

A Life-Cycle Model of Entrepreneurial Choice: Understanding Entry into and Exit from Self-Employment

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Abstract

The goal of this paper is to give a unified framework to answer such questions as why some people start businesses and others do not, what determines how well they will do and what policymakers can do to encourage them. Specifically, I present and estimate a life-cycle model that can replicate empirical patterns of work transitions, income profiles and wealth accumulation. I then use the estimated model to conduct various policy experiments intended to encourage the formation and the continuation of self-employed businesses. To avoid any ambiguities, it is useful to clarify at this point that the empirical counterpart in the data of someone starting a business is becoming self-employed. Hence the words *entrepreneurship* and *self-employment* are used interchangeably throughout. I choose this representation because I focus on the majority of new businesses in the U.S. economy: according to the Panel Study of Entrepreneurial Dynamics (PSED), about 75 percent of business startups are self-employed ones

Self-employment is not an unusual mode of employment. Evidence from the 1979 cohort of the National Longitudinal Survey of Youth (NLSY79) shows that self-employment experience among young white males (aged 20-39 in years 1979-2000) is not rare: about 28 percent of them have at least one year experience of self-employment in the data periods. However, the fraction of self-employment in the labor force at each age is around 7 percent. These two contrasting numbers reflect the fluid nature of self-employment, and hence the importance of understanding not only *entry* into but *exit* from self-employment. Any evaluation of a government policy designed with the intent to boost entries into self-employment should also include the consideration of exit from self-employment. Such policies may also increase the number of individuals who may soon exit from self-employment. The present paper gives an empirical framework to consider this issue.

Regarding the relationship between performance during self-employment and its continuation, there are two important empirical facts found to notice: (i) conditional on surviving, the longer a self-employer stays in self-employment, his income and net worth, on average, become higher, and (ii) the more he is educated, the higher income and net worth he obtains during the period of self-employment. These two evidences seem to show that human capital accumulation during self-employment (consisting of schooling and experience) enhances productivity. In addition, the inclusion of human capital in the model makes it possible to better measure the opportunity costs associated with the occupational decision over the life-cycle. Another interesting finding from the data is that while education increases one's income (both as a self-employer and as a paid

employee) it does not seem to affect how many years one stays in self-employment. This could be because college-educated individuals are not very different from non college educated individuals in terms of entrepreneurial talent or skills, or perhaps just because the college-educated have better opportunities in paid-employment than the non college-educated and thus they leave self-employment early independent of having higher entrepreneurial talent or skills.

This paper proposes and estimates a model that can account for observed patterns of work transitions, income profiles and wealth accumulation. Given the richness of the structural model, there will be no closed-form solution for the optimal choice. To empirically implement the model, it is first solved numerically. The life cycle model is then estimated by the simulated maximum likelihood method. The data I use for the study is the NLSY79.

The proposed life-cycle model is estimated to give a good fit to the main observables: the hazard rates during the first self-employment spell, cross-sectional distributions of net worth, income, and employment transitions over the life-cycle. Using the estimates of the life-cycle model, I perform several counterfactual/policy experiments. Since my approach explicitly solves an optimization problem and thus makes predictions on how individuals behave, I can quantify the effects of alternative parameter values on entrepreneurial decisions and performance. The first policy experiment is to see the effect of loan guarantees on the hazard rates of self-employment spells. With this government-supported loan, a larger scale of business becomes possible. The second experiment is a subsidy scheme: monetary incentives are given if an individual with net worth lower than some predetermined level chooses to be a self-employer. In these experiments, I quantify how much new entries are encouraged and how much performance during self-employment (in terms of income and duration) is affected.