

# Political Order and Inequality

*Their Foundations and Their Consequences  
for Human Welfare*

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## Conclusions

The fundamental question of political theory, one that precedes all other questions about the nature of political life, is why there is a state at all. Is human cooperation feasible without a political authority enforcing it? Or do we need a state to live together? This problem then opens up two further issues. If a state is necessary to establish order, how (and when) does it come into place? And, if it does, what are its consequences for the political status and economic welfare of the citizens under its control?

Classical political thinkers offered (or at least attempted to offer) a comprehensive answer to all these questions. Their ultimate goal was of a normative or justificatory kind – to establish whether there *should* be a state at all and, if so, of what nature. But their (rather diverse) responses have shaped our empirical understanding of politics in a powerful way. In this conclusion, I revisit the contributions of three main thinkers, Hobbes, Locke, and Rousseau, who can be thought of as the forefathers of our existing political traditions – from authoritarianism through liberalism to socialism. For each one of them, I summarize their positions on the three problems raised in this book: the feasibility of cooperation under anarchy; the conditions that elicit the formation of a state; and the political and economic effects of the latter. I then review the main findings of this book and the ways in which they disallow or qualify central tenets of political thought and political science. The final part of this concluding chapter takes a stab at one of today's most pressing intellectual topics: the determinants of inequality in contemporary democracies.

### Classical Political Theorists

According to Hobbes, cooperation is impossible under anarchy. Men, unceasingly moved by appetites and aversions, strive for “felicity” or the “continuall successe in obtaining those things which a man from time to time desireth” (*Leviathan*, chapter 6, 29).<sup>1</sup> To satisfy those desires, man needs power (and hence the “means and Instruments” to fulfill them) because “he cannot assure the power and means to live well, which he hath present, without the acquisition of more ...” (*ibid.*, chapter 10, 47). Hence, there is “a general inclination of all mankind, a perpetuall and restless desire of Power after power, that ceaseth onely in Death” (*ibid.*) to the point that such a “competition of Riches, Honour, Command, or other power, enclineth to Contention, Enmity, and War” (*ibid.*, 47–8). It follows from this that “during the time men live without a common Power to keep them all in awe, they are in that condition which is called Warre; and such a warre, as if of every man, against every man” (*ibid.*, chapter 13, 62).

The state appears then as the only rational solution because it puts an end to a situation that is “destructive of [man’s] life” (*ibid.*, chapter 14, 64). All human beings benefit from “lay[ing] down this right to all things [i.e., self-defense and war]; and be contented with so much liberty against other men, as he would allow other men against himselfe” (*ibid.*, chapter 14, 64). They do so when they “conferre all their power and strength upon one Man, or upon one Assembly of men, that may reduce all their Wills, by plurality of voices, unto one man, or Assembly of men, to beare their person” (*ibid.*, chapter 17, 87). This agent has absolute sovereign power: all persons surrender themselves to it out of “fear of death” in a situation of anarchy and it is the sovereign that holds the power of the sword and that determines what is just and unjust. Because *Leviathan* is a philosophical treatise, Hobbes does not have a theory of the conditions that lead to either a monarchical, aristocratic, or democratic sovereign. Yet an absolute monarchy is the best solution (and, applying an evolutionary or functionalist explanatory framework, the most prevalent form) to the problem of anarchy and human competition because “a Monarch cannot disagree with himself, out of envy, or interest; but an Assembly may; and that to such a height, as may produce a Civil Warre” (*ibid.*, chapter 19, 96).

<sup>1</sup> Pages refer to *Leviathan*’s original edition.

Hobbes only refers sparingly to the economic consequences of the state. Because the state holds an absolute sovereignty over its subjects, the distribution of wealth probably follows the will of the sovereign (and therefore its political structure) (*ibid.*, chapter 24). The implications for growth are more explicit. Under anarchy, “there is no place for Industry; because the fruit thereof is uncertain... And the life of man, solitary, poore, nasty, brutish, and short” (*ibid.*, chapter 13, 62). Under a state, human beings are subject to a fully unconstrained sovereign that can deprive them of everything: “a man may here object, that the Condition of Subjects is very miserable; as being obnoxious to the lusts, and other irregular passions of him, or them that have so unlimited a Power in their hands” (*ibid.*, chapter 18, 94). However, even that condition is better than the “miseries, and horrible calamities, that accompany a Civil Warre” (*ibid.*). Moreover, sovereigns restrain themselves because they need their subjects not to be weak so that they can “draw from them what they can in time of Peace, that they may have the means on any emergent occasion, or sudden need, to resist ... their Enemies” (*ibid.*).

In contrast to Hobbes, cooperation in the state of nature is feasible for John Locke. There humans live in a condition of equality and freedom (*Second Treatise of Civil Government*, sec. 4) and, although the underlying reasons why that is so are left unclear, they have a reasonable incentive to follow the law of nature, which instructs them not to harm others (*ibid.*, sec. 6) and, we may add, to cooperate with each other (through trade or joining in common actions) for their mutual benefit. As a result, “men [are] living together according to reason, without a common superior on earth, with the authority to judge them” (*ibid.*, sec. 19) – as attested by the governance structures of several Native American societies, recorded by Locke himself (*ibid.*, sec. 102).

Even though cooperation can take place under anarchy, the “inconveniences of the state of nature” make it advantageous to everyone to introduce a “civil government.” First, in any dispute, “it is unreasonable for men to be judges in their own cases, that selflove will make men partial to themselves and their friends: and on the other side, that ill nature, passion and revenge will carry them too far in punishing others; and hence nothing but confusion and disorder will follow” (*ibid.*, sec. 13). Second, they will have a strong incentive to misbehave: “men being biassed by their interest, as well as ignorant for want of study of it, are not apt to allow of it [the law of nature] as a law binding to them in the application of it to their particular cases” (*ibid.*, sec. 124). At this point, that is, once humans fall into a state of war defined “enmity, malice,



violence and mutual destruction,” the only solution consists in building a civil government capable of restraining all human passions.

If Locke says very little about the specific moment and conditions that turn a state of nature into a state of war, he is even less explicit about the conditions that lead to either an absolutist rule (*ibid.*, sec. 90) or consensual government (sec. 88–9) – arguably because an absolutist monarchy is seen as a prolongation of the state of war and hence lacking in any legitimacy. By contrast, Locke’s theory of property involves, even if it is indirectly, a theory of inequality. Departing from the assumption that at the beginning of human history, “no body ha[d] originally a private dominion, exclusive of the rest of mankind” (*ibid.*, sec. 26) and that “every man has a property in his own person [and that] the labour of his body, and the work of his hands, we may say, are properly his” (*ibid.*, sec. 27), Locke concludes that whatsoever that a person “removes out of the state that nature hath provided, and left it in, he hath mixed his labour with, and joined to it something that is his own, . . . makes it his property” (*ibid.*, sec. 27; specifically on land and cultivation, sec. 31). The invention and use of money put an end to a preexisting natural limit to accumulation (directed to prevent unused things from rotting). But money “and the tacit agreement of men to put a value on it” (*ibid.*, sec. 36) had a more consequential effect: it allowed the exchange of goods (before they could perish), introducing the idea of consent to the possession of things and therefore giving everyone “the opportunity to continue and enlarge” their possessions (*ibid.*, sec. 48). In short, inequality responds to the operation of fundamentally economic variables: it is the result of the talent and effort individuals put in exploiting some portion of commonly held assets and in multiplying their value through trade. Moreover, the daily and voluntary buying and selling of things makes a particular distribution of income and wealth socially legitimate: in Locke’s words, “it is plain, that men have agreed to a disproportionate and unequal possession of the earth, they having, by a tacit and voluntary consent, found out, a way how a man may fairly possess more land than he himself can use the product of, by receiving in exchange for the overplus gold and silver, which may be hoarded up without injury to any one” (*ibid.*, sec. 50). Political institutions come in later and simply use their “power to punish any injury done unto any of its members . . . for the preservation of the property of all the members of that society” (*ibid.*, sec. 88; see also sec. 138).

Rousseau’s point of departure and theory of politics are diametrically opposed to his predecessors. In his *Discourse on the Origins and*

*Foundations of Inequality*, cooperation is not just feasible but a condition constitutive of personhood. In the state of nature, men and women lived in a state of perfect equality (except for those differences generated by nature), characterized by the “uniformity and simplicity of animal and savage life” (*Discourse on the Origins and Foundations of Inequality*, part 1, para. 47).<sup>2</sup> Humans had little or no consciousness of themselves. The imagination of “savage man ... paints no pictures; his heart makes no demands on him. His few wants are so readily supplied, and he is so far from having the knowledge which is needful to make him want more, that he can have neither foresight nor curiosity.... His soul, which nothing disturbs, was wholly wrapped up in the feeling of its present existence, without any idea of the future, however near at hand; while his projects, as limited as his views, hardly extend to the close of day” (*ibid.*, part 1, para. 21). Moral standards and moral relations were absent: “men in a state of nature, having no moral relations or determinate obligations one with another, could not be either good or bad, virtuous or vicious” (*ibid.*, part 1, para. 33). Except for an innate sense of compassion, human relations (to the extent they existed) were devoid of meaning and humans “were consequently strangers to vanity, deference, esteem and contempt” and “they had not the least idea of meum and tuum, and no true conception of justice” (*ibid.*, part 1, para. 39). The state of nature unraveled, however, over time. In response to nature’s hardship and challenges, men developed new tools and, in mastering it, they became aware of their “superiority” over animals. As humans grew in numbers, they drew together and their continuous interaction “would naturally give rise in the human mind to the perceptions of certain relations between them” (*ibid.*, part 2, para. 5). Driven by self-interest, they began to cooperate: “[man] found himself in a position to distinguish the few cases, in which mutual interest might justify him in relying upon the assistance of his fellows [and] he joined in the same herd with them, or at most in some kind of loose association, that laid no restraint on its members, and lasted no longer than the transitory occasion that formed it” (*ibid.*, part 2, para. 8). As life in common became tighter, humans “began to consider the rest, and to wish to be considered in turn” (*ibid.*, part 2, para. 16). This demand for recognition had a double effect: it engendered in each person a full awareness of himself while tying everyone in a relationship of dependence with each other.

<sup>2</sup> Because modern editions of the *Discourse on Inequality* are multiple and have different pagination, I locate the quote by paragraph number.

Even though social cooperation was eventually “fatal to innocence and happiness” (*ibid.*, part 2, para. 16), human beings “lived free, healthy, honest and happy lives ... so long as they undertook only what a single person could accomplish, and confined themselves to such arts as did not require the joint labor of several hands” (*ibid.*, part 2, para. 19). Technological progress (particularly the invention of agriculture and metallurgy), the division of labor and the unequal distribution of natural talents among individuals put an end to that golden age of humankind. A growing inequality led to a generalized state of conflict. The poor “were obliged to receive their subsistence, or steal it, from the rich; and this soon bred, according to their different characters, dominion and slavery, or violence and rapine” (*ibid.*, part 2, para. 28). In turn, the wealthy, “had no sooner begun to taste the pleasure of command, than they disdained all others, and, using their old slaves to acquire new, thought of nothing but subduing and enslaving their neighbors; like ravenous wolves ...” (*ibid.*, part 2, para. 28).

Rousseau’s theory of inequality goes hand in hand with his theory of state formation. In the general condition of war ignited by inequality, the wealthy, “however speciously they might disguise their usurpations,” and knowing that their possessions “were founded on precarious and false titles” (*ibid.*, part 2, para. 30) turned to establish a state under the pretext that it would “guard the weak from oppression, to restrain the ambitious, and secure to every man the possession of what belongs to him” (*ibid.*, part 2, para. 31). The state was therefore an instrument of oppression and injustice and the perpetuation of a world of violence and inequality: “the origin of society and law, which bound new fetters on the poor, and gave new powers to the rich; which irretrievably destroyed natural liberty, eternally fixed the law of property and inequality, converted clever usurpation into unalterable right, and, for the advantage of a few ambitious individuals, subjected all mankind to perpetual labour, slavery and wretchedness” (*ibid.*, part 2, para. 33).

### Anarchy and Cooperation

Contrary to Hobbes’s claims, a vast ethnographic and archaeological literature shows that social cooperation under anarchy is possible. Human beings lived together, in relatively stable bands, before any formal political structure emerged about five thousand years ago. According to the *Ethnographic Atlas*, which includes contemporary anthropological material for about 1,100 human communities and which I examined in

Chapters 1 and 3, more than four-fifths of simple foraging communities and around two-thirds of complex (mostly fishing) foraging societies have no political chiefs. Almost one-fourth of agricultural (mainly horticultural) communities do not either.

Social cooperation (unenforced by some external party or authority) may be based on emotional bonds – such as those that come with parenthood, friendship, or even love. However, the existing anthropological research (ranging from the diaries of European explorers to current ethnographies) reveals that self-interest dominates the external or social behavior of individuals in stateless societies. Except for their more loved ones, who generally correspond to their offspring, men and women act systematically toward each other following an instrumental logic – trying to maximize their individual material welfare and social position while minimizing the income and status of everyone else. Foragers spend inordinate amounts of time protecting their share of food, controlling the level of resources of other individuals, and levelling down any member of the community that may attempt to assert himself over the rest. In fact, current experimental work shows that, if anything, stateless communities exhibit higher levels of selfish individual behavior than politically and commercially more developed societies.

In that world of instrumental behavior, cooperation is sustained on the basis of a strict tit-for-tat behavior. People care for others to the extent they are cared for (or reasonably expect to be cared for in a not too distant future) by those counterparts. As the explorer W. E. Parry wrote about his prolonged contact with the Inuit about two hundred years ago, such behavior responds to a “~~the~~ tacitly-received law of mutual forbearance,” whereby individuals exchange favors in an iterated manner to the extent their behavior is corresponded in a symmetrical way. Those that could not reciprocate were often abandoned: the old and the infirm. Those that did not want to cooperate were punished, sometimes severely. It is there that politics plays a fundamental role in stateless societies. Because there is no formal enforcer and because individuals are tempted to free ride on their companions, the members of a stateless community engage in prolonged discussions, normally embedded in normal daily conversations and gossip, to monitor each other and to negotiate joint solutions to their collective problems. Deviations from a socially acceptable behavior are punished collectively – using humorous sarcasm, yelling, physical blows, expulsion, and even death.

In a world made out of Hobbesian men and women, a Lockean state of nature is only possible if a particular structural condition holds:

individuals must be relatively equal, both in economic and military terms. Economic equality implies that the time producing and then cooperating with each other has the same marginal value for everyone than the time devoted to stealing from other individuals. This is then enough to dissuade everyone from not cooperating – because stealing may bring considerable costs to the thief (from the retaliatory action from the other party to the probable destruction of all lootable assets when the two sides fight with each other). Military equality, which takes place when no one has any significant advantage over the rest (the case of the “state of nature” where, roughly speaking, men do not differ excessively from each other in terms of strength and intelligence), makes the probability of attacking someone with success very low and the incentives to loot minimal.

Even though stateless societies do not live in a permanent state of war, they do not resemble Rousseau’s golden age either. Life there is, to paraphrase Hobbes, poor, nasty, brutish, and short. Men and women coexist in a tightly ordered social system: everyone invests in a strategy directed at controlling everyone else and at reinforcing their conformity to the communal rules of behavior; differences are not accepted; and they are punished in an exacting way. This high level of repression (jointly with the absence of an external, predictable enforcer) would explain why interpersonal violence in stateless societies is very high, irregular, often arbitrary, and, at the end, extremely individualized (in the sense of not jeopardizing social cooperation): in a context of extraordinary psychological and social repression, individuals’ anger explodes in an almost random manner leading to unexpected and considerable levels of maiming and killing.

The caloric intake and life expectancy of (particularly prehistorical) foragers seem to be similar to nonforaging preindustrial societies, and some anthropologists have emphasized that, in terms of heights and even health, hunter-gatherers fare better than most agricultural populations. However, their population density, which is a good indicator of their technical capacity to exploit a territory, is much lower: to survive, foraging bands need to control their population growth very strictly. Likewise, their material culture (from working tools and daily utensils to housing and art) remains clearly underdeveloped. This poverty is a direct consequence of the mechanisms that sustain equality and cooperation in stateless societies. At some point, technological progress requires accepting some heterogeneity among human beings. But it is this differentiation that stateless societies block actively for the sake of social cohesion.

### Political Institutions

*Technological Shocks and Inequality.* Gradually, and perhaps even imperceptibly, human beings invented new procedures and technologies to surmount the difficulties of daily life: they developed weapons to defend themselves against animals and other men and women; mastered the art of making fire; clothed themselves with animal hides; manufactured hooks and fishing tools; and eventually learned to treat and domesticate certain plants and animals.

At first, technological progress must have benefited everyone equally. At some point, however, it had a differential impact within and across human groups and territories. The development of large boats and fishing apparels opened up the exploitation of an extremely rich riverine and maritime biomass. Likewise, the invention of agriculture and herding raised the marginal productivity of land sharply. Population densities, which are the best indicator of land productivity (because in premodern economies with no artificial contraceptive methods net population growth followed the rate of technological change), grew exponentially: a household needs between fifty to one hundred square miles to live using simple hunting and gathering techniques; about one square mile in fishing communities; and about ten hectares (or about four hundredths of a square mile) in agricultural societies.

Economic and population growth adopted a territorially clustered structure. Fishing societies could only flourish next to seas and rivers. Similarly, agricultural technologies developed (and were adopted) in areas with suitable soils and climate conditions such as, among other regions, the Near East, China, South Asia, Mesoamerica, Andean South America, Papua New Guinea, or Ethiopia. In turn, the spatial clustering of wealth resulted in the collapse of the system of spontaneous or self-enforced cooperation under anarchy. It ignited a systematic pattern of conflict around ~~their~~ control – triggering what Locke refers to, in a relatively subdued manner, as the “inconveniences of nature” and Rousseau depicts in a much more colorful way as “a state of war [in which] men thus harassed and depraved were no longer capable of retracing their steps or renouncing the fatal acquisitions they had made, but, laboring by the abuse of the faculties which do them honor, merely to their own confusion, brought themselves to the brink of ruin” (*Discourse*, part 2, para. 29). This condition of war, which pitted those that benefit from the new economic technologies (and whom I have referred to as “producers”)

against those who do not and who may try to loot the former, could only cease with the formation of a state, that is, an institution with the capacity to monopolize violence and to enforce order upon everyone.

Indeed, the empirical evidence gathered in Chapter 3 confirms that formal political institutions only appeared in response to a process of biased technological shocks, the spatial concentration of resources, and significant systematic (as opposed to the irregular violence of stateless societies) conflict. The examination of Eskimo communities of northwestern Alaska shows that, everything else equal, a small climatic perturbation about eight hundred years ago led to a highly skewed distribution of resources along the shoreline and resulted in clear territorial conflict over their control and the formation of formal authority structures and strong social hierarchies in a set of very specific and highly valuable points of the coast. That story, which took place also in the Northwest Pacific Coast, is confirmed by the statistical analysis of the data of the Ethnographic Atlas: the probability of having chiefdoms goes from close to 0 percent among hunter-gatherers to 20 percent among fishing communities and 85 percent in fully agricultural societies; the likelihood of having a state is less than 5 percent among fishing societies but 54 percent among farmers. Results are similar when we examine the relationship between the temporal diffusion of agriculture and the emergence of state institutions across the globe. The presence of agricultural practices (themselves fundamentally a function of appropriate biogeographical conditions) explains more than two-thirds of the variation in the timing in the emergence of the state.

*Were States an Optimal (Evolutionary or Contract-Based) Response to the Problem of Violence?* For an important part of the current literature on state formation and institutional development (primarily among evolutionary biologists as well as many economists), the coincidence between conflict and the formation of the state implies that the latter emerged as a spontaneous or collectively agreed-upon solution to solve the problems of growth, inequality, and conflict. In other words, it confirms the claim that humans decided to surrender themselves to a common authority or common agent after realizing that this was the only possible strategy to overcome their collective action problems and to secure the supply of certain public goods, from the construction of common irrigation schemes to the provision of defense and order. Up to a certain point, Hobbes and Locke took a similar position. In Hobbes, the construction of the Leviathan conforms to the laws of nature and is the only rational response to the threat of the death consubstantial with

the state of nature. In Locke, men naturally agree, again by their power of reasoning, to subject themselves to a common authority to avoid the inconveniences of nature.

From an empirical point of view, however, functionalist explanations, according to which states appear because they fulfill a function beneficial to society, do not hold up well. A very influential historical literature claims that the first monarchical states were born to coordinate and manage vast irrigation schemes in the river civilizations of the Middle East, India, and China. Yet modern ethnographic work shows that that irrigation systems in precontact Hawaii were small, limited to a single locality, and did not need a central control system (of the kind that has been seen as the engine to the construction of political structures). Instead, Hawaiian chiefdoms formed as a result of warfare. In Polynesian islands, the size and border of states were strictly explained by geography and warfare technologies – and not by the need to solve collective action problems and supply certain public goods. The traditional anthropological literature on the so-called great men of the Papua New Guinea Highlands saw them as mediators at the center of an exchange network in essentially anarchic communities. More recent work has shown, instead, that those “great men” were predatory individuals that employed extraordinary violence to amass a surplus and buy a retinue of allies and servants.

More generally, even though economic technological change opened the door to the construction of political institutions, functionalist theories cannot explain the fact that war made the state and that war technologies shaped its internal organization. It is true that both the introduction of agriculture (around 8500 BC in the Middle East, 6000 BC in parts of China and India, and 4000 BC in Egypt and Mexico) and the dissemination of intensive forms of agriculture (from 4000 BC onward), which for some led to higher levels of accumulation and therefore stronger incentives (and resources) to build political institutions, were associated with the formation of compact villages with shared infrastructures and an incipient labor specialization. But state structures (of the vertical kind we live under today) took much longer to emerge. With the exception of military structures pointing to the existence of some political authority in Jericho at around 6500 BC, the introduction of formal political hierarchies coincided with the application of copper to military purposes and the corresponding formation of a class of individuals with a clear comparative advantage in the use of violence in the Middle East between 3500 and 3100 BC. The invention of bronze, an alloy of copper and tin, intensified the trend toward the construction of specialized armies and



the creation of a stable ruling elite. The use of bronze helmets and swords ~~are~~ correlated with the first big monarchical states in the Middle East around the middle of the third millennium BC and the first centralized states in China in the first half of the second millennium BC.

*Political Institutions.* Functionalist explanations of state formation, again based on the logic of collective optimization responding to a situation of lack of cooperation and conflict, do not fare well either from a strictly theoretical point of view. If some individual A benefits from raiding person B, it is not evident why A will agree to subject himself to an authority that will restrain him. Conversely, if, for some reason, both A and B already have the incentives to cooperate in setting up a formal political authority, there is no need for them to establish it because they will cooperate among themselves even in its absence – precisely the case of stateless societies.

Setting up a state to solve a situation of conflict between A and B will take place through two alternative mechanisms. In the first one, B permanently transfers part of her output to A (therefore subjecting herself to A) up to the point that is sufficient to convince A not to raid her. In the second case, B credibly threatens A with a reduction of A's income enough to make A desist from looting B. The first scenario corresponds to a monarchical solution. The looters or bandits, that is, those individuals that do not benefit from the technological shock (that led to the collapse of spontaneous cooperation), restrain themselves from raiding the producers and instead govern the latter permanently while receiving some permanent payment from them (in the form of direct labor, a lump-sum payment, or a regular tax). In the second solution, producers defend themselves successfully against looters constructing a defensive structure (army and police) that leads to the emergence of permanent institutions or a state of a republican nature.

Before I discuss the behavioral foundations of each regime, that is, the motivations that lead citizens to obey their ruler, and the role of war in shaping them, three brief points are worth reminding here. In the first place, each solution (republic and monarchy) can be internally organized in many different ways. Looters may decide to obey an absolute dictator or monarch (which, in its purest form, received the name of “sultanistic regime” among some classical thinkers), may set up some aristocratic structure where they preserve their equal status vis-à-vis each other, or may establish a system with a monarch advised and monitored by an assembly of (feudal) lords. In turn, producers may rule themselves through an elected leader, a government by committee, or a general assembly to make

decisions. In the second place, this republic or government of producers can also act “as a monarchy” toward third parties. In this instance, the republic becomes an imperial one (or, if the scale is more modest, a system of patrons and clients): producers, who act as producers and govern themselves at home, extract resources (through military means) abroad. Finally, mixed regimes (in which both producers and looters hold governing positions) are possible but uncommon. They require that both types of individuals have the military means to defend themselves against the other party (and its temptation to renege on the existing power-sharing pact). More specifically, the producers (who, by definition, have a comparative advantage in production) need to have some military skill that can neutralize the potential bandits and prevent the latter from taking control of the state. This is the case, for example, of maritime nations, where the central role of the navy allows the commercial interests to retain a direct hold on the affairs of the state.

*Foundations of Political Obligation.* Political compliance in each type of political regime has a distinctive behavioral foundation. In monarchical regimes, human beings submit, following a strictly Hobbesian logic, “to some Man ... on confidence to be protected by him against all others” (*Leviathan*, chapter 18, 88) but, more fundamentally, because “they are afraid of” the sovereign to which they subject themselves (*ibid.*, chapter 20, 102) – “as when a man maketh their children, to submit themselves, and their children to their government, as being able to destroy them if they refuse” (*ibid.*, chapter 18, 88). Contrary to the claims of some neoclassical economists, their acquiescence has nothing to do with a voluntary contract in which subjects pay a transfer or tax in exchange for military protection. It is true that monarchies leave citizens better off than under the state of war. But compliance is obtained through the use of force by those bandits that decide to become monarchs.

Likewise, and in contraposition to Weber’s claim, compliance is not based either on an idea of legitimation, understood in the “strong” sense of the term (i.e., that monarchical rule is believed to be right and appropriate). In dictatorial and monarchical regimes legitimation only exists in the most superficial sense of the word – that is, as allegiance for instrumental reasons to a regime for which there is or does not seem to be a plausible or more satisfactory alternative. Subjects remain loyal to a particular monarch or dictator only as long as that ruler has the capacity to project power and make them better off than they would be under a situation of anarchy. This explains why, after a successful palace coup or

conquest from external invaders, most or all subjects shift their loyalties quickly (and recognize him as fully “legitimate”) ~~to the new monarch.~~

In republican regimes, political compliance is, in turn, based on a “contract” in the sense that relatively similar individuals agree to govern together – hence not surrendering the defensive capabilities and right of resistance to a section of their community or to someone outside it. Because all these individuals participate in a position of (relative) equality, they are in principle free from the violence and exploitation that happens in monarchical regimes.

A republican regime is a fallback position from the outcome of spontaneous cooperation: it does not arise spontaneously; rather, it emerges because there is an external threat that forces everyone to establish some common defensive structure. Without that threat, individuals would continue to live under structural conditions (of relative equality) that would allow them to cooperate without having to establish a state. Notice, as well, that the level of relative equality (or, more precisely, of inequality) compatible with a nonmonarchical regime will be a function of the intensity of the external threat (poor citizens may still want to join a compact if the loss under a monarchical regime is very high) and of the gains that come from living together under common institutions (inequality will be more acceptable as the gains from production complementarities and the advantages of risk sharing rise).

*The Role of War.* The nature of war technologies shaped in a decisive way both the balance of power between producers and looters and the internal structure of the state. For example, the domestication of the horse intensified the level of warfare – as shown by studies on the impact of its geographical diffusion among Native American populations – and created a class of horsemen enjoying a preeminent political and social status. The combination of the horse with the light chariot in the first half of the second millennium BC allowed the much poorer pastoralist peoples of the steppes to ravage the Middle East, India, and China. The use of the iron stirrup, giving a definite advantage to the horseman over the foot soldier, gave birth to a powerful aristocracy in early medieval Europe and in the Byzantine Empire and was correlated with the impoverishment of the peasantry in T’ang China and Sassanid Persia. The introduction of large breeds in West Africa resulted in the formation of several “cavalry” states that based their income and strength on capturing men and women and selling them to European and Arab middlemen. The impact of the horse in West Africa operated through exclusively military mechanisms: due to the absence of the plow and the wheel and the extension of the

tsetse fly, horses in West Africa were useless to carry out any agricultural, herding, and commercial tasks and therefore could only be deployed as a tool of war and exploitation.

By contrast, in those areas where horses and war chariots played a much more marginal role in war tactics, political institutions and social structures were likely to be horizontal. In mountainous terrains such as most of southern Hellas, the absence of a cavalry class and the introduction of iron weapons, much cheaper than bronze, explain the dominance of hoplite armies composed by free citizens fighting on foot, armed with long spears, and in tightly drawn units, and were correlated with the emergence of democratic institutions. Similarly, those areas of medieval Europe and Japan where the mounted horseman could not penetrate preserved rather horizontal forms of governance right through the diffusion of firearms.

Due to the nature of war, republics tended to be smaller, shorter in duration and much more infrequent than monarchies around the world – at least until the nineteenth century. Even when warfare technologies were favorable to republican regimes (such as particular weapons favorable to infantry armies or the use of naval power in maritime cities), war making continued to have significant opportunity costs for producers – precisely because their advantage lay in the production of things rather in the plundering of other individuals. Producers could have employed their wealth to hire an external army or fund a professional army instead of defending their institutions. In fact, some cities did. However, the majority of republics minimized the size of their military commitments and investments for two reasons. First, a hired army could never credibly commit itself to respect the republican government that it was supposed to serve. Second, successful war making tended to create a class of successful officers and generals that used the resources obtained abroad and the popularity enjoyed at home to seize power – witness the end of the Roman republic and the French revolution. After the eighteenth century, two new developments made it possible for republics to become larger and more frequent. On the one hand, the American independence movement, which debated at length the trade-off between having small and therefore weak republics and strong but illiberal monarchies, crafted the federal solution of 1787 (defined by having a common executive and a much tighter union than previous confederative arrangements and defense leagues) as a solution to the traditional republican defense dilemma. On the other hand, economic growth and the extension of democratic institutions led to the decline of authoritarian and monarchical regimes across the globe.

### Growth and Inequality after the First Transition

The invention of complex fishing technologies and the domestication of plants and animals, which, contrary to the tenets of economic neoinstitutionalism, preceded (or at most coevolved with) the formation of the state, had a positive effect on the overall welfare of the average person. Human population multiplied by about thirty times until 1500. The invention of new production techniques (including things such as metallurgy or writing) increased the number and quality of material and cultural artifacts among agriculturalist peoples. The proportion of adult males killed violently dropped significantly – partly as a result of the creation of states with the ability to police their subjects and partly because humans abandoned the rather oppressive forms of social interaction and control examined in Chapter 1. Nonetheless, the material gains that followed were patchy at best. Mean life expectancy at birth did not increase. It was still less than thirty years at the beginning of the nineteenth century. In fact, agriculture and herding brought new infectious diseases that may have raised infant mortality. Because farmers' production and diet is limited to a few products (generally one cereal and some vegetables), average heights dropped in relation to Paleolithic and Mesolithic foragers – from four to ten centimeters depending on the region of the world. Growth was mostly extensive – based on the clearing and exploitation of new land. Any technological progress was absorbed by a rising population that lived at the verge of subsistence. At the eve of the Industrial Revolution, per capita income stood at less than \$2 per day (dollars of 1990) for 95 percent of mankind.

The economic stagnation of the preindustrial world had deep political roots. Rather than spawning the agricultural revolution, the newly created institutions (monarchies and republics alike), contributed, for different reasons, to the “freezing” of the technological leap and the new economic conditions that generated them. As discussed in Chapter 2 (echoing previous work by Mancur Olson), looters and professionalized warriors only established a monarchical or aristocratic government to the extent they could secure an acceptable stream of rents from their subjects. Accordingly, their incentives to spend time and resources searching for new production technologies were extremely low. Instead, they thwarted the formation of any new economic class that could jeopardize their dominant economic and political position. In principle, technological progress should have been higher in repub-

lican governments, where nonproducers could not block the dynamics of endogenous growth.

Indeed, several polis and city-republics enjoyed relatively high levels of welfare. Median wages in classical Athens, a few late medieval Italian towns, and some early modern Dutch cities were similar – and higher than those in rural areas. A wealthy class of bankers, traders, and manufacturers financed an extraordinary artistic and intellectual boom. Yet those growth patterns did not spread outside those urban nuclei and eventually collapsed at home for at least two reasons. On the one hand, most republican polities were too small, unstable, and short-lived, due to the military constraints examined before. On the other hand, it was not uncommon for republican systems to impose, often through bitter social conflict and popular revolts, limits on the rate of technological innovation and economic change because they could exacerbate internal inequalities and put their political stability at risk.

The social distribution of preindustrial income and wealth depended on economic parameters: factor endowment (modern Europe's wages varied with labor supply, raising sharply after plagues and war decimated its population), the state of production technologies, biogeographical conditions (and whether they led to crops susceptible of enjoying economies of scale), and access to trading and transportation routes (because populations living in the coast developed in different directions than landlocked communities). But it was also a function of the type of political institutions in place. Republican institutions tended to preserve the existing distribution of wealth and income that resulted from factor endowment conditions and the underlying structure of ownership given by economic variables. By contrast, dictatorships and monarchies engaged in a substantial redistribution of income from producers to the tyrant or monarch and their allies. This pattern of low growth rates and unequal access to the state and its regulatory policies is common among today's underdeveloped economies. Contemporary measures of corruption, which proxies for all the mechanisms employed to secure personal favors and to avoid the transparency and equality nominally embodied in modern legal systems, are substantially correlated with more inequality across countries.<sup>3</sup>

<sup>3</sup> Lack of corruption (measured by Kaufmann et al. 1999) and the Gini index are correlated with an  $r = -0.43$ .

In other words, both the origins and the persistence of inequality respond to a more complex story than the accounts of Locke and Rousseau. In contrast to Locke's theory of property, where effort determines wealth and income, the distribution of land depended on the balance of power between looters and producers and, within monarchical regimes, on connections to the ruling elite. Yet, contra Rousseau's theory of property as a straightforward robbery by the "rich," this book distinguishes between the wealth created and owned by natural producers (those that exert some direct productive effort on land and capital) and those assets grabbed through violence by bandits-turned-into-monarchs. The existence of two distinctive forms in the acquisition of property goes some way into explaining why different societies hold different views on the taxation and regulation of wealth: whereas property is seen as illegitimate in those societies where violence and connections have determined the distribution of life chances, it is not where most of the population has acquired it through work and commerce.

Because the data on wealth and income inequality before (and even after) the creation of statistical offices and tax agencies are hard to come by, this book has employed height (which is partly determined by access to food) to track the impact of economic and political factors on inequality. Three findings stand out. In the first place, height heterogeneity within farming communities was lower than in agricultural societies where landholding was concentrated in a few hands. In the second place, political communities with relatively simple warfare technologies, and therefore without a professionalized class of warriors who could squeeze resources out of the rest of society, present a relatively narrow distribution in terms of heights. Nineteenth-century Native American tribes tended to have smaller coefficients of variation of height than the United States today. That equality is confirmed by systematic ethnographic studies showing that, with a few exceptions such as the fishing communities of the Northwest Pacific Coast, those societies were hardly stratified. In the third and final place, societies that employed complex war technologies (from metal weapons to war chariots and heavily armored cavalry) were much more unequal. Royal elites in old Mycenae and ancient Egypt were seven to nine centimeters taller than commoners. The height gap between nobles and commoners in Poland (particularly after the reintroduction of serfdom in the early modern period) and in eighteenth-century Germany was similar. Those differences match the information we have about class differences in access to food: the upper classes in early modern Europe consumed

between 4,000 and 5,000 calories per day and had a much richer diet than poor individuals (Livi-Bacci 1991: 62–6). They were also correlated with similar differences in their consumption of other goods such as housing and clothing.<sup>4</sup>

### Transition to a Modern World

If the political structures of the preindustrial world locked it in a permanent condition of stagnation and poverty, why did northwestern Europe break away from it one century and a half ago? Biogeographical conditions played an important but by no means sufficient role in igniting the Industrial Revolution. Having the appropriate climate as well as a suitable soil for agriculture was behind the high population densities of East Asia, India, the Middle East, Europe, and, more mildly, Mesoamerica, the Inca Empire, and some regions of Africa. The concentration of part of that population in urban clusters then favored a process of economic specialization and the agglomeration of artisans and craftsmen that must have fostered a faster rate of technological progress in trade and proto-manufacturing activities. Indeed, the most densely urbanized areas of China and Western Europe enjoyed relatively high levels of consumption (in items such as furniture and high-priced commodities) compared to the rest of the world in the eighteenth century. Still, the Industrial Revolution only happened in Britain and, arguably, along the Rhine valley. According to recent estimates, biogeographical characteristics (having a climate and a soil suitable to the domestication of plants and animals) only explain between one-third and one-half of the current variation in income per capita across the world. In other words, the absence of (relatively intense forms of) agriculture accounts for the most egregious cases of underdevelopment in today's world. But its presence alone cannot explain northwestern Europe's success to industrialize.

Cultural and ideational explanations of modern growth do not hold well from an empirical point of view. The reception of classical ideas in Renaissance Europe and the diffusion of the Enlightenment took place in many countries that experienced a late process of industrialization or none at all. The application of the ideas of the scientific revolution to specific technologies and crafts may have mattered to foster innovations

<sup>4</sup> In health terms, the evidence is less clear. E.g., life expectancy for aristocrats and commoners in modern Europe was similar before 1750 (although not afterward) (Livi-Bacci 1991).



but it ultimately depended on the preexistence of a protomanufacturing cluster and of a class of artisans who could put to use that broad knowledge to solve the specific technical needs and challenges of their trade. The thesis that Protestantism reshaped the internal logic of the person of action transforming it into a rational businessperson is even more dubious. Premodern men were as acquisitive, calculating, and rational as modern ones. They simply adjusted their behavior to the economic and political structures of agrarian monarchies, where maximizing one's life chances entailed climbing up the ladder of power rather than investing in new technologies and managing production plants and private corporations.

Institutional accounts of the Industrial Revolution, which stress the importance of strong parliaments and of the rule of law, are not convincing either. Those "progrowth" institutions existed only when the social and economic strata that benefited from them (a cluster of producers as opposed to an elite of stationary bandits) were strong enough to defend them. In other words, institutions were endogenous to the sources of economic growth institutionalists profess to explain. The strength of producers depended, in turn, on their level of wealth and on their capacity to project it into independent military power (i.e., without falling into the credible commitment trap I identified before).

In the particular case of Europe, good soils, the invention of the caruca or heavy plow, and the availability of cheap means of transportation promoted the formation of a network of towns along the London-Rhine-Milan axis since 1100 approximately. Starting in 1300 their wealth and their growing population allowed them to organize infantry troops that defeated the feudal mounted class and to consolidate numerous sovereign or semisovereign city-republics – in sharp contrast with the fate of non-European towns, which remained governed by the bureaucracies of sultans and emperors. As a result of agglomeration effects and economies of scale, the urbanization of Europe kept its momentum throughout the modern era while witnessing a gradual process of territorial divergence: areas that had urbanized first grew faster than those that urbanized later.

The introduction of firearms by the turn of the sixteenth century rebalanced the power relationship between burghers and monarchies (and their aristocratic allies). The latter could now strengthen their position – provided they expanded territorially (or merged into larger states) to amass the resources to buy firearms and cannons. Very wealthy towns

could purchase them too – therefore resisting the military pressure of absolutism. Nevertheless, a double exogenous shock altered the strength of European towns in *two* directions. The collapse of Byzantium and the closing of Asian routes weakened the trading and financial position of Mediterranean cities and therefore depleted their military capabilities and resources to defend their political autonomy: Italy came under the control of Spanish troops by the mid-sixteenth century; Catalonia and Valencia lost their institutions in early eighteenth century. By contrast, the opening of the Atlantic trade bolstered the capabilities of British and Dutch commercial interests, explaining the eventual defeat of the Spanish Crown in the Low Countries and the Glorious Revolution in Britain. In sum, capitalism could (and can) only flourish and survive if it *has* the means to defend itself against the logic and the pressure of (internal and external) predators.

The political victory of the commercial and urban strata of north-western Europe allowed the process of urbanization and the maturation of protomanufacturing clusters to evolve unimpeded. As these new sectors proved more profitable than land, the old landed elites invested in them and eventually embraced a liberal political and legal order. This contrasts with Marx's claim (indebted to Rousseau's thesis on the origins of inequality) that political change requires the revolutionary action of the bourgeoisie. If anything, modern revolutions have happened in those political economies that remained closer to the model of premodern agrarian monarchies.

Industrial growth came hand in hand with the expansion of human capital (actively promoted by firms profiting from the complementarity of skills and capital) and a rising marginal productivity of labor. As I have discussed in much more detail in previous work on the sources of democratization, higher incomes and a more compressed income and wealth distribution dampened political conflict and facilitated the expansion of universal suffrage. Moreover, industrialization implied also a shift of wealth from fixed to mobile, nonspecific forms of capital. Acting as a guarantee against expropriation, asset mobility made it easier for its owners to accept the rule of the majority. Accordingly, in advanced economies the right to vote expanded from a tiny minority (in those countries with some kind of representative institutions) to all adult males after World War I and then to women in the following decades. By the turn of the twenty-first century, about three-fifths of all sovereign countries have become democratic.

### Inequality Today

Economic inequality declined substantially with industrialization and a correlated process of political liberalization. Men and women became taller and healthier: the average western European was ten to twelve centimeters taller in 2000 than in 1800; life expectancy at birth more than doubled in the same period. Change was not limited to a particular social class. Access to food, education, and sanitation democratized. As shown in Chapter 6, height variance declined with development. Likewise, the gap between rich and poor in life expectancy narrowed considerably. In England it declined from more than thirty years between aristocrats and commoners at the end of the eighteenth century to about six years in the early 1970s and nine years in the late 1990s for men across classes (Hattersley 1999; Deaton 2014).

Income inequality also declined – at least in the long run. The existing cross-sectional data shows that rich countries are, on average, more equal than the poor ones. Recently compiled temporal series point also to a secular decline in income and wealth inequality within advanced economies. Throughout the nineteenth century, the evolution of income inequality varied considerably across them. In England and France the capital share of national income increased substantially while workers' wages stagnated (Allen 2007; Piketty 2014). Wages (relative to land rents) fell and wage dispersion rose sharply in the United States and Australia. By contrast, the wage/rental ratio went up and wage dispersion narrowed rapidly in Scandinavian economies (O'Rourke and Williamson 1999). Around World War I inequality started to drop across the board. By the 1970s the share of national income in the hands of the top decile had fallen to around 30 percent from 45 percent five decades before. Private wealth behaved in the same way.

The evolution of inequality throughout the twentieth century belies so far Marx's prediction that capitalism implies a systematic process of capital-labor substitution and the concentration of capital in a few hands due to economies of scales that result in stagnating wages, a rising capital share of income, and a never-ending spiral of inequality.<sup>5</sup> Changes in inequality trends were a function, instead, of two main economic forces:

<sup>5</sup> Naturally, nothing prevents this process of capital-labor substitution from taking place in the future. In a world where intelligent machines replaced all work, capital would be left as the only factor of production. See Brynjolfsson and McAfee (2014) for a recent exploration of this question.

the underlying structure of factor endowment and the impact of technological change on labor demand and productivity. In the first place, our historical data shows that changes in population levels (and in the supply of labor) affect wages. As shown at the end of Chapter 4, real wages and population density were tightly (and inversely) correlated in preindustrial Europe. Likewise, the nineteenth-century fall of wages in the New World and their corresponding increase in European countries can be traced down to the massive migration flows that took place across the Atlantic one hundred years ago. In the second place, technological innovations directly affect the labor demand and compensation. The first industrialization wave led to the replacement of self-employed artisans by unskilled workers in highly mechanized factories. The introduction of capital-intensive industries made their owners much richer than their employees and the rest of economic sectors. However, once capital grew to the point it could absorb all labor supply – basically after 1860, real wages rose at a rapid pace, the capital share of income declined, and overall income inequality started to fall. Moreover, the technological innovations of the late nineteenth century shifted the demand of labor in favor of skilled workers. As capital and skilled labor became strongly complementary, the benefits of technical change spread to a growing share of the population – resulting in a relatively balanced distribution of growth by the middle of the twentieth century. In the last decades a persistent skill-biased technological shock and the automatization of many production processes (helped by the emergence of trade competitors in Asia) has led to a widening income distribution in several advanced economies.

What role do political factors play in the distribution of income? In the face of growing inequality, can the political system “reequilibrate” the economy, spreading the initial lead or advantage of one sector of society to the rest? Or may a rise in inequality resulting from endogenous technological change (such as the one we are probably witnessing today) become permanent over time through some political mechanism? In other words, can those that benefit from a given technological shock employ their economic advantage to institutionalize (through political decisions and legal regulations) their lead over time?

Inequality may become entrenched if the initial technological innovation shock (that generated it) gives its holders some advantage (over the rest of society) in the invention and/or adoption of more efficient technologies in the future. Indeed, this economic advantage seems to be embedded in the learning-by-doing structure of growth. Because economic agents invent new solutions to the problems they face in their current

production process, those that lag behind have a hard time catching up and overtaking those that are ahead in the technological race: as discussed in Chapters 3 and 6, a great deal of the long-run continuities in the location of economic activities in medieval and modern Europe (and the rest of world) can be explained in terms of this first-mover advantage.<sup>6</sup> Nevertheless, even if first movers have a strong technological advantage for strictly economic reasons (again, because they are better positioned to invent more efficient technologies in the future), they can only make their lead permanent through political means. More precisely, the “winners” of the technological shock need to have both the incentives and the political capacity to either impose barriers in the use of those new technologies to the rest of society or to block any attempt by the “losers” of technological change to tax them and redistribute their gains across society.<sup>7</sup>

The beneficiaries of technological shocks have no incentives to exclude others from those technologies if they only care about their absolute income (and not about the difference between what they earn and what others would earn) and if there are economic complementarities between them and the rest, that is, if the sector with the leading technology gains from having more people adopting or knowing it. In fact, in the latter case, they sometimes may even devise mechanisms to overcome any barriers to the adoption of new technologies. This seems to be the case of industrialization wave in the late nineteenth century. Although the technological innovations of that period led to growing inequalities, manufacturing employers supported publicly financed education schemes to improve their workforce and boost the profitability of their business (Lindert 2004). In short, in a world characterized by economic complementarities, and even if leading businesses have the capacity to dictate policy (due to their economic power or because they are the only ones that vote), the economy will remain an “open” one: it will have outbursts of technological change, which will generate faster growth rates and a broadening income gap, followed (at least in the long run) by a process of catch-up and some reequalization of incomes.

<sup>6</sup> Even more simply, that advantage may be the result of some initial income inequality. In a world with credit constraints and where an investment in a high-return technology is larger than some quantity  $k^*$ , anyone that has assets or income below that threshold  $k$  will be stuck with a low-return technology. By contrast, all those individuals with assets  $k > k^*$  will maintain or even amplify their advantage in the income distribution.

<sup>7</sup> I am employing the terms of winners and losers in relative terms. Even when everyone wins from technological change, some often benefit more than others.

When technological entrepreneurs have the incentives to impose some barriers to entry (because they care about relative incomes, they can capture some extra rents by creating noncompetitive markets or when there are no complementarities across economic sectors), inequality (due to a biased technological shock) will only become permanent if the beneficiaries of the shock have the capacity to determine policy.<sup>8</sup> This will vary with the institutional decision-making structure in place. In particular, democracies (with all individuals voting) are the most reliable institutional mechanism to equalize conditions: provided that those that do not benefit from the shock are the majority of the population, democracy enables them to reduce (through education, the creation of thick credit markets, etc.) any natural or legal barriers to the adoption of new technologies. The northern half of the United States, which had a relatively equal economy and quasi-universal male suffrage before industrialization (Engerman and Sokoloff 2002; Nikolova 2012), experienced a widening distribution of income and wealth in the second half of the nineteenth century. Although new franchise requirements were introduced and the electorate shrank a bit in the industrial North in the early twentieth century, democratic institutions remained robust. In line with the distributive pressures that usually come with democratic regimes, human capital formation was stepped up, resulting in a strong leveling of wages across the labor market (see Goldin 1999 on long-run human capital formation in the United States). Democratic demands, in interaction with the impact of massive immigration on the incomes of native workers, were also likely to lead to the closing of American borders in the 1920s. Foreign-born population as a proportion of total population fell quite dramatically and its decline turned to be strongly correlated with a decline in inequality (McCarty et al. 2006). In short, the American experience seems to imply that, at least in the long run, democracy tends to generate policy responses to curb inequality-enhancing technological shocks. This does not mean that democracy is always systematically associated with equal outcomes. In an open society, technological innovation and growth often generate economic and social inequality. Under those circumstances, even though democratic institutions tend to exert (normally through the political demands of those left behind) some downward pressure on inequality, the

<sup>8</sup> The same logic works for redistributive taxation: inequality only becomes permanent if the technological winners can block redistribution from them to the losers.

latter can coexist with democracy for long periods of time – particularly if technological innovation takes place at a fast rate.<sup>9</sup>

Not all policies to equalize conditions are similar – and not all of them are equally compatible with growth. The West’s successful reduction of inequality over most of the twentieth century was based on the formation of a relatively educated labor force (and to the de facto absence of economic competitors outside Europe and North America until the 1980s). This, in conjunction with technological progress, led to a falling variance in marginal productivities in the labor market and to a narrower distribution of incomes. An alternative strategy of equalization consists in relying on direct transfers or subsidies to less productive sectors. This solution distorts, however, the allocation of resources in market economies and jeopardizes growth – and therefore the resources to sustain equality – and requires, in the long run, the introduction of protectionist barriers against less redistributive competitors. Making sure that policy makers rely on the first strategy (based on human and capital formation) rather than in the latter one (based on pure redistribution) seems to be the most important challenge facing advanced countries and in fact all democracies today.

<sup>9</sup> Naturally, in the same way democracy may attenuate the effects of a biased technological shock, that shock may jeopardize democracy instead. Suppose technological change leads to an increase in income inequality such that those who benefit from it have the incentives and monetary means to block or restrict democracy – precisely to prevent the majority from taxing them. Technological change would result in the substitution of an oligarchy for democracy. As far as I know, this reversal of political fortunes has happened mostly due to imperial expansions (such as the one that enriched Roman generals and led to the collapse of the Roman Republic) and commodity booms (concentrating power in the hands of a mining elite). It is true, however, that the rise of a very wealthy urban stratum was behind the formation of strong oligarchical governments in several late medieval and early modern Italian and German cities.