peter Dickson on the organization of England's public finance, many economic historians today stress the crucial role of representative government. The Glorious Revolution of 1688 gave a central representative body the right to vote on public expenditure. In exchange for control over the Crown's purse, Parliament voted for higher taxes. This development ran counter to the fleecing of representative assemblies that characterized continental monarchies, whether it was Spain, France, or the absolutist states of eastern Europe. Here the Dutch Republic would seem to be the odd one out, for despite its representative government and high levels of indirect taxation, it could not raise enough money to continue the struggle for military primacy after 1715.

But early modern states did not just lack parliamentary control of taxation and expenditure. These were also composite monarchies, amalgamates of numerous territories with their own traditional liberties, political structures, and fiscal systems. In France, Spain, and the Habsburg lands the central government tried but could not overhaul these institutional barriers that history had created (Dickson 1987; Irigoin and Grafe 2006). For instance, the inhabitants of the *généralités* of Paris, Lyon, and Rouen always contributed far more money *per capita* than the population of Brittany, Burgundy, or Provence (White 2001). But even the more successful fiscal regimes suffered from this kind of fragmentation. England had to settle for very low revenues from remote Scotland (O'Brien 1988) The central government of the Dutch Republic was engaged in perpetual negotiation about tax transfers from its seven provinces.

A related problem was that of local particularism. Many towns in early modern Europe had financial institutions far superior to those of the central government. However, traditional liberties allowed them to keep tax revenues to themselves (O'Brien 2001; Dincecco 2007). In France, for example, local control over the levy of land taxes made it difficult to change rates and raise total revenue. Besides, there were fixed tax quotas between towns and regions. The loss of income to the central government was particularly important when local economies were thriving, like the towns of Flanders and Brabant in the Austrian Netherlands, the urban republics of the Swiss Confederation, or the ports of Catalunya. And just like the provincial particularism that haunted composite monarchies it was almost impossible to break urban autonomy. In the case of Holland it had been a major political crisis, indeed the imminent defeat in the face of Spanish troops in the early 1580s, that led towns to hand control over two thirds of local revenues to the central government (Fritschy 2003).

Finally in many regions, noblemen, clergy, and sometimes even larger sections of the population, benefited from tax exemptions. Old privileges or political clout did much to reduce the tax base of *ancien régime* governments. In order to maintain their standing in Europe, the rulers of France and Austria could not but revert to ad hoc fiscal policies which complicated rather than simplified the management of public finance (Dickson 1987; Bonney 1999). This was not just costly in terms of administration, the arbitrary nature of many emergency measures also reduced tax morale. Modern studies show that when properly assessed, and equitable in terms of the burden on each taxpayer, people will be willing to pay their taxes even without heavy enforcement (citation ?).

Fiscal centralization was the obvious solution to these problems, but achieving this required a major redistribution of political power in all European states with the exception of England (Dincecco 2007). This is why the French Revolution and the subsequent Napoleonic Wars were so important. France had to raise taxes and loans to finance its conquest of Europe; the countries it overran had to contribute to the French war chest; and England, as the only remaining opposition, had to fund an unprecedented military campaign. The first reaction of rulers was to levy additional taxes on wealth and income. In England for the first time Pitt the Younger introduced income taxes to pay for the troops. The Dutch Republic also reverted to income taxation to cover expenses in the late eighteenth century (Fritschy 1988). It was not until Napoleon's conquests that the governments of Prussia, Spain, and the Dutch Republic were forced to centralize their fiscal systems (Poell 2008).

As we saw in section 1, the political reconfiguration brought about by the Congress of Vienna after Napoleon's defeat (1815) reversed part of these changes. Fiscal centralization did not pay off in the new Kingdom of the Netherlands because the absolutist rule of William I prevented adequate parliamentary control over public finance until the liberal 'revolution' of 1848 (Van Zanden and Van Riel 2004). In Spain, several decades of internal strife between absolutists, reactionaries, and liberals preceded the unification of the fiscal system in 1845 (Tortella and Comín 2001). The English stopped experimenting with income taxes and continued to rely on excises and customs – even if they managed to reduce collection costs to below 5 per cent (Lindert 2004). The problems with fiscal centralization in most countries are reflected in the share of indirect taxes in total revenues. In 1870 central government typically raised only between 20 and 40 per cent of their revenue through taxes on wealth or income. The remainder came from customs and especially after the liberalization of trade in the 1850s and 1860s, excise duties (Flora 1983; Mitchell 2003).

Thus it comes as no surprise that central government revenues grew little if at all in most countries. The tax burden was often no higher in 1870 than it had been a century earlier. Most central governments still only raised between 5 and 10 per cent of GDP in taxes. In France taxes had actually fallen from 10.4 per cent in 1820 to 6.9 per cent of GDP in 1870. In the Dutch Republic central government expenditure as a percentage of GDP fell from a high of 14 per cent in 1840 to less than 8 per cent in 1870 (Van Zanden and Van Riel 2004). This decline is partly explained by the higher rates of growth of the economies—absolute revenues were increasing because aggregate GDP was growing faster after 1815 than it had before 1789. Hence in Northwest Europe state coffers were relatively flush. To be sure, in Southern and Central Europe the picture was not so rosy.

The moderation of the tax burden also involved the expenditure side, where the choice of rulers to refrain from European warfare figured most importantly. England, France, and Spain continued their struggle for Empire outside Europe but these colonial wars were much less costly – or lost early on, as in the case of Spain. At the same time governments were unable, or unwilling, to offer anything but military expenditure in exchange for the taxes they levied. In that sense really very little had changed in Europe between 1700 and 1870. Central governments were perfectly capable of designing fiscal institutions to raise money but they used these revenues only to fight wars, or service the debts issuing from warfare. They did not consider tax increases for a more generous provision of public goods. In this respect it is telling that most 19th century governments preferred to pass on the burden or benefits of infrastructural works to local governments or the private sector.

3.3. Business law

Our period includes the Industrial Revolution and its spread as well as a more general set of changes: the scale of enterprises in some sectors (finance, transport, and parts of manufacturing) exploded, and the extent to which raw material and finished goods were exchanged over long distances also saw a massive increase. In the traditional historiography, these new economic developments created problems for the old ways of carrying out business. The new firms were larger and had more illiquid capital than before and if they were to operate at proper scale they were dependent upon having access to both long term and short term credit. Obviously no one would create such firms if their investments were not protected from the rapaciousness of private and public agents. In other words debt and equity claims had to be secure. Thus, technological change drove the demand for legal change and in well ordered polities and well performing economies the political process responded with legal innovations. In more 'backward' economies, growth may have been held hostage to the inadequacies of business law—in particular by restricting incorporation (Landes 1969, Freedeman 1979). In another more recent literature law itself is seen as a constraint, with common law countries (the sole exemplars in Europe being Ireland and the United kingdom) being the most responsive to economic forces (see Laporta et al 1997). Countries that derive their law from Roman and later French codes would be the least responsive (beyond France these include the entire set of countries that border the Mediterranean and the majority of the countries that were carved out of the Ottoman empire.) Germanic and Scandinavian traditions fall somewhere in between. Implicit in this view is that the codes themselves are rigid and fail to change.

Neither argument is very satisfactory. Indeed the first business corporations were formed in the dawn of the 17th century, while general incorporation laws were passed mostly in the second half of the nineteenth century *after* industrialization was well on its way. The second argument is wanting because it takes as fixed a set of institutions that are constantly evolving. The arguments about legal origin can provide a useful framework provided one bears in mind that codes were typically quite short and much was left to the interpretation of judges. Judges in common law countries had an obligation to take precedent and statute into account, and on the continent there is growing evidence that the same was true. In fact one of the key elements to rule commercial law all over Europe was the accumulated legal expertise that reached back to the Middle Ages and in many cases to Roman law. We thus turn to the legacy of the past before confronting the breaks that came with the French Revolution and then general incorporation laws

In the pre-industrial era nearly all firms had a single owner and the few that had more were almost exclusively partnerships. There were exceptions, such as shipping and in mining, where different forms of joint stock enterprise had arisen early on (Harris 2000). In shipping and mining enterprises equity investment could be traded and investors had limited liability, but in other ways they resembled partnerships because the 'market' for the equity was typically very restricted—either to individuals engaged in the venture or to residents of the same town. In the case of partnerships and sole proprietorships, liability was unlimited and equity could not be traded. Business law as it related to equity in this sense was quite uniform throughout Europe because it was primitive. Even in silent partnership contracts (legal only in parts of Europe) equity was personal and very difficult to trade. In 1700 the few corporations that existed were intimately bound up with the business of the state or of the ruler.

The central area of innovation from the Middle Ages to 1700 had actually been debt (Clavero 1996 ch1). By the beginning of our period all the legal structures necessary to issue tradable debt securities was in place all over Europe (save obviously for the parts under Ottoman rule). If we consider commercial debts, the capacity to endorse both letters of exchange and commercial notes was general *including* the Christian and Jewish communities of the Ottoman Empire. Beyond commercial debts the creation of mortgages and other private obligations by individuals outside of commerce was also well established. To be sure states placed many restrictions on the expansion of the debt market--the first being the regulation of interest rates (Hoffman et al 2000). Throughout Catholic Europe usury laws had been reduced to the stipulation that interest rates should not exceed a level set by the Crown (not the Church) and the parties to a loan could not legally specify both interest and term in a contract. The second restriction of far lesser import was the distinction made between individuals engaged in commerce (trade and manufacturing) and other private persons; in theory the state controlled who could call themselves a merchant and issue securities that could be endorsed and thus traded. In practice, however, it seems that few states made much effort to restrict entry into commerce. The third restriction varied far more from place to place and over time: access to exchanges depended on state authorization.

During the eighteenth century itself the extent of change was limited by the legacy of the financial crises that followed the end of the War of Spanish succession. In Britain, though the crisis was successfully resolved, the failure to repeal the Bubble act severely constrained the development of new forms of equity claims. In France, and Holland the government adopted an equally restrictive stance towards privileged corporations. Hence limiting the extent to which business law changed.

From a larger perspective, the eighteenth century can be thought of as a preparation for the changes of the Revolution. The passage of the Code de Commerce in 1673 marked an important phase in the process of unification of commercial practices that would only gather steam over time. While economic historians have often written the economic history of Europe as driven by liberation from oppressive central rulers, in many place growth was driven by a process far more akin to liberating the forces highlighted by Adam Smith. In Freedom and Growth, Larry Epstein (2000) emphasized how economic performance was hindered by the vast array of local privileges and practices. It should be noted that these local privileges were probably the most important bulwark against the intrusion of rulers in the local economy. In England such protections were essentially inoperative because it was a small country that from the time of the Norman Conquest enjoyed the costs and benefits of a very centralized and unified set of institutions. The eighteenth century marks a major step towards creating unified economic spaces within polities. The steps include the development of an ideology of unfettered trade, the success of measures of legal unification like the Code de Colbert, and a steady attack on internal trade barriers.

In commercial law, as in other matters, the French Revolution was a watershed, both because of the pace of reform at home and because battlefield successes ensured a wide diffusion of laws enacted in Paris. The most enduring institutional export products were a series of codes (most famously civil, penal, and commercial) whose original ambition was to harmonize and modernize French law. Prior to the Revolution France was divided into more than two dozen large administrative units (provinces) many of which had been granted charters to guarantee their specific legal heritage and fiscal autonomy. [1] Each province had a special court (Parlement) to hear appeals and to ensure that any new law made by the king did not contravene the region's customs and local precedents. While there is some debate as to how extensive variation in commercial practices might have been there is no doubt that there was considerable variation in property, credit, and inheritance laws.

The codes were envisioned during the Revolution but drafted under Napoleon's rule and they have often been viewed as the manifestation of the Emperor's concern to preserve the capacity of the executive to intervene in matters of law at will. On a more prosaic level many of the key choices of the codes reflect the desire to break with the past. Because the past had been an aristocratic regime with male primogeniture and on privileges based on birth right, residence, occupation or even wealth, the civil code attempted to provide family and property law that was blind to all distinctions.

[1] The regional specificity of law was an attribute of nearly all but the smallest sovereignty in Europe including the United Kingdom as the example of Scottish banking bears out.

Legislators also seem to have been concerned with limiting the ability of individuals in position of power, and so they wrote provisions to protect those that were perceived as weak. The Civil Code's rules for the division of estates left limited room to testators for tilting their bequests towards any particular party. There were also quite specific rules for the administration of the property of minors and incompetents, the protection of women's dowries against their husbands' creditors and the rights of debtors over creditors.[2] The code mandated simple rules for the rental and sale of property among private persons that made individual side contracts difficult. At the same time the reforms provided essential elements of a property rights regime that was designed to secure both real property and private debt claims through title and lien registries. In a move that was perhaps less modern, the central role of notaries as mediators of family affairs was preserved. Although rarely required, the intervention of notaries in civil matters was pervasive. The Revolution had tried to make them strict civil servants with position allocated on the basis of a competitive exam, but that proposition failed and the Consulate quietly sanctioned a return to regulated market for positions. Notarized contracts retained a critical advantage over purely private transaction: an agreement drafted by a notary was deemed valid and anyone who contested its execution bore the burden of proof.

It is worthwhile to emphasize that relative to the mounds of precedent that British law made relevant in 1800, or to what would have been the body of law in any European country in 1789, the codes were short and perforce incomplete. The 19th century saw a steady stream of legislative action intended to correct gaps in the code (even though the code itself was not revised); even more important was the torrent of appellate decisions that served to complete the code. Although appellate decision were not published in full as they are in common law countries they were abundantly referenced in legal manuals that were the key companions to the code and the laws of the nation.

The commercial code enacted in 1807 was an equally important document, for it created an entirely different space for trade and industry--commerce. These activities were as needing a set of rules that were different from the stolid ones of the civil code. If the civil code was debtor friendly and procedurally slow, the commercial code was creditor friendly and emphasized speedy resolution. If the civil code put obstacles to side contracts, the commercial did the reverse, leaving people of business considerable leeway to devise the institutions that would govern their interactions. If the civil code gave a central role to government officials (notaries and judges), the commercial code was administered by special courts staffed by commercial people who relied heavily on arbitration by experts in the particular branches of activity where a problem arose.

By the time the codes were enacted Napoleon's empire was at its peak, which ensured that much of Europe was pushed to adopt these legal reforms. The codes were adopted in the Netherlands, parts of Germany, Switzerland, and parts of Italy and Spain because those areas were either annexed to France or ruled by one of Napoleon's relatives. Between 1815 and 1860, most of these countries rewrote their code with sometimes substantial alterations. Hence continental law was never unified and differences were sometimes quite large. For instance, only France had a court dedicated to commercial matters, and no other place gave quite as important a role to notaries in

[2] It these matters it largely reprised Roman law, but keeping with tradition was as much a choice as was the break that created equal division of estates.

private contracts. Even where the codes themselves were not imposed, such as in Prussia or Austria, reforms occurred. In Prussia, the monarchy allied itself with modernists who chose to respond to the Napoleonic challenge with a series of institutional changes that culminated in the rise of a Prussian set of codes that are related to the French ones. Important differences seem to have their origins in the need to conciliate the demands of most agrarian East Prussia and the more commercial west. In the nineteenth century the need to gain acceptance from the parts of Germany that were not under Prussian rule also dampened the capacity of the German code to set up a simple set of unique institutions. Scandinavian countries also adopted their own wholesale legislative reform.

[Table 3.2 about here]

Russia and the Ottoman Empire escaped the early nineteenth century spread of civil and commercial law reform associated with codes. It is important to note however, when new countries emerged in Mittel-Europa they all adopted some form of code. Some wanted to forsake their Ottoman, Russia or Austrian past. When they did so, it became increasingly unlikely that they would base their codes on the French originals. Indeed the French codes though regularly amended by law were never revised in the nineteenth century, it was better to start from those of Spain or Italy which included the more recent legislative activity.

In recent years it has become common place to put emphasis on the capacity of the executive to intrude in the judicial process on the continent relative to common law countries. The evidence that codes marked a massive increase in centralization and uniformity is indubitable, but scholars who would be tempted to criticize such a change should bear in mind lack of regional institutional diversity within England. The evidence that codes were an important source of differences in economic performance, and in particular that they can explain the continent's slow industrialization is thin, not to say inexistent. It is also true that another hypothesis needs greater investigation, namely that the codes and the failure to separate the judiciary from the executive branch of government lay the ground work for institutional change in the twentieth century that was less favourable to market-based economic change.

The corporation is probably the most emblematic public private institutional collaboration of the period of early industrialization, and success or failure at deploying corporations has been a frequent explanatory trope in economic history.[3] Until the middle of the nineteenth century each corporation was created as a specific delegation of authority by the sovereign to a group of individuals (Mousnier, Epstein). A corporation's purpose could include local administration as in municipalities or provincial governments, the provision of public services as in venal office holders (who were almost always grouped in corporations), or in the case of penitent societies. It could also include the collection of the crown's taxes as in the famous corporation of general farms in France. These organizations provided valuable antecedents to what would become the business corporation, because they were the first to depersonalize an association that had non-religious purposes. From our perspective corporations have three important attributes: legal personhood (they could sue and be sued in court), a life span independent

[3] Landes (Prom U.) Allen (steel), Chandler (Scope and Scale), Freedeman (Triumph)

of that of its initial membership, and delegated management.[4] From the Middle Ages on there had been a close association between corporations and material gain, but that gain was typically associated with the provision of some public service. The Great Discoveries changed all that because in many cases Europe's pursuit of empire and treasure depended on corporations (Harris 2006).

There were two obstacles to an early expansion of corporations in Europe in the eighteenth century. The first was that corporations remained privileged institutions and most rulers could not afford to liberalize rules about their creation without a serious drain on their treasury—indeed rulers expected to collect handsome fees for authorizing new ones or taxing their monopoly profits. The other obstacle was the foul reputation of equity claims after the collapse of the financial bubbles of 1719-21 in Amsterdam, London and Paris. Nevertheless at the end of the eighteenth century, corporations were making a come-back. That movement had its roots in two completely different set of endeavours: public utilities (canals and other improvements) and financial enterprises (insurance companies and investment funds). In both cases the corporation was a desirable organization relative to alternatives because it allowed the spreading of risk (relative to a sole proprietorship), the earning of a return by principals (relative to a trust), and protection from dissolution in case of the death of a principal (relative to a partnership). Purely industrial enterprises, however, did not gain easy access to the corporation's advantages. They flourished only in canals and insurance where handsome profits helped investors forget the losses of the 1720s.

The writers of the commercial code followed common practice and allowed for corporations but only by permission of the state, but facing demand for joint stock enterprise they allowed the free formation of share-issuing commandites. These enterprises offered limited liability and tradable equity to silent partners but required that managing partners take on full liability. These firms were given considerable leeway in designing their governance. While meetings of the shareholders (silent and general) could wield considerable authority, between meetings the general partner had the run of the firm. This form of enterprise was popular both in France and the Netherlands and must have reduced the demand for corporations; the history of its take-up in Europe has yet to be written. Between 1800 and 1850 the general rule was that some corporations were formed in every country but not very many, except in Belgium (where nearly as many were formed as in France).

In the 1840s and 1850s the rules for creating corporations were liberalized. Britain acted first. In part because common law did not allow silent partnerships, it faced a greater demand for a new joint stock form of enterprise than the continent. Britain allowed for corporations with liability in 1825, then double liability in 1844, and finally without liability in 1855. The continent followed in dispersed order with France enacting its law in 1867 and Germany in 1872, Sweden in 1895. It would be left to the next century to ponder the difficult problem of regulating and governing corporations.

3.4. The State and the Infrastructure Sector

[4] Limited liability was less central and a relatively late development. Tradable equity was no doubt important to the small number of very large firms that came into being in after 1700 but even today the share of corporations that trade of exchanges is small. Most corporation are privately held.

The infrastructure sector provides more fertile ground to the study evolution of state policies and their effects on the economy. It also reveals much about the role of European political institutions in influencing economic development. In this section, we provide a brief overview of state involvement in infrastructure across Europe and discuss whether state intervention (or the lack thereof) affected the provision of infrastructure. A key theme throughout is that political institutions, like restraints on the behaviour of the state or the degree of fragmentation, played a key role in explaining the patterns of state intervention and infrastructure development. The historical record also suggests there were interaction effects in which countries were spurred to reform their infrastructure in response to their neighbours efforts.

With rare exceptions, the state was always involved in the regulation or provision of infrastructure. The construction of roads, bridges, canals, harbours, street lighting, water supply, and railroads all required that property be purchased. As these projects were specific to a location, property-owners could hold-up a project by demanding a large price. At some point, every state addressed this hold-up problem by invoking some form of eminent domain, establishing the rights-of-way for infrastructure providers (see Milward, 2004). States intervened further by regulating the fees and entry requirements for private infrastructure providers. States were also involved in the financing and operation of infrastructure. In all these policies there was substantial variation across Europe. In the following sub-sections, we describe government policies in three of the most important types of infrastructure: roads, waterways, and railroads.

Road Policies

In 1700, most European road networks were maintained by local authorities, such as villages, cities, manors, and churches. Some local authorities had the right to use conscripted labour (known as the *corvee* in France and statute labour in England), while others could collect tolls usually through some ancient right. Local authorities faced little oversight and had few fiscal devices. Not surprisingly, roads were not maintained and new investment was rare.

Many European states took steps to reform the maintenance and improvement of their road network. One of the unique aspects of English road policies was the mixture of local initiative and Parliamentary oversight. Local groups submitted petitions requesting the right to form a ‘turnpike-trust’ and improve a particular stretch of road in their area. Parliament usually named the petitioners as trustees and gave them authority to levy a maximum schedule of tolls. Turnpikes were established on all the major highways linking London with major provincial cities. By 1840 there were over 30,000 km of turnpike roads in England and Wales. Most were well-maintained, permitting the use of large wagons and fast coaches (see Bogart, 2005).

The Southern Netherlands is another area that had an extensive turnpike network. It operated similarly to the English network with one major exception: most of the initiative for projects came from the Austrian government, which encouraged local authorities to undertake road improvements. The tolls were abolished by French authorities during early 1800s but they were reinstated in 1814 (Milward and Saul 1970, p. 441). Over the next few decades, the network increased to include 3000 km of well maintained roads in Flanders, Brabant, and Hainaut (Ville 1991, p. 16).

Spain and France had a different approach to their highways. In the eighteenth century, the crown designated some highways as royal routes and others as local roads.

The French royal routes received funding from the central government and were constructed and maintained by the *Ponts-et-Chaussees*, an elite group of engineers. Secondary roads were maintained by communes, generally through the use of *corvee* labour. By 1800 France had 43,000 km of roads, over half of which were royal routes (Price 1983, p. 37).

Napoleon often spoke of the need to expand the road network, especially the national roads, but little was accomplished during his rule. After 1814 the French central government increased its funding of national routes, and the primary network increased from 25,700 km to 34,000 by 1840 (Price 1983, p. 37). There were also changes in the funding and organization of secondary roads. A French law of 1836 gave communes the right to levy a 5 percent tax from the four main direct taxes in their jurisdiction. It also allowed departmental councils to impose financial contributions from communes located along roads of regional importance. The law appears to have been quite successful in that spending on local French roads increased by nearly 50 percent between 1837 and 1850 (Price 1983, p. 41).

How did government policies affect road infrastructure performance? Performance can be measured along several dimensions including network size, quality, and price. Here we focus only on network size because it is easy to measure and it proxies for investment. Table 3.3 shows the number of road km per capita and road km per square km in the four countries that invested the most in their road networks. England and the Southern Netherlands had significantly higher road km per capita and per square km than France or Spain. The data raises an intriguing question, namely would France and Spain have had a larger road network with turnpikes rather than royal roads? It is not possible to address such a counter-factual here, but there are reasons to believe that the adoption of turnpikes in France or Spain would have had a much smaller impact than they did elsewhere. By the eighteenth century, English political institutions placed significant limits on the ability of Parliament to arbitrarily change tolls or substantially reduce the rights of turnpike trusts. The high degree of regulatory commitment encouraged private groups to make investments in the road because they expected that Parliament would uphold their rights (Bogart, 2007). It is unlikely that the French or Spanish crown could make such commitments, and thus private investors would have been hesitant about making such investments.

[Table 3.3 about here]

Political fragmentation also stifled investments in road networks. One of the main advantages of a road (compared to rivers and canals) is the ability to create a continuous line of communication across a great distance. There was no transcontinental highway and very few trans-national highways in eighteenth century Europe. It is hard to imagine a turnpike road passing through multiple jurisdictions, because each governing authority would be tempted to set a higher toll than the others. A large absolutist state, like France or Spain, could conceivably solve this problem, but in many cases the crown did not have the political will or resources to control all of its sub-units. States also found it difficult to tax outlying regions, which again diminished its incentive to build trans-national highways.

Waterway Policies

Waterway improvements included maintenance for navigable rivers, the building of canals, and widening or diverting the path of rivers. Some areas were fortunate in having many navigable rivers already in the seventeenth century, but even in these cases there was substantial need for investment. The Dutch Republic was the first country to build and maintain an extensive network of navigable waterways. The network was financed and owned by municipalities like Utrecht, Amsterdam, and Harlem who received rights from provincial estates, like Holland. The estates issued *octrooi*, which specified a set of privileges like rights-of-way and the fees that could be charged by municipalities. The network expanded rapidly in the seventeenth century as provincial estates responded to the requests of many cities who desired to expand their commerce by building canals. By the late seventeenth the Dutch had the most extensive waterway network in Europe, including over 650 km of canals (De Vries 1978).

England tried to emulate Dutch waterway policies during the seventeenth century. Individuals began approaching Parliament or the King requesting rights to improve rivers and collect tolls. Few of these proposals were sanctioned largely because Parliament opposed the crown's right to grant patents, and the crown sought to undermine Parliaments ability to grant rights through acts. The Glorious Revolution of 1689 established Parliament's authority, and afterwards all river improvements were authorized through acts. River acts were very similar to turnpike acts because they were initiated by local individuals and granted rights-of-way and the use of tolls. The sanctioning of waterway improvements flourished again after 1760 with the building of canals. By 1840, England had over 7000 km of navigable waterways, rivalling the Dutch as having the most extensive waterway network in Europe (Willan, 1964).

France did build canals during the seventeenth and eighteenth centuries though the network would be nowhere as dense as in England or the Low Countries. Many of the early canals were built by private parties through privileges granted by the king or assemblies like the estates of Burgundy. However, most of these projects were not successful and the state began financing some canals in second half of the eighteenth century. The French Revolution slowed the pace of improvement and by 1814 little progress was made. In the 1820s, Francois Becquay laid out a plan to build a large network of waterways through concession contracts. Becquay appears to have had the English model in mind when he devised his scheme, but few investors showed a willingness to invest in French canals (Geiger 1994).

The French government was keen to develop the waterway network and so it devised a 'public-private partnership' to implement the Becquay plan. The state borrowed from private investors, mostly Parisian financiers, and gave them the right to split the profits once the government repaid the debt. They also gave private investors the right to veto any toll reductions. Relations between private investors and the government were often confrontational, especially regarding the tolls and the return paid on the private bonds. The French state eventually bought out the companies interests in the 1870s and began financing many of its own canals (Geiger, 1994). By the end of the 1870s, the French waterway network was largely government-owned (Ville 1990, p.38).

Belgian waterway policies were heavily influenced by the Dutch and the French. There was substantial investment in the 1820s when the region was under Dutch rule. Provincial authorities owned and financed well over half of all waterway projects and another substantial portion was owned by private concessions (Waterway Association, p. 47). In the 1860s, the state began purchasing private canals and assumed control over many provincial canals. Maintenance and construction were administered by the *Pont-et-Chaussees*, which operated similarly to the French.

Germany and Russia made relatively few improvements to their waterways before 1870. Most of the German improvements were initiated and financed by the provinces. For example, King Ludwig of Bavaria built and financed the Ludwig canal in the 1830s and 1840s which connected the Rhine and the Danube (Ville 1990, p. 33). State ownership and financing increased in the 1870s and 1880s as the unified German state undertook a number of waterway projects. In Russia, Peter the Great financed and built most canals, like those linking Moscow with St. Petersburg (Fink, 1991).

A comparison of waterway development across countries in table 3.4 shows that networks were the largest in England, the Dutch Republic, and Belgium, where private or municipal authorities had a substantial ownership and financing presence, and they were smaller in France, Germany, and Russia where the state played a direct role in financing, planning, and ownership. Although state-owned networks were smaller, they did perform better on other dimensions. For example, shippers often complained about the varying toll rates and the need for trans-shipment on Dutch and English canals. State-owned canals in France, Germany, and Belgium also competed with railroads and reduced their fares (Waterways Association).

[Table 3.4 about here]

It is interesting to consider whether French, German, and Russian waterways would have been more extensive if they adopted the waterway policies of the English, Dutch, and Belgians. As Reed Geiger suggests, the problems of building the French canal network were less the result of state enterprise than its cause (1994, p. 250). Geiger argues instead that the expected rate of return on French canals was too low to attract private investors because of low levels of urbanization and commercialization. As a result, he suggests that the state was the only entity willing to finance the network.

An alternative explanation for the slow development of the French waterway network was the state's inability to protect the property rights of companies. The lack of commitment is apparent in the French state's decision to reduce canal tolls against the wishes of the companies who had the legal authority to veto such changes in the original concession contract (Geiger, p. 249). Episodes such as these would have made companies hesitant about undertaking investments, and may have made state-ownership the only viable form in France, and perhaps Germany and Russia as well.

Political fragmentation also stifled waterway development, but for different reasons. Rights-of-way were especially important for canals because they cut through farmland. In eighteenth century France, canal promoters had difficulties negotiating with landowners in multiple jurisdictions. In theory, the Crown could force landowners to sell their property, but some local groups were able to appeal rights-of-way decisions in courts that met infrequently (Rosenthal, 1992).   Political decentralization could also cause problems in approving projects that crossed boundaries. In the Dutch Republic, estates could not issue an *octrooi* for projects outside their province. The result was that few of these canals crossed provinces. Moreover, some projects were delayed because any city in the estates of Holland could veto an *octrooi* (De Vries 1978, pp. 31-32).

Railroad Policies

Railroads were the most important infrastructure investment in many European countries, particularly in the East. Every European state quickly realized the importance of railroads for economic development, military security, and political unification. As before, the state had the choice of leaving railroad planning, construction, and operation to private companies, but many states decided that subsides or direct ownership was necessary (or more desirable) for railroad development.

Three types of policy patterns were common before 1870: One group of countries had private ownership combined with state subsidies, planning, or construction (i.e. the U.K., France, Spain, Portugal, Austria-Hungary, Russia, and Italy). A second group started with private involvement but shifted to greater government involvement (i.e. Netherlands, Denmark, and Norway). The third group had a mixture of state and private participation from the beginning (i.e. Germany, Sweden, and Belgium).

The U.K. and France had the highest degree of private ownership up to 1870. It also appears that both followed their policy model for canals when designing railway policies. In the U.K., Parliament passed acts giving companies rights-of-way and the authority to levy fees. The companies made substantial investments without any subsidies from the government. There were complaints, however, about over-building, the lack of coordination between companies, and high fees.

In France, the *Ponts et Chaussées* was responsible for planning and engineering. The state offered companies the right to lease the lines for 99 years and guaranteed the dividends on securities issued for new construction. Out of this system emerged six large railroad companies that owned most of the French railroad network. The policy was fairly successful in that Paris was connected by rail with all regions of France.

Spain also offered concession contracts to companies, but in this case the private financing largely came from foreign investors, like the Rothschilds. There is some evidence that contracts deliberately allowed the Rothschilds to earn high profits from the construction of railroads. According to Philip Keefer (1996), the high construction profits were meant to insure the Rothschilds against the risk that the Spanish government would expropriate their investments.

Keefer's analysis points to a problem faced by many countries that relied on private or foreign investment before 1870: the state could not commit against expropriation or other types of arbitrary behaviour that lowered returns to investors. One solution was to offer interest or dividend guarantees to investors. Guarantees on private railroad bonds became very common in Europe after the 1860s and indeed throughout the world. They are often viewed as a 'give-away' to foreign investors, but they might have also provided high initial returns to compensate for the risk of arbitrary changes in regulation.

States could also build their own railroad networks rather than subsidize private companies with guarantees. The Netherlands, Denmark, and Norway began with a greater degree of private ownership, but then turned to direct state-financing and ownership in the 1860s. By 1870, the state owned 57 percent of the track mileage in the Netherlands, 64 percent in Denmark, and 81 percent in Norway (Bogart, 2007). In several countries, it appears that politicians felt that greater state ownership was preferable to interest guarantees for private companies (Veenendaal 1995, p. 191).

States also increased their ownership of railroads because they believed it would increase military effectiveness and solidify their political power. The state focused on building the trunk lines connecting capital cities with their provinces and strategic borders. In Belgium, state ownership was part of a broader strategy to maintain independence from the Netherlands (Veenendaal 1995, p. 191). In Germany, the construction of state-owned railroads was intimately linked with the political ambitions of Prussian leaders like Bismarck. The strategy was successful in that state-owned railroads helped unify Germany and gain territory from France in the Franco-Prussian war.

The mixed systems of Germany, Belgium, and Sweden were successful in that all three countries had extensive railroad networks by 1870. It is not clear, however, whether a policy of state financing and ownership was more effective than a policy of private ownership with state subsidies. A comparison of railroad development across all the countries in table 3.5 suggests that private and state ownership yielded similar outcomes, at least by 1870. Perhaps the most important determining factor was the degree of restraints on state behaviour. If a state could not commit against expropriation or arbitrary changes in regulations, then state ownership provided a more attractive alternative because it could not expropriate from itself. However, state ownership had its own drawbacks because of limited expertise in constructing and operating railroads. In addition, the state might have directed too many resources towards railroads with political or military benefits, but low economic benefits.

[Table 3.5 about here]

Conclusion

After 1870, public and private institutions would face new challenges: the growth of two key public services (education, and social insurance) and the diffusion of progressive taxation. While the size of government and its direct involvement with the economy ballooned far beyond anything our period witnessed, the political and legal environment remained largely framed by the institutions devised in the nineteenth century. And even though the twentieth century finally ushered in institutions on a European scale, it has also seen the revival of regional politics. The problems of scale and unification that European rulers faced in the eighteenth century are still with us.

Institutions witnessed critical political and economic transitions between 1700 and 1870. Western Europe shed its regional economies and regional institutions in favor of national economies and national institutions. The growth of a national central state reaches into the smaller countries like England where acts of union of 1707 and 1801 attempted to forge a the United Kingdom with Ireland and Scotland) and the Netherlands where the regional privileges of the provinces were abolished between 1789 and 1815. In Eastern and central Europe the same forces were at work but the outcome is less clear cut. This was in part because those areas were dominated by three supra-national empires (Austrian, Ottoman, and Russian). Thus the institutional consequences of the development of nationalism were easier to see in the west, where it became an integral part of the strategies of rule for central government politicians. In the East, on the other hand, rulers went to considerable efforts to suppress most manifestations of nationalism. Even in the West these transition were far from smooth. In the birth of central and uniform institutions, domestic or international wars were usually midwives. Epstein's (2000) argument about the incapacity of central institutions to overcome special interests in the late Middle Ages continued to have full force in the eighteenth century. The French Revolution was a direct product of the Old Regime's incapacity to reform itself. The institutional change the Revolution unleashed was particularly important because of its spatial reach—it included not just those countries that fell under Napoleon's thumb but others who reformed in the hope of finding ways to counter the French. Though once free of Napoleon most polities abandoned part or all of the Revolution, they could do so because central states had been immeasurably strengthened by the episode.

On a second level, the period saw polities enact both fiscal and commercial reforms that made institutions in those domains far more homogenous. Most of this change occurred 1815 and 1870. Then international politics continued to be an impetus to institutional change, but relatively low levels of war led governments to focus on economic rather than military competition. Technical changes in finance and transport, provided an impetus to change because the old regime fiscal and legal environment was inimical to large scale firms. Railroads were emblematic of this situation, the technology was particularly valuable because it did not depend on where nature had located seas or navigable rivers. On the other hand it required massive investment and the taking of land to build the track—whether publicly or privately funded, railroad could not proceed without the close involvement of government. To be sure there was a great deal of local variation in what rules were adopted and in the efficacy of their enforcement. It is also likely that these rules had an impact in the speed at which different countries began to industrialize. Nevertheless, by1870, few countries were doing without join stock laws, or mechanisms to provide increase transport infrastructure; and the number of multi-owner firms and railroads was growing everywhere.

The contrast between the continued tension over political structure (authoritarian, representative, democratic) and the much milder debates over economic institutions is striking. With only a bit of exaggeration one might argue that European polities adopted economic democracy (end of bound labor and joint stock companies) while most struggled against political democracy. At the same time, the economic changes of the nineteenth century were associated with significant increases in wealth inequality (Lindert 1986, Piketty, Postel-Vinay and Rosenthal 2006). While political and economic reform promised economic growth that would increase total wealth, it would increase the likelihood of redistribution (either through fiscal policies, or by accelerating economic processes of creative destruction). The consequence was that some elites were willing to sacrifice economic change to avoid the redistributional consequences of political reform. Other elites (as in Spain) were deeply divided and the rise of economic democracy had limited impact because it was hostage to political conflicts. Then and now, public and private institutions are key to economic outcomes and they are also inextricably interlinked.

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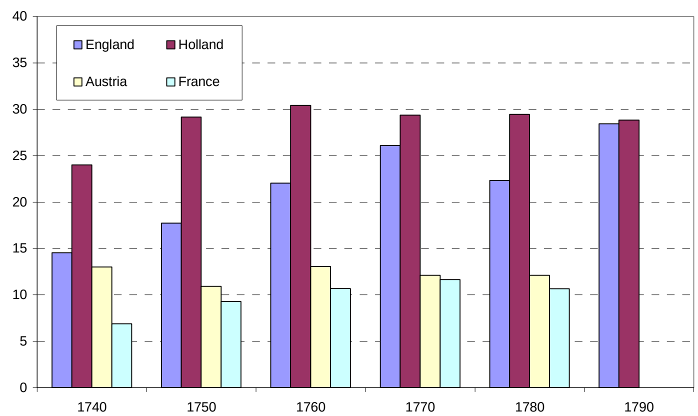
Table 3.1. Annual public revenue of European states around 1765, in pounds sterling, and estimated share of direct taxes in total fiscal revenue in 1770.

Country	**Annual revenue (c.1765)**	**% share of direct taxes (c. 1770)**
France	12,350,000	49
Great Britain	9,702,172	24
Habsburg monarchy	3,972,749	51
Spain	3,944,000	10
Holland	2,417,807	43
Prussia	2,104,077	32
Sweden	1,734,108	
Denmark	1,029,918	49
Bavaria	476,667	46
Austrian Netherlands	244,141	0
Hamburg	184,223	30
Dutch Republic	117,700	0

Sources: Hartmann 1979; For Spain: Tortella 2001, 156; For the Austrian Netherlands 1760-1769: Coppens 1992, 293. For Holland 1760-1769: Fritschy 2004. For the Dutch Republic 1762-1768: Dormans 1991, 158). Exchange rates are approximate values for 1766 from McCusker (1978).

Figure 3.1. Tax pressure in various European countries, expressed as the number of (silver) day wages per capita, 174-1790



Sources: Fritschy 1988, 54; Hoffman 1994, 238; Dickson 1987, vol. I, 36,40; vol. II, 369-370, 380; Prak and Van Zanden 2006, 130

Table 3.2: The diffusion of Commercial codes in Europe (Under construction)

Country	Get Cods via French occupation or annexation	Date Commercial Code Adopted	Date General Incorporation Enacted
Austria	No	1811	
Belgium	Yes	1851	1873
Ireland	No	None	1844 (UL) 1857 (ll)
Italy	Parts	1865	After 1875
France		1807	1867
Germany	Parts	1861	1870
Luxemburg	Yes		
Netherlands	Yes	1809 (1838)	
Portugal		1833	
Spain	Yes	1830	1869
Serbia	No		
Sweden	No		1895
Switzerland	Yes		
United Kingdom	No	None	1844 (UL) 1857 (ll)

Note: for the regions that were occupied during the Napoleonic Era, the date the commercial code was adopted is the date an 'indigenous' code was enacted.
Source Lescoeur (1877), Harris (2001)

Table 3.3: Road Policies, 1700-1840

Country	Summary of Road Policies	Road km per capita (000s) c1840	Road km per sq. km c1840
England & Wales	Mixture of local and Turnpike network.	1.98 turnpike 7.54 local	0.13 turnpike 0.49 local
Southern Netherlands/ Belgium	Mixture of local and Turnpike network.	1.22 turnpike Local roads?	0.17 turnpike Local roads
France	Mixture of local and state financing.	1.0 royal 0.88 local	0.05 royal 0.05 local
Spain	Mixture of local and state financing.	0.6 royal Local roads?	0.015 royal Local roads?

Sources for road km: England & Wales, 31,500 km turnpike roads and 120,000 km parish roads. BPP 1841 XXVII, p. 79. Southern Netherlands, 3000-5000 km, mostly turnpike roads Ville (1990), p. 16. France, 34,200 km royal roads and about 30,000 kmsecondary roads, Price (1983), p. , Spain, 5000-7500 km royal roads, Ville (1990), p. 17. Population data from Mitchell (1975).

Table 3.4: Waterway Policies, 1700-1870

Country	Summary of Waterway Policies	Waterway km per capita (000s) c1850	Waterway km per sq. km c1850
England & Wales	Private River and Canal network.	0.40	0.029
Dutch Rep./ Netherlands	Municipal financing and ownership.	0.53 (1830)	0.04 (1830)
France	Mixture of public and private participation	0.23	0.006
Belgium	Initially Mixture of Provincial and private ownership, later State-owned.	0.36	0.05
Germany	State-owned Network.	0.07	0.005
Russia	Mostly state-owned network.	0.01	0.0001

Sources for waterways Ville (1990), p. 31: England, 7200 km, Dutch Republic 1400 km in 1830, France 4170 km, Germany around 2500 km, Russia 500km. For Belgium I used theWaterways association figure of 1600 km.

Table 3.5: Railroad Policies, 1825-1870

Country	Summary of Railroad Policies	Railroad km per capita (000s) c1870	Railroad km per sq. km c1870
United Kingdom	Private ownership with no subsidies.	0.80	0.081
France	Private ownership with subsidies.	0.46	0.080
Spain	Private ownership with subsidies.	0.32	0.011
Portugal	Private ownership with subsidies.	0.16	0.008
Austria-Hungary	Private ownership with subsidies.	0.27	0.015
Russia	Mostly private ownership with state subsidies. Companies own 90 percent of track km	0.17	0.002
Italy	Mostly private ownership with state subsidies. Companies own 90 percent of track km.	0.22	0.020
Netherlands	Shift from private to state ownership Companies own 43 percent of track km.	0.25	0.027
Denmark	Shift from private to state. After 1860 the Companies own 36 percent of track km.	0.42	0.020
Norway	Shift from private to state ownership Companies own 19 percent of track km.	0.20	0.001
Germany	Mixture of state and private from the start. Companies own 56 percent of track km.	0.47	0.035
Sweden	Mixture of state and private from the start. Companies own 61 percent of track.	0.69	0.006
Belgium	Mixture of state and private from the start. Companies owned 69 percent of track km.	0.55	0.095

Sources for railroads km, *Abstract of Foreign Statistics.* United Kingdom, 25,400km. Netherlands, 900km. France, 16700km. Belgium, 2800km. Germany, 19,100km. Spain 5400km. Norway 367km. Italy 6000km. Portugal 694km. Austria-Hungary 9500km. Russia 11,200km. Denmark 750km. Sweden 2860km. Ownership figures come from Bogart (2007).