

# Law and Finance “at the Origin”

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## 1 Introduction

Understanding the causes of financial development and economic growth is central to research agendas in many fields of economics, ranging from macroeconomics, to microeconomics, and to finance. The law and finance literature has provided theoretical arguments and empirical evidence that a country’s legal system affects finance and growth.<sup>1</sup> Recently, researchers have started to re-evaluate the role of legal institutions relative to political institutions.<sup>2</sup> They emphasize that different political environments prompt different degrees of economic and financial development. Thus, the effectiveness of institutions might vary considerably with the political support they receive. Rather than considering the role of legal systems in isolation, the recent research proposes to account for its interaction with the political environment. Legislation and law enforcement are, for example, political outcome variables.

Definitive answers in the debate about the determinants of financial development and growth are hard to come by. Given the scarcity of perfect natural experiments, careful and detailed analyses of individual cases are a valuable part of the literature, even if they stop short of proving causality. In fact, much of the literature revolves around specific examples, mostly referring to the last two centuries.<sup>3</sup>

This paper expands the current body of evidence to a much earlier time period, two thousand years ago in ancient Rome. We focus on a specific cornerstone of financial and economic development, the emergence of the corporation. We propose that, contrary to widespread belief, the earliest predecessor of the modern business corporation was not the English East India Company nor the medieval *commenda*,<sup>4</sup> but the Roman *societas*

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<sup>1</sup> La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997) and (1998).

<sup>2</sup> Rajan and Zingales (2003); Acemoglu and Johnson (2005); Pagano and Volpin (2005).

<sup>3</sup> Examples are Engerman and Sokoloff, (1997) and (2002); Berkowitz, Pistor, and Richard (2003); Lamoreaux and Rosenthal (2005); and Haber, Razo and Maurer (2003).

<sup>4</sup> Ekelund and Tollison (1980) and Gower (1969), p. 22. Kindleberger (1984) characterizes, more generally, alterations of the “true” partnership as the earliest forms of business organization but views the medieval

*publicanorum*, i.e. the “society of government leaseholders.” We first provide some general background on the Roman economy and on the Roman legal system. The background information helps to understand how an ancient economy could arrive at such sophistication in financial development (Subsection 2.1). We then describe the role and business activities of the publicans, from the 5<sup>th</sup> century B.C. until their demise under the Roman emperors (Subsection 2.2). We argue that, at the height of its development, the *societas publicanorum* had many resemblances with the modern shareholder company — most importantly its existence as a legal entity that is not affected by the departure of partners (differently from the regular *societas*, i.e. the Roman partnership) and the issuance of traded, limited-liability shares. It was, de facto, assuming the role of a corporation (Subsection 2.3). We conclude by discussing the likely causes of the corporation’s demise under the Roman Empire (Subsection 2.4). In particular, we point out how changed political interests triggered the demise of such an advanced business organization at a time when the legal framework was, if anything, better able to support it than when it emerged. That is, we evaluate the demise of the *societas publicanorum* in the light of a drastically changing political environment – the shift from Republic to Empire. In the final Subsection (2.5), we summarize the insights from the historical evidence and link to later development of the East India Company. We discuss the broader implication of our ancient empirical evidence, including some more general insights about economic development with and without law.

The history of the Roman shareholder company sheds light on the nexus of law, finance, and growth from three angles.

First, much of the empirical evidence for the “law and finance” and the “politics and finance” view faces a basic identification problem: As law and politics evolve over time, they often head in the same direction—either fostering or prohibiting financial development. That makes it difficult to attribute financial development to either source or their interaction. The Roman *societas publicanorum*, instead, provides a rare case where the evolution of law and politics diverged. During the Roman Republic, when Roman law was still far from a complete body of civil law (the so-called period of the “pre-classics”), political interests demanded stable business organizations that could raise large-scale financing. During the Roman Empire, when Roman legal science reached its height (so-called “classics”) and the transaction costs for any type of financial and economic interaction diminished, political interests reversed. The political environment grew less favorable towards the smooth operation of large-scale economic activities. With the rise of the emperors, financial contracting regressed despite the progress in legal development. Our

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*commenda* as the starting point (p. 195). Baskin and Miranti (1997) explicitly assess the development of the business organization under Greco-Roman law as restricted to partnerships.

findings suggest that economic development requires little legal underpinning when it coincides with the government's interest. Without the government's support, however, it may wither despite a pre-existing legal framework.

None of these insights undermine the empirical importance of the law as a determinant of financial development. After all, the Romans might never have arrived at developing an early type of corporation in the first place without their advanced legal environment. Moreover, we are discussing just one historical case. Nevertheless, this case illustrates that the failure to account for the political economy and its changes would lead to a misreading of the relationship between law, finance, and growth.

Second, the history of the Roman shareholder company sheds light on the origin of Roman law. Much of the literature uses Roman legal origin as a proxy for a rigid legal environment and classifies it as a growth-hostile. Our analysis focuses on the time period which gave birth to Roman law. It suggests that legal systems may be less of a technological constraint for growth than previously thought, at least "at its origin." Roman law provided a flexible and nurturing legal environment for financial development during the Republic, accommodating such radical advancements as the enforcement of a corporate business format. In fact, the case-based evolution of Roman law resembles closely today's common-law systems.<sup>5</sup>

Third, the case of the *societas publicanorum* emphasizes the role of "business formats," in particular the corporation. The format of a business affects access to external finance, the stability (or "longevity") of a firm, the ease of representation by individual managers, and the rights and obligations firms can assume. In summary, the transaction costs of interacting and contracting with a firm depend on its business format. The case of the *societas publicanorum* illustrates how an advanced (corporate) format can facilitate business operation. At the same time, it also shows that the functioning of different organizational formats may develop independently of company laws. Analyses focusing on formal company law risk misconstruing the actual state of organizational development and its implications for finance and growth.<sup>6</sup>

After the presentation of the historical case study on the Roman corporation in Section 2, we link these insights to modern literature on finance, growth and its determinants. The selective literature survey in Section 3 focuses on two aspects: First, we would

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<sup>5</sup> At the same time, we also find that these economic advancements were reversed later, when political interests changed during the Roman Empire. It is possible that other legal systems would have prevented such a reversal. For example, a common law system might have provided better protection against the State, consistent with the view that civil-law systems are weaker in their protection of property rights.

<sup>6</sup> Lamoreaux and Rosenthal (2005) come to a similar conclusion for 19<sup>th</sup> century business organizations in France and the United States.

like to show the different types of empirical evidence provided so far – from historical case studies like ours to studies that rely on aggregate cross-country and within-country (cross-state) data and those that employ individual firm-level variables. Most of these analyses naturally lack clean exogenous variation in financial development and its determinants, and the quest for better empirical identification is still a high priority in this literature. At the same time, the consistency of the results from vastly different empirical approaches and data sources provides a “cross-methodology” robustness check. Second, we emphasize a literature that has found less attention in previous reviews but which echoes the message of our analysis of the *societas publicanorum*: the literature analyzing the role of different business formats (such as the shareholder-company format) and their characteristics (such as limited liability and the possibility of agency and representation). These mostly historical papers highlight that smooth access to financing requires more than investor and creditor protection. Restrictive business formats impose transaction costs on managers and may impede the funding of promising enterprises.

Our literature review is divided into three parts. Section 3.1 provides a selective overview of research that tries to establish a causal link between financial development and growth. In Section 3.2, we review a few papers that point to specific channels, through which financial development affects growth: channeling of investment in the fastest-growing industries; in industries with high intangible intensity; in smaller firms; and in firms with high demand for external financing. We then ask, in Section 3.3, what affects financial development. We start from the law and finance literature, which stresses the role of the legal environment and proposes legal origin as a useful instrument. We then discuss the more recent literature on politics and finance, which introduces a political-economy perspective, stressing the role of governments’ interests for financial development and growth. Section 4 concludes.

## **2 A Historical Case Study: the Roman Corporation**

### **2.1 Roman Economics and Roman Law**

The historical evidence about the publicans stretches from the beginnings of the Roman Republic into the Roman Empire. The height of their activities falls into the last two centuries B.C.

#### ***Economics***

An important starting point for our analysis is the question how an early economy could be sophisticated enough to generate, as we will argue, a business form as advanced as the *societas publicanorum*. A recent literature survey by Peter Temin (2006) focuses exactly on this question—framed more broadly, of course, than the specific context of the *societas publicanorum*. Temin surveys evidence from the markets for grain, from employment

contracts and the manumission of slaves, and from loan contracts, mostly covering the period of the Early Empire. Building on his earlier work (e.g. Temin, 2001), he argues that advanced economic institutions made the Roman economy during the Principate more market-oriented than even the medieval economy many centuries later. In this Sub-section, we provide a few examples from the literature, which illustrate exactly the same point and extend the discussion to the period of the Roman Republic.

From the third to the first century B.C., Rome developed from a rural community to a power stretching all over Italy and then beyond the Mediterranean, including West and South Europe, Asia Minor, the Near East, Egypt, and North Africa. Following this geographic expansion, large-scale commerce, industry, and financial sectors developed, and the volume of trade exploded. This appears to be particularly true for seaborne trade. For example, Hopkins (1980) infers from a data set of 545 dated ancient shipwrecks, mostly found near the coast of France, Italy, and Spain, that interregional trade was higher in the period 200 B.C. to 200 A.D. than ever before and any time during the following millennium. Evidence on the number of silver coins minted at Rome supports this hypothesis. Data on coin issuance in Rome during the late Republic (157-50 B.C.) suggests that the circulation of coins increased tenfold over the sample period.

The wide geographical expansion of a single political entity, ancient Rome, provided a favorable environment for the establishment of large product markets. For example, Kessler and Temin (2005) argue that there was an integrated grain market stretching all over all of the Mediterranean area. They analyze historical data on grain prices in Rome, Northern Italy, Sicily, Spain, Turkey, Palestine, and Egypt and find a strong linear relationship between prices and distance from the production site, which appears to reflect transportation costs and suggests a functioning market and price mechanism. In a similar spirit, Hopkins (1980) employs the spread of silver coins, minted at Rome, across the different regions of the growing Roman state to illustrate its integration into a single monetary economy. He plots the number of catalogued Roman coins found in Southern Germany, Northern Italy, Britain, France, the Balkan, and Syria, over the years A.D. 50-200. The highly positive correlation between all graphs suggest a smooth flow of money across the Empire – consistent with the view that, in the first century B.C., Rome had become the monetary centre of the known Western world (Cunningham, 1902, p. 164). The coin-flow also corroborates the empire-wide operation of many other product markets (Temin, 2001).

Technical progress supported the growth of the Roman economy. Wilson (2002) argues, for example, that the discovery and spread of water-powered devices had a causal impact on the development of the Roman economy. He shows that the use of water-powered mining technology is strongly correlated with the volume of metal extraction.

The estimates of extraction volume are based on analyses of Greenland ice scores, which record the atmospheric pollution from silver, lead, and copper extraction in different periods throughout history. A time-series plot of the concentration of lead between 962 B.C. and A.D. 1532 shows a steep increase in the first century B.C., a somewhat lower plateau in the first century A.D., a further decrease in the second century, and an even lower level up to the fifth century. Similar data of copper pollution reveals peaks from the first century B.C. to the second century A.D. and subsequently lower levels – all the way until the Industrial Revolution. The data suggests that advancements in Roman mining technology led to enormous increases in metal extraction.

A broader overview of the archeological evidence of technological innovation and the speed of technological transfer in the ancient world can be found in Greene (2000), especially for the late Republic and early Empire. Examples are the spread of grape- and olive-pressing equipment or water-powered grain-mills throughout the Mediterranean, statistics of bone dimensions on archeological sites, which suggest selective breeding, and remains of pumps and water-wheels that allowed mining far below the water table in the North-western provinces (Gaul, Spain).

Even Rome's financial system was quite well-functioning. According to Temin (2004a), it exceeded the financial development in eighteenth-century France. He documents that sophisticated financial intermediaries – bankers (*argentarii*) and brokers (*proxenetae*) – pooled funds effectively across the Roman economy. The evidence from the early Roman Empire includes the so-called *Muziris* papyrus of a large maritime loan, which appears to be copied from a standardized maritime loan contract; catalogues of loans in Roman Egypt; and numerous literary sources such as Livy's (*hist.* 35.7) account of the evasion of interest rate regulation via lending to foreigners. These sources report various lending practices, bank branching, loan transfers, and lending activities of temple endowment and local governments. Related to the context of our analysis, Temin points out that the *publicani* functioned as de-facto deposit institutions for the Roman government and provided interest income on revenues they collected for the government.

These details about the ancient Roman economy suggest an impressive economic development during the late Roman Republic and early Empire, in which we have to place the development of a company format as advanced as the *societas publicanorum*.

## ***Law***

Our knowledge of Roman law in the period until the Punic Wars (in the middle of the third century B.C.) is limited to the famous Twelve Tables from 450 B.C. The XII Tables were not an exhaustive codification of all legal rules. Rather, they ensured basic economic and political rights for the plebeians in their power struggle with the patricians (see, e.g., Kaser, 1980, p. 15).

The jurists of the last two pre-Christian centuries, the so-called period of the pre-classics, were the first to develop a “legal science” with formal legal concepts and systematization. This development is often credited to the encounter with Greek philosophy (Kaser, 1980, p. 4). It is during this period that the activities of the publicans and the formation of *societates publicanorum* achieved their greatest expansion and development.

Roman law reached its height later, in the period of the so-called “classical” jurisprudence during the first two and a half centuries A.D. The Roman law of this period has exerted a large influence on legal systems throughout the world and throughout history. The discussion about “Roman-law origin” in today’s Law and Finance literature is only one example. Among all the different fields of law, however, it is exclusively the “private” (or civil) law which has had this influence— either directly, as the foundation of modern private-law systems, or indirectly, through the modern Civil Codes.<sup>7</sup>

Roman private law never underwent systematic codification until the East-Roman Emperor Justinian put together the *Corpus Iuris Civilis* centuries later. During the pre-classical and classical period, legislated statutes (*leges*, *plebiscita*, or *senatus consulta*) played a rather small role in the development of Roman law. Mostly, it emanated from the advice of legal experts to the judicature, notably Julian, Celsus, Gaius, Ulpian, and Paul. Roman law textbooks (e.g. Schulz, 1951; Buckland and Stein, 1963) characterize it as “juristic law.”

The background is the following. In Rome, several different magistrates administered justice: the *praetor* (judge), the curule *aediles* (senatorial superintendents), and the governors in the provinces. These magistrates appointed jurors, called *tribunales*. Neither the magistrates nor their jurors usually had any legal training. Instead, they appointed jurists into a committee of legal experts, the *consilium*. Based on the experts’ opinion, the magistrates would grant actions (*actiones*), defenses (*exceptiones*) and other legal remedies. Those expert opinions shaped the legal system, even if they had no formal legal power.

The appointment as an expert was honorable and desired among lawyers, who usually belonged to the aristocratic class and also advised plaintiffs and defendants. Since the legal experts did not discuss abstract concepts but concrete cases of current interest, Roman law developed very much in touch with day-to-day legal questions. In fact, Roman-law scholars like Kaser (1980) and Duff (1971) liken the Roman law to English law today: largely free of abstract concepts and essentially “case law.” This gave the Roman law an enormous degree of flexibility and, in particular, the ability to cope with the transformation of Rome from a rural community to a large empire.

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<sup>7</sup> Civil-law codifications replaced the direct application of Roman law in many countries, starting at the end of the 18<sup>th</sup> century (Kaser, 1980, p. 2).

Under the Principate, the emperors' decrees (*constitutiones*) started to be recognized as binding legislation. The emperors appear, however, to have imposed little constraint on the autonomous, case-driven legal development. Imperial law mostly continued to develop the pre-existing body of law in a similar fashion.

These features of Roman law will help us to understand how the creation of a quasi-corporation could occur without formal legislative changes and without the formal recognition of limited liability or agency and representation as abstract concepts. We will discuss its evolution in more detail below; but, to further illustrate the process, we consider a few related examples.<sup>8</sup> The first example is the concept of limited liability. Roman law never recognized limited liability for private businesses – other than excluding liability “with the body” in 323 B.C. As the demand for limited liability increased in practice, Rome accommodated this need by exploiting the institute of the so-called *peculium* of slaves. In ancient Rome, slaves were legally considered “things” rather than persons and, as such, could not own other things. In practice, however, they were allowed to accumulate earnings and other property, denoted as their *peculium*. They would become the legal owner in case of manumission, i. e. when granted freedom. The Romans used the *peculium* of their slaves to remedy the lack of a business format with limited liability. They employed “company slaves” (*exercitores servi communes non volentibus dominis* or *servi communes negotiatores*) as managers and provided them with a limited amount of funds for the business. That way, business owners avoided any liability for business conducted by the slaves beyond the funds with which they provided them.<sup>9</sup>

Another example is the law of agency, which was not developed in ancient Rome. As the need for binding representation in business matters increased in Rome's growing economy, the Romans did not formally institute agency but employed the *patria potestas* (power of a Roman father) over (adult) children and slaves as a form of agency.<sup>10</sup> The Roman *pater familias* could act through children and slaves, in which case he was liable for their offenses.<sup>11</sup> Slaves managed the estate of their master and arranged trading and banking transactions on his behalf. Even the top managers were typically selected from among the slaves, which helps to explain the astonishingly common phenomenon of Romans “placing themselves into slavery.” Free people sold themselves into slavery in order to attain a high position in the “enterprise” of a senatorial house,<sup>12</sup> a striking example of

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<sup>8</sup> For more details see Malmendier (2002), pp. 212-213.

<sup>9</sup> Brentano (1925), p. 143; Földi (1996), esp. the summary on p. 211. For a discussion of the exceptions, in which the liability went beyond the *peculium*, see Honsell, Mayer-Maly, and Selb (1987), pp. 378-381.

<sup>10</sup> On the law of agency and its substitutes see Garnsey and Saller (1982), p. 33, and Crook (1967), p. 60. On the same topic in the context of the Roman labor market see Temin (1994b), p. 536.

<sup>11</sup> Taubenschlag, *Law of Greco-Roman Egypt*, pp. 307 ff., 505 ff.

<sup>12</sup> Ulpian (*Digesta* 28.3.6.5) denotes such slavery as *ad actum gerendum*.



how the Romans achieved modern organizational functions without formal legal reform but expanding the interpretation of existing legal institutes.

## 2.2 Who Were the *Publicani*?

The *societas publicanorum* owes its creation to the governmental system of the Roman Republic. During its five centuries of existence, the Roman Republic never assembled any sizeable bureaucracy. Similarly to the ancient democracy in Athens, Rome distrusted the continuity of power embedded in a bureaucratic state machine. Instead, public services were contracted out and public income sources were leased to private entrepreneurs. These private contractors were called “government leaseholders” or publicans (*publicani*). As Ulpian writes in the Digest (*Digesta* 39.4.1.1):

<i>Publicani ... sunt qui publico fruuntur, nam inde nomen habent.</i>	Publicans ... are those who deal with public property; that is where there name comes from.
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And shortly thereafter (*Digesta* 39.4.12.3 [38 ad ed.]):

<i>Publicani autem dicuntur, qui publica vectigalia habent conducta.</i>	Those are called publicans who conduct the exaction of public taxes.
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Since the Roman aristocracy was not allowed to participate in the government leases, a separate class of entrepreneurs emerged, later often equated with the knights (*equites*).

The business activities of the publicans are described in Badian’s classic work titled *Publicans and Sinners* (1983), and in Malmendier (2002).<sup>13</sup> The earliest reports refer to the 5<sup>th</sup> century B.C. Ancient historians such as Dionysius of Halicarnassus and Livy give accounts of religious and ceremonial services as well as construction jobs contracted out to private entrepreneurs. Another famous example of these early times is the feeding of the white geese on the Capitol. The geese received government-sponsored meals since, in 390 B.C., their honking had warned the Romans of the attacking Gallic troops.<sup>14</sup> According to Pliny<sup>15</sup>, the “geese feeding program” was leased out to the publicans.

Over the course of the Republic, an increasing volume of public works was leased out, until the publicans dealt with the business of practically every state department (e.g. Cunningham, 1902, pp. 157 and 162). The publicans had three main areas of business:

1. the provision of goods and services for the public,
2. the utilization of public property, and

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<sup>13</sup> Older literature includes Kniep (1986); Deloume (1890); and Ürödgi (1968). The 1997 edition of Badian’s work (in German) incorporates some newer sources and modified interpretations.

<sup>14</sup> Livy, *Ab urbe condita* 5.47.4.

<sup>15</sup> Pliny, *Naturalis historia* 10.26.51.

### 3. the collection of public revenues.

The reach of such “private procurement” and “outsourcing” of public services was far, ranging from army supplies to construction, renovation and maintenance of public buildings to the minting of coins, grazing on the public domain (*ager publicus*); mining and fishing on public property; and finally even the collection of poll or land taxes from the provincials.

The key element in the first group of contracts was the supplies to the Roman army.<sup>16</sup> They included both the regular supply to fixed and stationary garrisons and the less predictable supply demands during wartime. Evidence of the latter type of commitment exists even for the imperial period when the publicans were otherwise in demise. And, as Badian (1983, p. 29) shows, the revenues from these contracts were astonishing – equivalent to the annual pay for 10,000 soldiers (about 1.2m *denarii*) in the case of a supply contract for togas, tunics, and horses in the second century B.C. (Livy 44.16).

The construction, renovation and maintenance of public buildings were likely the next-largest instance of state contracting. Public buildings meant streets and city walls, temples, markets, *porticus*, basilicas, theaters and facilities for the circus games, as well as aqueducts and public sewers.<sup>17</sup> Private entrepreneurs were also contracted to erect statues.<sup>18</sup> Like the army supplies, building contracts required vast financial resources. In another calculation, Badian (1983, p. 67 f.) suggests that the building contract for the Marcian aqueduct in the middle of the second century B.C. amounted to 45m *denarii*, which was thus roughly equal to the entire fortune of the (purportedly) richest millionaire in Rome in the first century, M. Crassus.

The most famous – or infamous – type of contract, however, was the outsourcing of tax collection. The collection of taxes and dues played, originally, a minor role. Similar to the Greek *polis*, Rome had no concept of direct taxes. The state’s primary source of income was war booty. The peoples conquered outside of Italy paid tributes. Direct personal taxes, say, an income tax, was deemed unworthy of free men.

The only burden of “taxation” on the Roman citizen was the *tributum*, a tribute demanded irregularly, which in its origin probably replaced the self-provisioning during military service.<sup>19</sup> The tax financed soldiers’ pay and was levied only when military ven-

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<sup>16</sup> See for example Livy 23.48.5-49.4; 25.3.10; and 34.6.13 for the year 215 A.D.; 27.10.13 for 209 A.D.; 44.16.4 for 169 A.D.; Valerius Maximus 5.6.8. See on the topic Hill (1952), p. 88f.

<sup>17</sup> Examples can be found in Cicero, sec. in Verr. 1.49.128 (maintenance of temples); Dionysius of Halicarnassus, ant. Rom. 3.67 (maintenance of public sewers); Livy 4.22.7 (construction of the *villa publica*); 5.23.7 (construction of the temple for the Mater Matuta at the Forum Boarium for Iuno Regina on the Aventine hill); 6.32.1 (maintenance of city walls); 24.18.10 (maintenance of temples); 29.37.2 (street repairs; also in 41.27.5); 40.51.3-5 (renovation of markets and theatres).

<sup>18</sup> Cf. Milazzo, *Realizzazione delle opere pubbliche*, p. 147 ff.

<sup>19</sup> Laum (1926), p. 229.

tures had exhausted the state treasury. Even then it was perceived more as a loan by the citizen to the state, to be repaid later out of war booty.<sup>20</sup> With the increasing expansion of Rome, the tribute disappeared almost completely<sup>21</sup>—at the expense of the provinces. A steadier stream of tax revenues was imposed only at the time of the Principate. At that time however, an official fiscal administration took over, excluding the publicans from its collection.

Indirect taxes and tributes on goods and services, on the other hand, had a longer tradition, and their collection became a core activity of the publicans. Even these dues were imposed primarily on non-Romans and non-Roman goods, though: traders arriving at ports, at the city gates and at market places.

Cicero mentions the three most important taxes that were contracted out in *De imp. Cn. Pomp.* 6.15: the port tax (*portorium*), the “tenth” of the harvest of agricultural products, including grain (*decuma*), and the grazing fee (*scriptura*). The inheritance tax (*vicesima hereditarium*) was also contracted out but played a subsidiary role.<sup>22</sup>

The scale of these businesses expanded vastly with the expansion of Rome. While the classes of contracts remain relatively stable throughout the Republic, the economic opportunities grew with the addition of each new geographic area.

With the decline of the Roman Republic and the onset of the Principate, however, the success story of the publicans ended. In the last century A.D., the *equites*—and thus many of the *publicani*—were subject to proscriptions.<sup>23</sup> Legal reforms restricted the area of their activities one after the other. First, the activities of the publicans were limited to collecting taxes and dues.<sup>24</sup> Then, Augustus transferred the tax collection contracts in Gaul, Asia, and finally in all of the imperial provinces to a *procurator Augusti*, who was part of his bureaucracy.<sup>25</sup> Gradual restrictions continued to be implemented throughout the Julio-Claudian dynasty (Tiberius, Caligula, Claudius, and Nero; 14-68 A.D.). With the advent of the 2<sup>nd</sup> century A.D., Trajan (98-117 A.D.) limited the lease of collections contracts for private entrepreneurs to isolated types of taxes such as the inheritance tax.

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<sup>20</sup> Even voluntary contributions were repaid whenever possible. A famous example is the voluntary contributions of Roman citizens during the Second Punic War (in 210 B.C.). Livy (23.48.5 ff.) reports that, after the financial situation improved in 204 B.C., the contributions were ex post recognized as loans and repaid in three installments. See Briscoe (1989), p. 75.

<sup>21</sup> Cicero describes the *tributum* in *De off.* 2.21.74 as an overcome means of public financing, which reveals the lack of foresight from which state financing used to suffer.

<sup>22</sup> Cicero complains in his letter *Ad Att.* 2.16.2 that the *vicesima* alone generates too little tax income.

<sup>23</sup> According to Appian (*Bell. civ.* 4.5), 2000 *equestri* were killed; see also the detailed account of the brutality of the proscriptions in Cassius Dio (47,14). More on this in Ürödgí (1957), col. 1201.

<sup>24</sup> Cimma (1981), p. 99 ff.; Hirschfeld (1963), p. 69 ff.; Rostovtzeff (1902), p. 379 ff.

<sup>25</sup> Marquant (1884), pp. 301-318; Ürödgí (1957), col. 1200, 1202.

The large-scale operations of the *publicani* reverted to smaller-sized businesses of so-called *conductores* (contractors), similar to their origins in the early Republic.<sup>26</sup>

With the demise of the *societas publicanorum* we also observe a growth slowdown in several industries. One example is the mining industry, which had formerly seen an explosion in output, likely due to the improved technology and its use by the companies of the publicans. As Wilson (2002) reports, the use of the new water-powered mining techniques and the output from various mines shrank significantly in the first century A.D., which is when the emperors took over the mines.

The effect on other industries is harder to measure. Tax collection for example was likely easier with public enforcement. It was also affected by the drastic changes in tax laws. The construction industry remained very active, which is not surprising in light of the imperial expansions and the emperors' demand for villas, temples, and palaces. It would be interesting to know whether the cost of production, e.g. for street repairs or army provisions, increased after the demise of the *societas publicanorum*. Unfortunately, such data are hard to reconstruct.

The demise of the *societas publicanorum* also explains the puzzle why this form of business organization has not been well-known among economic and legal historian. Most of today's knowledge about Roman law stems from the *Corpus Iuris Civilis*, the massive compilation effort in the Eastern Empire under Justinianus I. The *Corpus Iuris Civilis* aims at documenting and codifying the full body of Roman law. Its main parts were issued in 529 and 529 A.D.: the *Institutes*, comparable to an introductory textbook, the *Digest* (or *Pandects*), the core piece, which documents various legal debates, and the *Codex* with imperial constitutions from the Principate. Thus, the compilation discusses legal opinions from the classical and post-classical periods (1<sup>st</sup> to 6<sup>th</sup> century AD), but not the pre-classics. Since the codex was compiled after the disappearance of the lease-holding companies, the jurists cited in the *Corpus Iuris Civilis* mention the publicans at most in the sense of smaller tax collectors. This lack of easily accessible evidence is likely the reason the *societas publicanorum* is relatively unknown in the history of the corporation.<sup>27</sup>

### 2.3 The *Societas Publicanorum* as a Business Corporation

To what extent were the large associations of the publicans "corporations"? Based on historical literature and on inscriptions,<sup>28</sup> we can characterize the evolution of the *societas*

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<sup>26</sup> See Pliny, *Epistulae* 7,14; *Panegyricus* 3,7,7; 39,5.

<sup>27</sup> See Malmendier (2002). In addition, most of the scarce surviving evidence about economic activities in ancient Rome comes from the period of the early Empire; see Temin (2006).

<sup>28</sup> As pointed out above, the primary source of Roman law, the *Corpus Iuris Civilis*, is of limited use since the activities of the publicans were already diminished during the classical period. We use classical Roman

*publicanorum* in the context of pre-existing business formats as follows. Roman law recognized two types of “associations,” the *collegium* and the *societas*. The only incorporated form of organization besides the public corporations (such as the *populus Romanus*, i.e. the state, or the *aerarium* and *fiscus*, i.e. the state and imperial treasuries) was the *collegium*. The *collegium*, however, was restricted to organizations with “public purpose” such as religious and political associations, not including government lease holding.<sup>31</sup> Thus, government leaseholders had to set up their companies as *societates*, the Roman version of partnerships. The Roman partnership differed from the modern corporation in many ways. The partners (*socii*) could not limit their liability; the partnership could not exist beyond the death or renunciation of a partner nor in case of legal disputes among the partners; and the firm could not assume rights or obligations separately from its members.<sup>32</sup>

This format was evidently insufficient for the large-scale and long-term operations of the government leaseholders. The Romans resolved this problem by developing a series of “reinterpretations” and exceptions to the prevailing legal rules, which were applicable only to the lease-holding companies. Four features differentiate the *societas publicanorum* from the simple *societas*:

1. *Representation*: A single person could contractually bind the firm and assume rights in the name of the firm.<sup>33</sup> The representative with whom the *censor*, i.e. the registrar and “finance minister” of Rome, interacted was called *manceps*.<sup>34</sup> He was also the person bidding for the contract in the public auction.
2. *Continuity and Stability*: The firm did not cease to exist if a partner died or left the firm. Moreover, legal disputes among the partners, which led to the dissolution of the simple *societas*, did not necessarily affect the existence of the *societas publicanorum*.<sup>35</sup> Even the departure of the key executive, the *manceps*, did not affect the contractual relationship between the company and the Roman government.<sup>36</sup>
3. *External Financing*: Outside investors could provide capital and acquire shares (*partes*) without becoming a partner and, in particular, without being liable for the

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and Greek literature and inscriptions as alternative sources. In particular, our analysis exploits the *Monumentum Ephesenum*, an inscription discovered in Ephesus in 1976, which turned out to be the translation of a Latin tax law – the *Lex Portorii Asiae* – from 62 A.D. (Engelmann-Knippe, 1989). The nucleus of this law, paragraphs 1-36, originates in the late Republic, 75 or 74 B.C. and reveals numerous details about the functioning of the lease-holding companies.

<sup>31</sup> Duff (1938), pp. 95 ff.

<sup>32</sup> See, for example, Kaser (1980), pp. 225-227.

<sup>33</sup> *Digesta* 3.4.1.1.

<sup>34</sup> Festus p. 151 M.

<sup>35</sup> The special legal action was called *actio pro socio manente societate*, see *Digesta* 17.2.65.15.

<sup>36</sup> We can infer this from paragraphs 46 and 54 of the *Lex Portorii Asiae*.

company's contractual obligations. Numerous ancient authors mention shareholders of the *societates publicanorum*, referred to as *participes* or *adfines*.<sup>37</sup> We also know that the shares were traded and had fluctuating prices. For instance, Cicero writes about 'shares that had a very high price at that time.'<sup>38</sup> The same quote also indicates that the shares could be bought either from another shareholder or directly from the company, suggesting secondary offerings. Traders met on the *Forum Romanum*, supposedly near the Temple of Castor.<sup>39</sup>

4. *Rights and Obligations*. According to *Digesta* 47.2.31.2 the company of tax collectors, *societas vectigalium*, could file actions, including actions against fraud or embezzlement. The company could own property and inherit items.<sup>40</sup>

The *societas publicanorum* thus seems to satisfy the most important elements of the modern corporation. In fact, some other sources describe it almost directly as a separate legal entity. For example, Cicero reports about a *societas publicanorum* that 'consists of other *societates* [*publicanorum*]',<sup>41</sup> and thus assumes the role of a natural *persona*. Gaius counts the *societas publicanorum* among the organizations with a '*corpus*' (*Digesta* 3.4.1.1). And *Digesta* 46.1.22 states that the *societas publicanorum* can 'act like a person.' This corresponds exactly to the modern classification of corporations as legal *persona*.

These modifications appear to have had a far-reaching effect on the companies' access to capital. Cicero mentions that stock ownership in the *societates publicanorum* was widespread among the Roman population. According to Polybius, "almost every citizen" was involved in the government leases by the 2<sup>nd</sup> century BC.<sup>42</sup> Investors aimed for diversified portfolios as suggested by Cato's famous statement that, if people wished to obtain money for shipping business, they should form a large association, and when the association had 50 members and as many ships, he would take one share in the company.<sup>43</sup> In summary, both the increased access to capital markets and the recognition as legal entities allowed the *societates publicanorum* to function like modern corporations.

This being said, the *societas publicanorum* does not satisfy every criterion of a modern legal definition of a business corporation. However, applying modern standards ignores that the concept of the legal *persona* was formed slowly over the centuries. It un-

<sup>37</sup> E. g. Cicero, *Pro lege Manila* 2.6, *Pro C. Rabirio Postumo* 2.4; Plautus, *Trinummus* 330-331; Livy, *Ab urbe condita* 43.16.2. The meaning of *adfines* remains more vague in the ancient literature; they are never mentioned in Cicero's work.

<sup>38</sup> Cicero, *In P. Vatinius testem interrogatio* 12.29. Badian (1983), p. 102, points out that the high stock price is consistent with a price reduction for right of tax collection in the same year.

<sup>39</sup> See Plautus, *Curculio*, 78, and the references in Chancellor (1999), p. 4.

<sup>40</sup> *Digesta* 3.4.1 (*habere res communes*) and *Digesta* 37.1.3.4 (*bonorum possessio*).

<sup>41</sup> Cicero, *Epistulae ad familiares* 13.9.2 ("constat ex ceteris societatibus").

<sup>42</sup> Polybius, *Historiae* 6.17.3-4.

<sup>43</sup> Plutarch, *Cato Maior*, 21.5-6. We thank an anonymous referee for suggesting this quote.

derwent major re-interpretations in the 16<sup>th</sup> century and was the subject of extensive theoretical debates in the 19<sup>th</sup> century, most prominently between the “Romanist” legal scholar Friedrich Carl von Savigny and the “Germanist” Otto von Gierke.<sup>44</sup> Imposing the resulting modern systematization upon Roman law runs the risk of introducing much more structure than existed at the time.<sup>45</sup> The Romans were concerned with the rapid transformation of their small closed agricultural economy into an open system that spanned the entire known world. What is crucial is that they managed to accommodate the practical needs of their growing economy, even without revolutionizing company laws. From a practical, economic perspective, the historical sources draw a rather compelling picture of the *societas publicanorum* as the first business corporation.

## 2.4 Why Did the *Publicani* Disappear?

Why did this development come to a halt, ultimately being reversed under the Roman emperors? Why did the *societas publicanorum* disappear instead of becoming the direct predecessor of the modern corporation? This takes us to the debate on the political economy of legal development. We showed above that the demise of the *publicani* is closely related to the rise of the Roman emperors, illustrating the importance of Rome’s political economy for its financial and economic development. It is less clear what exactly the motivation for the politically induced change was.

Traditionally, historians have pointed to the abuse of power by the *publicani* as the cause of their demise. In the 16<sup>th</sup> century, Cujaz described the publicani as “unsurpassed in fraud, avarice, immodesty and audacity.”<sup>46</sup> Over the last four centuries, this verdict has changed little. Deloume and Ürödgi portray the *publicani* as revenue-hungry exploiters.<sup>47</sup> Mommsen linked the gradual development of a class of profit-oriented entrepreneurs to the emerging social tensions in the Roman Republic and even the later disintegration of the Roman Empire.<sup>48</sup> Cunningham lists “avarice,” “extortions,” and “greed of gain” as the dominant influences in these transactions.<sup>49</sup> The elimination of government lease-holding and their replacement with public administration is then interpreted as an attempt to remedy the shortcomings of a system based on monetary incentives, similar

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<sup>44</sup> Von Savigny (1840-49), vol. 2; von Gierke (1887).

<sup>45</sup> A more detailed discussion of appropriate classification criteria for the ancient corporation is in Mal-mendier (2002). See also Duff (1971), e.g. on p. 48.

<sup>46</sup> Cujaz (1595) characterizes the *publicani* in his commentary on *De publicanis et vectigalibus et commissis* (*Digesta* 39,4) as: “*Hi quam fraude, avaritia, immodestia, audacia superent ceteros homines nemo est qui nesciat...*” (p.54).

<sup>47</sup> Deloume (1890), p. 475 f.; Ürödgi (1968), col. 1191 f.

<sup>48</sup> Mommsen (1912), vol. II, p. 379 f.

<sup>49</sup> Cunningham (1902), pp. 157 and 165.

to the reasoning in Akerlof and Kranton (2003). Augustus is hailed for organizing an effective public administration that eliminated the abuses of the publicans.

However, as Badian (1983) points out, the negative image of the publicans is biased. When the system of contracting with the publicans was working well, there was little interest in reporting about it. Only the excesses and abuses stirred the interest of ancient historians and led to a partial treatment of the publicans in the historical literature.

Most importantly, the traditional “benevolence” interpretation misses that the governing class had little interest in protecting the inhabitants of the provinces from the excesses of the publicans. Attempts to restrain them, such as the legislation of Q. Mucius Scaevola as governor of Asia in the early first century B.C., were rare. Politicians had to overcome resistance among their fellow magistrates, as Cicero reports in his letter to Atticus (6.1). Rather, the proconsuls displayed similarly abusive behavior in the provinces they were governing.<sup>50</sup>

Instead of invoking “benevolent paternalism” of the Roman government, we propose to link the elimination of the government lease-holding companies more directly to changes in Rome’s political economy.

First, the political change from Republic to Empire triggered an important organizational change. During the Republic, the short tenure of the consuls and other magisterial office precluded a stable bureaucracy which would organize the public works. The emperors, instead, established an apparatus that allowed for the nationalization.<sup>51</sup> Thus, as pointed out by the historians cited above, the establishment of an imperial bureaucracy was a necessary condition for the change.

Second, the reasons why the emperors preferred to create their own bureaucracy also shed light on motivation to abolish the business opportunities of the publicans. In particular, one potential reason why the Emperors *preferred* to use their bureaucratic apparatus over outsourcing is the diversion of public funds. Rome’s public treasury, the *aerarium*, lost its importance under the Principate as the emperors increasingly re-directed public revenues, especially from the provinces, into their (private) pockets.<sup>52</sup> Such diversion was likely easier when the emperors’ own employees collected the public revenues rather than when the task was publicly auctioned off and performed by private entrepreneurs. In fact, Badian (1983) argues that, earlier during the Republican times, Gaius Gracchus first started to outsource tax-collection in the province of Asia to the publicans to prevent government officials (governors) from extracting significant amounts. The same logic applies to the reversal.

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<sup>50</sup> See for example, Cary and Scullard (1975), p. 174.

<sup>51</sup> Heuss, 1960, p. 363; Rostovtzeff, 1957, p. 382.

<sup>52</sup> Cary and Scullard (1975), p. 379



Third, the emperors gradually increased the tax burden. Taxation was generally viewed as intruding civil liberty and had caused violent resistance all over the empire, also among non-citizens.<sup>53</sup> It was easier to enforce taxation using government employees, i.e. representatives of public sovereignty with public enforcement rights, to collect the taxes (rather than private entrepreneurs). Thus, even if the auction-based outsourcing system had revenue-enhancing features – such as identifying the lowest bidder for the provisions of services and the highest bidder for revenue rights – the new system was likely income-maximizing for the emperors.

Fourth, the emperors may have had concerns about powerful and large business organizations. In particular, they may have perceived the economic and increasingly political power of the publicans as a threat to their own imperial position, consistent with arguments in the modern political-economy debate (e. g. Rajan and Zingales, 2003). Relatedly, the Roman government had to realize its dependence on the services of the publicans at several instances during the Republic, especially during times of war. Being in the position to avoid such dependence, the emperor opted to build up his own bureaucracy.

The latter argument is particularly compelling in light of the increasing political role of the *publicans*. Early during the Republic, the publicans had shown little interest in political involvement. Becoming a senator and running for political offices would have required them to give up their business with the government, as senators were excluded from trade and commerce. At that time, publicans preferred their business to a political career.<sup>54</sup> The political involvement of the publicans increased significantly, though, with the Gracchan reform movement. After the murder of the elder brother, Tiberius Sempronius Gracchus in 133 A.D., Gaius Sempronius Gracchus continued to enforce the position of the *equites*. He passed a law (*Lex Iudicaria*) granting them control over the courts, which dealt with the senatorial extortions in the provinces.

The reforms of C. Gracchus created an *ordo equester* with a distinct identity. C. Gracchus also reinforced the economic power of the publicans by allowing them to collect the “tenth” (*decuma*) in Rome’s richest province, Asia. (Previously the publicans had only collected small taxes in Asia.) The *equites* and, most prominently among them, the publicans started exerting increasing influence on state politics – an influence that both senators (like Drusus and L. Sulla) and later the emperors aimed to undermine.

Finally, one may also question whether it was at all possible to sustain the *societas publicanorum* and the system of government leases, even if the emperors had preferred the system to persist. The issue is credible commitment on the side of the em-

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<sup>53</sup> Laum (1926), p. 218; Meincke (1984), pp. 170-1.

<sup>54</sup> Partly, the apparent lack of political ambition might reflect hidden constraints. While *equites* were formally qualified to enter the Senate, being part of the land-owning aristocracy may have been an informal impediment embedded in social prejudice, as for example argued in Badian (1983).

peror. Even if the emperors had benefited, economically, from continued outsourcing, how could they convince entrepreneurs that they would respect property rights and honor obligations towards the publicans? The Roman Republic was a system of checks and balances; but the emperors centralized power and could bend law and its enforcement in their favor. Eliminating the large companies was all the easier, given that their status was not enshrined in formal law. In fact, kings and other powerful elites imprisoning or killing their bankers was witnessed throughout history, including modern-era Europa, especially if the king was knee-deep in debt.

All these factors point to the importance of political factors, in addition to and sometime despite the legal development, in the establishment and persistence of corporations in ancient Rome.

## **2.5 Finance and Growth of Large Firms—With and Without Law**

We have shown that the Roman *publicani* were able to establish large-scale business operations when the governing class supported and in fact benefited from their operation. Laws were reinterpreted and adjusted to facilitate government lease holding without advancing the legal system. The concurrent switch from a Republic to an Empire and from an economy based on outsourcing and contracting with private entrepreneurs to a nationalized economy speaks to the role of politics in the financial and economic evolution in Rome. Moreover, since such regression occurred at a time when the legal system reached its height, we can distinguish the effect of the political changes from that of the legal changes at the time.

The case of the early Roman corporation shows that corporations can function without the legal infrastructure we usually presume they need, provided that the government is willing to take actions to grant their status and operation. And, it shows that corporations do not function without the government's continued support. On the other hand, all of these developments were embedded in an advanced legal environment without which the rise of the *societas publicanorum* may have never occurred. In other words, our analysis has little to say about the importance of law for the financial and economic development of large corporations. It does say, though, that political factors outweighed any other determinants in the specific case of the Roman corporation.

Interestingly, the political and economic interests of the government played a similar role in the later development of the corporation. The English East India Company developed slowly from a rather loose association of merchants, who contributed capital and divided profits one voyage at a time, into a continuous organization.<sup>55</sup> The incorporation was originally driven by the need to create a body of merchants to which the gov-

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<sup>55</sup> For a detailed history see, for example, Davis (1973) and Scott (1910-12), vol 2.

ernment could transfer monopolistic trading privileges and the governmental authority needed to extract economic surplus.<sup>56</sup> However, the government withheld the right to continuous incorporation as long as it could exploit the renegotiation with the merchants to extract higher profits. Not surprisingly, partnerships and corporations were not clearly distinguished until the end of the 17<sup>th</sup> century and many of the joint stock companies evolved from partnerships.

Economic historians as well legal scholars have elaborated on the emergence of economic relationships “even without law,” given the right set of institutions (Ellickson, 1991; Greif, 1989). Temin (2006) points to the growth-promoting quality of Rome’s political institutions, such as granting security to private individuals during the famous *Pax Romana* (27 B.C. - 180 A.D.). The case of the *societas publicanorum* stresses the countervailing force: It is true that the economic growth of Rome during the late Republic and the early Empire indicates the quality and importance of Rome’s (legal) institutions. But it is also true that these institutions persisted only as long as they served the interest of the political elite. They were not stable or resistant enough to protect citizens when political interests reversed. More than specific legal rules and developments, political interests drove (and hindered) the emergence of the modern business corporation.

### **3 Determinants of Financial Development and Growth**

The rise and fall of the *societas publicanorum* provides a unique setting, in which legal and political influences can be disentangled more easily than in many cases. How does it feed into current debate about finance, growth, law and politics? First of all, it builds on the literature that establishes a link between finance and growth. Legal and other institutional determinants of financial development are of interest largely because of the interplay between finance and growth. While we have some evidence that the financial development in Republican Rome and rise of the Roman shareholder company coincided with improvements in growth, and that its fall coincided with lower production and growth in some industries, the evidence is far from unequivocal and from establishing causality. In the next Subsection (3.1) we provide a selective overview of the literature that tries to establish such a link. We illustrate the breadth of empirical methodologies and the different types of evidence employed, as well as their limitations. We then ask (in Subsection 3.2) what specific mechanisms and channels from financial development to growth have been identified in the literature. As we will see, our Roman case is consistent with those findings, especially with the emphasis on access to external financing. In Subsection 3.3, we approach the core question of what determines, in turn, financial development. We

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<sup>56</sup> Gower (1969), p. 24.

review key papers on the law and finance as well as the politics and finance approach. While those approaches are often presented as competing, we highlight their interaction: Legal development cannot be separated from its political environment, and many empirically significant determinants of finance and growth, such as law enforcement and legal innovation, inherently represent both factors. In addition, we emphasize a literature that has found less attention in previous reviews and ongoing research in this area: papers analyzing the availability of different business formats in an economy (such as the shareholder company), and characteristics of those business formats (such as limited liability and the possibility of agency and representation). These, mostly historical papers illustrate that smooth access to financing and ultimately growth requires more than investor and creditor protection embedded in legal rules. Restrictive business formats impose transaction costs and may impede the funding the most promising enterprises.

As stressed before, our overview is selective due to its attempt to point to under-explored areas of research and its focus on the debate on law versus politics. Excellent surveys of the broader literature are, for example, provided by Levine (2005) and Beck and Levin (2005).

### **3.1 Causality**

While there is little doubt about the positive correlation between finance and growth (see e.g. Levine and Zervos, 1998), the basic question is: Does financial development induce economic growth? Or is it economic growth that triggers the development of better financial systems? Or are both outcome variables correlated with a third, unobserved factor?

The vast majority of recent papers argue that there exists a causal channel running from finance to long-term economic growth. The literature is extensively reviewed in Levine (1997) and (2005). For the purpose of this article, we confine ourselves to highlighting the main empirical approaches used to document the impact of finance on growth:

1. a simple *post hoc ergo propter hoc* approach;
2. identification out of regulatory changes that affect financial development but not growth;
3. direct comparison of financial development and other determinants of growth;
4. identification out of firm-level variation in dependence on financial development and the resulting firm-level differences in growth.

An example of the first approach is King and Levine (1993a). Using data from 80 countries over the period from 1960-89, they construct several indicators of financial development at the beginning of the sample period (1960). They focus on the size of financial intermediaries (ratio of liquid liabilities of the financial system to GDP) as a proxy for the

quality of financial services [LLY].<sup>57</sup> They then regress the average real per-capita GDP growth rate over the *entire* sample period (1960-1989) on LLY in 1960 as well as on economic indices in 1960 (per-capita GDP, secondary-school enrollment, government consumption to GDP), the inflation rate, regional dummies, and political variables (civil liberties index, number of revolutions). The coefficient on LLY is .02 with a 5% significance level. Thus, financial intermediation in 1960 predicts average growth over the next 30 years, even when controlling for an array of economic conditions in 1960.<sup>59</sup>

The results are suggestive of a causal link running from finance to growth since it is unlikely that governments would have built up financial capacity in 1960 in anticipation of high average growth over the next thirty years. On the other hand, if the time averages of these financial variables over the sample period are correlated with omitted determinants of economic growth, then this is likely to be true for their 1960 level as well.

An example of the second approach, which seeks to exploit exogenous, regulatory variation in financial development, is Jayaratne and Strahan (1996). The authors employ changes in intra-state banking restrictions in the US as exogenous shocks to financial development and analyze the impact on economic growth. Prior to the 1972, all but 13 U.S. states prohibited in-state banks from establishing other branches within that state. After 1972, states started permitting banks to establish in-state branches by acquiring other banks and, later, to freely establish branches anywhere in the state (*de novo* branching). Jayaratne and Strahan exploit state-by-state variation in the implementation of the reforms. Using 1972-1993 data from fifty states, they regress a state's change in real per capita income ( $Y_t/Y_{t-1}$ ) on state fixed effects, year fixed effects and a dummy for "no branching restrictions" through mergers and acquisitions. They estimate a significantly

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<sup>57</sup> The authors also calculate the size of the private banking sector relative to the size of the central bank as a proxy for "growth-enhancing" financial institutions [BANK], and two measures of the size of the private sector, capturing higher growth in financial systems that funnels credit to private rather than state-owned enterprises [PRIVATE and PRIVY]. As the authors acknowledge, each of these proxies is open to alternative interpretations. For example, the size of the financial system [LLY] may be unrelated to its quality. And, in many countries, it is difficult to classify the activities of government-controlled banks, which compromises the use of BANK, PRIVATE, and PRIVY.

<sup>59</sup> The authors do not show the results using BANK, PRIVATE, and PRIVY.

<sup>62</sup> The authors alleviate the concern by providing informal evidence that the timing of the deregulation was not correlated with state-level business cycle effects. For each reforming state, they calculate the average growth over the years between 1972 and the reform and between the year of the reform and 1992. About half of the reform states experienced a lower and half a higher average growth rate after the reforms, suggesting little correlation with the state business cycle. However, comparing the change in growth rates to non-reforming states (for the same pre- and post-periods separately for each reform state), they find that in 29 cases the control states had an even greater before/after difference in growth rate after the reform year.

positive effect of about 1 ppt change in growth from branching liberalization. The inclusion of regional fixed effects reduces the OLS coefficient by half. The results remain significant after adding proxies for state-level business cycles (ratio of public investment to income, the lagged ratio of tax receipts to total income, lags of the dependent variable).

The reduced estimates after the inclusion of region dummies points to the main concern in interpreting these results: Were the branching reforms exogenous relative to financial development? Some of the historical details support this claim. For example, many reforms were initiated when the Office of the Comptroller of the Currency (OCC) permitted branching for nationally chartered banks and states felt compelled to grant the same privileges to banks with state charters. Other states, however, initiated the reform process themselves. In fact, the timing of the reforms appears to be related to bank failure. As the authors point out, 25 of the 35 reforming deregulated after 1984, a year in which the rate of bank failures increased significantly—from 25 banks requiring FDIC intervention in 1975-1984 to 1,296 banks in 1984-1992.<sup>62</sup>

Thus, while the possibility remains that the branching reform is correlated with other growth-promoting actions of the state and that its implementation is correlated with regional differences, Jayaratne and Strahan make significant progress on the causality issue. The question is whether their US-specific findings will (a) inspire similar identification strategies in a large set of countries and (b) allow specifying the mechanism through which such reforms improve financial intermediation and consequently growth.

A third approach is the direct comparison of financial development and plausible alternative determinants of growth. Beck and Levine (2002), for example, ask whether financial structure or financial development better predict firm growth. Their paper links up to the debate about bank-based versus market-based financial structure – a question that has dominated the historical literature since the writing of Gerschenkron. Proponents of bank-based systems stress the ability of banks to access information about firms and to force firms to repay debt. Proponents of market-based systems argue that banks block innovation by protecting large firms and collude with firms against outside investors.

Beck and Levine basic approach is to relate growth simultaneously to proxies for Financial Development (FD) and Financial Structure (FS), interacted with the need for external finance in different industries, and compare the size and significance of the estimated coefficients. Using data on 42 countries and 36 industries for the years 1980-90, they estimate the following model:

$$\text{Growth}_{ik} = \sum_j A_j * \text{Country}_j + \sum_m B_m * \text{Industry}_m + G * \text{Share}_{ik} \\ + D_1 * (\text{External}_k * \text{FD}_i) + D_2 * (\text{External}_k * \text{FS}_i) + e_i$$

where Growth is the real growth rate of value added (averaged over the years 1980-90), Country and Industry are dummy variables, and Share is the share of industry k in manu-

facturing in country  $i$ . External dependence of industry  $k$  is measured as the fraction of capital expenditures not financed with internal funds for U.S. firms in same industry between 1980-89. The authors construct FD as the first principal component of the variables “Finance Activity” and “Finance Size” (size and financing activities of financial intermediaries and market capitalization) and FS as the first principal component of the variables “Structure Activity” and “Structure Size” (value traded and capitalization relative to commercial banks claims on the private sector). Alternatively, they define FS on a scale from 0 to 16, measuring whether bank activity in (i) securities, (ii) insurance, (iii) real estate, and (iv) control of non-financial firms are unrestricted (1), permitted (2), restricted (3), or prohibited (4). Third, they redefine FS as “State Ownership,” i.e. the percentage of assets of the 10 largest banks in each country owned by the government.

With all measures they find no statistically significant interaction effect of external dependence and FS but a significantly positive interaction effect with FD. The result suggests that, after accounting for the level of financial development, the overall size of the banking sector does not explain firm growth. In other words, the choice of banking or market institutions for financial arrangements is of secondary importance compared to the overall level of financial development.

Finally, a fourth approach uses firm-specific rather than aggregate measures of growth and relates them to differences in firm-specific dependence of financial development. For example, Demirgüç-Kunt and Maximovic (1998) use a sample of 8,472 firms in 30 developed and developing countries from 1980-91 and exploit between-firm differences in asset structure and sales to calculate how much a firm  $i$  could grow in year  $t$  under different financing scenarios:<sup>63</sup>

- 1) no external funds (IG), i.e. relying on internal resources (with constant dividends);
- 2) short-term borrowing (SFG), i.e. reinvesting all earnings and maintaining a constant ratio of short term borrowing to assets;
- 3) long-term borrowing (SG), i.e. maintaining a constant ratio of (short-term and long-term) debt to assets, and paying no dividends.

The difference between the fraction of firms that grow at a rate higher than IG and those growing above SFG measures the impact of short-term financing constraints; the difference between the fractions exceeding SFG and SG measures the impact of long-term financing constraints. For example, in Australia the fraction of firms exceeding the IG, SFG, and SG rates were .58, .41, and .34, respectively. Therefore, 17% of firms grew at rates that exceeded the maximal rate using only internal cash flow, but were bound by the

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<sup>63</sup> The definition of EFN builds on stark corporate-finance assumptions: 1) constant ratio of assets to sales; 2) constant profit rate per unit of sales; and 3) economic depreciation equal to firm book value. It also suffers from the endogeneity of assets and sales.

short-term debt constraint, while only 7% were not bound by the short-term debt constraint but by the long-term debt constraint. These numbers suggest that access to short-term external finance was a greater issue for firm growth in Australia than access to long-term external finance. In fact, in only five countries (Canada, Germany, Finland, Korea, and Norway) did long-term external debt constrain a greater fraction of firms than short-term debt. Thus, the availability of short-term finance appears to play a greater role in constraining the growth of firms.

The authors test, then, how the effect of short-term finance constraints on growth relate to a country's financial development. They regress the proportion of firms in a country that grow faster than attainable with short-term borrowing (SFG) on proxies for financial development such as the size of the financial sector (domestic assets of deposit banks), the extent to which the financial sector is under private or government control, and the ability of financial instruments to facilitate long term investment and planning, controlling for an array of economic and legal controls (stock market capitalization, stock market turnover, inflation, a law-and-order index, total government financing, fixed assets, GDP). They find that the size of the financial sector, the capital stock, and the proportions of investment funded by debt and equity are all positively associated with higher-than-predicted growth rates at a confidence level of one percent.

Lacking an instrument for financial development, the authors have to acknowledge omitted-variable and other endogeneity concerns. Nevertheless, their paper is an important step towards microfounding the country- or state-level correlations.

In summary, all empirical methodologies leave some room for alternative interpretations and endogeneity concerns, dictated by the nature of the available data. Viewed together, however, the evidence and its variety of methodologies draw a consistent picture of a causal link running from financial development to economic growth.

### **3.2 The Channels**

While the Roman case study of the *societas publicanorum* does not provide direct evidence on growth outcomes, it does point to specific channels through which the advances in financial contracting may have fostered productivity. The evolution of a publicly traded corporation allowed Roman entrepreneurs to tap a much larger market for external financing and investors were able to move their money more easily between types of companies (industries).

A second string of the literature on finance and growth explores exactly these channels: the ability of financially-developed economies to direct investment towards growing industries; to provide financing even to (otherwise constrained) small firms; and to provide sufficient financing to firms with high need for external financing.



Wurgler (2000), for example, explores whether financial development directs investment away from declining industries towards growing industries. The author approach is to first estimate country-specific elasticities of growth in investment (I) to growth in value added (V).<sup>64</sup>

$$\ln(I_{ict}/I_{ict-1}) = \alpha_c + \eta_c * \ln(V_{ict}/V_{ict-1}) + \varepsilon_{ict} \quad (*)$$

(where i indexes firm, c country, and t year) and to relate these elasticities to financial development. In his sample of 25,201 firms across 28 industries in 65 countries over the years 1963-1995, all but two estimated elasticities are positive (Bolivia and Swaziland are insignificantly negative). The average elasticity across all countries is .429 with a cross-country standard deviation of .288. The author regresses these country-specific elasticities on various measures of financial development, averaged over their values in 1980, 1985, and 1990. When the sum of stock market capitalization and private and non-financial public domestic credit (normalized by GDP) is the only independent variable, its coefficient is .565 (s. e. .107). When GDP per capita (in 1960) is added, the coefficient falls to .323 (.105). Considering stock market and credit separately, only the coefficient on credit remains significant. Wurgler concludes that the development of financial markets serves to channel investment into growing industries, and this impact appears to be larger for the credit than for the stock market.

Beck, Demirgüç-Kunt and Maksimovic (2005) focus on firm size. They argue that smaller firms stand the most to gain from removing constraints. The authors utilize the World Business Environment Survey, comprising 4,255 small, medium, and large firms (with up to 50, up to 500, and more employees, respectively) from 54 countries in 1995-99. The key variables constructed from the survey are measures of firm-level obstacles to operations and growth, categorized as Financial, Legal, or Corruption.<sup>65</sup> The authors relate these three obstacles to firm growth and estimate:

$$\begin{aligned} \text{Firm Growth} = & b_0 + b_1 * \text{Government} + b_2 * \text{Foreign} + b_3 * \text{Exporter} + b_4 * \text{Subsidized} \\ & + b_5 * (\text{Number of Competitors}) + b_6 * \text{Manufacturing} + b_7 * \text{Services} \\ & + b_8 * \text{Inflation} + b_9 * \text{GDP/Capita} + b_{10} * \text{GDP} + b_{11} * \text{Growth} \\ & + b_{12} * (\text{Financial Obstacle}) + b_{13} * (\text{Legal Obstacle}) + b_{14} * (\text{Corruption Obstacle}) + e \end{aligned}$$

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<sup>64</sup> Value added is defined as the value of shipments of goods produced minus the cost of intermediate goods and required services, not including labor, and adjusted for inventories of finished goods, work in progress, and raw materials. Both I and V are in real terms, deflated using the U.S. capital-goods producer price-index with base year 1982.

<sup>65</sup> Financial Obstacle is a firm level score on the question of whether financing is (1) no, (2) a minor, (3) a moderate, or (4) a major obstacle to operations and growth. Legal Obstacle is the same score with respect to the functioning of the judiciary. Corruption Obstacle is the same score with respect to corruption.

where Firm Growth is the percentage change in firm sales over 1996-1999; Government, Foreign, Exporter, Subsidized, and Manufacturing are dummy variables equal to one if the firm is government- or foreign-owned, an exporter, receives subsidies from national or local government, and in the manufacturing or service industry, respectively. Inflation is the log difference of the consumer price index, and Growth is the growth rate of GDP. (All numerical variables are averaged over 1995-1999.)

When this equation is estimated with only one of the obstacle variable, the obstacle coefficient is always significantly negative, ranging from -.021 to -.031 (s.e. = .009 in all three cases). When all three obstacle variables are included, Corruption becomes smaller in absolute magnitude (-.007) and loses significance.

In order to test whether the impact of these obstacles on firm growth depends on firm size, the authors re-estimate the equation, including only one type of obstacle at a time and adding measures of institutional quality:

- financial development (Priv = ratio of domestic banking credit to the private sector over GDP, averaged over 1995-99; source: International Financial Statistics),
- legal development (Laworder = indicator of legal efficiency, ranging from 1 to 6 and averaged over 1995-97; source: International Country Risk Guide), and
- corruption (Corrupt = indicator over the same scale and years, with higher values indicating less corruption; source: International Country Risk Guide).

Specifically, they add the type of institution (financial, legal, corruption) corresponding to the type of obstacle, interacted with the firm-size dummies Large, Medium, Small. They also include the logarithm of firm size, the interactions of Obstacle with the firm-size dummies Large, Medium, Small, and the triple interactions of Obstacle, corresponding Institution, and the three firm-size dummies.

For all three regression, i.e. types of Obstacle and types of Institution (financial, legal, and corruption), the obstacle-size interactions are significantly negative only for medium and small firms. And, among the triple interactions, the only statistically significant coefficient is for small and sometimes for medium-size firms. That is, only for small (and medium) firms does the negative impact of financial obstacles on firm growth ameliorate as financial institutions develop. The results suggest that financial and legal constraints and corruption place a greater burden on small firms, and that institutional development mitigates the adverse affect of these limitations on firm growth.

Rajan and Zingales (1998) focus on the availability and cost of external finance as determinant of growth. Is it the case that financial development improves the access to external financing for productive – even if cash-flow poor – firms? If so, then sectors that are in greater need of external finance should develop faster in countries with more developed financial markets.

The authors test this hypothesis using data of manufacturing firms in 41 countries from 1980 to 1990. The authors define dependence on external finance using an US benchmark, namely, the fraction of capital expenditures not financed internally in the median firm in an industry. For U.S. firms this value ranges from -.45 for the tobacco industry to 1.49 in the pharmaceutical industry.

The analysis rests on two crucial assumptions. First, different sectors (within the manufacturing industry) have different “technological demand” for external financing. That is, even in a frictionless world without moral hazard and without asymmetric information, some sectors would, on average, demand more external financing than other sectors, e.g. because of larger or more frequent investments required for production. Second, the amounts of external finance used by US firms in different sectors are useful proxies for the “technological demand” in those sectors in other countries. The plausibility of these assumptions is difficult to assess. The main difficulty is the identification of “technological demand.” For example, if it is very costly to monitor managers in a certain sector, even in the US, we will never observe mere technologically determined demand. Sectors with a small component of external financing in the US might be the sectors with the largest inherent moral hazard problems rather than the lowest technological demand.

The authors use a variety of measures to proxy for financial development: (total or equity market) capitalization, accounting standards, and domestic credit offered by depository institutions and the central bank to the private sector.<sup>66</sup> After averaging the country- and industry specific data over the sample years 1980-90, they regress the annual compounded growth rate (in real value added) for a particular industry in a particular country on the interaction between industry-specific external dependence and country-specific financial development, controlling the industry’s share of total value added in 1980 and including country and industry fixed effects. For all types of “financial development” proxy, they find a positive and significant interaction coefficient. When accounting standards and capitalization are included simultaneously, only the interaction coefficient for accounting standards is significant. The authors use the estimated coefficients results to calculate how much faster an industry at the 75<sup>th</sup> percentile level of external dependence would grow, compared to an industry at the 25<sup>th</sup> percentile, if it is located in a country at the 75<sup>th</sup> percentile of financial development rather than in one at the 25<sup>th</sup> percentile. The resulting differentials in real growth range from .4 to 1.3.

The analysis leaves open the possibility that sectors with large external financing (in the US) are drivers of economic growth for other reasons in financially developed

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<sup>66</sup> The authors show that capitalization is strongly correlated with accounting standards (.41 for total capitalization, with standard error of 0.02) and with domestic credit (.67 [.00]), while accounting standards and domestic credit are only weakly correlated (.25 [.17]).

countries. However, viewed jointly with other literature discussed above, the results both corroborate the finance-growth link and help to understand its micro-foundations.

A large literature in macroeconomics also identifies access to external finance as an important determinant of long-term growth (see Barro, 1997) and explores the role of financial intermediation on growth. Aghion, Howitt, and Mayer-Foulkes (2005), for example, argue that the lack of financial development can impede access to external finance and thereby prevent a country using technology transfer to converge to the growth rate of the world technology frontier. Thus, financial constraints prevent poor countries from fully benefiting from technology transfer.

A number of papers relate financial intermediation to growth in AK-style models, building on the assumption of non-diminishing returns to capital. In these models, following Romer (1990), production externalities in an intermediate goods sector with monopolistic competition leads to a positive association between the savings rate and the long-run equilibrium rate of growth. The papers emphasize different channels of the finance-growth interaction. In Greenwood and Jovanović (1990), for example, financial intermediation emerges endogenously from the needs of agents to diversify risk and the ability of financial intermediaries to identify projects with higher expected rates of return. Levine (1991) also considers the ability of intermediaries to mitigate the productivity risk of firms and the liquidity risk of consumers. He adds a positive externality from insurance mitigating the need to withdraw capital prematurely from production processes. In Bencivenga and Smith (1991), intermediation affects the composition of investment even if aggregate savings are held constant. Intermediation allows more productive, but illiquid projects to receive finance. Similarly, Saint-Paul (1992) assumes that, in the absence of financial institutions, producers have less insurance against production risks and must utilize more flexible technologies that yield lower expected returns. Bencivenga and Smith (1992) focus on the role of adverse selection. They show that credit rationing is inversely related to the equilibrium growth rate. They also point out that such rationing is mitigated when there is a positive feedback between growth and the development of financial institutions. The model of Sussman (1993) considers the role of financial market structure more broadly by building a model of spatial competition where costs to banks are increasing in distance from lenders. Regional specialization and entry by new banks then reduces the overall cost of capital to firms and leads to higher growth. Khan (2001) also considers the reduction in the cost of capital to firms, but emphasizes how it arises from the need of firms for external finance that cannot be met by internal cash flows.

The above models share the feature that finance affects growth through the channel of either more or more efficient use of savings. A second string of the literature takes a more Schumpeterian view and examines directly the role of finance in facilitating inno-

vation. King and Levine (1993b), for example, emphasize the role of financial intermediaries in evaluating and pricing the expected profits from entrepreneurial activity. Their model assumes that fixed costs in the evaluation of entrepreneurial activity give rise to organizations specializing in these tasks. The authors also emphasize—again, in the spirit of Schumpeter—the role of monopoly returns to innovations and the resulting need for a financial system that accurately reveals these potential rents to entrepreneurs. Galetovich (1996) critiques King and Levine’s emphasis on the role of fixed costs in evaluating entrepreneurial activity, pointing out that the financial sectors of poor economies have tended to develop at a faster pace than real income. He interprets this as evidence against the importance of high fixed costs in the historical development of these institutions. If such activities required high initial outlays, we would not expect to see them develop quickly in countries with low income levels. He argues instead that financial intermediaries emerge to avoid the costly duplication of monitoring activity as increasingly specialized firms seek external sources of finance. Blackburn and Hung (1998) also emphasize the monitoring role of financial intermediation. Firms privately observe their returns, and the optimal debt contract in the presence of such asymmetric information introduces a fixed cost to the research and development process. To the extent that there are multiple lenders, this encourages the duplication of monitoring efforts, and financial intermediation emerges when these costs can be lowered. The authors thus measure financial development in terms of the emergence of new financial institutions rather than the growth in the number or efficiency of existing institutions.

Departing from the costly state verification framework, De La Fuente and Marin (1996) assume that entrepreneurs’ actions are unobservable by lenders. In the absence of monitoring, entrepreneurs inefficiently reduce their effort. Incentive-compatible risk-sharing is inefficient since entrepreneurs are risk-averse entrepreneurs and divert their resources away from risky ventures. In this model, intermediaries emerge to finance entrepreneurial activity and solve the problem of moral hazard faced by risk-averse entrepreneurs. Finally, Morales (2003) attempts to combine two types of models: (1) models following neoclassical growth theory that have emphasized the interaction between financial institutions and capital accumulation in the growth process and (2) models that have emphasized the interaction between finance and the externalities from the production of new ideas and products.

So far, we have surveyed work from a growing body of evidence accumulated through a variety of methodologies, which point to a causal link running from the development of financial institutions to higher growth. The methodologies include cross-country regressions on proxies for the size and efficiency of the financial sector, quasi-natural experiments due to regulation of financial institutions, and firm-level estimates of

the financial constraints posed on sales growth. In addition, the papers surveyed in this subsection identify specific channels through which financial development matters, in particular the easing of external financing for small firms and firms with intangible assets. Even though each of these papers, by the nature of the available data, is open to alternative explanations, the evidence forms a consistent and convincing picture of the finance and growth connection.

### **3.3 The Determinants of Financial Development**

In light of this literature on the impact of financial development on economic growth, a core question is what triggers the development of a financial system.

#### **3.3.1 Law and Finance**

This is where the law and finance literature comes in, arguing that legal institutions are a key determinant. Starting with La Porta et al. (1997) and (1998), researchers have related financial development to private property rights, contract enforcement, and investor protection. This literature has used the legal tradition of a country, or its “legal origin”, to instrument for the current legal environment. The empirical analysis exploits that, through colonization, and later also through imitation, legal traditions spread beyond Europe and allow cross-country comparisons around the world.

La Porta et al. distinguish four legal systems: British common law, French civil law, German civil law, and Scandinavian civil law. This four-part classification scheme has become standard in the law and finance literature. Its foundation is worth some elaboration. In proposing these four legal systems, La Porta et al. refer the classification of commercial legal systems in David and Brierley (1985), who propose a tripartite division of Western law into a Romano-Germanic, a common-law, and a socialist family, a division also utilized by Merryman (1985). Neither Merryman nor David and Brierley use the fourfold distinction; Merryman does suggest, however, that Scandinavian law should be outside the civil-law tradition. However, he classifies French and German law as two of many subclasses of civil law. In fact, according to Merryman, French law and German law are both rather unique and unrepresentative of the civil law tradition, in the case of French law because of France’s revolutionary roots and, in the case of German law, because of the large influence German scholars exerted on their jurisprudence. David and Brierley group Latin, Germanic, Scandinavian, Latin American, etc. as subgroups of the “Romano-Germanic” family. Similarly, Dawson’s often cited history of the transformation from lay to professional judges in England, France, and Germany (Dawson, 1960) treats these countries as regions with distinct histories and thus distinct institutions but does not suggest that they are exhaustive typologies of legal systems. In summary, the now most commonly used fourfold typology in the law and finance literature does exist

in prior legal literature but is by no means universally accepted. One may consider the classification itself as part of a joint hypothesis tested in the law and finance literature.

In La Porta et al. (1998), the authors relate these legal traditions to a core aspect of financial development: investor protection. If the rights of investors are not enforced, managers can divert the return to corporate investments into their own pockets, and investors will be unwilling to finance such investments in the first place. The difficulty in relating investor protection to the legal environment of a country is, of course, that legal institutions arise endogenously. For example, a country may make a political choice in favor of banks and then adopt laws that favor banks over capital markets. The resulting correlation between creditor protection and legal environment would, in this case, simply results from an exogenous political choice. This is where the “legal origins” idea enters the picture. The authors argue that using “legal systems” rather than current laws ameliorates the causality problem. As they point out, countries typically have not “chosen” a legal system or, to the extent they have, did not do so on the basis of investor protection. Therefore, the exogeneity of the legal family can help to isolate the independent effect of legal rules on investor protection.

For their empirical analysis, the authors compile an impressive data set of investor protections across common law and civil law jurisdictions. Their sample covers 49 different countries, though it does not include any socialist or transition countries. To be included, countries need to have at least five domestic, non-financial, publicly traded firms with no government ownership. The sample contains 21 countries from the French civil law tradition, 6 countries from the German civil law tradition, 4 from the Scandinavian civil law tradition, and 18 from the common law tradition.

The authors relate the legal traditions in these countries to several measures of investor protection, separately for shareholders or creditors. The protections accorded to shareholders are classified as follows: (1) Does the jurisdiction have a one-share-one-vote rule for equity holders? (2) Can proxy voting be done by mail? (3) Are firms prevented from blocking shares before a general shareholders meeting (i.e. from requiring shareholders to deposit them)? (4) Can minorities cast all their votes for one board candidate (cumulative voting) or name a proportional number of directors to the board? (5) Does the law provide a venue for minority shareholders to challenge major actions of management, such as mergers and changes to the corporate charter (called “oppression” protections)? (6) Do shareholders get the first opportunity to buy new issues of stock, and is the minimum percentage of ownership that allows a shareholder to call for an extraordinary meeting below (the sample median of) 10%? (7) Must firms pay a mandatory dividend as a percentage of net income?

The authors find that, compared to other legal families, common law countries have the highest percentages of voting by mail (39%) and oppressed minority protection

(94%) and the lowest average share capital required to call an extraordinary meeting (9%). By contrast, French civil law countries have lowest percentage of voting by mail (29%), a high percentage of mandatory depositing of shares (71%), a low percentage of laws protecting minorities (29%), and the highest percentage of share capital required to call a meeting (15%). Moreover, only French civil law countries provide for mandatory dividend payments, consistent with the idea that such requirements are meant to compensate for otherwise-poor investor protection. The authors present evidence that these differences across jurisdictions of differing legal origin are not driven by per capita income levels. They show that there is no statistically significant difference in an anti-director rights index (based on (2) to (6) above) for sample countries in the bottom and top quartile of the distribution of GNP per capita.

Turning to creditor protection, the authors consider whether: (1) there is no “automatic stay” on assets when a firm files for reorganization (which would prevent creditors from getting possession of collaterals), (2) secured creditors receive priority when firm assets are sold, (3) creditors must consent before a company files for reorganization, (4) a party appointed by the court or creditors, rather than management, runs the firm during reorganization, and (5) a minimum amount of share capital must be kept in reserve by firms to avoid dissolution. Implicitly, these five criteria measure creditor protection from the standpoint of senior secured claims. The drawback is that greater rights to secured creditors often come at the expense of unsecured creditors. A second implicit choice is to stress the process of reorganization over the process of liquidation. In countries with weak creditor protections in reorganization, however, creditors might still enjoy a high overall level of protection if they are protected in liquidation and if reorganization is rare. Both implicit assumptions call for caution in the interpretation of the findings.

The authors find that creditor protection is, in general, more widespread than that of shareholders. Almost half the countries in the sample do not provide for an automatic stay on assets in reorganization. In 81% of the sample countries secured creditors are paid first from the sales of firm assets, and in 45% of the countries management is removed during reorganization. Common law countries appear, again, to provide more protection, though the difference is not as pronounced as with shareholder protection. They have the highest percentage disallowing automatic stay on assets (72%) and removing management during reorganization (78%). The United States—which has an automatic stay provision during reorganization, allows managers to petition for reorganization with no restrictions, and allows management to manage the firm in reorganization—is, in fact, one of the most creditor-unfriendly common law countries. French civil law countries score the worst on creditor protections. Automatic stay is allowed in 74% of French civil law countries, only 65% ensure secured creditors are paid first, only 42% place restrictions on managers seeking court protection from creditors, and only 26% remove managers during



reorganization. Legal reserve requirements, which the authors consider to be a bright line rule that indicates overall weak protections for creditors, are very rare in common law countries (only Thailand has such a provision), but appear in 21% of French civil law countries.

From these statistics and correlations, the authors conclude that legal origin explains both weak shareholder and creditor rights and, in particular, that investor protection is weaker in civil-law jurisdictions than in common-law ones. The authors also consider whether jurisdictions with weak investor protection develop institutional substitutes such as stronger legal enforcement of existing laws. The authors find that, controlling for per capita income, common-law countries are ahead of civil-law countries on measures of the efficiency of the judicial system, the rule of law, corruption, the risk of expropriation, and the risk of contract repudiation by the government, though the differences are not always statistically significant. On the other hand, the authors also suggest that bright line rules, such as the mandatory dividend rules in French civil law countries and legal cash reserve requirements in German civil law countries may be thought of as attempts to alleviate the effects of poor investor protection. They hypothesize that high ownership concentration may also reflect poor investor protections.

Overall, civil-law systems and, in particular, French civil law emerge as the most detrimental to financial development. La Porta et al (1997) take this evidence one step further and argue that countries with better investor protections have higher valued and broader capital markets and therefore easier access to external finance. The underlying mechanism is straightforward: providing creditors and shareholders with legal rights that allow them to realize the return on their investment with greater certainty facilitates external finance. La Porta et al. (1997) base their evidence on the following estimation:

$$\begin{aligned} \text{ExtCap/GNP} = & B_0 + B_1*(\text{GDP Growth}) + B_2*\log(\text{GNP}) \\ & + B_3*(\text{Rule of Law}) + B_4*(\text{French Origin}) \\ & + B_5*(\text{German Origin}) + B_6*(\text{Scandinavian Origin}) \\ & + B_7*(\text{Antidirector Rights}) + B_8*(\text{One Share/One Vote}) \end{aligned}$$

where ExtCap/GNP is the ratio of stock market capitalization held by outside shareholders over gross national product in 1994.<sup>67</sup> Rule of Law is the average, for the months of April and October in the years between 1982 and 1995, of the International Country Risk Guide's monthly index for each country (defined on a scale from one to ten). Antidirector Rights is an index of shareholder rights—defined on a scale from one to five—, which adds up shareholder protection rights (2) to (6) from La Porta et al. (1998) as described

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<sup>67</sup> The stock market capitalization held by outside shareholders is computed by multiplying total stock-market capitalization by the average percentage of shares not owned by the largest three shareholders for the ten largest private, non-financial firms in a country.

above. One Share/One Vote equals one if a country's law requires that each ordinary share carry one vote. The authors do not include GDP per capita in their regressions because its correlation with the Rule of Law variable is .87. Adding GDP per capita eliminates the significance of the Rule of Law variable.

When all the variables except for Anti-Director rights are included in the regression, the coefficients on French, German, and Scandinavian Origin are all negative (-.3341, -.3230, and -.3056) and at the one or five percent level, while that of Rule of Law is positive (.0437) and significant at a 10% level. The regression associates a decrease of around 30 percentage points in the ExtCap/GNP ratio with a change in legal origin from common law to any type of civil law. It also associates an increase of approximately 20 percentage points in this ratio with a Rule of Law change from a score of five to ten. When Anti-Director Rights are included in the regression in place of the One Share/One Vote variable, it has a coefficient of .0675, with a significance level of 10%. Thus, a change in the Anti-Director rights score from the French origin average of 1.76 to the common law average of 3.39 is associated with a change in the ExtCap/GNP ratio of approximately 19 percentage points. However, the coefficients on the three types of civil-law origin become smaller (-.1849 to -.2816) and insignificant or significant at 10%. In summary, the regression suggests that common-law legal systems are correlated with more external financing and this effect cannot be explained solely through current shareholder rights, at least as captured by the variables the authors define.

The authors also relate investor protection to debt financing. They re-estimate the above equation using Debt/GNP—the ratio of the sum of private sector bank debt and outstanding non-financial bonds over GNP in 1994—as the dependent variable, and with Creditor Rights replacing the Anti-director Rights and One Share/One Vote variables. The authors interpret the Debt/GNP ratio as measuring the extent of the debt market and the ability of firms to obtain external debt finance. The resulting coefficient on Rule of Law is .0694 with a standard error of .0148. Thus an increase from 5 to 10 on this measure is associated with an almost 35 percentage point increase in the Debt/GNP ratio, where the sample mean of this ratio is .59. French civil law is associated with a Debt/GNP ratio that is 12 percentage points lower than that for a common law country, at a significance level of 1%. Thus, similarly to the results for equity financing, common-law systems seem to facilitate debt financing.

A large body of research has followed up on these two seminal papers and relates investor protection laws and private property rights to firm valuation (Claessens, Djankov, Fan, and Lang, 2002; La Porta et al. 2002; Caprio, Laeven, and Levine, 2003), to dividends (La Porta et al., 2000), and reinvestment of earnings (Johnson, McMillan, and Woodruff, 2002). La Porta, Lopez-de-Silanes, and Shleifer (2006) showcase weak liability rules and insufficient information disclosure rules in French legal origin coun-

tries, consistent with weaker enforcement of private contracts. Levine (1998, 1999, 2003) and Beck, Levine, and Loayza (2000) bridge legal-origin induced investor protection to the development of stock markets and financial intermediation, and ultimately to cross-country differences in growth.

At the same time, the law and finance research has also triggered intense criticism. The findings in La Porta et al. (1997, 1998) are subject to rather obvious empirical caveats, starting from the cross-country methodology employed. In light of the aggregate nature of these measurements and the specific definitions of the control variables robustness checks are particularly important. For example, ExtCap/GNP is a fairly noisy measure of non-insider shareholding, especially since the authors infer the country-wide percentage of non-insider holding from the percentage found in the ten largest firms in the country. Thus, the measurement error in this variable is likely to be large and to vary in magnitude and sign across different countries. La Porta et al. have performed many such robustness checks. In the above example, the authors obtain very similar results using the number of listed, domestic firms as the dependent variable.<sup>68</sup>

Another important concern regards the direct channel from institutional features to external finance. The analysis leaves open the possibility that firms in civil-law countries obtain finance through various types of credit, rather than through equity markets and that the differences in the number of firms in each country arise from other institutional features. In fact, the authors conclude with the observation that, based on summary statistics for 1996, large publicly traded firms are able to obtain external debt financing in almost all countries, possibly financing directly from the government and from government banks. This last observation reinforces the concern about alternative, especially debt-based mechanisms.

Going beyond concerns about the empirical methodology, much of the more fundamental criticism is rooted in different interpretations of legal rules, legal systems, and legal evolution. Is civil law really more rigid than common law? Are private property rights really less well protected in civil-law countries? How informative is the classification by legal origin? And, even if such a classification *is* useful, how relevant is legal origin for financial development? For example, it has been argued that the mere presence of French or English legal code is a poor proxy for the actual institutional reality of a legal system. According to Berkowitz et al. (2003), the origin of a particular country's legal

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<sup>68</sup> Re-estimating the regression equation with the number of listed, domestic firms per one million people in 1994 as the dependent variable, the authors find that Rule of Law is significant in each specification, with estimates ranging from around 4.5 to 4.9 and standard errors from 1.2 to 1.4. A change in the Rule of Law variable from 5 to 10 is associated with an increase of around 23 more firms per one million people, a large effect given the sample mean of 22. The coefficient for French civil law across specifications is estimated to be negative and of similarly size (approximately -20 with standard errors ranging from 7 to around 8.5).

system matters less to the development of its legal institutions than its receptiveness to the system at the time it was introduced. Countries like England and France, in which legal systems developed organically over time, are the most in tune with their legal institutions, mores, and customs. Former colonial countries differ in their receptiveness depending on their histories. The authors classify as “receptive transplants” countries like Japan, with indigenous traditions of formal legal practices, institutions, and personnel, who selectively borrowed from foreign services while preserving the characteristics of its own system. They classify as “unreceptive transplants” countries in which foreign legal codes were adopted wholesale and without the support of a domestic constituency.

The authors test whether, once they control for the receptivity of transplant, legal origins can explain the effectiveness of legal institutions (“legality”) and subsequent economic development. The authors measure of legality (L) based on the survey indices of the quality the judiciary, rule of law, the presence of corruption, the likelihood of contract repudiation, the risk of government expropriation in the years 1980-95 that are used by La Porta et al (1997, 1998). They aggregate the individual proxies using principal components analysis and estimate the following equations for a sample of 49 countries:

$$L = A \cdot X + u \quad (1)$$

$$G = B \cdot X + v \quad (2)$$

where G is the log of GNP per capita in 1994 and X is a vector consisting of a constant and dummies for “receptive transplant,” “unreceptive transplant,” French origin, German origin, Scandinavian origin, and OECD membership. In the unrestricted estimation, most coefficients are insignificant. After dropping the variables with the largest standard errors (“receptive transplant,” German origin, and Scandinavian origin), the estimated effect of “unreceptive transplant” on legality is -3.017 and the effect of French legal origin -2.060, both significant at the 1% level. Thus, receptiveness appears to matter more than most types of legal origin. At the same time, French legal origin is a disadvantage compared to English origin, even when controlling for the means of transplantation. In summary, the mode of transplant appears to be separable from the particular legal system transplanted and appears to dominate the legal-system effect. Moreover, it translates into a significant effect of the mode of transplant on per-capita.

The above criticism underpins concerns about the exact link between legal and financial development. However, while these concerns are certainly of methodological and juridical interest, it is less clear how important the criticism it is on substance. After all, even if law and finance researchers misinterpreted the historical evolution of some characteristics of the law, the empirical relation between certain legal systems and certain economic outcomes is still important – as a predictor of empirical outcomes and, with the caveats spelled out in Berkowitz et al. (2003), in its policy implications. This is the tenor

of Beck and Levine (2005), who present a broad discussion of these issues. They focus on the link between the historical origins of particular legal institutions and subsequent financial development and ask: Through which channels do civil-law and common-law institutions differentially affect financial development? They distinguish between two lines of argument why law and legal origin affect finance and growth—one emphasizing political structures and the other emphasizing “adaptability.” Scholars emphasizing political structure argue that civil-law countries accord excessive power to the state and constrain property rights. These countries are less likely to maintain politically independent judiciaries, to grant courts jurisdiction in cases involving executive or legislative power, and to extend to courts the power of constitutional review. Civil-law states thus impede the development of financial markets by diverting resources toward state functions and state clients. In contrast, common law countries promote private property through politically independent judiciaries who are capable of pronouncing binding judgments on the other branches of government.

The adaptability thesis holds that the common-law reliance on judicial discretion and case law has allowed it to adapt more easily to fit changing commercial and financial needs. Judges are better at adapting to new circumstances because they are more objective than legislators and are shielded from political pressure. The adaptability view also points to the common law’s eschewal of rigid guidelines for the presentation of evidence and communication between parties that can otherwise hamper the judicial process. By contrast, it is argued that the civil-law system has evinced, at least from the time of Napoleon, a mistrust of judges and has tied their hands with formalistic statutes and procedures that cannot easily be adapted to changing needs. In summary, while the political channel emphasizes differences in the independence of the judiciary across countries, the adaptability channel emphasizes differences in the flexibility of the law-making process.

The authors then elaborate on the criticism of the law and finance links and the two mechanisms proposed in the political-structure and the adaptability view. This criticism includes doubts as to whether the common-law places greater emphasis on property rights than the civil law, whether the prevalent scheme of country classifications across these traditions is valid, and whether legal origins or investor protections are crucial to financial development. The purported efficiency of the common law in rooting out bad laws has been questioned by highlighting the role of wealthy, interested parties in litigating and appealing cases that affect their interests. Historical instances abound where statutes have been necessary to overrule poorly functioning judicial doctrines which were held in place by a culture of precedent. The authors also point out that a time-invariant attribute like legal origin cannot explain the historical evolution of particular polities and their financial systems, nor can it explain the evolution in the differences between countries over time.

The authors maintain, however, that despite such doubts, the relationship of legal origins to financial development is remarkably resilient in the data. This continues to be so when variables like the competitiveness of the election process, indices of national openness, resource endowments, and religion are included in the regressions. The authors also point to a growing microeconomic evidence that strong investor protection laws increase corporate valuations, force firms to pay higher dividends, reduce the need for concentrated ownership as a form of corporate governance, and allow stock prices to convey more information by reducing the aggregate correlation of returns.

Even with this broader view of the law and finance relationship, however, one important concern remains: if legal institutions and its instrument, legal origin, are to be reliable predictors of financial development – through whichever channel – then they ought to be such a predictor not only today but throughout history. That does not appear to be the case. Comparative historical studies have highlighted the ability of civil-law institutions to serve the organizational needs of commercial society, outperforming the common-law environment, at other points in history. Lamoreaux and Rosenthal (2005), for example, suggest that, French law has historically allowed more flexible forms of liability and ownership than the US common law – contrary to claims of the superior adaptability of the common law over the civil law in the face of commercial change. They provide evidence from the case of the limited liability corporation. Businesses could not form limited-liability corporations in France before 1867. However, as the authors argue, the need for this form was not acute because the *société en commandite* provided a sufficient substitute. The *commandite* consisted of general partners, who managed the firm and had unlimited liability for its obligations, and of special partners, whose liability was limited to their investments and who had no managerial role. These organizations issued shares as well. In the mid-19<sup>th</sup> century, when stock quotations were only available for a few firms in New York and around 50 in Boston, over 200 firms had their securities actively traded in Paris.

No such flexible partnership arrangements were available in the United States. While New York did pass an enable statute for the *commandite* in 1822, partners were required to declare the amount of their individual investments, precluding the trade of shares, and courts often interpreted these arrangements as exposing limited partners to unlimited liability.

Unlike American law, French law also allowed ordinary partnerships to alter the terms of partner liability through contract<sup>69</sup> and permitted contractual restrictions on the managerial authority of partners. Furthermore, should the *commandite simple* not be sophisticated enough, the *commandite par actions* could engage in both tradable shares and allowed for the replacement of general partners without dissolving the legal form. The authors argue that the lack of flexibility in American corporate law was particularly onerous to minority shareholders, who could neither force dissolution of the company nor exit easily by selling their shares. Moreover, contractual supermajority provisions for certain corporate decisions were often ruled unenforceable by courts. Not until the creation of the Securities and Exchange Commission in the 1930's, the authors argue, were there significant protections for outside investors in American law.

These findings have to be interpreted with some caution. For example, the forms of corporations and partnerships available America may have sufficiently spanned the space of required organizational form. The authors do maintain, however, that the easy opposition of a flexible, judge-led common law tradition to an ossified, code-besotted civil law does not stand up to historical scrutiny. While it may characterize the impact of legal development today, it did not do so at previous points in history, which casts doubt on perceived fundamental differences between the two legal systems.

The progress made by the modern law and finance approach since La Porta et al (1997, 1998) is embodied in the remarkably robust link between French civil-law origin, on the one hand, and lower scores on some plausible measures of shareholder and debt-holder protections and smaller capital markets, on the other hand. Any empirical analysis of financial development and growth needs to accommodate this fact, regardless of its interpretation. However, it also needs to accommodate the fact that the predictive power of this link appears to vary over time. One attempt to accommodate both is the more recent string on literature on “politics and finance”, discussed in the next Subsection.

Before we turn to this literature, we would like to emphasize one aspect of the legal environment that has received less attention in the law and finance literature but that was core to our Roman law analysis: company law and, in particular, the role of “company formats.” For example, does it matter whether firms can incorporate? Among other implications, the company format is likely to affect the access of the company to external financing. Access to external investment is likely to be easier if the liability of investors for company debt can be limited and if the existence of a company does not depend on

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<sup>69</sup> It has been proposed in the historical literature that the civil law of contract was superior to that of the common law because civil law courts could grant remedies of specific performance, had superior service of process, and conduct independent fact-finding. See generally Plucknett ( 1956).

the presence of its members (partners). Access to external financing, in turn, is likely to affect economic growth. Only few economic and legal historians have studied the role of limited liability and incorporation directly, among them Lamoreaux and Rosenthal (2005), Forbes (1986), and Weinstein (2001). Historically, the debate over the costs and benefits of limited liability has swung from fears that such limitations were a grossly unfair boon to equity holders to paeans to this legal device as forming a necessary precondition to the modern business enterprise. Recent theory is more modest, and tends to the opinion that limited liability is a sensible contractual default for large companies that seek to raise capital through easily alienable ownership interests. Debate on the costs of limited liability continues with respect to potential tort victims who, unlike creditors, are unable to engage in ex-ante bargaining with the corporation to protect their interests.

There are also shades of liability. Shareholders can have unlimited pro-rata liability and be responsible for the fraction of the total corporate arrears that they own (as opposed to joint and several liability for corporate arrears.) They can also be responsible for the face or par value of the stock they purchase, or for given multiples of this value. They can have unlimited liability up to a cap, or unlimited liability for contractual claims over a limited time period (a contractual statute of limitations), or be able to make corresponding claims on the corporation for actions against them by individual creditors, or seek bankruptcy protections, and so on. All this Coasian flexibility suggests that where the courts or legislature set the default is not all that significant for commercial dealings.

Indeed, as discussed above, Lamoreaux and Rosenthal (2005) show that both American and French law devised organizational forms that could accommodate the needs of owners of a firm to shield themselves from personal liability for obligations entered into by their business ventures. Weinstein (2001) provides historical evidence from the adoption of limited liability by the state of California in 1931, well after its adoption by other states. In 1927, California had a system of unlimited pro-rata liability for shareholders. Creditors could, however, waive shareholder liability. Moreover, shareholders were only liable for contractual claims against the firm for three years after the obligation was entered into. Analyzing the effect of the change to limited liability in 1931, the author finds little impact on California corporations or shareholders: there is no evidence of a surge in firms changing their names to take advantage of limited liability status (as required under the statute); no dramatic increase in the number of corporations filing income tax returns as compared to other states; and no dramatic increase in the share value of California's seven publicly traded firms after the change. The author also analyzes the position of interest groups (California Bankers Association, California State Bar Committee, San Francisco Association of Credit Men) and is unable to find strong support for or against the change. In summary, the historical record does not bring to light any large-scale gains from the move to limited liability.



In contrast, Forbes (1986) argues that, rather than a contractual wash, limited liability facilitates risk sharing between creditors and shareholders and fosters growth. The author argues that the introduction of limited liability to Massachusetts in 1830 provides some evidence of its economic benefits. As a first piece of suggestive evidence, he plots the ratio of incorporations in Massachusetts to those in New York against time (1811-42), where the incorporations in New York are meant to capture all time-variant influences on incorporations in Massachusetts other than the introduction of limited liability. He shows that the ratio increases after 1829 (though it plunges after 1839 and shows wide fluctuations before and after). The author then estimates, for the same sample period:

$$\text{MACORP}_t = a_0 + a_1 * \text{NYCORP}_t + a_2 * \text{Liability} + a_3 * \text{Liability} * \text{NYCORP}_t + u$$

where  $\text{MACORP}_t$  is the number of incorporations in the Massachusetts textile industry in year  $t$ ,  $\text{NYCORP}$  is the number in New York, and  $\text{Liability}$  is a dummy variable equal to one if limited liability is available in Massachusetts. The coefficient on  $\text{NYCORP}$  and  $\text{Liability}$  interacted with  $\text{NYCORP}$  are positive and significant at the 1% level. The coefficient on  $\text{Liability}$  is insignificantly negative. If  $\text{NYCORP}$  captures all influences besides  $\text{Liability}$ , the interaction points to synergies between the presence of limited liability and those other influences. However, the mere time-series identification, based on a single event, leaves ample room for alternative explanations, including other simultaneous legal changes and economic development.

The author also attempts to estimate the impact on profits and growth, using the following equation (for the shorter sample period of 1818-42):

$$\text{INV}_t = b_0 + b_1 * \text{Liability} + b_2 * \text{Div}_{t-1} + u$$

where  $\text{INV}_t$  is the aggregate amount of new capital invested in the Massachusetts textile industry in year  $t$  (in real \$1000), and  $\text{Div}_{t-1}$  is the lagged logarithm of dividends as a percentage of the par-value of stock for a sample of New England textile firms. The coefficient on  $\text{Liability}$  is 8.29 with a  $t$ -stat of 2.23, suggesting a modest \$8,290 a year increase in investment as a result of limited liability.

Forbes interprets these results as indicating the value of limited liability as a legal innovation. In his conclusions, he speculates why limited liability might have arisen late in England, though it was the earliest country to industrialize. As he points out, Parliament only permitted the incorporation of limited liability companies in 1855, and did so over the objections from some industrialists. Part of this late adoption may have been a result of the blame placed on corporations for the South Sea Bubble of the early 18<sup>th</sup> century. The author also suggests that large incumbent firms opposed the introduction of limited liability as a means of deterring future entrants. Historical scholarship indicates that the most intense opposition to limited liability arose in the shipping, cotton, woolens,

iron, and steel industries, which were all key sectors in the early part of the Industrial Revolution – similar to the argument that the legal bar kept the partnership as the dominant form in order to deter entry. Thus, the instrumentalization of and opposition against limited liability may obscure its economic benefits in other historical studies.

The example of the Roman corporation draws a more nuanced picture. On the one hand, it confirms the view that it does not seem to matter whether company laws formally allows for private corporations or not. Roman businessmen achieved a corporation-type organization in practice, even without the formal legal implementation. On the other hand, it *does* matter whether quasi-corporations were enforced in practice. In the Roman case, the large businesses withered when government interests opposed them and prevented their corporate organization.<sup>70</sup>

### 3.3.2 Politics and Finance

A recent string of literature re-evaluates the role of legal institutions relative to political institutions. This literature aims at redirecting emphasis to the interests of the political elites and the particular coalitions in countries that led to particular institutional outcomes. The “political economy view” follows two main lines of arguments. The first argument starts, again, from questioning the exogeneity of legal systems. Legal institutions are viewed as the outcome of political decision-making. This literature posits that the political elites shape legal institutions to maximize their power and ensure that they stay in power (Pagano and Volpin, 2001; Rajan and Zingales, 2003). From that perspective, legal and economic institutions are endogenous to the political environment. The second line of arguments takes the role of politics one step further. Rather than analyzing the interaction of politics and law, some researchers ask directly whether politics determines long-term growth – with or without law.

The first type of argument does not necessarily refute that the legal environment has a causal impact on finance and growth. The political economy view merely points out that the finance- and growth-friendliness of a legal system depends on the interest of the political elites. One example is the work by Rajan and Zingales (2003), who propose and test a theory explaining the historical patterns of financial development that turns on the ability of incumbent industrial and financial groups to oppose financial liberalization. Their model aims at explaining both the difference between civil-law and common-law

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<sup>70</sup> The importance of enforcement is more general. As Easterbrook and Fischel (1991) argue, the explanatory power of legal rules is limited if firms can opt out of the default regulation. From this point of view, it is puzzling that legal rules have *any* significant impact on economic outcomes. Gennaioli (2006), however, points out that “opting out” is a true option only if the alternative private contracts are permitted and enforced by courts. He develops a model illustrating the role of the “contractual channel” via which law can affect economic development.

countries and the variation within such countries of the extent of financial development over time. The authors observe that, in many countries, financial systems were highly developed in the early twentieth century, declined in response to the Great Depression of the 1930's and only recovered after the demise of the Bretton Woods system in the 1970s. They also show that civil-law countries are inferior to common-law ones at developing financial systems. In 1913, Belgium, France, Germany and Sweden all had more developed financial systems by these measures than the United States. However, financial development declined more steeply in civil-law countries from 1913 to the 1990's.

The authors argue that both patterns are related to large industrial groups opposing more open access to potential competitors. Incumbent groups that can finance projects out of internal cash flows or already have access to finance try to keep competition from increased access to finance. Similarly, incumbent financiers will oppose measures that erode their privileged position vis-à-vis other potential lenders. The authors relate the variation between countries and over time to variation in the barriers to trade and capital movement. The lower the barriers, i.e. the greater the openness to trade and capital flows, the smaller is the ability of incumbents to suppress financial development.

The authors test their explanation using a fixed sample of 20 countries and four measures of financial development: deposit to GDP ratio, equity issues to gross fixed capital formation ratio, stock market capitalization to GDP ratio, and number of companies in the population. They relate these proxies on measures of openness to trade and capital flows. The authors predict that a country's level of financial development should be positively associated with trade openness in periods of high cross-country capital flows. The baseline measure of openness is the sum of exports and imports of goods. Given the endogenous nature of trade openness, they attempt to instrument for a country's openness with measures of its natural propensity to trade, such as its size or proximity to trade partners. Variation in global capital flows over time are used as exogenous shocks to an individual country's openness to capital.

The authors regress their measures of financial development, on openness, an index of industrialization, and the interaction, separately for 1913 and for the 1990's – two periods of rather free cross-border capital flows. The most straightforward prediction is a positive coefficient of openness. If we interpret the industrialization index as a proxy of the “demand for financing”, a second prediction is a positive coefficient of the interaction term: openness predicts financial development given the demand for finance in a country.

When this model is estimated by OLS for 1913, with the ratio of equity market capitalization to GDP as the measure of financial development, none of the coefficients are significant. When using the number of listed firms or issuance activities, the interaction term is significantly positive. In all cases, the coefficient on the level of openness is insignificantly negative. The interaction term is also significantly positive when the equa-

tion is estimated using population size as an instrument for openness, though the authors only present a model specification that excludes the openness level variable (likely also because of the lack of a second instrument).

The authors then estimate a similar equation using contemporary data (96 observations). They regress the ratio of equity market capitalization to GDP averaged over 1996 to 1998, in order to smooth out the effects of the East Asian crisis, on log per capita GDP, and *either* on openness *or* on the interaction of openness and log per capita GDP. (The full model is not shown.) With all three proxies for financial development used above openness and (separately) the interaction term are significantly positive.

In order to test whether the relationship between openness and financial development was weaker during times of lower capital mobility, the authors pool their cross sectional data over the years 1913, 1929, 1938, 1950, 1960, 1970, and 1980 (100 observations) and regress the ratio of equity market capitalization to GDP on an index of industrialization, the interaction of this index with openness, and the interaction of the index with a dummy equal to one for the years from 1938-1980, which are designated as years of low capital mobility. The coefficient on the interaction with the low-mobility dummy variable is indeed significantly negative.

In additional analyses, the authors observe that in civil-law countries, stock market capitalization both fell more during the time of the Depression, and recovered more in recent times, evidence which they interpret to be consistent with their thesis. They hypothesize that this difference between civil-law and common-law systems reflects that the government decision-making in the former is more centralized and, as a result, is both more amenable to decisive action as well as capture by concentrated private interests.

As stated above, this view does not necessarily refute the causal link between finance and growth. Instead, the political-economy view ties the finance- and growth-friendliness of a legal system to the interest of the political elites. If their interests coincide with financial and economic development, the elites will choose to implement legal and other institutions that foster the development. If their interests and desire to cement their political power demand institutions that are unfavorable to growth and development, they will implement those (North, 1981).

Pagano and Volpin (2005) illustrate this connection with a corporate-governance model where the political stakeholders are controlling shareholders, non-controlling shareholders and employees. Controlling shareholders desire low investor protection in order to reap private benefits of control. In order to gain political support for such protection, controlling shareholders strike a deal with workers that gives them greater protection from being fired. If the political system favors the formation of party coalitions or workers hold little equity, the equilibrium political agreement will entail low investor

protection and high worker security. If the system does not favor coalitions or if workers own non-negligible amounts of equity, then the equilibrium political outcome will be high shareholder protection and low worker security.

According to the authors, similar dynamics are at play across a variety of policy arenas competing interests, also discussed in Pagano and Volpin (2001): corporate control, public ownership of enterprise, bankruptcy, and securities market regulation. The market for corporate control is a site of political contestation between managers and controlling shareholders, who favor such devices as “poison pills” and the inclusion of other anti-takeover defenses in corporate charters, and non-controlling shareholders who gain from the increase in share prices often associated with contestations for control. In these conflicts, employees side tend to side with incumbent management and controlling shareholders in order to protect their employment. In the case of public ownership, privatizations are governed by the political considerations of various stakeholders. The government may try to structure its privatization to place more shares in the hands of swing voters in order to garner support for its policies. Similarly, the shape of bankruptcy law and policy can be understood in terms of the competing interests of debtors of different classes and creditors. Poor debtors may favor lax bankruptcy laws, while upwardly mobile middle class borrowers may favor more stringent bankruptcy rules in order to increase their access to credit. When considering security market regulations like insider trading, the authors argue that because the cost of equity capital is sunk for established firms, their controlling shareholders and managers will favor lax insider protection rules and enforcement so that they can exploit the private benefits of control. New firms in need of finance, however, will favor strong rules and strict enforcement so that they face a lower cost of equity finance. The political economy approach thus highlights the role of relevant stakeholders in determining institutional outcomes.

A similar discussion of property rights protection and the underlying political economy can be found in Roe (1994) and Haber, Razo, and Maurer (2003). Roe (1994) details how competing political groups have, through history, cumulatively determined the present form of American corporate governance. Haber et al (2003) use the case of Mexico from 1876-1929 to develop an explanation of how economic systems can remain stable in spite of considerable political instability when governments selectively enforce property rights for those property holders who are integrated into the political system.

The second substring of the political-economy view takes the role of politics one step further. Rather than analyzing the interaction of politics and law, some researchers ask directly whether politics determines long-term growth – with or without law. One starting point is the research by Engerman and Sokoloff (1997) and (2002). They identify

inequality in political power (as well as in wealth and human capital) as a key determinant of cross-country differences in economic growth, in a comparison of North America (US and Canada) and other New World economies. They identify a similar impact of inequality over time, using the example of the Americas and discuss the tendencies of government policies to maintain these conditions.

The role of political institutions is also the theme of Acemoglu and Johnson (2005). The authors distinguish two types of institutions: political, or “property rights” institutions, which regulate the relationship between the State and citizens, and legal, or “contracting” institutions, which regulate contractual relationships between citizens. The authors compare the two types of institutional determinants and question how central “contracting institutions,” including corporate and business-related laws, are to the economic and financial development of a country. Their hypothesis is that weak property-rights protections will have a first-order effect on economic performance, while contracting institutions will not have a large effect. The reason is that weak contract protection can be remedied in private agreements and via reputation; the absence of property protections, by contrast, is hard to mitigate through private dealings.

In order to evaluate the role of property-rights and contracting institutions, the authors relate various measures of long-run economic performance and financial development to indices of contract and property rights. For a sample of 71 ex-colonies, they construct three measures of property-rights institutions: (1) Polity IV’s measure of constraints on the executive (Gurr, 1977), (2) Political Risk Services’ measure of protection against government expropriation (Knack and Keefer, 1995), and (3) the Heritage Foundation’s assessment of private property protection (Gwartney and Lawson, 1997).<sup>71</sup> For contracting institutions, they propose the following three measures: (1) an index of legal formalism based on the number of formal legal procedures necessary to resolve a simple case of collecting on an unpaid check (Djankov et al., 2003); (2) an index of procedural complexity that measures the difficulties in resolving a case of unpaid commercial debt (World Bank, 2004); and (3) the number of procedures necessary to resolve a court case involving unpaid commercial debt of the same type as (2).<sup>72</sup>

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<sup>71</sup> Measure (1) ranges from 1-7, with a higher score indicating greater constraints on the executive. A score of 1 indicates unlimited authority, and 7 is executive subordination. The authors use the measure for the years 1900, 1970, 1990 and the first year of a country’s independence. Measure (2) is scored range from 1-10, and a higher score indicates lower risk of expropriation. The authors use the mean of the years 1985 to 1995. Measure (3) ranges from 1-5, with a higher score indicating higher private-property protection.

<sup>72</sup> The index of legal formalism quantifies the procedures associated with collecting on a bounced check worth five percent of the country’s per capita income when the defendant has avoided payment without justification. The index is constructed from surveying the opinions of lawyers in 109 countries. The index of procedural complexity uses the same methodology as Djankov et al. (2003), but deals with commercial debt contracts worth 50% of the country’s annual per capita income. Both indices range from 1-10.

The authors relate these proxies for property-rights and for contracting institutions to financial development and long-run economic performance, measured as 1) log(GDP per capita), 2) the ratio of investment to GDP, 3) the ratio of private credit to stock market capitalization, and 4) total stock-market capitalization.

The obvious empirical difficulty is the endogeneity of institutions. To address this concern, the authors exploit variation in both types of institutions due to colonial history (building on Acemoglu, Johnson, Robinson, 2001) and legal origin (based on La Porta et al., 1997 and 1998). Specifically, the authors propose settler mortality rates and settler density as instruments for property-rights institutions and legal origin as an instrument for contracting institutions. In the case of settler mortality, the basic argument is that in areas with high initial mortality, colonial powers established extractive political institutions to expropriate wealth from their colonies, while in areas with low mortality they sought to create settlements with greater property protection. The argument builds on their previous work, in which the authors show the importance of property-rights institutions for financial development and long-run growth.<sup>73</sup> The logic of the second instrument for property rights, population density at the time of colonization, is that, in more densely settled societies, colonizers set up institutions to extract resources through slave or bonded labor. The authors do not subject this second instrument to the series of tests employed in AJR (2001). Here, some further investigation, whether the instrument is uncorrelated with determinants of per capita income like the disease burden, would be valuable, for example in light of Jared Diamond's (1997) thesis on the relationship between human population density and the transmission of human disease. Diamond points out that societies with low population densities did not develop immunities to human diseases transmitted from

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<sup>73</sup> In Acemoglu, Johnson, Robinson (2001), the authors regress log(GDP per capita in 1995) on their measure of expropriation risk, using log settler mortality as an instrument. Their estimated coefficient implies that the long-run effect of changing the quality of institutions for the country at the 25<sup>th</sup> percentile of the sample, Nigeria, to that of the country at the 75<sup>th</sup> percentile of the sample, Chile, would be a seven-fold increase in per capita income. This result suggests a large impact of property rights institutions on financial development. The authors spend significant effort checking the validity of settler mortality as an instrument for contemporary institutions, i.e. whether settler mortality rates is uncorrelated with all other, non-institutional determinants of contemporary per-capita income such as climatic and geographical factors, that affect its per-capita income. They show that the coefficient on expropriation in the instrumental-variable estimation remains significant when adding, jointly and severally, a large range of variables that might be correlated with settler mortality and current per-capita income: dummies for the identity of the colonizer, dummies for the legal system of the colonizer, average temperature, average humidity, average soil quality, a measure of natural resources, distance from coast, percentage of European descendants in 1975, percentage of European settlements in 1900, a measure of ethno-linguistic fragmentation, malaria incidence in 1994, life expectancy, infant mortality, a measure of constraints on the executive in 1900, dummies for whether the country was democratic in 1900, and dummies for whether the country was democratic in its first year of independence. The robustness of the positive estimates for the coefficient on expropriation risk is a remarkable finding: the size of the estimate suggests that the role of geographic and climatic factors is not as large as has been suggested by others (Diamond, Sachs, Montesquieu).

domesticated animals—like measles and smallpox—and, as a consequence, were virtually exterminated by such diseases after encountering Europeans.

The authors' choice of legal origin as an instrument for contracting institutions follows the argument in La Porta et al. (1997, 1998) that common-law systems provide more robust contract protections than civil-law systems. The classification is particularly appropriate in the context of colonies. As La Porta et al. point out, colonized countries neither chose their colonizer nor chose to retain their colonizer's legal system on the basis of its contract law. It is thus plausible that legal origin affects per-capita income or financial development only through its correlation with contract rights.

Before turning to the main findings from the instrumental-variables regressions of economic performance on property rights and contract rights, the authors point to an interesting finding in their first-stage regression. When regressing the three proxies for contracting institutions—legal formalism, procedural complexity, and number of procedures—on (1) a dummy for English legal origin and (2) either  $\log(\text{settler mortality})$  or  $\log(\text{population density})$ , the coefficients on  $\log(\text{settler mortality})$  and  $\log(\text{population density})$  are not significantly different from zero. Legal origin, instead, is significant in all three regressions, both in the settler-mortality specification and in the population-density specification. The result suggests that the instruments for property-rights institutions do not explain contractual protection, after accounting for their correlation with legal origin. The authors then repeat these first-stage regressions with the three proxies for property-rights institutions—constraint on executive, protection against expropriation, and private property protection—as dependent variables. They find that the coefficients of the contracting-rights instrument, English origin, are not significant when constraint on the executive is the dependent variable. They are, however, significant when protection against expropriation and private property are the dependent variables. The coefficients of the property-rights instruments, instead, are significant in each regression. If constraint on the executive is taken to be the property rights measure of choice, the result suggests that once one accounts for the correlation between legal origin and settler mortality or population density, legal origin does not explain property rights protection.

Turning to the second-stage regressions, the authors find that, with  $\log(\text{GDP per capita})$  as dependent variable, none of the (instrumented) proxies for contracting-institutions have coefficients significantly different from zero. The coefficient on the property-rights variable “executive constraint,” however, is statistically significant no matter what contracts variable is included in the regression. The coefficient is .99 with a standard error of .16 when legal formalism is the other included (contract-rights) variable. As the authors point out, the coefficient of .99 implies that a one-standard deviation increase in executive constraint leads to a 1.9 standard deviation increase in GDP/capita. (The sample standard deviation for executive constraint is 1.9 and the sample standard



deviation for log(GDP) is 1.00.) Stated differently, a one-standard deviation change in executive constraint increases the log GDP by 1.9, or approximately doubles GDP. For two of the other measures of economic performance, the authors find a similar pattern of significant coefficients for property-rights institutions and insignificant ones for contract institutions. The only exception is “stock market capitalization,” where the coefficients on the contract protections are negative and significant.

In summary, after controlling for the quality of property-rights institutions, there is no effect of contracting institutions on per-capita income, investment over GDP, and private credit over GDP. The authors conclude that contracting institutions do not have a big impact when they are not backed up by political power. And, vice versa, even dysfunctional contracting institutions will be enough to support economic and financial growth as long as political institutions provide security against expropriation by elites and government. The State, as the ultimate arbiter of contracts, cannot be constrained under insufficient political institutions – whether it fosters or hampers economic growth. Our example of the Roman corporation illustrates precisely this point.

The above paper illustrates that the second line of argument within the “political-economy view” can lead to a horse race between the importance of legal and political institutions. In a similar spirit, Beck, Demirgüç-Kunt, and Levine (2003) relate cross-country differences in financial systems to law and politics. The authors seek to assess the relative merits of explanations based on the legal environment and explanations based on the natural resources of a colony. According to the legal-origin school, the identity of the colonizer (and his legal system) explains some fraction of contemporary institutional quality and financial development in former colonies. Under the endowment hypothesis, the colony’s resource endowment explains the type of institutions developed by the colonist, which in turn determines financial development today.

To compare the explanatory power of those theories, the authors’ estimate the following equation on a sample of 71 former colonies:

$$\text{Financial Development} = b_0 + b_1 * \text{French Legal Origin} + b_2 * \text{Settler Mortality} + B_3 * X$$

where Financial Development is either Private Credit (the value of credit by financial intermediaries to the private sector as a share of GDP averaged over 1990-95), Stock Market Development (the value of shares listed on the stock exchange as a share of GDP averaged over 1990-95), or Property Rights (the Heritage Foundation index of private property protections in 1997 ranging from 1 to 5). X is a vector of control variables that includes 1) continent dummy variables for Latin America and Africa, 2) dummy variables for the main religion (Catholicism, Islam, or Other), and 3) Independence (the percentage of years since 1776 that a country has been independent) and Ethnic Fractionalization (the probability that two randomly selected individuals in a country will not speak the

same language). The authors estimate this equation for each measure of Financial Development and varying sets of control variables.

When Private Credit is the dependent variable, the coefficient on Settler Mortality is significant in every specification at the 1% level with estimates ranging from -.127 to -.160. French Legal Origin is significant when the only other included variable is Settler Mortality, but it loses its significance when other control variables are used. While this is to be expected in the case of religion because French Legal Origin and Catholic are highly correlated, the coefficient on legal origin also loses significance when only continent dummies for Latin America and Africa, Independence and Ethnic Fractionalization are the included independent variables. The religion dummies are never significant.

When Stock Market Development is used, both dummies are significantly negative in all specifications other than the model including religion dummies, in which French Legal Origin becomes insignificant.

When Property Rights is the dependent variable, however, the coefficient on Legal Origin is significant at the 1% percent level in every specification with coefficients ranging from -.781 to -.856. While Settler Mortality is significant at the 1% level with a coefficient of -.279 when Settler Mortality and French Legal Origin are the only independent variables, Settler Mortality loses its significance when the Africa dummy variable is included while the coefficient on Africa is significant at the 5% level and equal to -.786. The authors interpret these results as evidence that both the geographic endowments and legal origins account for the quality of contemporary institutions, though the lack of robustness to various controls casts doubt on the law-and-finance view and warrants further research. In terms of adjusted  $R^2$ , Endowments explain a greater amount of the cross-country variation in Private Credit and Stock Market Development.

#### **4 Conclusions**

The literature review reveals that, building on the finance-and-growth literature, research has focused on two types of institutional determinants: law and politics. The evidence about the rise and fall of the Roman shareholder company provides historical support for the view that political institutions can dominate the role of other institutions. The right set of political interests allowed the shareholder company to flourish under the Republic, when the legal environment was not (yet) sophisticated enough to allow for the concept of a non-public corporation. And, when the Roman legal system reached its height in the so-called classical period, but government interests changed, the corporation vanished. At the same time, the evolution of such a sophisticated business format in an ancient economy may never have been possible without the advanced legal environment of ancient Rome. In other words, a horse race between the two determinants is unlikely to be a use-

ful exercise. Today as in ancient Rome, legal determinants cannot be separated from the political environment and the political developments are preconditioned by the legal framework. The Roman case as well as the most recent politics-and-finance literature *do* clarify, however, that politics cannot be left out of the analysis.

A second insight regards the modern-day empirical proxies for the legal environment. Our Roman-law analysis indicates that the relevant legal determinants may be hard to capture when focusing on formally coded law or even the non-codified law that is enforced in the courts. In practice, economic agents may find ways to accommodate the practical need, e.g. for better access to external financing or for limited liability, even if the recognized law appears to stand in the way. When trying to capture which transaction costs an institutional environment (including its laws) imposes on economic transactions, it thus is more sensible to investigate how a specific demand (e.g. for equity financing) is solved in practice – akin in spirit to the law and finance approach to ask lawyers how a legal problem is solved in practice.<sup>74</sup> A number of historical papers on limited liability and corporations point in this direction. I would be desirable to see attempts to quantify such effects to day.

Finally, our review attempts to emphasize the role of business formats and available organizational and financing options *beyond* the analysis of investor and creditor protection. While the latter is key to a smooth functioning of the markets and to long-term growth, other types of transaction costs should not be neglected. An immediate example from our Roman case is the question how easy is it, for the average person, to invest money in a company if he is willing to do so. Are certain classes of investors excluded?

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<sup>74</sup> In addition to the literature discussed above, see more recently La Porta et al. (2006) on debt contracts around the world.

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