Entrant demographics, option value of delay, and business cycles

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(Dissertation)

U.S. establishments that start operating during recessions employ fewer workers at entry and over time, although these establishments are on average more productive and have higher survival rates. My first essay studies what accounts for these observed dynamics of entrants. I offer a conceptually simple modification of standard firm-dynamics models. Specifically, I allow potential entrants to postpone entry after observing the aggregate state. The ability to delay entry, coupled with aggregate volatility, creates option value of delay, which generates a countercyclical opportunity cost of entry. Consequently, during low aggregate demand, many low-productivity entrants find entry unprofitable, while some high-productivity entrants wait for better conditions. The first effect, explains the observed countercyclical productivity and survival rate, while the second effect decreases the cohort-level employment persistently. The model generates business-cycle dynamics of the economic aggregates that is consistent with the data.

The number of entrants dropped significantly and persistently in the Great Recession. The process was accompanied by a sharp and persistent decline in aggregate employment. The second essay studies the causal relationship between the change in entry margin and the dynamics of the aggregate variables. I show that a one-time negative aggregate demand shock that changes entry margin has a long-lasting, negative effect on the aggregate employment due to the persistent decline in the impacted cohort's employment. If entry rate drops persistently, the cohort effect accumulates and has a substantial effect on the depth and the long-run recovery of economic aggregates. The model fully accounts for the slow recovery of employment observed after the Great Recession. A counterfactual exercise shows that if the number and the composition of entrants had stayed at the pre-crisis level, the drop in aggregate employment would have been 45 percent lower and the economy would have recovered 3 times faster.

In the third essay, I show that accounting for the option to delay entry has important policy implications. The ability to delay entry implies qualitatively and quantitatively different responses of potential entrants to a change in the expected value of entry, depending on the timing, duration, and the magnitude of the change. For example, during recessions, a policy that permanently decreases the entry cost has a minor effect on entrants' decisions to postpone entry, whereas a temporary decline of the entry cost significantly increases the number of entrants. Also, the ability to delay entry implies that potential entrants respond not only to contemporaneous changes but also anticipated changes in the expected value of entry. As a result, the model produces an aggregate co-movement in response to news about future policy changes.

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