

# “Growth Expectations and the Dynamics of Firm Entry”

Discussion

Matteo Cacciatore

HEC Montreal, Bank of Canada, and NBER

13 Annual BIS CCA Research Conference

“Growth, Productivity and Macro Modelling in the Americas”

October 27, 2023

# Questions

- Rich paper on firm entry dynamics
- How (much) does entry depend on past entry/exit developments?
- How do expected macroeconomic conditions affect lead-lag relationships?
- Which structural factors (e.g., entry regulation) matter?
- Theory and empirics
  - Rich data for 7 euro area countries (2009 - 2019), 2-digit sector level

# Main Findings

- Expectations about GDP growth shape entry dynamics
  1. Entry increases with past exit if strong expected growth (not if strong current growth),
  2. Entry increases with past entry, but less so when strong expected GDP growth
- Expected growth for private and public investment most important drivers
  - Fiscal policy important: fosters business dynamism through the expectations of public investment

# Main Findings

- Expectations about GDP growth shape entry dynamics
  1. Entry increases with past exit if strong expected growth (not if strong current growth),
  2. Entry increases with past entry, but less so when strong expected GDP growth
- Expected growth for private and public investment most important drivers
  - Fiscal policy important: fosters business dynamism through the expectations of public investment

# Comments

# Comments: Overview

## 1. Theory

- Model vs. previous theoretical work
- Reduced-form entry costs specification

## 2. Empirical analysis

- Causality vs dynamic correlations
- Measuring expectations

## 3. Policy Implications

# Comment I: Relationship with Previous Work

- Elegant partial-equilibrium model, analytical results
- Some key insights present in existing GE models (e.g., Bilbiie, Ghironi, and Melitz, 2012)

1. Number of producers ( $N_t$ ) is a state variable:

$$N_{t+1} = (1 - \delta_t) N_t + N_{E,t}$$

$N_{E,t}$  new entrants;  $\delta_t$  exit rate (endogenous or exogenous)

2. Free entry condition:

$$f_{E,t} = E_t \sum_{s=t+1}^{\infty} \beta_{t,s} \pi_s(\omega)$$

$f_{E,t} \equiv$  sunk entry cost (units of effective labor);  $\pi_t(\omega) \equiv$  profits

- With standard preference and technology, the model generates procyclical net entry and profits
  - State-dependence relatively unexplored

# Comment I: Relationship with Previous Work

- Elegant partial-equilibrium model, analytical results
- Some key insights present in existing GE models (e.g., Bilbiie, Ghironi, and Melitz, 2012)

1. Number of producers ( $N_t$ ) is a state variable:

$$N_{t+1} = (1 - \delta_t) N_t + N_{E,t}$$

$N_{E,t}$  new entrants;  $\delta_t$  exit rate (endogenous or exogenous)

2. Free entry condition:

$$f_{E,t} = E_t \sum_{s=t+1}^{\infty} \beta_{t,s} \pi_s(\omega)$$

$f_{E,t} \equiv$  sunk entry cost (units of effective labor);  $\pi_t(\omega) \equiv$  profits

- With standard preference and technology, the model generates procyclical net entry and profits
  - State-dependence relatively unexplored

# Comment I: Relationship with Previous Work

- Elegant partial-equilibrium model, analytical results
- Some key insights present in existing GE models (e.g., Bilbiie, Ghironi, and Melitz, 2012)

1. Number of producers ( $N_t$ ) is a state variable:

$$N_{t+1} = (1 - \delta_t) N_t + N_{E,t}$$

$N_{E,t}$  new entrants;  $\delta_t$  exit rate (endogenous or exogenous)

2. Free entry condition:

$$f_{E,t} = E_t \sum_{s=t+1}^{\infty} \beta_{t,s} \pi_s(\omega)$$

$f_{E,t} \equiv$  sunk entry cost (units of effective labor);  $\pi_t(\omega) \equiv$  profits

- With standard preference and technology, the model generates procyclical net entry and profits
  - State-dependence relatively unexplored

# Comment I: Relationship with Previous Work

- Elegant partial-equilibrium model, analytical results
- Some key insights present in existing GE models (e.g., Bilbiie, Ghironi, and Melitz, 2012)

1. Number of producers ( $N_t$ ) is a state variable:

$$N_{t+1} = (1 - \delta_t) N_t + N_{E,t}$$

$N_{E,t}$  new entrants;  $\delta_t$  exit rate (endogenous or exogenous)

2. Free entry condition:

$$f_{E,t} = E_t \sum_{s=t+1}^{\infty} \beta_{t,s} \pi_s(\omega)$$

$f_{E,t} \equiv$  sunk entry cost (units of effective labor);  $\pi_t(\omega) \equiv$  profits

- With standard preference and technology, the model generates procyclical net entry and profits

– State-dependence relatively unexplored

# Comment I: Relationship with Previous Work

- Elegant partial-equilibrium model, analytical results
- Some key insights present in existing GE models (e.g., Bilbiie, Ghironi, and Melitz, 2012)

1. Number of producers ( $N_t$ ) is a state variable:

$$N_{t+1} = (1 - \delta_t) N_t + N_{E,t}$$

$N_{E,t}$  new entrants;  $\delta_t$  exit rate (endogenous or exogenous)

2. Free entry condition:

$$f_{E,t} = E_t \sum_{s=t+1}^{\infty} \beta_{t,s} \pi_s(\omega)$$

$f_{E,t} \equiv$  sunk entry cost (units of effective labor);  $\pi_t(\omega) \equiv$  profits

- With standard preference and technology, the model generates procyclical net entry and profits
  - State-dependence relatively unexplored

## Comment II: Fixed Costs Assumptions

- Partial-equilibrium model
- Reduced-form specification for entry costs:

$$f_{E,t}^i = (\lambda_0 + g_{t+1} - N_t^i) y_t$$

where  $y_t \equiv$  output and  $g_{t+1} = y_{t+1}/y_t$

- Which narrative behind these assumptions?
  - $\text{corr}(f_{E,t}^i, y_t) \geq 0$ : technology progress vs resource scarcity (what drives  $y_t$  matters)
  - $\text{corr}(f_{E,t}^i, N_t^i) \geq 0$ : heterogeneity across industries (e.g., software industry vs pharmaceuticals)
- Empirical support/discipline?

## Comment III: Markups

- Back to the main question: How can past entry/exit affect future entry in a given industry?
- Model focuses on entry cost  $f_{E,t}$  (for given expected profits)
  - Higher past entry  $\implies$  lower  $f_{E,t}$
  - Higher past exit  $\implies$  higher  $f_{E,t}$
- If competition channel important, potentially different implications
  - Lower expected markups when  $N_t$  is higher: lower PDV for prospective entrants
  - Higher expected markups when  $N_t$  is lower
- Useful to discuss market structure/markup implications for expected profits

# Comments IV: Causality vs Dynamic Correlations

- Sectoral entry (gross or net) projected on past sectoral gross entry and exit
    - Fixed effects: country-year, sector-year, and country-sector
  - Not yet causal effects
1. Country-sector-year shocks
    - Country-sector-year controls?
  2. Within-industry analysis: sectoral spillovers
    - Example I: upstream exit may lead to higher input costs and lower entry downstream
    - Example II: Downstream entry can increase upstream entry

## Comment V: Measuring Growth Forecasts

- 1- to 2-year ahead GDP growth forecast to measure expected macro outlook
- Sectoral expected growth not necessarily correlated with expected macro outlook
- What is the impact of sector-specific expectations?
- Finance literature: market-to-book ratio

## Comment V: Market-to-Book Ratio

- Benchmark firm-level measure of expected returns from finance literature:

$$MB_{ijt} \equiv \frac{E_{ijt}}{V_{ijt}}$$

- $E_{ijt} \equiv$  equity market value for firm  $i$  (outstanding shares  $\times$  price)
  - $V_{ijt} \equiv$  accounting value (from company's balance sheet)
  - $MB_{ijt} > 1$ : positive expected returns
  - $MB_{it} \equiv mdn(MB_{ijt})$
- In U.S. data,  $MB_{it}$  has forecasting power for industry employment growth (Barattieri and Cacciatore, 2023)

## Comment VI: Policy Implications

- Paper motivated by an important policy question: should governments dampen firm exit during recessions?
- Not yet a final answer
  - Paper addresses a related but different question: does exit trigger future entry? Which structural factors matter the most?
- Great starting point, policymakers eager to learn more
- GE model disciplined by empirical estimates?
- Are productivity effects of exit/entry state dependent? Are they sector specific?

# Comment VII: Connecting Theory and Evidence

- Connection between theory and empirics could be strengthened
- Much richer set of empirical results about entry persistence
  - Manufacturing vs service industries
  - Cross-country heterogeneity and role of financial conditions (euro area core vs. periphery)
  - Sector specific entry regulation
- Would be nice to have further theoretical guidance

# Conclusions

- Very rich and interesting paper on firm entry dynamics
- Important empirical results about the role of macro expectations
- Great starting point to address key policy questions