Industrial development is one of the most powerful poverty-alleviating forces. We study the role of cost uncertainty and learning in new industries in developing economies. With unique historical data from the cut-flower industry in Ethiopia, we document rapid entry and growth in the industry in the early 2000s. We find concurrent cost uncertainty among potential entrants and inter- and intra-firm variation in growth, consistent with learning. We go on to build a multi-agent, dynamic model that brings the production function uncertainty insights of Hausmann and Rodrik (2003) to the framework of Jovanovic (1982). Model simulations predict that the least productive firms shrink and exit each period, that firm production levels become more dispersed over time, and that firm-level growth is most volatile early in the industrial development process. We find corroborative evidence in transaction-level trade data. We conclude with an exercise that uses our model to show the potential for short-term industrial stimulus to generate long-term economic growth in the industry.