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Social Organizations, Violence, and Modern Growth[†]

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Although social institutions permeate the world in which we live, they are all but absent from our analyses of economic growth and development. This paper argues the need to mitigate this omission by demonstrating the importance of social institutions for growth and development while focusing on institutions providing social safety nets.

Social institutions and policies render individual behavior contingent on the social status or category of the parties involved as is the case, for example, in the relations among members of the opposite sex, family members, rich and poor, young and old, nobles and commoners, and public officials and those whom they serve. Social institutions thus influence important outcomes such as human capital acquisition, wealth distribution, labor market opportunities, nutritional intake, and social safety nets. As such, social institutions complement and interact with economic, legal, and political institutions whose importance is well recognized (e.g., North 1990).

The hallmark of a modern economy is useful knowledge progression that increases labor productivity. Explaining why this progression began by considering political and economic institutions, however, has thus far been elusive. There is no unified theory that accounts for three key puzzles: first, why China or the Dutch Republic was not the first to make the transition to a modern, knowledge-based economy. After all, China was the world technological leader for centuries, while the Dutch Republic had political and economic institutions conducive to bring about modern economic growth. Second, why England, of all places, was the first to transform to a modern economy. And third, why the West followed the English lead in short order while other regions failed to do so.

Our research program focuses on two factors limiting economic transitions. First, the production of welfare-enhancing new knowledge may not be individually rational due to the associated individual-level risk. Second, labor saving innovations entail negative pecuniary externalities. Those whose labor is no longer needed and their livelihood thus threatened might respond violently, and their expected response undermines the incentive to innovate.

Social institutions can promote economic growth by fostering risk taking and reducing violence. This was noted as early as 1797 when Sir F.M. Eden argued that "any … machines or contrivances calculated to lessen labour … throw many industrious individuals out of work; and thus create distresses that are sometimes exceedingly calamitous" (vol. 1, p. xiv). Social institutions, he added, are important to insure that the "inconvenience to [these] individuals will be softened and mitigated" (ibid).

In Greif, Iyigun, and Sasson (2012), we modeled, simulated, and historically analyzed the institutions providing social safety nets in premodern China and England. We argued that the pre-Reformation (Church-based) English poor relief system was inferior to the (clan-based) Chinese system. After the Reformation, however, the tables turned when a more effective, state-based poor relief system was introduced in England. Greif and Iyigun (2012) provides other supporting evidence by empirically substantiating that, from the seventeenth to the nineteenth century, English counties that provided more poor relief had fewer riots and more innovations (as measured by patents).

Cross-country analysis provides yet more supporting evidence. The poor relief systems in other European countries were less effective than the English Old Poor Law but were also state based. If, as our conjecture implies,

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this similarity facilitated the subsequent economic transition in Europe, innovations and the relative efficacy of poor relief systems—in securing income to the poor—should have been correlated across countries historically. Greif and Iyigun (2012) evaluates this conjecture. Cross-country regressions, indeed, reveal that innovations, measured by exhibits and awards in the International Exhibition of 1851 and 1876, were positively and significantly correlated with the efficacy of the poor relief systems.

I. Innovations and Social Institutions

England's transition to a modern economy illustrates two channels through which social institutions influence economic transitions. The transition itself was predicated on the growth of new useful knowledge embodied in multiple technological, organizational, and social innovations that directly increased production and/or productivity (Mokyr 1990). The required new knowledge was generated by experimenting, by "deviating" from the conventional ways of "doing things."

Social institutions influence the extent of such risky experimentation. One channel through which social institutions can influence growth is by directly mitigating the individual-level risk associated with discovering, adopting, and responding to new knowledge. Social institutions can foster socially beneficial innovations by providing risk sharing that motivates risk taking. In fact, the evidence suggests that during the English transition, individuals with low economic means often assumed the risk of generating new knowledge. Bennet Woodcroft, the first technical expert of the Great Britain Patent Office, noted that "almost all the inventions on which her [Britain's] colossal system of manufactures has been founded have been produced by individual projectors, mostly poor and of obscure condition, toiling unaided" (1863, p. vii).

Another channel of influence is fostering social order. Socially beneficial innovations often have negative pecuniary externalities, and those affected by others' innovations might respond violently. Such a response is particularly likely in poor, unequal societies in which people live on the margin of subsistence. Expectations of violent responses reduce the return to innovations, thereby discouraging investment in generating new knowledge in the first place. Sir F.M. Eden, for example, recognized the distributional impact of economic development. In his 1797 book he argued that "manufactures and commerce are the true parents of our national Poor" (vol. 1, p. 60-1). Indeed, contemporaries viewed poverty as a threat to social order. Vagrancy, according to Sir Matthew Hale, the Lord Chief Justice of the King's Bench, undermines "public wealth and peace" (1683 p. 7) as the poor engaged in "thieving and stealing" (p. 58–9). More generally, economic issues were the main source of social disorders during that period and were concerning labor saving machinery, food prices, wages, and enclosures (see Bohstedt 2010 for England and Hung 2009 for China).

Thus, the second channel through which social institutions can influence economic growth is by alleviating the risk of violent social responses. In fact, there was relatively little popular resistance in England to major economic transformations such as the decline in the putting-out system, the introduction of hourly wage, or the New Husbandry. England was remarkably peaceful during its transition although numerous traditional occupations ended and workers' individual-level risk increased due to the transition to wage labor and the elimination of traditional communal rights.

II. Social Institutions in China and Europe

Throughout history, elites created social institutions to contain social upheavals. In general, however, these institutions' (unforeseen) growth implications did not influence their design. Rather, the factors influencing institutional details were preexisting cultural and institutional elements, and, thus, institutional dynamics could have influenced by the embeddedness of social institutions in the broader society. It is therefore appropriate to consider the forms of these risk-sharing institutions as exogenous with respect to their role in economic growth, as we do in our research.

The social institutions that prevailed in premodern China and England were no exception. A clan-based risk-sharing institution evolved in the collectivist, lineage-based Chinese society, while risk-sharing institutions based on relations among non-kin evolved in the individualistic,

nuclear family–based English society and, more generally, in much of Europe.

In China, the major source of aid to the poor, the sick, and the aged were kinship groups. During the tenth century, communal families were still common. In such families, all property was held in common and the "underlying principle was distribution of income to all members equally according to need, just as though they were members of a small family" (Ebrey and Watson 1986, p. 33). Subsequently, looser associations of relatively large numbers of kin became the predominant form of kinship organizations in late imperial China. These organizations provided social safety nets and, since the eleventh century, held assets for this purpose in special trusts.

In Europe, prior to the sixteenth century, the Church was the main provider of social safety services alongside self-help groups and charity organizations. Monasteries, fraternities, mutual-insurance guilds, and communes provided assistance in times of need. Relief was thus idiosyncratic. The Reformation and Counter-Reformation put an end to this system as rulers confiscated the property of the Church in the context of the Wars of Religion (1524–1697). In the absence of an alternative system, population pressures and urbanization threatened social order. European states created alternatives that differed in their details, but common to most of them was that the state took—directly or indirectly—responsibility for the needy.

III. Social Institutions in England and China

In England, the Old Poor Law of 1601 formalized a system that lasted, with some modifications, until 1834. The deserving poor had a legal right for support and each parish had the authority and obligation to provide for them by levying a tax (Boyer 1990). The law was implemented and supported between 5 to 15 percent of the population at any time (Solar 1995, p. 8).

Although shifting the responsibility for poor relief to the state was a European phenomenon, the English Poor Law system was more reliable and generous than the continental ones. In England, a special tax financed poor relief and most aid was given without forcing the recipient to move to the poor house. On the continent, a variety of sources financed poor relief: voluntary donations, capital income, subsidies from local and national governments, and general tax revenues. Funding was, therefore, less reliable. Furthermore, the legal right to relief was well defined in England but were vaguely defined, less credibly assured, and generally at the discretion of local authorities on the continent.

A major distinction between the European system that the Old Poor Law epitomizes and the Chinese system was in terms of decision rights. In China, the elders, who were responsible to take care of the poor, were also in a better position to influence risk taking by those who might have become poor. In Imperial China, "the father had paternal authority over his children. The family head had absolute authority and discretion protected by state and customary law. These rules provided him with arbitrary power over family property … [and] in making decisions concerning all aspects of family matters … all earnings of family members had to be handed to him. … Even members who settled somewhere else or were temporarily absent, sent their surplus earnings to him" (Chen 1999, p. 250–1).

Theoretically, the above institutional distinctions and dynamics could have led to China's initial technological lead and the post-Reformation advances in England. To see why, note that China's social institutions implied less risk taking for a given level of risk sharing. Intuitively, the Chinese elders internalized the expected cost of risk taking by the young, while the European states did not. Moreover, contemporary evidence reveals that elders tend to be more risk averse. At the same time, kin-based poor relief systems could have provided more risk sharing than, for example, the pre-Reformation, Church-based European poor relief system. Thus, prior to the Reformation, China's social institutions might have motivated more risk sharing and more risk taking relative to Europe. The institutional reforms associated with the Reformation, however, implied more risk sharing than before and more risk taking than in China. The efficacy of the latter might have also been eroded by population growth and unequal wealth distribution among kinship groups.

In Greif, Iyigun, and Sasson (2012), we evaluate this possibility using an OLG "technology transition" model in which economic agents choose how to employ their capital. We capture the complex processes of experimentation, learning, and spillovers in a simple set-up

in which each agent has to choose between two technologies. The "traditional" technology is less likely to generate new knowledge but is less risky. The "risky" technology is more risky, although it is also more likely to generate new knowledge. New knowledge, if discovered, increases the capital productivity of the agent who discovers it and, subsequently, it increases others' capital productivity. Agents choose the risky technology less than is socially optimal due to positive externalities. In particular, due to decreasing relative risk aversion, poor agents select the traditional technology and, if sufficiently many agents are poor, a transition does not transpire and the economy stagnates.

The model captures the relation between new knowledge and violence by embedding appropriation risk. Income inequality increases the expected gains for the poor of investing their resources to capture others' income by force. The possibility of appropriation, in turn, reduces the incentives of the wealthy for developing and implementing new knowledge. Thus, risk-sharing institutions that reduce the net gains from appropriation increase the expected gains of discovering and implementing new technologies. Whether a transition transpires, thus, directly depends only on the choice of institutions at the social level and those involving risk taking and violence at the individual level.

The simulations reveal that if the Chinese and the English institutions had equally provided risk sharing, China would not have transitioned to a modern economy if elders were initially more risk averse than the young by as little as 11 percent. In contrast, to initiate a transition, the Chinese institutions would have had to provide, roughly speaking, about twice the risk sharing of the English institutions. This, and other evidence, supports the claim that China's growth stalled not because it lacked risk-sharing institutions, but because its risk-sharing institutions did not sufficiently foster risk taking.

IV. English Evidence: the Old Poor Law, 1650–1830

Analyzing county-level data on technological progress, poor relief, and social disorder in England from the seventeenth to the nineteenth century further confirms the importance of social institutions in the transition to modern growth (Greif and Iyigun 2012). Our panel covers the 39 English counties from 1685 to 1830 and includes county-level information on patenting activity and public resources available for poor relief at six different points in time. We combine these data with a variety of measures of social instability observed within each county over subsequent periods of time. We then control for a host of county-specific but time-variant data, such as regional indicators, levels of population, wealth and tax-base indicators, as well as the extent to which the local economies were market dependent.

Using this dataset, we first document that variations in the amounts of poor relief came to bear negatively and statistically significantly on the propensity of food riots (as coded by Bohstedt 2010) within each county in England over this period. Then, using county-level data on patents, we examine the potential three-way links among innovations, poor relief, and social disorder. The key finding is that poor relief per capita and patents are positively and significantly correlated, leading us to conclude that, while aid to the poor might have impacted English innovations both directly and indirectly through the two channels we discussed above, poor relief came to influence innovations directly.

V. Cross-Country Evidence

The English county panel has the advantage of controlling for county-specific unobservable variables. But patents could be biased proxies for innovations, and intercounty positive spillovers could bias the key results. It is, thus, reassuring that cross-county analyses reveal a positive and significant correlation between the efficacy of poor relief and innovations in nineteenth century Europe (Greif and Iyigun 2012).

Specifically, the nineteenth-century records of the international exhibitions contain country-level data on the exhibits and whether a particular exhibit got an award indicates whether it constituted an innovation. The data from the 1851 and 1876 exhibitions is particularly reliable (Moser 2005). Given that a transition to the modern economy had already begun in the West, interregional institutional comparisons could be uninformative. Accordingly, we primarily focus on the 17 European states from the two exhibitions. We then look at the relationship between the number of exhibits and awards as our proxy for a country's innovativeness and the efficacy

of its poor relief system (based on ease of access to poor relief, state supervision, and the source of financing). Although this evidence is highly suggestive due to data limitations, there is positive, significant, and economically meaningful correlations between innovativeness and the efficacy of the poor law.

VI. Conclusions

Theory suggests why social institutions might matter, and historical and empirical analyses reveal that they did matter. Moreover, institutional forms mattered, implying that, in addition to constraining the design of formal institutions, social and cultural factors also directly influenced the impact of these institutions on economic outcomes. China's kinship structure influenced the institutional form of its poor relief system but also influenced this system's growth implications. Finally, the impact of social institutions on economic outcomes was highly contextual. Both the clan-based system in China and the Old Poor Law in England fostered innovations and growth for a long period of time. Over time, however, their negative impact on, for example, risk taking and population growth became more important. Social institutions need to adjust as society evolves. Thus, although good political and economic institutions were necessary for economies to grow rich, they were not sufficient. Good social institutions were necessary as well.

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