

# The Transition from Stagnation to Growth

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The major part of my research is concerned with what may be called the “transition perspective” on economic development. This literature starts from the observation that economic growth is a historically recent phenomenon. Until about 200 years ago, living standards were essentially stagnant in every country in the world. Starting with the industrial revolution in Britain, an increasing number of countries have undergone a transformation from a pre-industrial, stagnant, mostly agricultural economy to a modern society where sustained economic growth is the norm.

The transition from stagnation to growth is not simply a matter of increased technical progress or faster capital accumulation, but a sweeping transformation of a diverse set of aspects of the economy and of society. For example, all countries that have successfully developed have also experienced a demographic transition of rapidly falling mortality and fertility rates, a structural transformation from agriculture to industry and services, as well as political changes such as the abolishment of child labor, the introduction of public education, and the expansion of women’s rights.

It is precisely because economically successful countries are so similar to each other in all these dimensions that we think that studying the transition from stagnation to growth is relevant for economic development today. By improving our understanding of this transition, we hope to learn which of the changes that accompany the economic takeoff are essential ingredients in the growth process rather than luxury goods that merely happen to be acquired as economies grow rich. In what follows, I will review my research with a number of coauthors on demographic change, political reforms, and cultural change during the transition and discuss what the findings imply for economic development.

## The Demographic Transition

The standard explanation for economic stagnation in the pre-industrial era is the Malthusian income-population feedback. Before industrialization, living standards and population growth were positively related: when food and other resources were plentiful, people had more children, and more children survived to adulthood. This relationship led to a Malthusian trap where productivity improvements increased population density, which, in turn, depressed living standards due to the scarcity of land.

Given the central role of population growth in Malthus’ theory, it is no surprise that the first models of the transition from stagnation to growth (such as Galor and Weil 2000 and Hansen and Prescott 2002) focused on the demographic dimension of the transition. In my work on the issue, I concentrate on the question why the speed and timing of fertility decline varies so substantially across countries. For example, after World War II a number of Asian countries such as South

Korea needed only thirty years to undergo a demographic shift that in Britain took more than 100 year to complete.

In “Accounting for Fertility Decline during the Transition to Growth” I develop a theory in which (following Hansen and Prescott 2002) the economic takeoff is modeled as an endogenous switch from a land-intensive agricultural technology to a modern industrial technology. Fertility decisions are endogenous, and are subject to a quantity-quality tradeoff. The model generates a transition from Malthusian stagnation to growth accompanied by a demographic transition from high to low fertility.

The theory points to government policies that affect the opportunity cost of education as a key determinant of demographic change during development. In particular, the speed and timing of fertility decline is highly reactive to education subsidies and child labor restrictions. Comparing across policies, child labor regulations turns out to have larger effects than education policies. This is due to the fact that before industrialization, working children used to provide a substantial fraction of the overall income of the typical family. As a consequence, forgone child-labor income turns out to be the main component of the overall opportunity cost of education.

In addition to influencing fertility decisions, child labor and education policies also have a major impact on the evolution of inequality. The inequality effects are large because of the impact of government policies on the fertility differential between the rich and the poor. If poor unskilled parents have many children who themselves receive little education, the fraction of unskilled workers in the economy will tend to increase, which puts further downward pressure on the wages of the unskilled. The relationship of inequality, differential fertility, and economic growth is analyzed in more detail in “Inequality and Growth: Why Differential Fertility Matters” (with David de la Croix). The paper shows that it is not overall population growth, but the distribution of fertility within the population which matters most for growth. In other words, who is having the children is more important than how many children there are overall.

## **Political Reform: Child Labor and Public Education**

The finding that social policies can have a large impact on economic outcomes in a country undergoing the transition from stagnation to growth leads to the question of what determines if and when these policies are adopted. Consider the case of child labor laws. The first countries to successfully develop all introduced a set of policies that outlawed most child labor in the late nineteenth century (in addition to direct child labor restrictions, compulsory schooling laws also played a major role). In contrast, unregulated child labor continues to be widespread in many developing countries.

What determines whether a country adopts child labor laws, and why are differences in child labor regulation so persistent? One possibility, of course, is that ruling out child labor is socially optimal at some stage of development. However, in “Origins and Consequences of Child Labor Restrictions: A Macroeconomic Perspective,” Dirk Krueger and I argue that this is unlikely to be

the case; while child labor may lead to specific inefficiencies, a child labor ban is generally not the best policy to address these inefficiencies. The alternative is a political-economy explanation for the existence of child labor laws, which is the angle that Fabrizio Zilibotti and I pursue in “The Macroeconomics of Child Labor Regulation.”

In our model, the motive that leads to support for child labor restrictions is the drive to limit competition: unskilled workers compete with children in the labor market, and therefore stand to gain from higher wages if child labor is restricted. In this sense, we regard child labor laws as similar to other forms of labor regulation aimed at, say, union outsiders. There is, however, one essential difference: in the case of child labor, the potential competition comes at least partly from inside the unskilled workers’ families. For this reason, workers’ attitudes regarding child labor laws depend not only on the degree to which they compete with children in the labor market, but also on the extent to which their own income relies on child labor.

We examine workers’ political preferences over child labor laws in a framework with endogenous fertility and education decisions. The potential loss of child-labor income is especially severe for workers who have many children. We show that the irreversible nature of fertility decisions can lead to multiple politico-economic steady states. Countries can get locked into an outcome where the average family size is large, households rely on child labor, and public support for child labor regulation is low. Alternatively, there is a regime with small family sizes, high levels of education, and widespread support for regulation. In each case, the existing political regime induces fertility decisions that lock parents into supporting the status quo.

The existence of multiple steady states can explain why in some developing countries a large proportion of children work and political support for the introduction of child labor laws is weak, while other countries at similar stages of development have strict regulations and a low incidence of child labor. Child labor laws are introduced only if an increase in the demand for human capital induces young families to reduce fertility and educate their children. This prediction is consistent with the history of child labor regulation in Britain, where the introduction of regulations in the nineteenth century followed a period of rising wage inequality, and coincided with rapidly declining fertility rates and an expansion of education.

## **Political Reform: Female Empowerment**

In addition to changes in specific laws and regulations, a major political transformation in the course of development is the expansion of economic and political rights. Arguably, the people who experienced the most dramatic improvement in their legal position were married women. In the U.S. and Britain, until the mid-nineteenth century married women had essentially no economic or political rights at all: their entire legal existence was subsumed in marriage, and husbands got to make all the decisions. A married woman could not own property, she could not make a will, she usually could not obtain a divorce, in the case of separation she could not get custody of her children, and she had no right to vote.

The legal position of married women started to improve in the second half of the nineteenth century. The reforms started well before women obtained the right to vote, and well before married women's labor force participation started to rise substantially. In ongoing research with Michèle Tertilt ("Women's Liberation: What's in It for Men?"), we examine the reasons behind this transformation from an economic perspective. We focus on the observation that expanding female rights amounted to a voluntary ceding of power on the part of men, who at the time were in firm political control. What, then, are the economic interests of men for sharing power with women?

In our analysis, we interpret women's rights as a determinant of bargaining power within marriage. The idea put forth in the paper is that from a man's perspective, there is a tradeoff between the power of one's own wife and other men's wives. Men ideally want their wives to have no rights. At the same time, men care about their daughters, and may prefer them to have some power vis-à-vis the future sons-in-law. Moreover, men would like their children (both sons and daughters) to find high-quality spouses. In our theory, an expansion of women's rights leads to increased investment in children (including future sons- and daughters-in-law), which provides an additional motive for men to support women's rights.

We show that the strength of men's incentives for supporting women's rights depend on the return to education. If parents do not invest into their children's education, men have little incentive for extending rights. The situation changes when an increase in the demand for human capital induces families to reduce fertility and educate their children. If the return to education is sufficiently high, men stand to benefit from giving equal rights to women, and they will vote for the reforms. These predictions are consistent with the observation that the initial phase of expanding women's rights in the U.S. and Britain coincided with the main phase of fertility decline and a rapid increase in schooling levels.

Our findings provide a contrast to a recent literature on franchise extension initiated by Acemoglu and Robinson (2000). In their theory, the expansion of political rights is driven by the threat of violence: the elite extend the franchise in order to avert the threat of a revolution. In the case of women's rights, fear of revolution appears as an unlikely motive for the reforms. Instead, we suggest that changes in the economic environment led to a situation where both men and women stood to gain from an equalized distribution of rights. (Lizzeri and Persico 2004 and Galor and Moav 2006 apply similar arguments to franchise extension and public education funding.)

## **Political Reform: Property-Rights Institutions**

In many developing countries, the institutional framework governing economic life has its roots in the colonial period, when the interests of European settlers clashed with those of the native population or imported slaves. A recent historical and empirical literature documents a reversal of fortune among these former European colonies, i.e., countries that were initially economically

successful were overtaken by others (such as the U.S. and Canada) that started out relatively poor (See Sokoloff and Engerman 2000 and Acemoglu, Johnson, and Robinson 2001, 2002).

A number of authors argue that this pattern is due to institutions; in particular, institutions that were set up in the initially successful colonies turned out to be a hindrance for development later on. In ongoing research with Andrea Eisfeldt (“Colonies”), we examine this hypothesis in a theoretical framework based on endogenous property rights. In our theory, property rights are represented as a state variable given by the number of people with power in a country, i.e., “gun owners.” Gun owners can protect their own property, they can trade with other gun owners in a standard market economy, and, crucially, they can exploit and expropriate others who do not own guns.

We develop a simple theory of colonization where the colonizing power optimally determines the number of gun-owning settlers to be sent to each colony. Here a colony is characterized by its technology and factor endowments, including the number of (unarmed) locals already present. After the initial colonization stage, political control passes to the gun owners in each colony. The key decision collectively taken by the gun owners is emancipation: they can decide to issue guns to some or all of the oppressed locals and slaves, and thereby issue them with property rights. The incentives for doing so stem from the fact that free labor is complementary to physical capital, which, in turn, is owned by the existing gun owners.

Optimal colonization leads to an initial outcome where income per capita is highest in the colonies with the highest ratio of the unarmed to gun-owning settlers. Subsequently, capital accumulation leads to a rise of the industrial sector, with an associated increase in the demand for free labor. In the long run, full emancipation takes place in all colonies. Emancipation proceeds faster, however, in colonies that start out with relatively few oppressed. Intuitively, people whose property rights are protected accumulate more capital, which in turn makes it attractive to issue even more property rights in the future in order to raise the return on this capital. The result is a reversal of fortune: Through faster emancipation, the initially poor colonies overtake the richer colonies in terms of income per capita.

## **Cultural Change**

One of the puzzles posed by the British industrial revolution is the observation that the land-owning upper class was not able to maintain its relative economic position in society, and was instead overtaken by entrepreneurs and capitalists who, for the most part, rose from the middle classes. Many observers of the time linked this outcome to differences in values, attitudes, and ultimately preferences across social classes. Building on this hypothesis, in “Occupational Choice and the Spirit of Capitalism” Fabrizio Zilibotti and I develop a theory of preference formation that is rooted in the rational choice paradigm, and ask whether such a theory can help explain the success and failure of different social classes in the industrialization period.

In our theory, altruistic parents strive to shape their children's preferences in a way that best fits with their future material circumstances. We focus on two key aspects of preferences: the rate of time preference (patience) and the taste for leisure (or, conversely, work ethic). Parental investments in patience interact with the occupational choice of the child. Lifetime earnings are relatively flat in some occupations, while high returns are achieved only late in life in others, in particular those requiring the acquisition of skills. A parent's incentive for investing in a child's patience increases in the steepness of the child's future income profile. Parental investments in their children's taste for leisure hinge on the role of labor effort. Parents who expect their children to be wholly reliant on labor income will tend to instill them with a strong work ethic, i.e., a tolerance for hard work and a reduced taste for leisure. In contrast, parents who anticipate their children to be rentiers with ample free time will teach them to appreciate refined leisure activities, from performing classical music to hunting foxes.

The theory can account for the reversal in the economic fortunes of different social classes at the time of the industrial revolution. For centuries, members of the pre-industrial middle class—artisans, craftsmen, and merchants—had to sacrifice consumption and leisure in their youths to acquire skills. Artisans, for instance, could become prosperous masters of their professions only after undergoing lengthy stages of apprenticeship and journeymanhood. We argue that in response to this economic environment, the middle classes developed a system of values and preferences centered on parsimony, work ethic, and delay of gratification. For the landed upper class, in contrast, neither work ethics nor patience were particularly valuable, because the members of this class could rely on fairly stable rental incomes from their estates. As a result, the landowning elite cultivated refined tastes for leisure and grew less future-oriented.

In the pre-industrial era, these differences in preferences and values had limited consequences. However, patience and work ethics became a key asset—a “spirit of capitalism”—when opportunities of economic advancement through entrepreneurship and investment arose at the outset of the industrial revolution. In an already stratified society, it was members of the patient, hard-working middle class who made the most of the new opportunities and ultimately gained economic ascendancy over the landed elite.

## **Outlook**

One of the byproducts of the literature on the transition to growth is a new and, I think, highly productive exchange of ideas between growth theorists and economic historians. Starting from a situation where most variables of interest were contained in the Penn World Tables, theorists have considerably expanded their view of what matters for economic development, and are now doing research on many aspects of political and social change that were not traditionally in the realm of growth theory.

Ultimately, we hope that by studying the transition from stagnation to growth in the countries that successfully completed the transition, we will be able to learn more about why some

countries fail to develop successfully even today. From this perspective, a recurring theme in the research described above is the role of human capital as a catalyst for economic and social change. Most importantly, we believe that increased demand for human capital changed the nature of the family, with investment in children steadily gaining in importance. In addition to affecting family decisions such as fertility, this process also shifted political preferences for policies such as child labor regulation, public education, and women's rights. Similarly, we interpret the divergent success of the upper and the middle class in the course of the industrial revolution as a consequence of human capital investment, although here the investment is in preferences or values of varying economic usefulness rather than in productive knowledge itself. Taken together, these findings suggest that the direct productivity effect may be only a small part of the overall contribution of human capital to a successful transition from stagnation to growth.

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