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ARTICLE

On the role of social rules in economic development: historical perspectives

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Abstract

This paper explores the role of social rules in economic development. It reviews the historical evidence on social rules and their linkages with human capital. We present supporting evidence from the historical evolution of four important aspects of society: (1) improved dispute resolution mechanisms; (2) the elimination of debt bondage; (3) reductions in the severity of punishments; and (4) the development of limited liability rules and their linkages with the rise of the modern corporation. In each case, we evaluate how social rules have evolved to protect human capital and support economic development.

Keywords Social rules · Economic development · Historical evidence · Human capital

JEL O10 · O43 · N2 · K4

1 Introduction

The process of economic development is complex and has varied over time and across space (e.g., Polanyi 1944; Weber 1954; North 1990; Mankiw et al. 1992; Pomeranz 2000). Much attention has focused on the role of innovations, markets and property rights in improving productivity and income. Yet, markets rely on socio-economic and political institutions that affect the economic performance of societies (e.g., Elster 1989; North 1990; Tilly 1990; Fafchamps 1992; Bicchieri 2006). In this context, efficient institutions can be defined as the ones that support economic and policy decisions that maximize aggregate income. North (1990) argues that efficiency gains help motivate the historical evolution of economic and political institutions. These arguments also apply to the analysis of social rules. We define social rules broadly to include norms, laws, regulations, and customs that affect individual

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interactions in a society. Social rules can be formal (e.g., laws and government regulations) as well as informal (e.g., cultural norms guiding the behavior of members of a family or social network). Our focus on social rules is motivated by their role in guiding interactions among individuals. These interactions are common in societies, some positive (e.g., access to information, improved productivity from teamwork), others negative (e.g., conflicts). In general, the design and implementation of social rules influence how individuals interact, which in turn affect individual behavior, economic performance, and the process of economic development (e.g., Commons 1934; Rutherford 2001). Social rules shaping interpersonal relationships occur at all levels of society, going from the micro level (e.g., formal or informal contracts among individuals within a household or a firm), to the meso level (e.g., dispute resolution schemes) and to the macro level (e.g., government policies) (Dopfner et al. 2004). North (1990) argued that individual interactions can be managed efficiently through the design and implementation of social rules (including contracts and policies).

We agree with North (1990) that there is a lot to learn about the historical evolution of social rules. But we argue that North's focus on efficiency gains is too narrow for three reasons: (1) social rules exhibit a lot of inertia, making it more difficult to document how they change; and (2) social rules vary a lot across space, making it hard to identify which rule is efficient; and (3) most social rules are also affected by distribution issues, stressing the need to go beyond efficiency.

Our paper evaluates the historical evolution of social rules. Our historical inquiry is motivated by the fact that many social rules change slowly, and some have long-term effects that cannot be easily identified over short time periods. While our paper examines institutional changes over the centuries, we also strive to provide depth by focusing on four important aspects of society: (1) improved dispute resolution mechanisms; (2) the elimination of debt bondage; (3) reductions in the severity of punishments; and 4) the development of limited liability rules and their linkages with the rise of the modern corporation. In the process, our historical analysis will give new insights in the relationships between social rules and economic development.

These explorations lead us to go beyond previous literature in several ways. First, our analysis makes it clear that we need to go beyond efficiency and include fairness considerations in the analysis of social rules. This argument is strongest in our investigation of dispute resolution mechanisms. But we argue that it applies to all social rules (e.g., in the evaluation of punishment, slavery and limited liability rules). This is motivated by the fact that fairness and empathy are common characteristics of human behavior (Batson 2011; Segal 2018). While such arguments have stimulated the inclusion of fairness in the analysis of social rules, the role of fairness remains imperfectly understood for two reasons: (1) the tradeoffs between efficiency and fairness depend on the nature of social structure (Chavas 2020); and (2) the role of fairness has varied over time and across space (as exemplified by the use of punishment and violence; see Foucault (1995) and Scheidel (2017)). Our discussion stresses that institutional innovations are motivated by both efficiency and fairness considerations.

Second, our historical analysis examines the linkages between social rules and human capital. We argue that economic development occurs jointly with the elaboration of reciprocity relationships which are conditional on the level of human capital.[1] In this context, human capital helps improve individual abilities to assess the situation of others, thus making it easier to settle disputes and to increase efficiency and productivity. Under low level of human capital, reciprocity relationships are typically limited in scope (e.g., mostly within the family). But reciprocity relations expand significantly under high level of human capital, in which case social rules become more extensive (e.g., as seen in modern states).[2] In assessing the progress of civilization, we argue that an important part of the process has been the development of limited liability rules that protect human capital. This gives additional support for the role of human capital as major contributor to economic growth (e.g., Mankiw et al. 1992; Goldin 2016). Our analysis explores the evolving linkages between limited liability rules, financial institutions and the role of the modern corporation in economic development.

Third, our historical analysis illustrates that, reflecting both efficiency and fairness considerations, social rules have evolved with the structure of societies around the world. The choice of social rules typically occurs in complex socio-political environments. Institutional changes are often slow and exhibit "path dependence" (Pierson 2000). In addition, choosing social rules is often difficult. For example, seeing societies establishing dispute resolution institutions (such as the Courts) is a testimony about the frequency of failures in private bargaining. In this context, the study of social rules can best be presented in the context of evolutionary dynamics where individuals interact to set up new rules that evolve over time (North 1990; Ostrom 2000; Bicchieri 2006; Young 2015; Chavas and Wang 2021; Nunn 2021). We do not think that a single model can explain the complexities of institutional change. But we see evolutionary dynamics as providing useful insights supporting our historical analysis of social rules.

Finally, the investigation presented below is qualitative. It examines the nature of some key institutional innovations and their longer term effects. Our approach will allow us to avoid the fallacy of "the trees hiding the forest" as many changes in the structure of societies have been slow, making it difficult to identify their long-term effects. Our historical approach documents how some key factors have influenced the evolution of social rules and their linkages with the process of economic development.

The paper is organized as follows. Section 2 evaluates how dispute resolutions have changed over time and space. Section 3 discusses the evolving role of punishments through the centuries. Section 4 presents an historical overview of an extreme form of inequality: slavery. Section 5 evaluates the evolution of liability rules, with

[1] The role of human capital in economic development has been stressed by Schultz (1961), Becker (1964), Mankiw et al. (1992) and Goldin (2016).

[2] Previous literature has explored the linkages between human capital and social capital (Coleman 1988; Temple 2002). Empathy and social interactions among individuals typically vary over time and across social networks and political institutions (Batson 2011; Segal 2018). In this context, note that our historical analysis has one advantage: discerning the significance of institutional changes is easier when examining changes over extended periods (such as centuries).

linkages with bankruptcy and the rise of the modern corporation. Finally, Sect. 6 concludes.

2 The evolution of dispute resolution

When disagreements arise, potential conflicts can be resolved through private bargaining among the individuals involved. When this fails, social rules can be set to manage disputes and conflicts. Settling disputes is important to the extent the presence of conflicts often has adverse effects on individual incentives, on economic payoff and on human welfare. As civilization progressed, first city-states and then nation-states developed, and their rulers codified social rules to help settle disputes and manage retributions (Tilly 1990; Johnston 2011). Applied to Babylon, the Code of Hammurabi (who reigned from 1792 to 1750 B.C.E.) is one of the earliest examples of such rules. The Code states that an accused person is considered innocent until proven guilty. It distinguishes between crimes (with associated punishments for those who commit crimes) and torts (which provide ways to compensate victims of wrongful acts). While it inflicted harsh punishments on those found guilty (e.g., death penalty for theft), Babylonian law imposed some form of reciprocity (including the rule of "an eye for an eye") by restricting retribution to be no worse than the crime as long as the victim and offender had the same status in society.

Through the ages, social rules evolved through institutional innovations (North 1990; Johnston 2011). In primitive societies, social rules were designed and implemented through oral agreements, relying heavily on the accumulated experience of the elders. With the invention of writing, rules regulating socioeconomic behavior were written down, thus codifying the law and making it easier to implement the legal code and to sanction transgressors. In turn, this stressed the importance of literacy in the management and control of behavior, and the spread of private and public contracts. These changes also made it easier to settle disputes. Following the rise of the state, an important institutional innovation was the creation of the Courts that helped improve the adjudication of conflicts when individual negotiations fail.

The Roman empire implemented a set of rules that served as a basis for civil law that eventually became the legal system adopted in continental Europe (Johnston 2011). Civil law relied on the codification of legal rules applied and interpreted by judges in charge of settling specific disputes. England followed a different path. Following the Norman conquest in the twelfth century, England adopted rules that became known as common law (Plucknett 2001), with more emphasis on precedents and a greater involvement of citizens in dispute resolutions (as reflected in the jury system). While not as widespread as civil law, common law provides the legal system currently used in much of the former British and American colonial empires. Seeing the coexistence of two legal systems has been puzzling (Arruñada and Andonova 2008).

The Courts have evolved over time and remain an expression of the structure of society (Posner 1973, 1981). For example, access to the Courts favored adult males in patriarchal societies. And women continue to have limited legal rights in some countries (e.g., Saudi Arabia). With a trend toward democratization, the last few decades have seen a broadening of legal rights for women and minority groups. This is illustrated in the 1948 Universal Declaration of Human Rights proclaimed by the United Nations General Assembly.

How well do the Courts perform in settling disputes? Allowing for flexible rules that can adapt to local conditions and evolve with changing socioeconomic conditions is desirable. This is an area where common law (with its reliance on precedents and a jury system) has some advantage (e.g., Glaeser and Shleifer 2002). To help support private and public contracts, it is also desirable to have rules that are consistent over time and across space. Under globalization, this is a challenge for international law that must deal with the heterogeneity of national legal systems. This led to the rise of merchant law ("lex mercatoria") involving the development and implementation of rules to help facilitate litigation among merchants (Baker 1979; Milgrom et al. 1990; Greif 1991). Another challenge is the Court's access and ability to process relevant information (e.g., Arruñada and Andonova 2008). First, acquiring information being costly, it is desirable for the Courts to avoid frivolous litigation. Second, difficulties can arise when a defendant does not have effective legal representation. Third, maintaining the impartiality of the Courts can be problematic (e.g., due to judicial corruption). In spite of these challenges, there is strong empirical evidence that the legal system has had significant effects on the patterns of economic growth (e.g., La Porta et al. 2008). Thus, with conflicts having adverse effects on individual incentives, on economic payoff and on human welfare, the historical evidence indicates that improved dispute resolution mechanisms are important contributors to the process of economic development.

3 The evolution of punishment

There are many ways to settle conflicts and disputes between parties and to manage retribution. Peaceful options include negotiation, mediation and litigation. But using violence has always been available. Execution of criminals or dissidents has been found in all societies since the beginning of civilization: a ruler would establish the death penalty as punishment for crimes committed by one of his subjects (e.g., the Code of Hammurabi mentioned above). The death penalty typically varied for nobility, freemen and slaves, and it could target different crimes and use different punishments methods (Randa 1997).

The use of the death penalty has changed over time and across space. For example, Britain has a long history of punishment by death. In the 10-th century AD, hanging was the usual method of execution in Britain. In the 11-th century, William the Conqueror opposed killing: except in war, he ordered that no person would be executed for any offense (Randa 1997; Ward 2015). The 19-th century saw the beginning of major reforms in the use of the death penalty around the world (Foucault 1995; Randa 1997; Ward 2015). After 1800, advanced societies saw a sharp decline in murders and in physical acts of violent aggression. This was due in large part to public investments in police apparatus that tracked down groups of smugglers and gangs of malefactors, forcing them to disband or to reduce the scope of their activities (Foucault 1995). During the middle ages in Western Europe, prisons were rarely used and had a limited role of holding those awaiting trial or punishment. This changed in the early 19-th century when prisons were built on large scale to hold prisoners. This opened a new option: using imprisonment as a punitive device for criminals. In addition, prisons began to be used as rehabilitation centers for wrongdoers in society. At a time when the crime rate was declining, incarceration as forms of punishment and correction stimulated reforms in criminal laws. By the middle of the 19-th century, in most developed countries, imprisonment had replaced the death penalty as a method of punishment for the most serious offenses except for murders (Foucault 1995).

4 The evolution of slavery

Slaves are individuals that are owned by others who control their live and work. Slavery has existed through the centuries (Bradley 1994; Rio 2017). While slavery has become less common in modern time, this is a reminder that socioeconomic relationships can take many forms, with significant implications for income distribution.

Slavery was widespread in the ancient world. It came from two main sources: warfare (when people losing a war become slaves of the winners) and debt bondage (discussed below). Often, the slaves worked in difficult jobs (e.g., gang labor in mines or plantations) and were treated harshly by their owners. In many societies, slavery was persistent because slaves did not have the option to acquire their freedom, because slavery was hereditary, or because new debt bondage or war pushed many free individuals into indentured labor. In most cases, slaves were not remunerated for their work: they constituted the lower class of society while their owners belonged to the upper class and the political elite. When social mobility was low, such situations persisted over time, meaning that slave societies were often structured as aristocratic or autocratic. The large economic and political gap between slaves and owners contributed to social unrest and created pressures for political change (Scheidel 2017).

Slavery was common in Rome, as Roman military victories enslaved many populations, ensuring an ample supply of workers to Rome's farms, mines and households (Bradley 1994). European slavery continued during the middle ages, especially as a byproduct of wars between Christians and Muslims. But it became less common due to the decline of debt bondage and to a transition from slavery to serfdom (Rio 2017). After the Norman conquest, British law no longer supported slavery. Poland banned slavery in the 15-th century. With the notable exception of the African slave trade, slavery was in decline.

4.1 The African slave trade

Columbus' discovery of the Americas in 1492 initiated the "Columbian exchange" that led to the colonization of the New World, with dramatic effects on African slaves. The Columbian exchange involved the widespread transfer of plants, animals, culture, human populations, technology and diseases between the Old World, the New World and Africa (Crosby 1972; Nunn and Qian 2010). The effects of diseases were substantial. Without natural immunity, the native American populations were devastated by European diseases (including smallpox and measles): it has been estimated that 80–95 percent of the native American people died from epidemics between 1492 and 1650. Europeans also suffered high death rates from tropical diseases (e.g., malaria, yellow fever). In contrast, people in Africa had acquired at least partial immunity to both European and tropical diseases. In the New World, the demographic collapse among native Americans opened the door for Europeans to use the land for agricultural production; but it also created a significant labor shortage. Solving the labor shortage was done through massive migration from both Europe and Africa toward the Americas, with some important differences: European migration was voluntary and was greater toward temperate America (Acemoglu et al. 2001). In contrast, African migration involved bonded labor and was greater toward tropical America. Again, technology and diseases played a role. Europeans had access to better technology, including better weapons and better transportation. Compared to Europeans, Africans were more resistant to tropical diseases, making them better prospects to work on plantations or mines in America and the Caribbean. The result was the development of the Atlantic slave trade: European ships would carry goods (including weapons) to Africa where the weapons stimulated the capture of slaves by local African rulers; Europeans would buy the slaves, transport them (on European ships) and sell them to plantation owners in America; and European ships would carry plantation-produced goods (e.g., sugar) to be sold on European markets. There were economic incentives for this triangular trade as profit was made at every stop. Between the 16-th and the 19-th century, more than 10 million Africans arrived in the Americas on European ships as slaves (Manning 1992; Thomas 1997; Lovejoy 2012). When the slave trade reached its peak in the 18-th century, about 60,000 Africans were involuntarily transported across the Atlantic every year, making it the largest oceanic migration in history.

The 19-th century saw a rise in political opposition to slavery on ethical and religious grounds. This created fierce political debates in Europe and in America between abolitionists and colonial slave-owners. As abolitionists gained political support, they pressed for ending the slave trade. Importation of slaves was banned by Denmark in 1792, by Britain in 1807, by the USA in 1808, by Portugal in 1810, by France in 1814 and by Brazil in 1831. After 1808, the British Navy became actively involved in stopping slave ships crossing the Atlantic. These events signaled the decline in slavery around the world.

4.2 The decline of slavery

The path toward ending slavery varied across countries. Western Europe saw a decline in slavery at the same time as it exhibited rapid economic growth. During the period 1760–1820, Western Europe benefited from the industrial revolution. The development and spread of mechanization and the use of steam power generated large increases in labor productivity and income. These innovations also reduced the need to rely on human power, thus decreasing the demand for bonded labor. The industrial revolution started in England and then spread to Western Europe and to the USA. It reshaped the political economy of the world. Before 1800, India and China were major manufacturing centers of the world. For example, in the 18-th century, India had a comparative advantage in producing cotton and in manufacturing cotton fabrics that were exported throughout the world (Beckert 2014). The industrial revolution generated large productivity gains that stimulated economic growth and shifted the manufacturing centers from Asia to Western Europe (Williamson 2011). This contributed to the economic and political rise of the Western World in the 19-th century (Appleby 2011).

While slavery benefits slave-owners, it is typically seen as an inefficient mode of production that contributes to high income inequality and reduced prospects for economic development (e.g., Nunn 2008; Wright 2020). These arguments are illustrated next through specific examples.

First, consider the case of Haiti. Slavery in Haiti started after the arrival of Christopher Columbus on this Caribbean Island in 1492. After the collapse of the native population (from disease and violence), African slaves were imported in large numbers to work in mines and plantations. Between 1625 and 1789, Haiti was a French colony (then named Saint Domingue) producing slave-grown crops that were exported to Europe. In the 18-th century, Saint Domingue became the largest producer and exporter of sugar and coffee in the world. By the 1780s, it produced about 40 percent of all the sugar and 60 percent of all the coffee consumed in Europe (Heinl 1996). Plantation-owners treated their African slaves harshly, leading to high death rate among slaves and stimulating the importation of more slaves from Africa. In the second half of the 1780s, Saint Domingue accounted for a third of the entire Atlantic slave trade. In 1789, Haiti had about 500,000 slaves ruled by a white population of 32,000 (Heinl 1996). While plantation owners became very wealthy, slave resistance grew. A slave revolt in Saint Domingue established Haiti as the first independent black republic in 1804. After its independence, Haiti suffered from isolation from the international stage. Without diplomatic relations with Europe and the USA, it lost its access to capital and to world markets, leading to an economic collapse that proved to be enduring. Haiti was also handicapped by unequal power relations with the Western World. This was illustrated by the 1825 request by the French government and French slaveholders for Haiti to pay 150 million Francs as compensation for "theft of slaves and land" following the Haitian independence.[3] Haiti has been also plagued with political instability. All these factors contributed to a failure of economic development: Haiti is currently the poorest country in the Western Hemisphere, with a Gross Domestic Product (GDP) per capita of US$797 and a Human Development Index ranking of 169 out of 189 countries in 2019. This indicates that slavery is more likely to occur under poverty; and slavery can act as a poverty trap.

The evolution of slavery in the USA has generated much attention (e.g., Fogel 1989; Wright 2020). Technological progress played a role. In 1794, Eli Whitney

[3] Given Haiti's economic difficulties, paying this debt proved difficult. The debt was finally paid off by Haiti but only in 1947.

invented the cotton gin, a machine that revolutionized the production of cotton by speeding up the process of removing seeds from cotton fiber. This greatly increased the efficiency of cotton production in the US, allowing the US to compete with India in the production of cotton. With access to land and slave labor, the Southern US became the leading producer and exporter of cotton in the world in the 1830's (Beckert 2014). Cotton was produced on large plantations in the Southern states and exported to Britain for processing. Using black slaves, cotton cultivation generated large profits, making plantation owners some of the wealthiest men in the US prior to the Civil War.

Wright (2020) argues that slavery did not have any particular advantage over free labor. Rather slave labor was adopted on cotton plantations because it benefited slave-owners. The evidence supporting this claim comes from the evolution of the cotton market after the Civil War. The wartime and postwar years disrupted US cotton exports and created a "cotton famine" in the British cotton manufacturing industry. Yet, after the war, the US saw a significant increase in cotton production from white farmers in the Piedmont (Wright 2020). Seeing a strong substitution of US cotton production away from slave-based plantations toward "other farms" is evidence that slavery was for the benefit of the slaveholders and not the US economy as a whole. In this context, slavery was a policy that scared off new immigrants, failed to invest in infrastructure and education and was not conducive to economic development.

Finally, what has been the impact of the Atlantic slave trade on Africa? Nunn (2008) studied the long-term effects of slavery by examining the current performance of African states. The evidence is strong: slave raiding had significant adverse effects on long-term economic development in Africa. Presumably, this is due to the corrosive effects of slavery on trust and state governance. Importantly, such effects are enduring and can last for decades if not centuries. This is another indication of the importance of social rules in the functioning of productive human societies.

The last century has seen the world move away from slavery. As discussed above, this has been a contributing factor to the process of economic development. Today, slavery is no longer legal anywhere in the world. The Universal Declaration of Human Rights, adopted in 1948 by the UN General Assembly, explicitly banned slavery.

5 The evolution of liability rules

In sedentary groups, repeated interactions among individuals create opportunities for exchange and agreements. But how do unpredictable events (e.g., earthquakes) affect the validity of prior agreements? This is the essence of liability rules. A simple example is the case of credit where one individual borrows something (thus making a loan and acquiring a debt) from another with a promise to repay the debt at some later time. This is supported by a contract (either formal or informal) between the creditor and the debtor specifying the nature of the loan and the conditions for its repayment. But what happens if, for some unforeseen reasons, the debtor cannot repay his/her debt in a timely manner?

In the context of a loan, seeing a borrower default on a loan repayment can be seen as breach of contract by the borrower, with adverse impacts on the creditor. As a result, creditors prefer loan contracts that reduce the prospects of default. This can be done by imposing stiff penalties on the debtor if he/she failed to repay his/her debt. These penalties have evolved over time. As discussed in previous sections, both the death penalty and debt bondage have been used as punishments against defaulters through the centuries. Such harsh punishments are no longer legal, reflecting the changing socioeconomic relationships between creditors and debtors. But milder forms of penalties remain available.

In antiquity, loans involved specific goods (e.g., grain), with the repayment of the loan including an interest payment charged by the creditor. The first use of interest rate in loans is documented in a Sumerian tablet about 2500 BCE (Goetzmann 2016). With the invention of money,[4] loans often took a monetary form. In situations where the interest rate is high, the debtor may find it difficult to repay the creditor in a timely manner, increasing the prospects of default. In this context, one way to reduce the risk of default is to implement policies restricting interest rates. The assessment of the role of interest rate has varied through history.

Usury is the practice of charging interest on a loan. In ancient societies, usury was often seen as undesirable on moral ground. Indeed, Christian, Jewish and Islamic societies all considered usury to be wrong (Taeusch 1942). Such views arose in situations of unlimited liability and poorly developed credit markets. Poorly developed credit markets meant that loans were often personal, typically involving a rich person loaning to a poor person. Unlimited liability meant that there was no limit on what a debtor could lose in case of default. Finally, the personal nature of loans was conducive to abuse, including the creditor charging a "very high" interest rate. Such situations could allow "the rich to get richer while the poor get poorer", making usury a mechanism supporting an inequitable distribution of income and wealth.

This discussion has three implications: (1) concerns about income distribution have played a role in the choice of liability rules; (2) the relationships between creditors and debtors are directly linked to the functioning of the credit market; and (3) unlimited liability was associated with poorly functioning credit markets. In ancient times, loans were typically offered by wealthy creditor to a less wealthy individual, putting the creditor in a stronger bargaining position. As a result, the liability rules favored the creditor (thus explaining the harsh punishment of the debtor in case of default). This imbalance has persisted through the centuries. But it has also shifted.

5.1 The rise of limited liability

Liability rules apply to any institution facing insolvency, including individuals, corporation and states. Focusing on liability rules for individuals and businesses, the punishment for defaulting on debt repayment has become less severe over the centuries. Starting in the middle ages, the punishments for financial failure switched to

[4] Coinage first developed in Lydia and in China around 600 BCE (Goetzmann 2016).

public shaming and debtors' prisons (Gratzer and Stiefel 2008). Also, the involvement of the Courts has played an important role (Levinthal 1919). The Courts faced the challenge of protecting the interests of the creditors while providing some relief to the honest and unfortunate debtor. In situations where there were multiple creditors, the Courts also worked on finding some equitable ways of dividing the property of an insolvent debtor. Before the 19-th century, the Courts typically favored the creditors (trying to help them recover their investments) and provided little relief to insolvent and unfortunate debtors. The early 18-th century saw the beginning of a shift in favor of insolvents. In the 1705 Act of Ann, England took a step toward limited liability on debt repayment: the debtor's pledge was limited to his estate and did not include his future earnings nor his personal liberty (Levinthal 1919).

In the USA, the 1789 Constitution granted Congress the power to establish federal bankruptcy law. For most of the nineteenth century, there was no national bankruptcy policy in the United States; and insolvency was fairly common (Balleisen 2001). The US Bankruptcy Act of 1898 was a major reform that was more favorable to debtors and established modern liability rules (Tabb 1995; Skeel 1999). With less emphasis on punishing insolvents, it focused more on rehabilitating debtors in distress. It was followed by the Chandler Act of 1938 and the Bankruptcy Reform Act of 1978 which included substantial provisions for business reorganization.

These reforms reflect fundamental changes in creditor–debtor relationships. Over the centuries, there were slow but significant improvements in the financial markets (Goetzmann 2016). To allow the credit markets to develop, loan transactions first had to move away from personal relationships between creditors and debtors. The key was the creation of financial intermediaries that increased the competitiveness of the credit industry (Dermineur 2018). After appearing first in Italy in the 14-th century, banks started providing financial services and spread throughout Western Europe. The Bank of England was created in 1694; it started issuing banknotes in 1695. This was followed by the creation of Central Banks to manage currency and monetary policy in states across the Western World. London became the financial capital of the world: 1848–1914 was a period of economic and financial globalization led by Great Britain (Appleby 2011). The period 1914–1945 was turbulent: in-between two world wars was the Great Depression that saw high unemployment rates and many bank failures in the early 1930s. In 1944, the Bretton Woods system signaled that the US had become the economic and financial center of the world. Based on the gold standard, the Bretton Woods agreement established the dollar as a corner stone of the world economy. Financial markets grew and became integrated across countries. This contributed to an improved ability to manage risk. But throughout the centuries, bubbles and crises have occurred in financial markets (Aliber and Kindleberger 2015). Globalization means that a crisis in some country could get transmitted globally, possibly increasing market volatility. To deal with such concerns, two new institutions were created: the International Monetary Fund (IMF) and the World Bank, designed to promote international financial stability and monetary cooperation among countries. Since 1945, the world has seen a period of rapid innovations, globalization and economic growth that benefited many countries around the world. These changes were associated with a changing role of capital and shifts in liability rules.

5.2 The rise of the modern corporation

Liability rules and their implications for the handling of default are relevant for all institutions. This applies to business institutions and their evolution over time. An important innovation was the appearance of the *commenda* in Italy during the 11-th century (Hillman 1997). Used mostly for sea trade, the *commenda* was a limited partnership between a passive party providing the capital financing overseas commercial venture and a managing partner assuming the risk of the sea trade venture. At the end of the venture, the profit was divided between the two parties according to a predetermined formula. The passive investor in the *commenda* enjoyed limited liability, a milestone in the history of limited liability. Another example of limited partnership was the *société en commandite* introduced in French law in 1671. These were early forms of limited liability for business in the Western World (Hillman 1997).

Another innovation was the business corporation, defined as a legal entity where the investors are shareholders providing capital, the shares are transferable, and the management is provided by specialized managers.[5] The corporation arose in situations of increasing need for capital. The first corporation appeared in Toulouse (France) in 1372 as the product of a merger of smaller mills (Goetzmann 2016). Before 1800, corporations were typically subject to unlimited liability as active shareholders assumed personal liability (Harris 2020): in Britain and in the USA, bankruptcy procedures applied only to individuals and not to corporations. Without the legal ability to determine whether shareholders were liable in case of insolvency, the limited liability corporation did not yet exist. Around 1800, entrepreneurs started arguing in favor of limited shareholder liability. In 1811, New York was the first jurisdiction in the world to introduce limited liability as a legal part of manufacturing corporations (Harris 2020). In the course of the 19-th century, limited liability for corporations evolved along with bankruptcy law. During the period 1880–1930, the transition was made to the modern version of limited liability corporations, where stockholders are liable only up to their shares in case of insolvency.

Why did this transition occur? Limited liability for corporations clearly benefits stockholders (by limiting their exposure to losses). Having shares that are transferable, corporations stimulated the development and functioning of the financial markets. Having limited liability made it easier for investors to invest, thus helping corporations raise capital. As such, the modern corporation is an integral part of a capitalist economy. Limited liability corporations help firms raise capital. In situations where access to capital is important, they help reduce the cost of capital. Limited liability corporations also stimulate entrepreneurship and technological progress. Over the last century, both technological change and capital accumulation have played significant roles in the process of economic growth (e.g., Solow 1957;

[5] The legal status of a corporation varies across countries. In the US, a business corporation is typically distinguished from sole proprietorship (when a business has a single owner) and a partnership (when there are multiple owners who are also managers).

Mankiw et al. 1992). This means that the rise of the modern corporation has been an important contributor to economic development.

5.3 The rise of modern bankruptcy

The US Bankruptcy Act of 1898 was a major threshold in the historical evolution of limited liability. Before 1898, various attempts were made to develop and refine bankruptcy rules around the word but with limited success. The conflicting interests between creditors and debtors did not generate enough political support for a permanent bankruptcy law. This changed with the US Bankruptcy Act of 1898 that proved to be enduring (Tabb 1995; Skeel 1999). First, following periods of boom and bust, unsecured creditors were adversely affected by economic distress. This motivated creditors to look for new bankruptcy rules that would help protect their interest. Second, the system proposed by the US Bankruptcy Act of 1898 was presented as a protector of the "honest but unfortunate" debtor. Third, US creditors preferred a bankruptcy process run by bankruptcy Courts, leaving the process largely to the creditors, debtors and their lawyers. The US Bankruptcy Act of 1898 gave creditors four things they were looking for: some control over the bankruptcy process; a low cost of implementing it; guaranteeing creditors a fair share of the debtor's assets (in case of multiple creditors); and ruling out debt discharge from debtors who committed fraud (Tabb 1995; Skeel 1999). The US Bankruptcy Act of 1898 also reflected political bargaining between creditors and debtors. Debtors were concerned that they could be forced into bankruptcy by malicious creditors. On this point, creditors made some important concessions: debt discharge could happen without the creditors' approval; creditors were required to post bond when filing for involuntary bankruptcy; and debtors were guaranteed a trial by jury. The result was a new bankruptcy process with minimalist administrative structure that benefited all parties, making it an enduring institutional innovation. Importantly, the US Bankruptcy Act of 1898 gave a relatively generous treatment of debtors.

Why was debtors' protection not made available earlier? The rising importance of capital played an important role. In antiquity, there was little use of capital (besides land) and slow productivity growth. In this context, credit was often personal and used by poor individuals to satisfy short term needs in the presence of adverse shock. Starting with the industrial revolution, the 19-th century saw rapid technological change, increases in capital use and a rise in labor productivity (Appleby 2011). As a result, investments and access to the latest technology became important, stressing the growing value of physical capital and human capital and thus the importance of protecting them (Schultz 1961; Becker 1964; Goldin 2016). As discussed above, steps toward the protection of human capital include moves away from both the death penalty and debt bondage. After 1898, it also meant some bankruptcy protection for individuals or corporations defaulting on debt repayments. Over the last century, US bankruptcy Courts were granted expanded jurisdiction, allowing honest debtors to obtain a discharge from debts and get a fresh start under certain conditions. This stimulated investments, encouraged innovations and contributed to sustained productivity growth.

6 Conclusion

Investments in human capital have been an important engine of economic development. As noted by Goldin (2016), while accumulations in physical capital can explain a large proportion of economic growth in the past, the role of human capital has increased over time. The twentieth century became the "human capital" century. After starting in North America, improvements in education eventually spread to the rest of the world during the twentieth century, contributing to sustained innovations and increases in productivity (Goldin 2016). The last century has seen institutional changes protecting human capital: improvements in conflict resolutions, reductions in the severity of penalties and the rise in limited liability rules. These changes contributed to innovations and stimulated economic development.

While our analysis has stressed the role of social rules in economic development, it also points to current challenges. We mention four issues that need further investigation. First, one concern is whether limited liability rules had become too generous. In response to this concern, the Bankruptcy Abuse Prevention and Consumer Protection Acts of 2005 made bankruptcy protection less generous in the US (Albanesi and Nosal 2018). It tilted the balance between creditors and debtors back toward the creditors. A concern is that the US Bankruptcy reform of 2005 may be dampening investments in human capital for low-income individuals, generating adverse effects on future productivity and increases in income inequality (Lochner and Monge-Naranjo 2016; Albanesi and Nosal 2018).

Second, the structure of corporate governance raises some concerns. The modern corporation exhibits a separation of ownership and control. While this separation has helped firms get access to capital markets, it also raised questions about whether managerial decisions are always supporting the interests of stockholders (Wright 2013; Cheffins 2015). Since the 1990s, government deregulation, the decline in labor unions and reorientations in corporate finance have expanded managerial discretion and raised new concerns about managerial accountability. This is exemplified by financial frauds and scandals often associated with poor monitoring of management decisions and excessive risk-taking (Balleisen 2017; van Driel 2019). The 2008 financial crisis provides an example (Lo 2012). The 2008 crisis started with a bubble in the US real estate market, associated with excessive risk-taking by US banks. The bursting of the US housing bubble caused the US stock market to plummet, damaging financial institutions first in the US and then globally. Are current financial institutions prepared to deal with future crises?

Third, there are concerns about whether managerial decisions are always supporting the interests of society. At times, corporations can have adverse impacts on members of society, raising questions about the relevance of their limited liability protection. Can future limited liability rules evolve to protect members of society without having effects on economic growth?

Finally, the last few decades have seen a trend toward globalization and the rapid growth in stock and financial markets. The increased mobility of capital changed the political economy of the world, often reducing the effectiveness of government policy. A challenge is to design and operate national and international institutions that can be effective in dealing with future economic shocks and financial crises.

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