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ABSTRACT

The origin of the modern publicly-held joint-stock company is typically traced to large-scale maritime trading companies in England and the Netherlands in the early 17th century. Highlighting medieval cases in southern Europe, we claim that the joint-stock company likely emerged in several times and places, in response to a similar set of needs and requirements for coordinating large-scale enterprises. These prior appearances support the theory of convergent evolution toward the joint-stock company. We document the different legal genealogies of the various paths, their independence and their socio-economic contexts. These observations have implications for identifying the necessary legal and political background underlying the emergence of the joint-stock company, and for the debate regarding the link between institutions and economic development.

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I. Introduction

A major theme of new institutional economics is that innovation depends on pre-existing institutional arrangements. The joint-stock company (hereafter, JSC) is one such innovation.¹ The publicly traded JSC is a business organization in which investors exchange wealth for ownership claims in a legal entity displaying the following characteristics: legal personality, permanent capital, limited liability for shareholders, transferable shares, entity shielding, and delegated management (see Hansmann et al., 2006).

The emergence of the JSC in northern Europe in the context of long-distance maritime trade is well-documented. Looking for pre-existing institutional arrangements, scholars have traced the developmental paths of English and Dutch corporate forms from medieval guilds and limited-term partnerships to perpetually-lived, chartered, joint-stock companies with limited liability and shares widely traded in secondary markets (Gelderblom et al., 2013; Harris, 2020). These companies in early 17th-century northern Europe can be thought of as a constructed equilibrium that could effectively accommodate the needs for large investments, and balance the interests of the state and market participants. The JSC proved robust and flexible enough to survive and adapt to the subsequent development of the modern global economy.

One challenge to understanding the emergence of the JSC is limited data. The two companies most cited as early examples are the English East India Company (hereafter, EIC), created in 1600, and the Dutch East India Company (hereafter, VOC standing for *Vereenigde Oostindische Compagnie*), created in 1602. The correlation between their business purposes and timings makes it difficult to

¹ We prefer the term joint-stock company over joint-stock corporation to prevent the confusion with the broader notion of corporation that also includes for example guilds and universities. The word company is itself ambiguous because, coming from the Latin expression *cum panis* (meaning bread together), it implicitly suggests a face-to-face cooperation which is of course not the dominant case in joint-stock companies.

establish which features of the environment were necessary versus simply coincident for the emergence of the JSC. For example, both East India companies engaged in long-distance maritime trade to Asia and they both operated by the granting of a sovereign charter. The presence of the JSC in various legal systems and industries today suggests that a particular feature such as maritime trade may not have been necessary for their emergence. The underlying social, political, legal, and economic factors that facilitated the development of the JSC remain to be elucidated.

In this paper, we present evidence supporting the claim that the JSC has emerged several times rather than been invented once before spreading. This is in line with convergent evolution, a theory borrowed from evolutionary biology and cultural anthropology. Convergent evolution “refers to the evolution in different lineages of structures that are similar or ‘analogous’, but that cannot be attributed to the existence of a common ancestor endowed with the same structures” (Gabora, 2013a). In evolutionary biology, “convergent evolution occurs when species occupy similar ecological niches and adapt in similar ways in response to similar selective pressures” (see, Gabora, 2013a). For instance, insects, birds, and bats developed the same ability to fly but through independent evolutionary paths, as they did not evolve from a common flying ancestor.

In anthropology, the theory of convergent evolution has long been a counter-point to the theory of cultural diffusion, which in its most extreme form posits that life-improving innovations are rare in human history and, once realized, spread geographically via cultural interactions (Gabora, 2013b). Diffusion theory in anthropology is used to explain similarities in material culture such as stone tools, domestication of plants and animals, and even the emergence of sophisticated social programs such as large-scale pyramid architectures. In the latter case, the independent invention of pyramid-based worship in Eurasia and Americas, continents separated by oceans, implies that separate populations converged on

similar, complex social equilibria that include a variety of aesthetic and political characteristics, in line with convergent evolution.

Applied to law and economics studies, convergent evolution is a theory corresponding to a situation in which “the law has converged on similar solutions (though often in different forms) to a common set of economic problems” (Miceli, 2017). In this paper, we argue that the emergence of the JSC in different places and times in Europe is likely due to convergent evolution. The development of the limited partnership (*société en commandite*) to offer almost the same economic functions as the standard JSC but following a distinct legal genealogy is another case (Guinnane et al., 2007) that is consistent with such a view.² We show that the roots of JSCs that emerged in medieval southern Europe differ substantially from those that appeared in northern Europe in the early modern period. Moreover, we show that there is not much evidence supporting the view of a migration of the JSC model from the early southern instances to the northern cases.

The structure of our paper is as follows. We begin by setting the scene and presenting the different cases of JSC that have emerged in various places and times. We offer historical background, especially regarding unfamiliar cases: the Toulouse milling companies and the Casa di San Giorgio. We then present our theoretical framework: our main hypothesis, convergent evolution, and the alternative hypothesis, migration (or diffusion).

To support our convergent evolution claim, we show that the legal genealogies of these different JSCs were distinct. The genealogy of the East India trading firms is well known. Beyond their temporal and business synchronizations, it has been shown that the EIC was grounded in the guild tradition while the VOC was the result of the aggregation of trade *commenda*, distinguishing two slightly different

² In large modern firms organized as *sociétés en commandite*, the liable partner (the *commandité*) can be a company as in Hermès or both a company and the CEO as in Michelin.

paths consistent with our convergent evolution argument. We provide more documentation on the legal genealogies of the lesser-known paths. The Toulouse milling companies originated in *pariages*, a legal form used in medieval southern Europe to manage assets held in common, as described by Sicard (1953, [2015]). These assets ranged from infrastructure projects to townships and even to states. As will be shown below, the same pariage contract is also likely the source of the Casa di San Giorgio adapted to a specific activity: tax collection. We do not have evidence that one influenced the other or that they constitute two independent emergences from a similar background. Another emergence may have occurred in the mining industry.

We then evaluate the migration hypothesis. Unlike the case in evolutionary biology, in the economic and legal spheres, business actors could be aware of the economic concept of JSC, by observing earlier or contemporary emergences, before implementing it in their own legal system; in this case, only the legal tools would exhibit a convergent evolution while the concept of the JSC would have migrated.³ We thus look for evidence of transmission across paths of the JSC concept. It is often difficult to distinguish between the effect of a common context and an actual diffusion. However, the historical evidence supports the view that these various paths were broadly independent from each other, especially regarding medieval southern cases and later northern trading companies. The little evidence of transmissions from these medieval cases supports the claim that convergent evolution toward the JSC has been not only legal but also conceptual.

Finally, we present the existing institutional arrangements in force that were conducive to these first southern emergences of the JSC form. We highlight the

³ Business actors could also directly import the foreign legal code in addition to the JSC concept. This is for example what has been observed in Canada where the JSC legal framework was transplanted into the Quebec civil law by copying the New York legislation (Dufour, 2010). In this paper, we are mostly interested in the evolution and early migration of the concept of JSC, along with the associated evolution of legal arrangements. There is little doubt regarding mutual influences in the discovery of the JSC concept leading to the EIC and the VOC, but the direction of the influence is not clear.

important role of the Communes in this process, confirming the key economic role of these institutions highlighted by Greif (2002). Charters granted by states played an important role in the emergence of the JSC in the early modern period. However, Mahoney (2000) highlights a path eventually not followed in which contracts, not concessions, could have led to features such as juridical personality and asset partitioning. He argues that the norm of concession derived from the English crown aggressively asserting its rights to license monopolies as an important source of state revenue. In the medieval Toulouse milling companies, we find firms that apparently followed the development path envisioned by Mahoney (2000): the firm as a nexus of contracts based on property rights and arrangements enforceable in a court of law, not on a royal charter. The Roman law as employed in southern Europe was flexible enough to allow the necessary legal adaptations for the JSC to emerge.

Convergent evolution offers a relevant alternative to the migration hypothesis highlighted by Harris (2009a, 2020) to explain the rise and widespread use of business organizations, especially the JSC.⁴ We complement this work i) by adding into the picture the emergence of medieval southern European JSCs, ii) by highlighting the consistency of this additional evolutionary path with convergent evolution; and iii) by putting the southern medieval paths to the JSC in perspective with respect to their pre-existing institutional arrangements, especially the rediscovered Roman law. However, convergent evolution and migration hypotheses are not mutually exclusive. We identify convergent evolution at the level of the emergence of the JSC but migration of the various emerged institutions occurred at later stages, at the beginning of the 18th century regarding the EIC/VOC model. We thus simply argue that migration theory does not rationalize the facts

⁴ Harris favors the use of the concept of “migration” and “legal transplants” rather than “diffusion”, but the principles are similar.

regarding the early appearances of the shareholding company in different places and times in Europe.

To summarize, the organization of this paper is as follows. Section II presents the multiple emergences of JSC. Section III introduces convergent evolution theory and how it can be applied to the evolution of business organizations. Section IV delineates the distinct legal genealogies leading to these analogous observations. Section V discusses the potential migration from the southern to the northern path. Section VI puts the various paths to the JSC in perspective with respect to the socio-economic and political environment of these times. Finally, Section VII concludes by discussing the main implications of our findings.

II. Historical background

This section highlights the various occurrences of the joint-stock company that have been observed in different times and places in Europe.

A. Famous emergences for the Asian trade

The English East India Company (hereafter, EIC) was initially chartered by Elisabeth I in 1600 for a 15-year duration with a monopoly for the Asian trade. It was explicitly granted unlimited duration in 1609 by James I. Harris (2020) points out that the charter made the firm – but not the capital – perpetual because investors were allowed to withdraw funds and profits upon liquidation of assets after each trading voyage, a structure somewhat akin to the modern private equity partnership that periodically raises separate capital for a series of specific investments and accounts for profits in each separately. The evolution towards permanent equity share capital in the English East India Company was not complete until 1651 when

Parliament proclaimed that “the trade in the East Indies should be carried on by one joint-stock”, long after its charter was granted.

The Dutch emergence of the JSC is likewise rooted in the capitalization of overseas trading ventures. The Dutch East India Company (VOC) was created through legislative action of the Estates General by combining city-sponsored trading enterprises to Asia and granting the united venture a monopoly on that trade. Like English ventures, the VOC was initially chartered for a limited duration, and divided the profits among investors following successive voyages. At the outset, neither the firm nor its capital were permanent. Despite the fact that the VOC is often referred to as the earliest modern corporation, Gelderblom et. al. (2011) argue that the firm is best viewed as “a private corporation entrusted with a public task. (...) Company directors therefore really faced two principals: the shareholders and the Estates General, the highest political institution in the Dutch Republic.”

Dari-Mattiacci et al. (2017) document the process of how permanent capital and permanent entity status were eventually achieved through state intervention: the abrogation of the rights to return of capital following voyages, and the granting of a charter without term for the firm. These changes can be interpreted as solutions to the problem of the long-duration and uncertainty associated with Asian trade and the need to maintain capital within the organization. Rights to freely buy and sell shares of the permanent capital were granted in exchange for the abrogation of the right to the return of capital after each voyage.

B. Cases of the joint-stock company in medieval southern Europe

Hazards of inheritance or voluntary associations led to productive assets (i.e., assets that required investments and generated revenues) being held under *pariage*, a specific form of common ownership. Assets such as rights concerning taxes, mines, or infrastructures make these parages similar to JSCs. There may have been

very many instances of productive assets being owned through a pariage, but our knowledge of the past is highly dependent on the availability of archives that are themselves strongly dependent on the life of these organizations.

In the Toulouse region, several examples of pariages dealt with activities requiring investments and producing revenues. For example, in 1248, several *portionarii* and *comportionarii* entered a pariage to create productive farmland by draining a 1,000-acre wetland in Montady, near Narbonne (Abbé, 2006). Another interesting early case is the mint of Toulouse, known thanks to a sale in 1198 by 10 existing owners of one quarter of the mint to two brothers. The mint of Toulouse appeared more like a pariage than a standard *societas*. About 20 owners of high social standing were associated; they were clearly capitalists (i.e., investing and not working). The arrangement was designed to survive the death of an owner because several of them had inherited their shares over generations. The firm seems to have been perpetual because of the use of the word *dominium* used to describe the rights of the owners regarding the mint. *Dominium* refers to full ownership of the property as lord (*seigneur*), and not only to the usage right (Boyer, 1950).

Southern European joint-ownership for business activities is well documented for two types of organizations that enjoyed a very long life: the Casa di San Giorgio in Genoa and milling firms in the Toulouse region. In the Middle Ages, joint ownership flourished in Genoa, particularly for tax farming – the state function of tax collection having been privatized early in its history (Heers, 1963). In medieval Genoa, this activity was managed via large, impersonal organizations. The first case appears in the 12th century: the *comparia salis* (salt pariage) allowed for common ownership of tax revenues on salt (Sayous, 1933b). Other forms of comparias appeared, with rights on several types of taxation. These shares were widely traded (Heers, 1963; Sayous, 1932).

At the beginning of the 15th century, several comparias collected a large proportion of the fiscal revenues of Genoa. In 1407, in an attempt to lower the

interest burden, the Genoese Republic decided to merge the existing comparias by converting them into a novel and single entity, the Casa di San Giorgio. After 1420, shareholders received a variable revenue that could be regarded as a dividend. Shares were nominative but freely negotiable; a notary wrote any change in the firm's register (Wiszniewski, 1865: 38). San Giorgio expanded to include businesses other than tax farming, especially colonial exploitation and banking activities. It became a dominant financial power in Europe for centuries, operating up to 1805 when Napoleon closed it down (Felloni, 2005).

Whether the Casa di San Giorgio was a private JSC doing the fiscal business of the state or a state-controlled JSC relying on private capital is a matter of interpretation. The same ambiguity actually exists for the EIC and VOC. These firms also enjoyed public monopolies to trade with specific foreign lands and some aspects of sovereignty as they were allowed to act as a state to judge specific cases or even to make war.⁵

Another documented form of JSC emerged in the Languedoc region for the milling business. Near Montpellier, 12th-century mills were divided into shares of 1/16, called *pecol*, transferable among non-workers. In 1192, the pariers of a mill could seize the *pecol* of those who did not want to pay for common expenditures (Débax, 2012: 154), a practice also observed later in the Toulouse milling companies. Water mills owned under pariage also appeared in Moissac and Montauban, where the shares were called *meules* and *rases*, respectively (Troplong, 1843: XXIX). But the most thoroughly documented cases are the Toulouse milling companies. Sicard (2015) depicts in detail, out of primary sources, how two milling firms, the Castel Narbonens and the Bazacle, emerged out of common ownership under the pariage form to acquire all the characteristics of a JSC.

⁵ Erikson (2015) details this dual nature while Vermeulen and van Lint (2020) viewed these firms as hybridizing commercial and state logics.

In 1182, a group of mills in a location close to the Castel Narbonens was enfeoffed by the Count of Toulouse to several people called *parierii* and to any others they might wish to add (Mot, 1910). In the Bazacle location, the first enfeoffment of 1177 does not use the word parier, but the term is present in the second enfeoffment in 1184. The Castel's enfeoffment of 1182 makes it clear that mills could be sold by shares because the amount of taxation paid on share transactions is detailed for fractions of a share representing a half, a third, a quarter, and so on. Pariers were free to sell ownership rights on their mills or on part of their mills without the consent of the other pariers. As early as the 12th century, some pariers were clearly capitalists: the Daurade monastery was a parier and some pariers had been or later became Capitouls – chief magistrates of the city. Milling parages' governance included general assemblies and representation.⁶

Various forms of cooperation among the independent milling parages were experienced over the years, including mutual insurance contracts, common management and temporary mergers. In 1372 and 1373, respectively, the Bazacle company and the Castel Narbonens company were created by the perpetual merger of the various milling parages at both locations. These two large-scale firms worked well for several centuries and adopted, before the EIC and VOC, almost all the governance features that we find today in modern JSCs including a board of directors and a professional Chief Executing Officer (see le Bris et al., 2015).

III. Convergent evolution hypothesis

The evolution process can be characterized in two ways: divergent and convergent evolution (Gabora, 2013a). Divergent evolution comes to mind more

⁶ Sicard (2015) offers more details on the functioning and the evolution of the milling parages in Toulouse over the Middle Ages.

directly: it refers to organisms that inherit a given trait from a genetically-related ancestor and that subsequently evolve other diverging traits. An example of divergent evolution is offered by penguins, eagles and humming-birds that, despite various dissimilar characteristics, are birds that have evolved from a common ancestor with wings, the paravian dinosaur (see Brusatte et al., 2015).

Convergent evolution, on the other hand, refers to organisms that evolve a given trait that is analogous to one possessed by other organisms that are not closely related, in the sense that their common ancestor did not have the given trait. Convergent evolution occurs as an adaptive response to similar environmental pressure. An example of a trait that emerged via convergent evolution is the wing: birds, bats and some insects have wings, but their latest common ancestor did not. The genetic code that triggers a given trait may be quite different across organisms.

Figure 1 illustrates divergent and convergent evolution.

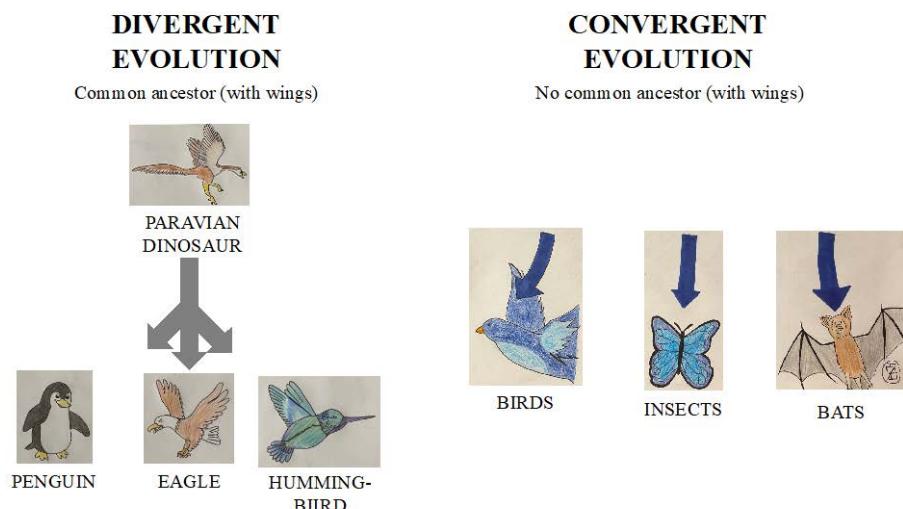


Figure 1: An illustration of divergent and convergent evolution processes⁷

Principles of evolution theory have been used as a scientific framework in other fields than biology. In social sciences, examples include cultural change (Gabora, 2013b), law (see, e.g., Whitman, 2000) and economics (see, e.g., Alger and Weibull, 2013, 2016). When it comes to business, an analogy can be made between organizations and organisms, the organizational traits being coded into legal rules as phenotypic traits are coded into genes.

According to divergent evolution, similarity of traits is due to closeness between organisms: organisms may be similar because they are vertically related (certain are the ancestor of the others) or because they derive from a common ancestor with the same traits. Divergent evolution can be discarded in the case of the JSC: as shown by Harris (2009a), the VOC and EIC evolved out of ancestor organizations, the commenda on the one hand and a kind of corporation, the guild, on the other. Both of these lacked crucial organizational traits found in the JSC.

In this paper, we thus compare the merits of the two potential explanations for the emergence of the JSC: convergent evolution and migration. To evaluate the convergent evolution hypothesis, we study the economic and legal facts surrounding the various emergences of the JSC. The idea here is to determine whether or not, in the different paths, the emergence of the JSC is coded in similar legal rules, and to identify the environmental forces at work in this emergence.

Harris (2020) proposes an alternative to convergence -- the migration hypothesis, which corresponds to the horizontal diffusion of legal rules and/or organizational traits, directly imported from one place to another. As highlighted by Gabora (2013b), horizontal transmission, deriving from the blending of knowledge from

⁷ This figure is meant for illustrative purposes only and does not aim at being a truthful representation of the phylogeny of birds or organisms with wings.

different sources at a given point in time, is likely to be an important driver of the evolution of cultural artefacts. To test this hypothesis, we study whether there is evidence of direct transmission of the JSC traits across various contexts. Needless to say, our two hypotheses are not mutually exclusive: convergent evolution and migration of legal rules and organizational traits could both have played a role in the development of the JSC.

IV. Distinct legal genealogies

To evaluate the convergent evolution and the migration hypotheses, this section describes the legal genealogies and arrangements of the various paths to the JSC. It starts with the better-known northern European paths and continues with the southern ones.

A. The guild and commenda paths to the joint-stock company

The processes leading to the emergence of the English and Dutch East India maritime trading companies have been widely discussed.⁸ While similar in motivation and outcome, the English and Dutch paths differ in important ways that support the proposition that there may not be a single path to the corporate form but instead convergent evolutions. The VOC evolved as an association of capital and EIC as an association of members (De Jongh, 2011; Harris, 2021: 262).

In the case of the EIC, Scott (1910-12, vol. 1:3) identifies the root of the JSC in the chartering of guilds. Perpetually-lived institutions for the express purpose of business date to a 1391 guild charter for trade with Prussia (Scott, 1910-12, vol. 1:

⁸ For an emphasis on agency problems, see Carlos (1992) and Carlos and Nicholas (1996), on the effect of state motivations, see Irwin (1991), on the exploitation of a rent, see Jones and Ville (1996), on cooperation between inside entrepreneurs and outside investors, see Harris (2005), on the exploitation of monopoly and monopsony, see Sivramkrishna (2014), and on the institutionalist views, see North (1990) and Kyriazis and Metaxas (2011).

9). This and other later merchant guild charters specified roles and rules for governance, the most famous of these being the Fellowship of the Merchant Adventurers of England (1407), a self-governing trading collective in which members operated in concert, but which did not explicitly pool revenues and expenses from trade or divide ownership through transferable shares. The Muscovy Company (1555) seems to be the earliest chartered English JSC that pooled capital and apportioned ownership and other rights by shares (Harris, 2009a).⁹ In line with this tradition, the monopoly for Asian trade is attributed in 1600 to a group of merchants belonging to what would become the EIC.

Thus, the English path to the corporate form with permanent capital evolved over centuries from roots in English merchant guilds and maritime trading companies that pooled capital to finance long-distance exploration and trade. The organizations' existence was formalized via charters through which the sovereign conferred specific rights. While 16th-century English trade guilds were long-lived, they did not pool capital and allocate profits by shares in a common firm derived from a series of ventures. An inter-temporal allocation mechanism was only achieved when the sharing of profits proportionally to shares of a joint-stock capital was established.

The Dutch path towards the JSC took its roots in contracts used to finance long-distance maritime trade. In medieval Italy such contracts were temporary partnerships referred to as *commenda*, but their roots almost certainly date back millennia – perhaps in Mesopotamia and definitely in ancient Greece as testified by Demosthenes's legal pleadings (Udovitch, 1962; Larsen, 1974; Harris, 2020). *Commenda* prospered in medieval southern Europe with rules detailed in municipal statutes such as in Marseille in 1250-1260 and with the *società in a commandita* in

⁹ It is worth noting that Scott (1910-12) leaves open the question of whether the Muscovy Company adopted its structure from prior southern examples. He observes that Sebastian Cabot, the governor of the company (i.e., the chief executive officer), was Genoese.

Florence (Roover, 1963). A type of commenda was used by Dutch merchants to finance Asian trade through six city-based proto-companies. As indicated above, these merchant enterprises were merged through a charter from the States-General in 1602 granting a monopoly and requiring the capital to remain in the business for several trips, in contrast to a typical commenda contract which was a temporary association that was dissolved at the end of each trip. The first version of the VOC had several joint stocks linking active entrepreneurs and passive investors at the level of cities. This original organization offered the basis for the development of a form of modern JSC through later evolutions.

The commenda contract was thus the source of two paths toward the JSC: the VOC in the 17th-century Netherlands and the limited partnership in 19th-century Europe especially in France with limited partnership (*sociétés en commandite par actions*). The limited partnership, as it exists in continental Europe, is a direct heir of the commenda tradition. Investors own shares giving the same rights as a share in a standard JSC but there is still at least one entrepreneur (*commandité*) fully liable. Today, in large limited partnerships such as Michelin, the tire company, or Hermès, the luxury goods company, this commandité is often a limited liability company or the *CEO*.

The legal arrangements of the VOC and EIC are well known. The critical one is a charter granted by the state that included all the required legal tools. The joint-stock characteristics were thus obtained as granted by state authority. The governance designed for the VOC was far from what is supposed to be efficient for JSCs with almost no role for shareholders, while the EIC governance was built around its members. Whatever the weaknesses of their governance, they both enjoyed economic success. North and Weingast (1989) stress the importance of the credibility of the state's commitment to pay back its debt for the development of financial activities through debt markets. The role of the state has also been stressed for the English and Dutch East India companies (e.g., Ekelund and Tollison, 1980)

and, more broadly, all the commercial chartered companies because they “did not emerge independently of the state … and their existence was predicated on state collaboration” (Erikson and Assenova, 2015).

B. The pariage path to the joint-stock company

Various JSCs, including the Toulouse mills, emerged in southern Europe from pariages, a set of legal rules for common ownership rooted in local inheritance practices, according to Débax (2012)’s analysis of secondary sources. Primogeniture was introduced in Europe at the turn of the first millennium.¹⁰ While northern Europe quickly allowed unequal inheritance, a large part of medieval southern Europe remained faithful to the Roman practice of equitable partition of assets among heirs.¹¹ During the Middle Ages, equitable partition was widely applied from Catalunya to Italy – at least among the higher social classes.¹² Equitable partition could be realized through debt agreements, but the easiest way to achieve perfect equality was to divide the asset.

Property could be divided in three ways. First, the division among heirs could be physical. For example, in Nimes, the former Roman arena became a castle and was physically divided between several dozen lords, starting in the 11th century.¹³ But a spatial division could be difficult for some properties, thus leading to a surprising

¹⁰ Probably by the Norman aristocracy, see Todd, 2011: 445.

¹¹ Equal division among heirs, including both sons and daughters, was the rule under Roman law (Novel 118 of Justinian). During the Carolingian dynasty, equitable partition among sons applied, but primogeniture for noble fiefs is attested in the Holy Roman Empire (which included modern Netherlands) in 1037, in Anjou in 1070, in Normandy in 1100 (from where it was exported to England), and in Britany in 1185 (Chénon, 1929 I: 249). During the early modern period, for standard inheritance, primogeniture was the norm in the Germanic area (Todd, 2011: 391), while in England and Holland, inheritance was frequently egalitarian (see Howell, 1976, van de Woude, 1972). However, in these last two countries, unequal inheritance was not forbidden. It was also socially valued as a noble practice and thus offered a legitimate solution to the transmission of non-fractionable assets.

¹² Nobility in southern Europe gave up equitable partition during the early modern period.

¹³ The examples offered in this paragraph and in the next are taken from Débax (2012) who offers a very detailed description of pariages in the southern part of France in the Middle Ages.

second possibility: temporal division. There is evidence of several heirs sharing months of an asset *pro rata temporis*; for example, this case is observed for a castle in Boussagues in 1145 (Débax, 2012).

A third way to share a common property was to divide it into several theoretical shares. This solution to achieve an equitable partition reduced transaction costs and resulted in joint ownership. Each heir received a *par* (more frequently called a *sors* in Italy) and was thus called a *parier* (*consort*), joined in a *pariage* (*consortium*).¹⁴ The division of an asset into theoretical shares is observed in southern France as early as 1032, when two brothers owned a third of the half of the castle of Auriac, indicating previous divisions. The first mention of a *parier* appears in 1069 when Raimond Bernard Trencavel gave to his daughter his right to the castle of Castelnaudary, already owned by several *parierii*.¹⁵ This solution was widely adopted, since at least half of the castles in 12th-century Languedoc were owned through *pariages* (Débax, 2012: 73). Joint ownership in the form of *pariage* enabled owners to hold various kinds of assets.

Pariage was also used to settle legal disputes. An early case is found in 1146: to solve a dispute, the property of the mine of Coume de Boxeda is shared as *pariage*. The most famous case is a 700-year-old arbitration between the bishop of Urgel and the Count of Foix settled by a *pariage*, still in place today, to govern Andorra. The *pariage* regime was also freely adopted to administer assets in joint ownership. For example, the new cities of southern France, called *bastides*, were often created through a *pariage* between a religious institution bringing land and a local lord

¹⁴ We mainly use the word *parier*, but many others are used in the sources: *parierius*, *pareria*, *parerie*, *parciarius*, *partitionarius*, *parciaria*, *parcier*, *parsonnier*, *partizors*, *co-lords*, *compararius*, *compartiarius*, *comportionarius*, *compaire*, and *comparse*; in Genoa, the terms *consors*, *consorts*, and *consor* are more frequently used; in Venice, *parcenevoli* and *fraterne* (Sayous, 1933a).

¹⁵ Other pieces of evidence confirm that daughters received their inheritance rights through *pariage* shares. For instance, the *pariage* of Lagarde-Guérin had specific dispositions to prevent share concentration when a daughter who inherited a share married another *parier* (Porée, 1907).

bringing capital and public services (Gallet, 1935). These contracts allowed a private individual and a religious institution to cooperate on an equal footing.

In Toulouse, the JSC emerged out of parages, without any chartering institution imposing a framework. Instead, it was the result of private contracting. In this respect, the Toulouse milling companies are very specific compared to both San Giorgio and later commercial chartered companies. The development of the Toulouse milling companies as a nexus of private contracts (see Le Bris, Goetzmann, and Pouget, 2015) is in line with Greif's conclusion that private-order institutions (that do not rely on the coercive power of the state) can support sophisticated exchange.¹⁶

Overall, the available sources indicate that the evolution toward the JSC took distinct legal paths in the various places in which it emerged in southern and northern Europe, in line with convergent evolution.¹⁷ This suggests that the JSC is a business organization that is a self-coherent and effective response to the economic challenges of economic cooperation (Hansmann et al., 2006).¹⁸

V. On the migration of the joint-stock company

This section evaluates the migration hypothesis by describing the available evidence in favor of the horizontal transmission of the JSC legal rules or economic

¹⁶ See Greif (2012). Such a substantial difference, namely the absence of a chartering institution in the case of the milling firms, suggests that these milling firms and the Casa San Giorgio constitute two independent emergences of the JSC with parage-like organizations as a common ancestor.

¹⁷ The economic forces that have shaped the evolution of business organizations, such as high initial capital expenditure, high working capital, and the need to coordinate various professional activities have been studied elsewhere and will not be covered here (see, e.g., Hansmann et al., 2006).

¹⁸ For example, limited liability reduces the exposure to managerial misbehavior and thus favors delegation to a professional agent. Likewise, permanent capital facilitates firm investment but restricts liquidity; this calls for shares' tradability.

traits across different locations. It also studies what factors limited the migration of the southern JSC.

A. Evaluating the migration hypothesis

To evaluate the merits of the migration hypothesis, we study the timing of the emergence of the JSC in different locations. Figure 2 shows the different types of JSC-related institutions that developed over time. The lag between the emergence of the JSC in southern and northern Europe, and then their coexistence, raises the question of the potential influence of the southern cases on northern developments.

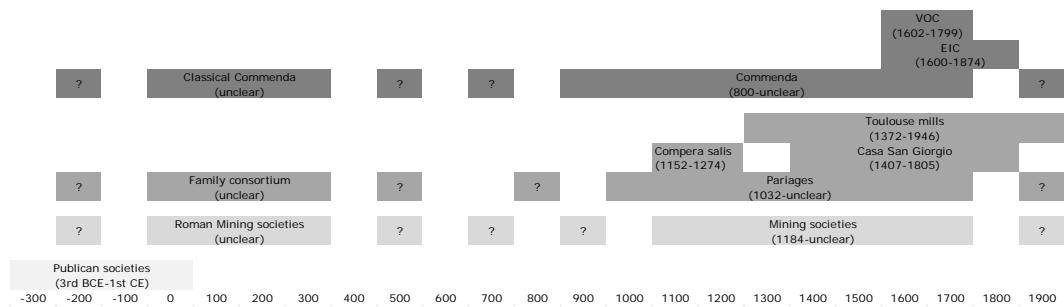


Figure 2: Chronology of the various European joint-stock companies and their ancestors

(inspired by Prof. Florent Garnier's lecture notes at University of Toulouse Capitole)

Harris (2009a, 2020) shows that some business institutions migrated while others did not. A migration from southern Europe has been demonstrated for insurance contracts that were invented in Italy before reaching northern Europe (Rossi, 2017). Kadens (2012) further shows that many aspects of what is commonly known as *lex mercatoria*, including the bankruptcy system, were actually derived from statutory systems created in late-medieval southern Europe. The Bazacle mills were famous enough to be mentioned by widely-read authors such as Rabelais and Nostradamus, and there is no doubt that the Casa di San Giorgio was a well-known institution all

over Europe. For example, in his 1697 *Discourse concerning Banks*, Sir Theodore Janssen, one of the founders and first directors of the Bank of England, mentioned that this establishment is similar to the Casa di San Giorgio (Clapham, 1944). It thus appears plausible that a transmission from southern to northern Europe could have occurred as far as the JSC concept is concerned.

The early southern JSCs may have left certain legacies to the modern JSC. Excluding long-distance trading, the oldest cases of proto-corporations observed in England were the Society of Mines Royal and the Company of Mineral and Battery Works, founded in 1568. These firms are related to continental mining companies that could constitute another case of emergence out of medieval Italian and German mining societies, however the evidence remains scarce (cf. Jenks, 2003 and Domergue, 1983).¹⁹ Sweden's Stora Kopparberg is often cited as a medieval mining company that evolved into a JSC (Shelton, 1965).. The first English mining companies were set up by Germans importing skilled workers, capital and organizational arrangements.²⁰

Some similarities can also be found between southern firms and the first English trading companies now described as proto-corporations, which are the best documented. The Muscovy Company as well as the Company of Kathai (1577) had "consuls". The word consul did not exist in the English language of the time but was typical of the governance of pariage and communes. According to Scott (1910: I.20), "there can be little doubt that this temporary introduction of the term Consul, as applied to a deputy-governor, was of Italian origin."

Financing policy of the English proto-corporations resembled the financing of the Toulouse milling companies as well as that of medieval mines. The number of

¹⁹ These medieval mining companies could themselves have been inspired by Roman mining companies.

²⁰ For instance, the English Crown received 1/10 of the extracted ore (see Scott, 1910: I.31), which was a common rule in Germany. For Heckscher (1931, 1994: 393), the notion of permanent capital could have been imported into England through these German-style mining companies.

shares was fixed, and the sums called up on each of them to finance expenditure and investments varied across time. If additional capital was needed, it was provided by adding to the sums already called up. In modern JSCs however, once shares have been fully paid, supplementary capital is provided by the issue of new shares (Scott, 1910: I.44). Trading portions of shares both in England and in medieval firms was possible, to allow an owner unable to meet such calls to sell part of his shares. Scott (1910: I.343) describes the difficult process of constraining a defaulting owner to contribute in 16th-century English proto-corporations, as well as the solutions found. Ways to deal with shareholders refusing to pay were already stipulated in the mills of Toulouse in the 14th century (le Bris et al., 2015).

These elements indicate that some characteristics of northern European companies resembled those found for centuries in Southern European companies. However, we find no direct evidence that northern joint-stock companies directly imported corporate solutions from the other paths, which would contradict a convergent evolution explanation. Indeed, when they were created, both EIC and VOC lacked various JSC traits, such as permanent capital, that would only be acquired at later stages in their developments. At a minimum, we can thus conclude that the use of common vocabulary and techniques arose because of a common background and an important level of cultural exchange (Muchembled, 2007). Our findings concur with recent research (e.g., Guidi-Bruscoli, 2012) placing the first companies in a broader European context.

A 1604 French trading company for Asian trade exhibited certain characteristics of the JSC that were lacking in the EIC and VOC of the time. This company, not to be confused with the famous French East India Company launched by Colbert in 1664, obtained a monopoly for the Asian trade in 1604 but failed to send any ships for twelve years. It later sent only 7 ships between 1616 and 1622, with limited success. This had several key features of a JSC. First it allowed any French person to become a shareholder until 6 months after the return of the first trip, and second,

it established a board of directors chosen by shareholders (Lelièvre 2014: 318). These characteristics were closer to the modern JSC model than what was in place in the EIC and VOC at the time, suggesting that solutions to aggregation of capital for large-scale trade were known and potentially related to the southern pariage/JSC tradition.

Apart from the Toulouse firms and the Case di San Giorgio, there is at least one 16th century French company involved in international trade that exhibits some features of the JSC that pre-date their adoption by the EIC or VOC. Its existence is consistent with either the independent invention or the diffusion hypothesis. The *Compagnie du Corail* (or *Bastion de France*) in Marseille had several modern characteristics such as permanent capital, inheritable (and thus transferable) shares and an agency structure with a board (Masson, 1903).²¹ This company was known in Paris in 1604 because a trial was brought before the Royal court in 1600: the shareholders requested that the main manager be elected as before while the son of the main manager claimed he should inherit his father's position. But the 1604 first French attempt was clearly motivated by the Dutch successes: many investors and one of the main entrepreneurs were Dutch (Lelièvre, 2014: 211).²² This shows the difficulty in clearly assessing the mutual influence of various evolutions in business organizations.

Certain individuals were sometimes involved in both paths. Financiers from the Languedoc (Toulouse area) managed all the French trading companies until the time of John Law in the early 18th century (Chaussinand-Nogaret, 1970: 16), which is remarkable as the Languedoc had no Atlantic coast and was not known to be the

²¹ The Compagnie du Corail gathered coral in modern Algeria and traded various products, especially with Cairo. It was founded through patent letters in 1553 by merchants from Marseille to replace an existing Genoese company. We have no evidence to connect this company to the commenda, nor to the pariage path.

²² Some of these Dutch merchants were Anabaptists, rejecting the violence employed by the VOC against the Portuguese, while others were hostile to the VOC monopoly. From 1608, Isaac Le Maire, a famous former director of the VOC, was also involved in this French company.

region of origin of the French elites. For instance, the banker Antoine I Crozat (b. ? - d.1690) was twice Capitoul of Toulouse, involved in the financing of the Canal du Midi and also director of the *Compagnies des Indes Occidentales* in 1671 (Chaussinand-Nogaret, 1970: 87). His son, Antoine II (c. 1655-1738) was a shareholder of the *Compagnie du Corail* and was involved in most of the French trading companies at the end of the 17th century.²³ However the presence of some individuals in both paths is mainly found after the emergence of most of the characteristics of the JSC in modern trading companies. It thus does not constitute clear evidence of a direct transmission.

Finally, one could argue that the mid-19th-century development of the JSC in France was not exclusively inspired by the famous examples of the EIC and VOC. It is difficult to know where they drew their inspiration from, but businessmen, lawyers and scholars of that time looked back to the southern past to build the legal arrangements for their growing ventures.

A first example is offered by Wiszniewski (1865) who started his book about the Casa di San Giorgio explaining that his motivation was to find institutional solutions to the financial crisis that affected many investment banks in France in 1857. The surtitle of the book was “The historical method applied to banking reform”. Dozens of pages within the book are devoted to comparisons with the situation at his time, especially that of the French Crédit Mobilier, to the situation that prevailed at the creation of the Casa di San Giorgio. It is difficult to assess the impact of this publication, but the author was himself a board member of several

²³ More modest than the profits generated by the VOC and the EIC, French trade ventures nevertheless enjoyed some success, as exemplified by the Crozat family. At one point, Antoine II was the sole owner of Louisiana. His Hotel in Paris became today's Ritz. He also financed the construction of the current *Palais de l'Elysée* for his daughter. Bought by Catherine II, the Crozat family art collection is at the basis of the Hermitage museum in St Petersburg. See Ménard (2017) for a colorful description of Crozat's businesses.

firms, writer of the statutes of the Crédit Foncier Italien and advisor to the Banque de France.²⁴

A second example is offered by Troplong (1795-1869) when he wrote a commentary, in 1843, on the French commercial code regarding the different forms of companies. He was the first scholar to highlight the Toulouse milling companies as medieval JSCs. His work became a textbook for lawyers of the *Second Empire* (1852-1871), the period during which JSC, named *sociétés anonymes*, flourished in France, especially after the law of 1867 that freed their creators from the need for the approval of the *Conseil d'Etat*.

Finally, one could consider the evidence supporting the diffusion hypothesis between the two southern cases emphasized in this paper. Unfortunately, it is difficult to distinguish between diffusion, most likely from Genoa to Toulouse, and a common context. The two cities had strong cultural and political links but they also shared a common historical background. This common background could explain the emergence of similar JSC-like organizations in both regions without any clear direct importation of the concept. For instance, the board member term was limited to one year in both Casa di San Giorgio and Toulouse mills but it was also the term of Roman Republic Consuls, often used as a reference by peoples of the time.

B. Factors limiting the migration of the southern joint-stock company

The southern expression of the JSC was adopted successfully by some business enterprises to raise capital. But the limited diffusion of direct replications of this model of JSC is a puzzle. The diffusion of business organization frequently faces obstacles and resistance (Harris, 2009a and 2020; see also the evidence collected

²⁴ *Revue Diplomatique* 29.30, July 29, 1906.

and analyzed by Trivellato, 2020, on the lack of diffusion of limited partnerships during the Renaissance period in Tuscany). It thus appears interesting to study the factors that limited local duplication of the southern pariage-like JSC form.

The San Giorgio scheme was difficult to reproduce due to its links with a state entity. However, since the VOC model (as well as other trading companies) exhibited the same kind of overlap between merchant and political elites (Harris 2020: 320; De Jongh, 2011), this explanation is not fully satisfactory.

Regarding the relative lack of diffusion of the Toulouse model, even within the milling industry (two in Toulouse, one in Montauban and one in Moissac) a fiscal explanation can be suggested. During the *Ancien Régime*, a tax (called *lods*) had to be paid to the lord in the case of the sale of any property. Tax rates varied strongly across regions and contracts. In Paris, as in a large part of France, the rate was 20% (the tax was called the *quint*) due by the seller.²⁵ In addition, most of the rivers also had a lord. Thus, the lord of the water had rights on a portion of the tax on transactions (Molieres-Fonmaur, 1783: 178-179). On the contrary, transactions on shares in the Toulouse mills were taxed at a very low rate from the Middle Ages onward.²⁶

A low tax on share transactions is necessary for a JSC to prosper. That is the argument developed by the Castel mill shareholders during a lawsuit against the King who was the lord of the Castel mills as successor of the Count of Toulouse. In 1666, the fiscal administration decided to tax all transactions on Castel shares at 1/12, the standard rate in Toulouse. The shareholders argued that their company

²⁵ Article 23 of the old Custom of Paris. If it was the buyer who paid the quint, he also needed to pay the requint which was 20% on the 20%.

²⁶ The Castel was enfeoffed twice, in 1183 and 1192. Most clauses in the two enfeoffments are identical except for the tax on transaction, which is divided by ten to half a shilling for a mill. Using the first known price of a share, the rate was 1/1200. At the Bazacle after 1177, the tax rate was a fixed 5 Toulouse shillings. In 1248, the rate decreased again to 1 pogès (quarter of penny) for each shilling of sale. This meant a rate of 1/48 for a sale. In the last enfeoffment of 1474, this tax fell again to 1/70. We have computed these rates using tax amounts and stock prices mentioned in Sicard (2015)'s book.

was subject to the enfeoffment title of 1192 which mentions a fixed lods of half a shilling instead of a 1/12 tax rate. They also clearly explain that with a tax rate of 1/12, nobody would want to buy shares.²⁷ In 1671, the Conseil d'Etat accepted the arguments of the shareholders and constrained the King to perceive only the insignificant amount mentioned on the enfeoffment contract signed 500 years before. The migration of this model would thus be impossible due to the high rate of tax on share transactions in force in other parts of France. However, this fiscal explanation is not fully satisfactory because one might think that it would be in the interest of the lord of a favorable location to reduce transaction taxes to allow such a company to emerge.

Finally, the lack of evidence regarding the replication of the Toulouse pariage model could also be due to an archival bias. For instance, the milling company of Moissac is stated by Troplong in 1843 to be the oldest firm organized as a JSC but, as far as we were able to investigate, no archive is available today. Other cases of JSC based on the pariage model could thus have existed without any documents being available today to testify to their existence.

Besides, it appears that the adoption of the JSC structure itself was not an easy process. The modern JSC form resulting from the sophistication of the commenda and guild models in Northern Europe in the 17th century was not widely adopted before the middle of the 19th century and the creation of canals and railway companies. Thus, other conditions, in addition to the mere availability of its concept, were probably required to trigger wide use of the JSC form.

²⁷ FACTUM Pour le Syndic des Pariers, Archives Municipales de Toulouse, 15^{ème} série n. 1 et 2. This document, a statement of facts from the Castel Narbonens pariers in a controversy against the King of France in the end of the 17th century, is the only primary source that is used in the present article.

VI. Environmental factors in the first emergence of the joint-stock company

We start by discussing the impact of a common Roman background on the emergence of the JSC in southern Europe. We then present the socio-economic and political environment prevailing in the times and places of emergence. This enables us to advance our understanding of the conditions that are conducive to the JSC.

A. A common Roman background

From the Toulouse region to northern Italy, Roman law, in the form of the rediscovered *corpus iuris civilis* (see, e.g., Michaud Quantin, 1970; Avi-Yonah, 2005), was a reference during the high and late Middle Ages. The Roman civil law offers the concept of *universitas* that included several characteristics of the JSC that would contribute to making parages resemble a JSC. A definition of *universitas* is offered by Jean Bassien, a scholar from the 12th century (cited by Michaud-Quantin, 1970): “A *universitas* is a collection of several bodies separate from each other, to which a single name is specially assigned”.²⁸

Avi-Yonah (2005) summarizes the legal traits embedded in the concept of *universitas*. He cites and explains various paragraphs of the Roman law taken from the classical jurist Ulpian. For example, Ulpian (Digest., 3, 4, 7, 1) states: “a debt owed to a *universitas* is not owed to each of its members, any more than the debt of the *universitas* is owed personally by the individuals who compose it.” This suggests that *universitas* enjoy entity shielding and offer limited liability to their members. Another paragraph, Ulpian (Digest., 3, 4, 2) indicates that “if members of a municipality or any *universitas* appoint an attorney for legal business, it should not be said that he is in the position of a man appointed by several people; for he comes in on behalf of a public authority or corporate body, not on behalf of

²⁸ “*Universitas est plurium corporum inter se distantium, uno nomine specialiter eisdem deputato, collectio.*”

individuals.” This suggests that some universitas operated with delegated management or at least representation.

Universitas were not initially designed for profit-seeking activities. Roman law mentions different types of universitas including municipalities, associations, guilds and public bodies, as well as charitable organizations (see, Gaius, *Digest.*, 3.4.1 pr.-1). Another type of universitas more compatible with profit-seeking is that of publican companies (*societates publicanorum*) that could bid for public contracts to supply governmental functions, including the provision of armies, maintenance of public edifices, and tax farming (Malmendier, 2009). Publican companies disappeared over the course of the Roman imperial era. They may be considered as a first emergence of JSC, consistent with the convergent evolution hypothesis, but this is questioned in the literature on the history of law (see, e.g., Dufour, 2010).

The purpose of the last type of universitas was for successions opened but not yet transferred (*hereditates iacentes*), paving the way toward the JSC through pariage. A text of Gaius called *Consortium*, not present in the *Corpus Juris Civilis* but discovered in Egypt in 1932, explains that this specific form of company existed among heirs of non-divided property and that a voluntary consortium could also be created among persons who were not co-heirs. The text also mentions as a peculiarity of this type of company that one associate can act on behalf of the others (Jolowicz and Nicholas, 1972: 296). This last form of universitas likely gave a legal basis to the pariages and by extension to the emergence of the southern European JSC.

Indeed, in the legal practices of medieval southern Europe, properties held in common by heirs before the effective division gave rise to the specific case of universitas called consortium (Michaud-Quantin, 1970). For Southern France, Débax (2012) provides a variety of evidence supporting a family origin of pariage. The word *sors* is the basis of the most frequent name of these associations in Northern Italy (consortium, *consorzi*, *consortes*, etc.). The sors are the shares of

inheritance that were, according to Roman law, randomly distributed among the different heirs. A consortes or consortium appears when sors remained owned in common. So, the legal tool used as a basis for a form of JSC was grounded in inheritance law and then evolved.

In the Middle Ages, a pariage was treated as a *universitas* (Sicard, 2015 and Débax, 2012). This had several consequences resulting from the above-mentioned extracts of the rediscovered Roman law. First, since a *universitas* was endowed with the various characteristics that now define legal personality, this also automatically applied to pariages. Thus, a pariage enjoyed the benefits of legal personality without the need for any approbation by the state or any other authority. For the later northern European cases, achieving legal personality as an independent *corpus* first meant obtaining the right of incorporation from the King (Harris, 2000:17). In the pariage path, legal personality was not a crucial step as it was for the East India Companies (see Dari-Mattiacci et al., 2017), but was instead a pre-existing characteristic.

Second, all members of a *universitas* were equal. In pariage, the term *par* itself refers to the idea of equal footing; even the king of France, parier of the Castel mills, was treated as any other parier. As a consequence, each parier was supposed to participate in capital expenditure and to receive distributions of revenue in proportion to their pars or shares in the pariage. With this rule of equality, the shares were identical, irrespective of the owner (such a standardization is a preliminary for depersonalization), as is the case in modern JSCs. This distinguishes the pariage from the *societas*, another type of business enterprise from Roman law in which the shares were linked to a specific owner who could bring various inputs in addition to capital and in which partners were free to decide capital contributions and profit-sharing rules among themselves.

Being depersonalized allowed a pariage, as *universitas* did, to enjoy a third crucial characteristic: a pariage was perpetual, surviving the death of a parier.

Compared to the commenda contract used for commercial trade, the capital of a pariage was thus permanent from the beginning. In a pariage, a parier could not force the division of jointly-owned assets (as was the case in the Roman *indivisum*). Such a commitment to permanent capital was always reiterated in pariage contracts (Débax, 2012).

To compensate for the impossibility of forcing the division of the assets, shares were transferable and divisible. The successive inheritances and sales of shares led to a considerable fractionalization of ownership in the pariages. In 1246, four brothers sold in common one quarter of 1/18 of the seigneurie of L'Isle sur la Sorgue, meaning that each brother must have owned 1/288 of the seigneurie (Laval and Chobaut, 1913). In some cases, sales to non-pariers were banned. In others, a share that was sold could be repurchased, or holding more than one share was forbidden (see Débax, 2012). But most of the time, trading shares was free, leading some rich investors to hold shares in many different pariages, as was for example the case in the Avignon region in the Middle Ages.²⁹ Sophisticated legal tools for the common management of assets were thus widely available when the Casa San Giorgio and Toulouse milling companies emerged at the end of the Middle Ages.

The reference to the Roman law and the formalization of trade rules by municipal institutions (more on this below) did not prevent flexibility in contracting. Several original forms of associations have been observed in the geographical area. For instance, a company very different from the standard commenda but similar to a modern "limited partnership" was recorded in 1336 in Barcelona (Sayous, 1934). In Toulouse, several forms of associations between pariages, including a form of mutual insurance, were undertaken before the final definitive mergers led to the milling companies (Sicard, 2015). The developments of institutional arrangements

²⁹ The legal historian J.-P. Poly (1979) describes the lords of Avignon as "a large group of shareholders, combined with the Profession of Arms, earning coupons from old but prosperous businesses."

suitable for various purposes within the legal framework of the Justinian Code contrast with the purported rigidity of code laws often assumed in the Law and Finance literature.

The evolutionary path leading to the JSC in northern Europe can also be related to the Roman heritage. Indeed, being rooted in English guilds, the emergence of the EIC was facilitated by the fact that guilds were understood as universitas thus enjoyed many of the characteristics of the JSC, if not permanent capital. The commenda, the ancestor of the VOC, was also linked to the rediscovered Roman law, as commenda were treated as societas by medieval lawyers in Southern Europe and the Netherlands, both areas being under the influence of the Roman law.

B. Socio-economic and political background

The role of Communes in the earlier emergence is typical of the political economy of the time. The context in Western Europe during the Middle Ages is generally described as feudal, but this term encompasses very different situations (Brown, 1974). Social organization in southern European regions was very different from the stereotype of a “manorial” economy but instead appears as favorable for business and other cooperative institutions such as Communes. In medieval Toulouse, feudalism was mainly characterized by a form of property that imposed on the tenant the obligation to pay the lord a perpetual yearly rent and a tax in case of a sale or a pledge, that tenants could make freely. In exchange, the lord guaranteed peaceful enjoyment to the tenant and his heirs and was supposed to provide proof of property. Finally, a financial penalty was due by the tenant when a complaint was lodged with the lord; the lord was in charge of organizing trials, most frequently settled by three arbitrators (Castaing-Sicard, 1959). Everyone could become lord, exchanging a property for a perpetual rent (operation called

enfeoffment); there were many lords in medieval Toulouse including from the Jewish community (Saige, 1878).

In Genoa, from 1052 onwards, the city was governed by city Consuls from various rival merchant families, with only a weak role for the traditional nobility; the use of titles was even repeatedly forbidden in the city. These rivalries led quickly, and frequently, to the appointment of a foreign *podesta* (Sayous, 1937). In 1396, Genoese consuls elected the French king to be perpetual lord of the city and to govern free of these rivalries. It was under the strong government of the French *Maréchal* Boucicaut that the Casa San Giorgio appeared as the merger of various existing compères. This merger thus occurred under political pressure, as would later be the case for the VOC.

Toulouse (called the Republic of Toulouse before 1789) was also governed by Consuls, like most cities in Southern France. In 1189, the Count of Toulouse recognized full rights to the Consuls, only keeping for himself the power to coin money and to raise an army when the city was in danger. Eight different Consuls were elected each year, acquiring a title of nobility. It is interesting to note that according to Débax (2012) the appearance of communes as political entities also derives from the pariage institution: after a few generations of division among heirs, the administration of the pariage of an urban seigneurie became a municipal institution that represented all the inhabitants.

Whatever their exact origins, these Communes were dominated by merchants to whom they offered favorable conditions, especially in the form of a supportive legal framework. According to Greif (2002, 2006b), the existence of these communes explains the development of efficient impersonal relations in Western Europe. Communes had judicial responsibility, providing a business-friendly legal context including the shaping of an appropriate legal framework. For instance, in the custom of Toulouse, written in 1286 to affirm the local specificities compared to

the rediscovered Roman law, two articles (72 and 73) are dedicated to a form of commenda for overland trading.³⁰

Like those of other maritime Republics, Genoese merchants used their own legal rules abroad, where they lived in specific neighborhoods. Much later, the long-established Genoese practice of providing a legal context favorable to business explains the modern aspects of the 1688 Genoa code stating in particular the possibility of limited liability and the free access of any shareholder to the accounts (Wiszniewski, 1865: 160).

These sophisticated business regulations didn't emerge out of the (legal) blue. These cities saw much legal activity. In Toulouse, the university produced many graduates. In 1378 there were 1,600 students and graduates (about 10% of the male population), 59% of whom were lawyers. The university of Toulouse provided many high-level scholars in civil law, especially during the 14th century. Several of them were famous for writing about property rights (Verger, 2008). Moreover, the city of Toulouse enjoyed the unusual right to create notaries anywhere in the world. 3,984 notaries were created by the city consuls between 1266 and 1337, on average 56 per year, and 11,026 up to 1526 (Roschach, 1867). Notaries wrote all contracts including those leading to the early JSCs. In Modern Times, the Genoese commercial court, the Rota, became famous; a collection of its judgments was published across Europe early on, such as in Lyon in 1592 (van Niekerk 1998: 200). One reason for its success may have been the ability of its judges to reconcile merchant practices with the legal academic tradition (Piergiovanni, 1987).

The southern European path to the JSC thus arises in a context in which political power was in the hands of Communes dominated by merchants. One might ask whether these elites played an active role in these emergences of the JSC. The

³⁰ See Castaing-Sicard (1959) for a description of the Toulouse customary law as a reflection on the business orientation of the merchant class.

proximity or even collusion between the Republic of Genoa and the Casa San Giorgio is a well-established fact since at least the time of Machiavelli, who characterized San Giorgio as “a state within the state” (see Fratianni, 2006). The links between the city of Toulouse and the Toulouse mills were weaker, because the city did not have any role in the business operations. It only regulated the fee the milling companies could charge for their service.

Some similarities are observed between the governance of the communes in Toulouse and Genoa and that of the JSC business institutions: for example, there were eight members in a staggered governing board and the elected board members could not refuse the responsibility. However, these similarities do not necessarily imply that the governance of municipal institutions directly influenced the choice of corporate governance. It may well be that they developed in the same cultural context, influenced by the governance of the Roman Republic.

VII. Conclusion

It is commonly accepted that the first JSCs appeared in Northern Europe with the English and Dutch East India Companies. In this paper, we describe multiple paths leading to the emergence of the JSC. These paths led to the creation of several large-scale business enterprises, such as the Toulouse milling companies and the Casa di San Giorgio. These different paths to the JSC are in line with the theory of convergent evolution: analogous organizational characteristics emerged from different legal paths.

Analyzing the emergence of the JSC from the angle of convergent evolution sheds some light on the environmental features that are conducive to this business organization. In addition to the economic forces studied by Hansmann et al. (2009),

we highlight the presence of the Roman background as well as the business orientation of the political elites and legislators, often at the municipal level.

The question of the emergence of joint-stock companies is not just an historical debate, it also has broader implications for a contemporary and important topic: the role of institutions in economic development. We now briefly discuss what can be inferred from the existence of convergent evolution toward the JSC regarding the relationship between institutions and economic development.

The emergence of sophisticated corporate forms in southern Europe before the large-scale maritime trading companies in northern Europe provides little support for the thesis of the crucial role of legal origins (La Porta et al., 1997). Under the codified Roman law of that time, several forms of business organizations emerged as JSCs centuries before what would be observed in common-law England. Harris (2009b) reached similar conclusions, observing that civil-law in the Netherlands enjoyed earlier bond and stock markets than common-law England. This finding is also in line with the conclusion of Malmendier (2009) on the rise and decline of the publican companies under Roman law, and with the analysis and evidence offered by Guinnane et al. (2007) on the limited liability company.³¹

Our evidence is more consistent with the approach of Rajan and Zingales (2003), who point out the importance of political institutions that favor financial development. Indeed, both in Genoa and Toulouse, political power of the active merchant class helped economic activities flourish. Also, in the two southern cases, the positive externality of the communal system, whose importance for impersonal commercial exchanges is highlighted by Greif (2002), seems to be prevalent.

Another main implication of our work is that the modernity of southern business institutions was not sufficient for the economic take-off observed later in northern

³¹ It is possible that more recent versions of the Civil Law adopted more rigidities as highlighted in the law and finance literature.

Europe. The Asiatic trade undertaken by the VOC and the companies that followed constituted a salient development in economic history, but it was not due only to the rise of the JSC, which appeared earlier in southern Europe and was not accompanied by a significant economic takeoff. This finding concurs with a strand of literature highlighting that Venice and Genoa enjoyed a financial revolution as early as the Quattrocento (e.g., Fratianni and Spinelli, 2005). This fact raises new questions about the role played by formal business institutions in economic development.

A final implication of our analysis is that neither the existing institutions of southern Europe nor those of northern Europe were particularly vital to the emergence of the JSC. Rather it appears that this business organization form has such strong internal logic, linking its various attributes to objectives of constituent agents, that it requires very little doctrinal or institutional precedent as stimulus for its formation except well-defined property rights. Given the convergence from different legal roots, the JSC with tradable shares may be a stable equilibrium that provides a robust and generally workable solution to financing and managing large-scale projects requiring permanent investment in firm-specific assets.

On the other hand, cases of emergences of the JSC remain infrequent, implying that other conditions are required. The lack of emergence outside western Europe may reflect the key role played by family organizations: in the nuclear family context, typical of western Europe, individuals cooperate through “corporations” (Greif, 2006) such as the JSC, among other business organizations, while more complex family systems allow cooperation among relatives without the need of such an institution (Kuran, 2005). In China, the business organization closest to the JSC was family-based (Zelin, 2005: 292). The fact that this business organization did not evolve to fully-fledged JSC is in line with the fact that a family model with low kinship intensity (Henrich, 2020) typical of western Europe is an important factor in the emergence of the JSC.

Moreover, the JSC model appeared several times but has rarely spread to many businesses. This apparent contradiction echoes what can be observed after the success of this model for the Asian trade. In the Netherlands, only one JSC was formed throughout the entire course of the 17th century (the Dutch West India Company). Before the speculative bubbles in the 1690s and 1720s in London, only a handful of enterprises raised outside capital other than for exploiting overseas trade. Equity finance with the JSC model then remained rarely used until the early 19th century. In France, fewer than nine shareholding companies were created each year between 1817 and 1830 (Freedeman, 1965). Regarding listed companies, a scan of stock price lists from early 19th century Amsterdam, London and Paris shows only a few traded shares. The real development of the publicly-traded JSC took off with the transportation revolution and financial liberalization of the middle of the 19th century, almost as a new emergence that did not decrease the widespread use of other forms of companies (Guinnane et al., 2007; Gelderblom and Trivellato, 2018). The weak diffusion of this business organization in medieval southern Europe and then for numerous decades in northern Europe constitutes an interesting avenue for future research.

REFERENCES

Abatino, B., Dari-Mattiacci, G., Perotti, E. (2011) Depersonalization of Business in Ancient Rome. *Oxford Journal of Legal Studies*, 31.2: 365-389.

Abbé, J-L. (2006). *À la conquête des étangs : l'aménagement de l'espace en Languedoc*, Toulouse, PUM.

Alger, I., and Weibull, J. (2016) Evolution and Kantian morality. *Games and Economic Behavior* 98: 56–67.

Alger, I., Weibull, J. (2013) Homo moralis — preference evolution under incomplete information and assortative matching. *Econometrica* 81: 2269–2302.

Avi-Yonah, R. (2005) The Cyclical Transformations of the Corporate Form: A Historical Perspective on Corporate Social Responsibility, *Delaware Journal Corporate Law* 30: 767-818.

Boyer, G. (1950) Un texte inédit du XIIème siècle sur l'atelier monétaire de Toulouse. *Annales de la faculté de Droit d'Aix en Provence*, 43.

Brown, Z. (1974) The Tyranny of a Construct: Feudalism and Historians of Medieval Europe. *American Historical Review* 79.4: 1063–1088.

Brusatte, S. L., J. K. O'Connor, and E. D. Jarvis, (2015) The Origin and Diversification of Birds. *Current Biology Review* 25: R888–R898.

Carlos, M. A., (1992) Principal-Agent Problems in Early Trading Companies: A Tale of Two Firms. *American Economic Review*, 82.2: 140-45.

Carlos, M. A., Nicholas, S. (1996) Theory and History: Seventeenth-Century Joint-Stock Chartered Trading Companies. *Journal of Economic History* 56.4: 916-24.

Castaing-Sicard M. (1959). *Les contrats dans le très ancien droit toulousain*, Presses Universitaires de Toulouse, Toulouse.

Chaussinand-Nogaret G. (1970), *Les Financiers de Languedoc au XVIIIe siècle*, Ed. Sevpen.

Chénon, E. (1929) *Histoire Générale du Droit Français Public et Privé*, Paris:

Sirey.

Clapham, J. (1944) *The Bank of England: A History*. Cambridge: MacMillan.

Dari-Mattiacci, G., Gelderblom, O., Jonker, J., Perotti, E. (2017) The Emergence of the Corporate Form. *Journal of Law, Economics, and Organization*, 33.2: 193-236.

Débax, H. (2012), *La seigneurie collective*. Rennes, Presses Universitaires de Rennes.

Domergue, C. (1983) La mine antique d'Aljustrel et les tables de bronze de Vipasca. Bordeaux, Pierre Paris.

Ekelund, R. B., Tollison, R.D., (1980) Mercantilist Origins of the Corporation, *Bell Journal of Economics* 11.2: 715-20.

Erikson, E. (2015) (ed.) *Chartering Capitalism*. Emerald: Bingley.

Erikson, E., Assenova, V. (2015) Introduction: New Forms of Organization and the Coordination of Political and Commercial Actors. in Erikson, E. (ed.) *Chartering Capitalism*. Emerald: Bingley.

Felloni, G. (2005) *Genova e la storia della finanza: una serie di primati? Genoa and the History of Finance: a Series of First?* Genova, second edition.

Fratianni M. (2006) Government Debt, Reputation and Creditors' Protections: The Tale of San Giorgio. *Review of Finance* 10.4: 487-506.

Fratianni, M. and Spinelli, F. (2005) Did Genoa and Venice kick a financial revolution in the quattrocento? working paper.

Freedeman, C. E. (1965) Joint-Stock Business Organization in France, 1807-1867, *Business History Review* 39.2: 184-204.

Gabora, L. (2013a). Convergent evolution, *Brenner's Encyclopedia of Genetics* (Second Edition), 178-180.

Gabora, L. (2013b). An evolutionary framework for cultural change: Selectionism versus communal exchange. *Physics of Life Reviews* 10.2: 117-145

Gallet, L. (1935). *Les traités de parage dans la France féodale*. Paris, Sirey.

Gelderblom, O., Jong, A., Jonker, J. (2013). The Formative Years of the First Modern Corporation: Dutch East India Company, 1602-1623, *Journal of Economic History* 73-4: 1050-1076.

Gelderblom, O., F. Trivellato (2018). The Business History of the Preindustrial World: Towards a Comparative Historical Analysis. *Business History* 61.2: 225-259.

Greif, A. (2002) Institutions and Impersonal Exchange: From Communal to Individual Responsibility. *Journal of Institutional and Theoretical Economics* 158.1: 168-204.

Greif, A. (2006) Family structure, institutions and growth: the origins and implications of western corporations. *American Economic Review* 96: 308–312. 20.2: 221-236.

Greif, A. (2012) The Maghribi traders: a reappraisal? *Economic History Review* 65.2: 445-469.

Guidi-Bruscoli, F. (2012) John Cabot and his Italian financiers. *Historical Research* 85: 372-393.

Guinnane, T., Harris, R., Lamoreaux, N., Rosenthal, J-L. (2007) Putting the Corporation in its Place, *Enterprise and Society* 8.3: 687-729.

Hansmann, H., R. Kraakman and R. Squire (2006). Law and the Rise of the Firm, *Harvard Law Review* 119.5: 1333-1403.

Harris, R. (2000) Industrializing English Law: Entrepreneurship and Business Organization, 1720 – 1844. Cambridge University Press.

Harris, R. (2005) The Formation of the East India Company as a Cooperation-Enhancing Institution. working paper.

Harris, R. (2009a) The Institutional Dynamics of early Modern Eurasian Trade: The Corporation and the Commenda. *Journal of Economic Behavior and Organization* 71.3: 606-622.

Harris, R. (2009b) Law, Finance and the First Corporations. in James J. Heckman,

Robert L. Nelson and Lee Cabatingan, *Global Perspectives on the Rule of Law*. London, Routledge.

Heers, J. (1963) *L'Occident aux XIV^e et XV^e siècles. Aspects économiques et sociaux*. Paris, PUF.

Heckscher, E. (1931, 1994) *Mercantilism*. London: Routledge.

Henrich, J. (2020) *The WEIRDest People in the World*. New-York: Farar, Straus and Giroux.

Howell, C. (1976) Peasant inheritance customs in the Midlands, 1280-1700. In Goody et al. (Eds) *Family and inheritance: rural society in Western Europe, 1200-1800*. Cambridge: Cambridge University Press

Irwin, D. A. (1991) Mercantilism as Strategic Trade Policy: The Anglo-Dutch Rivalry for the East India Trade. *Journal of Political Economy* 99.6: 1296-314.

Jenks S. (2013) The first bubble: Silver mining in the Saxon Erzgebirge, c. L470-154, working paper.

De Jongh, M. (2011) Shareholder Activists Avant la Lettre: the “Complaining Participants” in the Dutch East India Company, 1622–1625. In: Koppell J.G.S. (eds) *Origins of Shareholder Advocacy*. Palgrave Macmillan, New York

Jolowicz, H.F., Nicholas, B. (1972) *Historical introduction to the study of Roman law*. Cambridge: Cambridge University Press.

Jones, S.R.H., Ville, S.P. (1996) Efficient Transactors or Rent-Seeking Monopolists? The Rationale for Early Chartered Trading Companies. *Journal of Economic History* 56.4: 898-915.

Kadens, E. (2012) The Myth of the Customary Law Merchant, *Texas Law Review* 90: 1153-1206.

Kyriazis, N., Metaxas, T. (2011) Path dependence, change and the emergence of the first joint-stock companies, *Business History* 53.3: 363-374.

Kuran, T., 2005. The absence of the corporation in Islamic law: origins and persistence. *American Journal of Comparative Law* 53: 785–834.

Laval, V., Chobaut, H. (1913) *Le consulat seigneurial de L'Isle-en-Venaissin (XII^e-XIII^e siècles)*, *Mémoires de l'Académie de Vaucluse*, 2^e série, 13: 1-42.

Lelièvre G. (2014). Les précurseurs de la Compagnie française des Indes orientales, 1601-1622. PhD thesis University Caen-Normandie.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R. W. (1997) Legal Determinants of External Finance. *Journal of Finance* 52: 1131-1150.

Le Bris, D., Pouget, S., Goetzmann, W. (2015) The Development of Corporate Governance in Toulouse: 1372-1946, NBER working paper 21335.

Le Bris, D., Goetzmann, W., Pouget, S. (2019) The present value relation over six centuries: The case of the Bazacle company, *Journal of Financial Economics* 132.1: 248-265.

Malmendier, U. (2009) Law and Finance "at the Origin". *Journal of Economic Literature*, 47.4: 1076-1108.

Mahoney (2000) XXXX

Masson P. (1903) *Histoire des établissements et du commerce français dans l'Afrique barbaresque (1560-1793) : Algérie, Tunisie, Tripolitaine, Maroc*. Paris.

Ménard P. (2017). *Le Français qui possérait l'Amérique*, Ed. Le cherche-midi.

Miceli T. J. (2017) Economic Models of Law in Francesco Parisi (ed.) *The Oxford Handbook of Law and Economics: Volume 1: Methodology and Concepts*

Michaud-Quantin, P. (1970) *Universitas. Expressions du mouvement communautaire dans le Moyen Age latin*. Paris : Vrin.

Molieres-Fonmaur, B-L, (1783) *Traité des droits de lods et vente*, Lyon.

Mot, G. (1910) *Le Moulin du Château Narbonnais de Toulouse*, 1182-1600, PhD in Law, Toulouse.

Muchembled, R. (Ed.). (2007). Cultural exchange in early modern Europe. 4 vols. Cambridge: Cambridge University Press.

North, D. C. and Weingast, B. R. (1989) Constitutions and Commitment: The Evolution of Institutions Governing Public Choice in Seventeenth-Century

England. *Journal of Economic History* 49: 803-832.

North, D. C. (1990), *Institutions, Institutional Change, and Economic History*; Cambridge, Cambridge University Press.

Piergiovanni, V. (1987) *The Courts and the Development of Commercial Law*. Berlin: Duncker & Humblott.

Poly, J-P. (1979), *Histoire d'Avignon*. Edisud, Aix-en-Provence.

Porée, C. (1907) Les statuts de la communauté des seigneurs pariers de la Garde-Guérin en Gévaudan. *Bibliothèque de l'école des Chartes* 68 :81-129.

Rajan, R. G., Zingales, L. (2003) *Saving Capitalism from the Capitalists: Unleashing the Power of Financial Markets to Create Wealth and Spread Opportunity*. Crown Business.

Roschach, E. (1867) Les signets authentiques des notaires de Toulouse du XIIe au XVIe siècle. *Société Archéologique du Midi de la France* 1 : 142-162.

Rossi, G. (2017) *Insurance in Elizabethan England*. Cambridge: Cambridge University Press.

de Roover, R. (1963) *The rise and decline of the Medici Bank, 1397-1494*, Cambridge, Massachusetts: Harvard University Press.

Saige, G. (1878) De la condition des juifs dans le comté de Toulouse avant le XIVe siècle. *Bibliothèque de l'École des chartes* 39: 255-322.

Sayous, A-E. (1932) Un marché de valeurs au XIIIe siècle : la « Compere salis » de Gênes. *Annales d'histoire économique et sociale* 4.13: 70-73.

Sayous A-E (1933a) Les associations de caractère capitaliste à Venise entre le milieu du XIe siècle et celui du XIIe, *Académie des Inscriptions et Belles-Lettres*, 77.4 : 435-443.

Sayous, A-E. (1933b) Les valeurs nominatives et leur trafic à Gênes pendant le XIIIe siècle d'après des documents inédits de ses archives notariales. *Comptes-rendus des séances de l'Académie des Inscriptions et Belles-Lettres* 77.2 : 215-225.

Sayous A-E (1934), La technique des affaires : sa genèse. *Annales d'histoire économique et sociale*, 6 : 133-137.

Sayous, A-E. (1937) Aristocratie et noblesse à Gênes. *Annales d'histoire économique et sociale* 9.46: 366-381

Scott, W., R. (1912) *The constitution and finance of English, Scottish and Irish Joint-Stock Companies to 1720*. Cambridge: Cambridge University Press.

Shelton, J. (1965). The First Printed Share Certificate: An Important Link in Financial History. *Business History Review*, 39(3), 391-402.

Shleifer, A., Vishny, R. (1997). A Survey of Corporate Governance, *Journal of Finance*, 52:2: 737-783.

Sivramkrishna, S. (2014) From merchant to merchant-ruler: A structure-conduct performance perspective of the East India Company's history, 1600–1765. *Business History* 56.5: 789-815.

Sicard, G. (1953), *Aux origines des sociétés anonymes. Les moulins de Toulouse au Moyen Age*. Paris, Armand Colin translated as Sicard G. (2015) The Origins of Corporations. New Haven: Yale University Press.

Todd, E. (2011), *L'origine des systèmes familiaux*. Paris, Gallimard.

Van der Woude, A.M. (1972) Variations in the size and structure of the household in the United Provinces of the Netherlands in the seventeenth and eighteenth centuries. In Laslett, P. (Ed.) Household and Family in Past Times. Cambridge: Cambridge university Press.

Van Niekerk, JP. (1998) *The Development of the Principles of Insurance Law in the Netherlands from 1500-1800*. Kenwyn: Juta.

Verger J. (2008), « Étudiants et gradués des universités du Midi à la fin du Moyen Âge : problèmes d'effectifs et d'origines », in Ed. Patrick Gilli, Les élites lettrées au Moyen Âge. Modèles et circulation des savoirs en Méditerranée occidentale (XIIe-XVe siècles). Actes des séminaires du CHREMMO, Montpellier: Presses universitaires de la Méditerranée, 2008, p. 195-215.

Vermeulen, P., van Lint, A. C. (2020) The Rise of the Dutch East Indies Company in Billis, D., Rochester C. (eds) *Handbook on Hybrid Organizations*. Cheltenham: Edward Elgar (pp. 186-205).

Troplong, R-T. (1843) *Commentaire du contrat de société*, Brussels, Mélines, Cans et Cie.

Udovitch, Abraham L. (1962) At the Origins of the Western Commenda: Islam, Israel, Byzantium? *Speculum* 37.02: 198-207.

Wiszniewski, A. (1865) *Histoire de La Banque de Saint-Georges de Gênes*. Paris Guillaumin.

Whitman, D. G. (2000) Evolution of the Common Law and the Emergence of Compromise, *Journal of Legal Studies* 29: 753-781.

Zelin, M. (2005) *The Merchants of Zigong*. New York: Columbia University Press.