SOCIAL CLASS AND THE SPIRIT OF CAPITALISM

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Abstract
One of the key social transformations that accompanied the British Industrial Revolution was the economic decline of the aristocracy. Standard theories of wealth inequality cannot explain why the aristocrats, in spite of their superior wealth and education, failed to be the main protagonists and beneficiaries of industrialization. We discuss recent research based on a model of endogenous preferences that is consistent with the demise of aristocracy. (JEL: 010, 040)

1. Introduction

The last two centuries have been a period of unprecedented economic, cultural, social, and political change. Starting with the British Industrial Revolution, a large number of countries have overcome Malthusian stagnation and entered a modern growth regime of perpetually improving living standards. The economic transition from stagnation to growth has been accompanied by changes in the social and political organization of society that are just as revolutionary as the upheaval in the area of production. Consider the example of England, the first country to industrialize. Before the Industrial Revolution, England was characterized by a rigid class system in which a small aristocracy of wealthy landowners dominated the spheres of both economics and politics. With industrialization, the old elite went into economic decline, and ultimately lost political control. Today, social classes no longer play a major role in modern industrial societies, and representative democracy has replaced the rule by a small elite.

The transition from stagnation to growth has long remained outside the scope of modern growth and development economics. In recent years, however, a new

literature has emerged that applies economic theory to explain a variety of aspects of this transition. A dimension that has so far been largely neglected is the emergence of a "capitalist spirit." The importance of this new "ethics," based on thriftiness and perseverance, was emphasized in the celebrated work of Max Weber (1930). Economists have, however, largely ignored this factor, possibly regarding it as noneconomic in nature. We discuss some of our ongoing research, based on Doepke and Zilibotti (2004), where we argue that the cultural factor may be key to understanding the Industrial Revolution, and that the cultural transformation can be explained by economic motives. We show that an economic theory of endogenous preference formation can explain how a class-based society differs from modern societies, how the "capitalist spirit" emerged among the lower classes, and why the aristocracy lost its primacy.

2. Existing Theories of Transition

The first unified theories of the transition from stagnation to growth concentrated on developing joint explanations for the evolution of output and population. Galor and Weil (2000), Hansen and Prescott (2002), and Doepke (2004), among others, all developed models that deliver an Industrial Revolution from stagnation to growth, accompanied by a demographic transition from high to low fertility.[1] A common feature of these theories is that they view the transition from stagnation to growth as primarily driven by technological change, in the sense that preferences and institutions are assumed to be constant over time.

A different view is that the main constraint on development was not technology. Indeed, a number of technologies that became widespread during the Industrial Revolution (e.g., the steam engine) had been invented long before. Rather, the major bottleneck was the scarcity of capital, as well as the inability of financial markets to collect and channel large amounts of resources towards large-scale undertakings (see, e.g., Bagehot 1873). Acemoglu and Zilibotti (1997) proposed a theory of financial development and capital accumulation that is consistent with this view, and can explain why progress in the pre-industrial world was erratic and the transition to the Industrial Revolution slow.

Beyond the specific case of financial markets, a number of economists argue that institutional development in general is the key to long-run growth. This view is supported by the observation that economically successful countries (initially, Western Europe and its colonial offshoots) are quite similar to each other in terms of their political system and social and economic institutions. Without exception, successful industrialization was accompanied by political reforms such as the

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1.   Different aspects of the link of demographic and economic change are also analyzed in Boldrin and Jones (2002), de la Croix and Doepke (2003a), Galor and Moav (2002), Greenwood and Seshadri (2002), Jones (2001), and Lagerlöf (2003).

replacement of aristocratic rule by representative democracy, and the introduction of social policies such as public schooling and pension systems.

Recently, a number of authors have developed explanations for some of the political changes that accompanied the transition from stagnation to growth. Acemoglu and Robinson (2000, 2001) link the expansion of voting rights in the nineteenth century to the threat of revolution. The existing elite prefers the sharing of power and redistribution of income over the risk of being violently removed. Alternative explanations are proposed by Lizzeri and Persico (2004), where franchise extension is driven by the need for public services, and by Galor and Moav (2001), where redistribution is in the interest of capitalists due to an increased role of human capital. More specific political reforms are analyzed in Doepke and Zilibotti (2005), who provide a theory of the introduction of child labor laws, and de la Croix and Doepke (2003b), who concentrate on the choice of a schooling regime.

These models have in common that political change is driven by a conflict between different groups, such as capitalists, landowners, workers, or "the elite." The theories treat these groups as primitives, and analyze how their incentives to support or oppose political reform respond to changes in the economic environment. In many cases, however, political reforms are triggered not by a "change of mind" of a particular group, but by a change in the relative political power of groups with opposing interests. In the context of nineteenth-century reforms, the waning influence of the old, aristocratic elite has been a major factor of this kind.

3. The Decline of the Old Elite in Economic Perspective

The economic decline of the aristocracy after the start of industrialization has been a key prerequisite for political and institutional change. The extension of voting rights in the nineteenth century in Britain closely followed the economic success of new groups, as well as the relative misfortune of the old landed elite. In the eighteenth century, when most of the members of the House of Lords and the House of Commons were rich landowners, the aristocracy was still firmly in control of the political sphere. In the nineteenth century, the aristocracy ultimately found itself on the losing side of most of the major political debates of the day, ranging from issues such as the Corn Laws and free trade to franchise extension and labor legislation.

A number of theories have been proposed to explain why the old elite was opposed to political reform. It has been argued, for instance, that in land-oriented societies, and more generally, economies that derive a large part of their income from natural resources, predatory behavior is highly profitable, so that the elites are reluctant to agree to a more diffused distribution of political power (see Boix 2003; Galor, Moav, and Vollrath 2003; and Sala-i-Martin and Subramanian 2003).

Much less is known about the question of why the aristocracy was unable to maintain its economic and political dominance in society after the start of the Industrial Revolution.

The decline of the aristocracy during the nineteenth and early twentieth centuries was historically unprecedented; never before had an elite declined so quickly, unless the change was triggered by violence and war (see Cannadine 1990). The new capitalists who became dominant in society mostly rose from the middle and lower classes. Very few aristocrats served as financiers for the new entrepreneurs. Towards the end of the century, relative decline led into absolute decline, as many of the wealthy families were burdened by increasing debt and were forced to sell off parts or all of their estates, leading to a land distribution in modern times nowhere near as concentrated as early in the nineteenth century.

This rapid decline is puzzling. Why did the upper classes prove unable to exploit the new opportunities arising with industrialization, in spite of their superior wealth and education? Economic theories of wealth inequality often appeal to capital market imperfections: poor individuals may be unable to finance otherwise profitable investment projects, and are therefore forced to enter less productive professions.[2] But according to this theory, when new technological opportunities arise, the rich (who are least constrained by credit market imperfections) should be the first beneficiaries. Indeed, this theory should be highly relevant for the British Industrial Revolution, because wealth inequality was quite extreme and financial markets shallow by modern standards. Yet, we know now that the old rich did not do well at all, and were overtaken by a new economic elite that rose from the middle classes. In the following section we outline a theory, based on our own research in progress, where the endogenous evolution of preferences across social classes can help explain the puzzle.

4. Endogenous Preferences in a Class-Based Society

The important new element of the theory proposed by Doepke and Zilibotti (2004) is the endogenous choice of the rate of time preference: altruistic parents can invest to instill patience into their children. This investment responds to economic incentives, which are related to the occupation in which a family (or dynasty) is engaged: some professions pay off more in the future and require more sacrifice in the present.[3] This is typically the case for professions that entail the acquisition of

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2.   See the seminal contributions of Banerjee and Newman (1993) and Galor and Zeira (1993). Matsuyama (2003) applies similar ideas to the rise and fall of class societies.

3.   The concept of patience as a choice variable was first introduced by Becker and Mulligan (1997). Our theory is also closely related to a recent literature that emphasizes the role of preference formation for long-run development, but relies on selection instead of conscious investment as the mechanism; see Galor and Moav (2002) and Clark and Hamilton (2004).

skills over the life cycle, such as artisanry and craftsmanship (the most common activities of the pre-industrial middle class). Other occupations, such as unskilled labor in agriculture, provide flatter returns over the life cycle. Thus, parents who anticipate that their children will be artisans have an incentive to instill patience in their children, since this will increase their future happiness by helping them endure early sacrifices. Consequently, the middle class becomes the patient class. This attribute becomes a major advantage once new opportunities arise with the Industrial Revolution. At that point, the thrifty middle class has a cultural edge that allows it to exploit the new investment-based technology: this is the "spirit" that the development of capitalism requires. The theory can contribute to the explanation of the rise of the bourgeoisie, with a new ethics, and the demise of the aristocracy after the Industrial Revolution.

To illuminate the mechanism behind this new theory, we present a simple example that illustrates some of the properties of the dynamic model in Doepke and Zilibotti (2004b). In the pre-industrial economy, output can be produced with two technologies, the "agricultural" technology and the "artisan" technology. The agricultural technology uses labor, L, and land, X, and is assumed to be Cobb-Douglas: $Y_A = L^\alpha X^{1-\alpha}$. The artisan technology uses only skilled labor H: $Y_M = H$. For simplicity, we assume that the two goods are perfect substitutes: $Y = Y_A + Y_M$.

The economy is populated by two generations of individuals who live for two adult periods (so, the world lasts for a total of four periods).[4] First-generation adults have a child who is born in period one, and who turns adult in period three. People work in both adult periods of their life, and every individual supplies one of the three factors of production in the economy. Thus, a person can either be a landowner, or an agricultural worker, or an artisan. We assume that owning land precludes working in a different profession, since landowners must monitor the agricultural workers. The landowners (who will also be referred to as the "aristocracy") make up a constant fraction a of the population. Workers cannot buy land, so the aristocracy is separated from the other classes.

The rest of the population can choose at the beginning of their adult life whether they want to be agricultural workers or artisans. The key difference between these professions is the lifetime income profile. Since agriculture requires less skill or experience, we assume that the income profile of agricultural workers is flat ($y_{t,AGR} = y_{t+1,AGR}$). Artisans face a steeper income profile: $y_{t,ART} < y_{t+1,ART}$, i.e., they supply more effective units of labor in the second period.

We now turn to the preference structure. While all people in the model have the same basic utility function, their time preference is endogenous. In particular,

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4. In Doepke and Zilibotti (2004b), we assume overlapping generations of two period-lived agents. In the simple illustrative example presented here, we assume, for simplicity, that the two generations never work simultaneously because otherwise the labor force would be twice as large in the overlapping period.

while all members of the first generation have a common discount factor B, each parent can affect, at some cost, the discount factor of her own child, B'. Agents care about consumption, leisure, and the (adult) utility of their child. For simplicity, we assume that utility from consumption is linear, and that agents cannot invest in their own patience. There are no capital markets to smooth consumption, implying that income equals consumption in each period. The parent's preferences are described by the following utility function:

$$V_P = \max_{i, B'}\{y_{1,i}(1 - l) + B y_{2,i} + B^2 V_C(B')\}, \tag{1}$$

where $y_{t,i}$ is the income derived in period t in profession $i \in \{AGR, ART\}$, B is the parent's discount factor, and V_P, V_C denote the utility of parent and child, respectively. The maximization is subject to the "production function" for the child's patience, which is given by:

$$B' = l^{\theta}, \tag{2}$$

where $0 < \theta < 1$, and l is the amount of time that the parent invests in increasing the patience of the child. The child's utility depends on the discount factor B' chosen by the parent, and is given by:

$$V_C(B') = \max_{j}\{y_{3,j} + B' y_{4,j}\}. \tag{3}$$

In the parents' generation, all members of the lower (i.e., nonaristocratic) classes are identical. Consequently, in equilibrium the fraction of first-generation workers who become artisans is determined such that a member of the first generation is just indifferent between being a worker and being an artisan. Despite the fact that the initial generation is indifferent between the two professions, parents optimally choose different discount factors for their children. In the children's generation, those individuals with a high discount factor will strictly prefer to become artisans. Thus, preferences start to diverge across professions due to endogenous investment in patience.

To see this, consider the trade-off that the parent faces when deciding on patience. After plugging equations (2) and (3) into equation (1), we get the following first-order condition for the optimal choice of investment in patience:

$$y_{1,i} = \theta l^{\theta-1} B^2 y_{4,j}, \tag{4}$$

where i is the profession on the parent and j is the profession of the child. Here the left-hand side is the marginal cost of investing in patience, and the right-hand side is the marginal benefit. The optimal $B' = l^{\theta}$ is given by:

$$B' = \left(\frac{\theta B^2 y_{4,j}}{y_{1,i}}\right)^{\frac{\theta}{1-\theta}}.$$

Thus, the choice of patience depends positively on the parent's patience and on the second-period income of the child, since both these factors increase the weight of B' in the parent's utility. The effect of $y_{1,i}$ is negative, in contrast, since a high income of the parent in the first period implies a high cost of providing patience. Notice that the determinant of the investment in patience is not the level of income, but the ratio between first-period income (of the parent) and second period income (of the child).

In equilibrium, there is persistence in the occupational choice: the children of first-generation artisans become artisans, while the children of workers become workers. Unlike the first generation, however, the children strictly prefer their parents' profession to the alternative. The reason is that in artisan "dynasties", the ratio $y_{4,j}/y_{1,i}$ is high due to the steep lifetime income profile of artisans, while the ratio is small for workers (in our example, the ratio is bigger than one for artisan and equal to one for worker dynasties). The artisans therefore choose a higher discount factor B' for their children. Consequently, the artisans' children place more value on a steep income profile than the children of workers, and prefer to be artisans.

What happens to the aristocracy in this process? Even though the aristocrats do not choose their profession, equation (4) still describes their optimal choice of patience. In the model, an aristocrat owns a constant amount of land. Since the number of agricultural workers is constant as well, an aristocrat derives the same income in every period, so that the lifetime income profile is flat. The income ratio $y_{4,j}/y_{1,i}$ is then equal to one, just as for the agricultural workers. Consequently, aristocrats choose the same low B' as the agricultural workers.

Thus, in the equilibrium of our economy, preferences diverge across professions in the second generation despite the fact that initially everyone has the same preferences. The key for this result is a complementarity between the choice of profession and investment in patience. In the equilibrium, artisans face a higher incentive to invest, because their income profile is steep. Landowners and workers face a flat income profile, and consequently choose to be less patient.

In Doepke and Zilibotti (2004), we incorporate this mechanism into a more general and fully dynamic framework. The model gives rise to a steady-state distribution of discount factors across professions, where, just as in our example, artisans and craftsmen are relatively patient, while landowners and workers are relatively impatient. In the stationary "medieval" economy, these class differences matter only to the extent that they determine the professional choice of individuals. Patience becomes of central importance, however, when technological change gives rise to new investment opportunities (the "Industrial Revolution"). Since investment requires the sacrifice of current income for future gain, the artisan middle class turns out to have the highest incentive to invest in the new technology, despite being less wealthy than the aristocratic landowners. The result is the

emergence of a new group of "industrialists" who rise from the class of the artisans, and the relative economic decline of the aristocracy.

5. Conclusions

In the previous section, we outlined a theory that relies on endogenous investments in patience to explain the economic decline of the aristocracy after the start of the Industrial Revolution. We think of this theory as providing a link between models of the long transition that emphasize technological change, and the literature that focuses on the role of political reforms and institutions for economic development. Technological change is important in our model, because the latent class differences in terms of patience become paramount only after the arrival of a new investment-based technology. Following this technological impulse, the model provides an account of the relative economic fortune of different classes, which in itself was a driving force behind many of the political and institutional changes that followed the Industrial Revolution.

Our approach of endogenizing preferences may seem unusual from the perspective of modern economic theory. At the same time, historical observers (including classical economists such as Smith and Ricardo) found it quite natural to think of members of different classes as essentially distinct beings whose behavior was governed by class-specific rules. The idea that there was something "special" about the aristocracy that ultimately led to its downfall is therefore neither new nor unusual. Our contribution is to show that the concept of class distinctness can in fact be easily formalized in an economic context. In our theory, the "capitalist spirit" does not randomly attach itself to a specific class, but is driven by economic conditions before the Industrial Revolution. Standard economic analysis can therefore be used to analyze a phenomenon that at first sight may appear noneconomic in nature.

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