

Evolution and the growth process: Natural selection of entrepreneurial traits[☆]

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Abstract

This research suggests that a Darwinian evolution of entrepreneurial spirit played a significant role in the process of economic development and the dynamics of inequality within and across societies. The study argues that entrepreneurial spirit evolved non-monotonically in the course of human history. In early stages of development, risk-tolerant, growth promoting traits generated an evolutionary advantage and their increased representation accelerated the pace of technological progress and the process of economic development. In mature stages of development, however, risk-averse traits gained an evolutionary advantage, diminishing the growth potential of advanced economies and contributing to convergence in economic growth across countries.

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1. Introduction

This research advances the hypothesis that a Darwinian evolution of entrepreneurial spirit played a significant role in the process of economic development and the time path of inequality within and across societies. The theory suggests that the prevalence of entrepreneurial traits evolved non-monotonically in the course of human history. In the early stages of development risk-tolerant, growth promoting traits generated an evolutionary advantage and their increased representation accelerated the pace of technological advancements, contributing significantly to the process of development and the transition from stagnation to growth. As economies matured, however, this evolutionary pattern was reversed. Risk-averse traits gained an evolutionary advantage, diminishing the growth potential of advanced economies and contributing to convergence in economic growth across countries. Historical variations in geographical, institutional and cultural factors which affected the pace of this evolutionary process and thus the prevalence of growth-promoting entrepreneurial traits across economies, contributed to contemporary differences in productivity and income per-capita across countries.

Unlike the commonly emphasized forces for economic convergence (i.e., higher returns to human capital, physical capital, and technological adoption, for laggard countries), the research proposes that a higher prevalence of growth-promoting entrepreneurial traits in developing economies contributed to economic convergence. Moreover, the predictions of the proposed theory provide further understanding of the path of income inequality within a society over time. The study suggests that as economies mature, inequality subsides due to higher representation of entrepreneurial traits among lower income individuals. This prediction is consistent with the class origin of entrepreneurs during the industrial revolution. The failure of the landed aristocracy to lead the innovative process of industrialization could be attributed to the low representation of growth promoting entrepreneurial traits within the landed gentry, and their prevalence among the middle and the lower classes.

The study develops an evolutionary growth theory that underlines the importance of the evolution of entrepreneurial spirit in the transition from stagnation to growth. It constructs an overlapping-generations economy that due to the forces of natural selection evolves endogenously from a Malthusian epoch into a state of sustained economic growth. The growth process is fueled by technological progress that is affected positively by the level of income per worker as well as by the prevalence of entrepreneurial traits in the economy.¹

The theory rests upon two fundamental building blocks. First, technological change is affected positively by the frequency of risk-tolerant traits in the population. The intensity of entrepreneurial spirit affects the contemporaneous production choices and advances the technological frontier available to subsequent generations.² The second central building block is the heritability of such traits across generations. Consistent with the supposition that entrepreneurial spirit is heritable, evidence described in Section 1.2, suggests that the trait of “novelty seeking” has been subjected to a selection process in the recent past. More generally, evidence suggests

¹ The theory is perfectly applicable to either social or genetic intergenerational transmission of entrepreneurial traits. Allowing preferences to be transmitted both via vertical and horizontal transmission processes might affect the speed of selection of entrepreneurial spirit in the process of development (Bisin and Verdier [4], Cavalli-Sforza and Feldman [8], and Boyd and Richerson [7]).

² The positive association between the frequency of the entrepreneurial individuals in the population and the rate of technological growth is well documented in the literature, and is at the foundation of the Schumpeterian viewpoint (e.g., Schumpeter [38], Aghion and Howitt [2]), where the role of entrepreneurs is instrumental in the process of innovations.

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