Uncertainty, Imperfect Information, and Expectation Formation over the Firm’s Life Cycle

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Research Questions

How do uncertainty and imperfect information drive firm dynamics and aggregate productivity?

We use direct measures of firm sales expectations to
• Provide evidence on learning and imperfect information
• Quantify the impact of imperfect information on aggregate productivity

Data Description

Main data source: Basic Survey of Overseas Business Activities
E.g., Honda of America Mfg., Inc., Honda Alabama LLC, Honda Automobile (China) Co., Ltd.

Additional: Basic Survey of Japanese Business Structure and Activities
E.g., Honda’s headquarters in Tokyo

Each firm (firm = subsidiary) reports expected sales next year \(E_t(R_{it+1})\)
Sales forecasts are meaningful:
1. Only 3% of firms predict that \(E_t(R_{it+1}) = R_t\)
2. \(E_t(R_{it+1})\) has stronger predictive power for \(R_{it+1}\) than \(R_t\)

We define forecast errors (FEs) as
\[ FEs_{it,t+1} = \log \left( \frac{R_{it+1}}{E_t(R_{it+1})} \right) \]

Empirical Facts

Fact 1: Sales forecasts are more precise when firms are more experienced.

Fact 2: Forecast errors are less correlated as firms are more experienced.

Conclusions and Contributions

We provide two stylized facts that firms become “better” at predicting sales over their life cycle
We retrieve data on firms’ forecasts and achieve direct mapping from such data to key model parameters
Information friction and learning affect aggregate productivity through extensive margins and via dynamic selection

We connect to several literatures:
1. A concrete case where a “better technology” (multinational production) may not be adopted due to information friction, echoing the theoretical analysis by Jovanovic and Nyarko (1996). Quantify such a mechanism.
2. Use firm expectations data to answer macroeconomic questions (Blom et al. 2017, Coblin and Groshchenskiy 2012). Imperfect information and misallocation (David et al., 2016), with an emphasis on the extensive margin. (see extensive margins in other contexts, such as Mudigirn and Xu 2014, Buer and others 2012)

References


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