
Why Risky Sectors Grow Fast

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Abstract

Because they are populated with large firms. We construct a model of idea flows in which growth and volatility both depend on the prevalence of large firms in a sector. There is a finite number of firms that choose whether to imitate or to experiment. Experimenting means producing using a random technology, given by a discrete Markov deviation from its earlier value. In the limit, experimenting firms define an expanding technology frontier. Imitating means drawing technology from the pool of existing producers. In equilibrium, only large enough firms experiment, and growth increases in their share. Since experimenting has stochastic consequences, so does volatility. The model's key predictions are born out in US firm-level data: growth and volatility both increase in the share of large firms. The dispersion in tails can explain about 40% of the positive link between growth and volatility at the 4-digit level. As the data are aggregated, growth and volatility cease to correlate significantly: We argue this is consistent with our model, as structural change reallocates factors across sectors from high to low technology growth. In the aggregate, the link between large, experimenting firms, growth, and volatility is broken.

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