Political Losers As a Barrier to Economic Development*

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Per-capita income in many sub-Saharan African countries, such as Chad and Niger, is less than 1/30th of that of the United States. Most economists and social scientists suspect that this is in part due to institutional failures that stop these societies from adopting the best technologies. A particularly interesting historical example comes from the diffusion of railways in the nineteenth century. While railways are regarded as a key technology driving the industrial revolution, there were large lags in its diffusion. For example, in 1850 the United States had 14,518km of track, Britain 9,797km and Germany 5,856km, in the Russian and Hapsburgh Empires there were just 501km and 1,357km, respectively (all data from Mitchell, 1993). Why do societies, as in this example, fail to adopt the best available technologies?

One answer is that existing powerful 'interest groups' block the introduction of new technologies in order to protect their economic rents, and societies are able to make technological advances only if they can defeat such groups. Economic monopolies may be one example. A monopolist might wish to block the introduction of a new technology by a rival that will capture the market. This idea, which we call the 'economic losers hypothesis' was discussed by Kuznets (1968), developed at length by Mokyr (1990) in the context of technology adoption, and formalized by Krusell and Rios-Rull (1996), and Parente and Prescott (1997). Related ideas are widely discussed in the literature on international trade policy with many formal models (for example, Grossman and Helpman, 1994).

There are problems with this story, however. First, despite the intuitive appeal of the idea, there are relatively few instances where major economic change was blocked by economic losers. Mokyr (1990) emphasizes the attempts of many skilled artisans to block the introduction of new machines. The most famous example is the Luddites, skilled weavers who were thrown out of work by mechanization. Interestingly, however, many of these groups, including the Luddites, were ultimately unable to block economic progress. Equally important, the economic losers hypothesis relies on the presumption that certain groups have the political power to block innovation. But if so, why not use this power to simply tax the gains generated by the introduction of the new technology? This might be because there are limits on the nature of fiscal instruments, though it seems plausible that groups with sufficient political power to block innovation would be able to subsequently lobby effectively for redistribution. A more important reason, however, may be that the introduction of new technology, and economic change more generally, may simultaneously affect the distribution of political power.

We argue that the effect of economic change on political power is a key factor in determining whether technological advances and beneficial economic changes will be blocked. In other words, we propose a 'political loser hypothesis.' We argue that it is groups whose political power, not economic rents, are eroded that will block technological advances. If agents are economic losers, but have no political power, they cannot impede technological progress. If they have and maintain political power—i.e., are *not* political losers—, then they have no incentive to block progress. It is therefore agents who have political power and fear losing it that will have incentives to block. Our analysis suggests that we should look more to the nature of political institutions and the determinants of the distribution of political power if we want to understand technological backwardness.

These ideas are closely related to Douglass North's emphasis on the political-economic determinants of the institutional structure. North (1981) argued that good institutions might not be chosen by those with political power because they did not necessarily maximize their revenues. Our argument is related in that

the currently powerful groups have to block economic change because there is no credible commitment to compensate them once economic changes have been implemented. Robinson (1997, 1999) pursues a similar idea, and argues that dictators may act in a predatory fashion in order to protect their political power. In Acemoglu and Robinson (1999), we develop a related theory of development where the economic opportunities and the constraints faced by politically powerful groups determine the institutional structure and economic policies.

1. A simple model

We use a reduced form static model to illustrate our main points. The economy consists of three groups of agents and two goods. The agents are a group of consumers, with measure normalized to 1, a monopolist and a potential rival. The two goods are corn, x, which is produced competitively with price normalized to 1, and a manufacturing good, y, produced either by the monopolist or its rival, with price p, which will be determined endogenously. Citizens have an exogenous initial endowment of corn of m, and a utility function

$$x + \frac{1}{\alpha} y^{\alpha}.$$

This implies that their demand for the manufacturing good is given by $y = p^{\frac{-1}{1-\alpha}}$. The initial monopolist has the most advanced technology to produce y, which turns one unit of good x into π_0 units of good y; i.e., $y = \pi_0 x$. The potential rival has a superior technology $\pi_1 > \pi_0$. We use π to refer to the generic technology.

The monopolist also faces a proportional tax on its sales, denoted by τ. Since the demand curve facing the monopolist is isoelastic, a constant markup over marginal cost maximizes profits; hence $p = \frac{1}{\alpha(1-\tau)\pi}$, where $\pi = \pi_0$ is the technology in operation. This gives the monopolist's profits as

$$\Pi = \left[p(1-\tau) - \frac{1}{\pi_0} \right] y = (1-\alpha)(1-\tau)^{\frac{1}{1-\alpha}} \left(\alpha \pi_0\right)^{\frac{\alpha}{1-\alpha}}.$$

We assume that the total endowment of corn satisfies $m > \max\left\{ \alpha^{\frac{2}{1-\alpha}} \pi_1^{\frac{\alpha}{1-\alpha}}, \alpha^{\frac{1}{1-\alpha}} \pi_0^{\frac{\alpha}{1-\alpha}} \right\}$,

where π_1 is the technology of the rival. This condition implies that the largest equilibrium production level of y is feasible.

The monopolist initially controls the political system and initially,

- By incurring some cost C, it can block the introduction of new technology $\pi_1 > \pi_0$ by the rival monopolist.

Subsequently, if it stays in power,

- It can set the sales tax τ on the manufacturing good and receive the revenue.
- It can collect a lump sum tax on the citizens $T \in [0, \overline{T}]$.

The tax on manufacturers enables us to model the possibility that the monopolist will allow the introduction of the better technology, and tax the ensuing revenue. The lump sum tax on citizens parameterizes how important it is to stay in power. Finally, the option to block is essential for our discussion.

We assume that if the new technology is not introduced, the monopolist keeps control of the political system with probability q, and loses it with probability $1-q$. Whereas if the new technology is introduced, the initial monopolist retains political power with probability s and loses it with probability $1-s$. We assume that $s \leq q$, so that political power is dependent on the monopolist's economic position in that when it blocks the introduction of new technology, it is more likely to remain in power.

We can now analyze the behavior of the incumbent monopolist. To determine whether the monopolist will decide to block the introduction of the new technology, let us calculate its payoff under different scenarios. If the monopolist blocks the introduction of new technology (B) and remains in power (P), it will choose the maximum tax rate on the citizens, $T = \overline{T}$, so

$$V(B, P) = \overline{T} + \Pi(\pi_0) = \overline{T} + (1-\alpha)(\alpha\pi_0)^{\frac{\alpha}{1-\alpha}}$$

where B denotes "blocking", and P denotes "in power". Note however that the monopolist who blocks and stays in power will levy a sales tax of zero on itself.

Alternatively, the monopolist may lose political power (NP), with probability $1-q$. If additionally it blocks the new technology so that it remains the monopolist, its return is $V(B, NP) = \Pi(\pi_0)$. In this case we assume that no one replaces the monopolist in exercising political power, so that there are no sale taxes either.

Suppose next that the monopolist is in power but has not blocked. Its return in this case will depend on the tax revenues that it will raise from the rival monopolist. This tax revenue is given by

$$\Im(\tau) = \tau py = \tau \frac{1}{\alpha(1-\tau)\pi_1} \left(\frac{1}{\alpha(1-\tau)\pi_1} \right)^{\frac{-1}{1-\alpha}} = \tau \left(\alpha(1-\tau)\pi_1\right)^{\frac{\alpha}{1-\alpha}}$$

which yields the revenue maximizing tax rate as $\tau = 1-\alpha$. So the maximum tax revenue for the incumbent monopolist is $\Im^* = (1-\alpha)[\alpha^2\pi_1]^{\frac{\alpha}{1-\alpha}}$. Therefore, the return to the monopolist of remaining in power but not blocking the innovation is $V(NB, P) = \overline{T} + \Im^*$. Finally, it is clear that if the monopolist does not block and loses power, it gets $V(NB, NP) = 0$.

Now consider the expected return to the two possible strategies, blocking and not blocking. These are $V(B) = qV(B,P) + (1-q)V(B,NP) - C$, and $V(NB) = sV(NB,P)$. So the monopolist would block if and only if

$$(q-s)\overline{T} + (1-\alpha)\left(\alpha\pi_0\right)^{\frac{\alpha}{1-\alpha}} - s(1-\alpha)(\alpha^2\pi_1)^{\frac{\alpha}{1-\alpha}} > C$$

Intuitively, $(q-s)\overline{T}$ is the loss of political rents expected by the monopolist when it does not block. It also loses the profits $(1-\alpha)\left(\alpha\pi_0\right)^{\frac{\alpha}{1-\alpha}}$ from the sale of the good y. But, if it maintains political power, it can tax the new monopolist and collect revenues, so there is an expected gain of $s(1-\alpha)(\alpha^2\pi_1)^{\frac{\alpha}{1-\alpha}}$ from not blocking. If the gains from blocking exceed the cost C, the monopolist will block.

First, notice that as long as $\alpha\pi_1 > \pi_0$ —i.e., as long as the new technology is sufficiently better than the old one—, $\Im^* > \Pi(\pi_0)$, and the monopolist would make greater revenues by taxing the more advanced technology of its rival. In this case if $q = s = 1$, then the monopolist would never want to block. Instead, it would allow the introduction of the more advanced technology, still collect its political rents from the taxation of citizens, $\overline{T}$, and make greater revenues from

the taxation of its rival than it would have made as profits by producing the good. In this case, economic losers would never block the adoption of new technologies. Blocking arises, instead, when the political power of the incumbent is threatened by economic innovation, i.e. when $s < 1$.

More generally, the main implications of the simple model are.

Result The incumbent monopolist is more likely to block the introduction of new technologies when

1. $q - s$ is higher and s is smaller, i.e. when it is relatively more likely to stay in power when it blocks introduction of the new technology.
2. $\overline{T}$ is higher, i.e. when political rents from staying in power are greater.
3. π_0 is higher, i.e. when monopoly profits from blocking are greater.
4. π_1 is lower, i.e. when the tax revenue they can collect from its rival are smaller.

2. Political power and resistance to economic development: the case of the landed aristocracy

The ideas outlined in the previous section enable us to provide an interesting interpretation to the attitudes of the landed aristocracy to the rise of capitalism in 19th-century Europe. David Ricardo (1815, p. 21) argued that "the interest of the landlord is always opposed to the interest of every other class in the community". As urban centers grew, migration was likely to increase real wages and reduce rents and land prices. Moreover, in Western European countries with comparative advantage in manufacturing, industrialization and free trade would reinforce these effects. Thus landed interests would be economic losers as a result of the industrial revolution. Our hypothesis is that landed interests, which uniformly controlled political power on the eve of the industrial revolution, opposed the rise of manufacturing in countries where their political power was threat-

ened, such as Russia and Austria-Hungary, but not in societies where they could maintain their political power, such as in Britain and Germany.

Landed interests were economic losers from industrialization. In Britain, the 1846 abolition of the Corn Laws was against the interests of the landed classes. In fact, from the 1870s onwards international competition led to falling real rents and land prices (see Clark, 1998,—though during the first half of the nineteenth century real land rents and prices rose despite industrialization). This basic economic situation was similar in other European countries.

In Britain and Germany, the landed groups did not however attempt to block industrialization. As Mokyr (1990, p. 243) notes about Britain, "the landowning elite, which controlled political power before 1850, contributed little to the Industrial Revolution in terms of technology or entrepreneurship. It did not, however, resist it." We argue that in both countries landed groups anticipated that their continued political power was secure. In Britain, despite the franchise reforms of 1832, 1867 and 1884, the House of Lords guaranteed the security of landed interests until the Liberal government of Asquith after 1906. Although agricultural tariffs were blocked in the 1870s, the landed aristocracy was initially confident of controlling the political system, and in most cases did so until the 20th century, and so had little resistance to industrialization initially. In Germany, the landed Junker aristocracy forged the coalition of 'Iron and Rye' with the rising industrial class to secure their economic interests. Gerschenkron (1943, p. 49) describes this coalition as, "a compromise between modern industry and the feudal aristocratic groups in the country." After the 1870s the Junkers were able to gain protection for their output, insulating themselves economically from the worst effects of industrialization. Therefore, in Germany the continued political power of the Junkers allowed them to compensate for the adverse direct economic effects of industrialization.

The situation was very different in Russia and Austria-Hungary. At the start of the industrial revolution, both countries were ruled by absolutist monarchies and landed elites. In both countries, these elites blocked industrialization because

they saw it as a threat to their political power. In Russia, after the Decembrist putsch economic development was opposed since, as Mosse (1992, p. 55) puts it "it was understood that industrial development might lead to social and political change." It was only when the defeat of the Crimean war showed the Tzars that being so backward technologically made them highly vulnerable externally that this policy was changed. The reaction of the Hapsburgh elites in Austria-Hungary was similar. The state not only failed to promote industrialization, but rather, as Gerschenkron (1970, p. 89) noted, "economic progress began to be viewed with great suspicion and the railroads came to be regarded, not as welcome carriers of goods and persons, but as carriers of the dreaded revolution. Then the State clearly became an obstacle to the economic development of the country."

Our model suggests two plausible—and speculative— ideas for why did landed elites in Russia and Austria-Hungary, but not Britain and Germany, decided to block innovations and the railroads. First, the landed elites in these countries had more to lose since they began the nineteenth century with an almost unreformed feudal system. This implies that $\overline{T}$ was larger. In comparison, the serfs had been freed in 1806 in Prussia and feudal labor relations were long gone in Britain. Second, both Russia and Austria-Hungary had absolutist monarchies with a narrow base of social support. Relative to this both Britain and Germany began industrialization with much more open and legitimate political systems. This made it less likely that existing political institutions would be able to adapt to the social forces unleashed by industrialization in Russia and Austria-Hungary, thus $q - s$ might have been higher, increasing the threat to the political power of the landed aristocracy. Overall, although the causes of the different attitudes in these countries we propose are speculative, it seems plausible that the main difference between Britain and Germany, on the one hand, and Russia and Austria-Hungry, on the other, was the threat that industrialization posed to political power, not to economic rents.

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Notes

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