

# Small and Vulnerable: SME Productivity in the Great Productivity Slowdown

Paper by Sophia Chen and Do Lee

Discussion by Ryan Decker

*Federal Reserve Board*

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The analysis and conclusions set forth here are those of the author and do not indicate concurrence by members of the Federal Reserve staff or the Board of Governors.

# Nice paper with big advantages

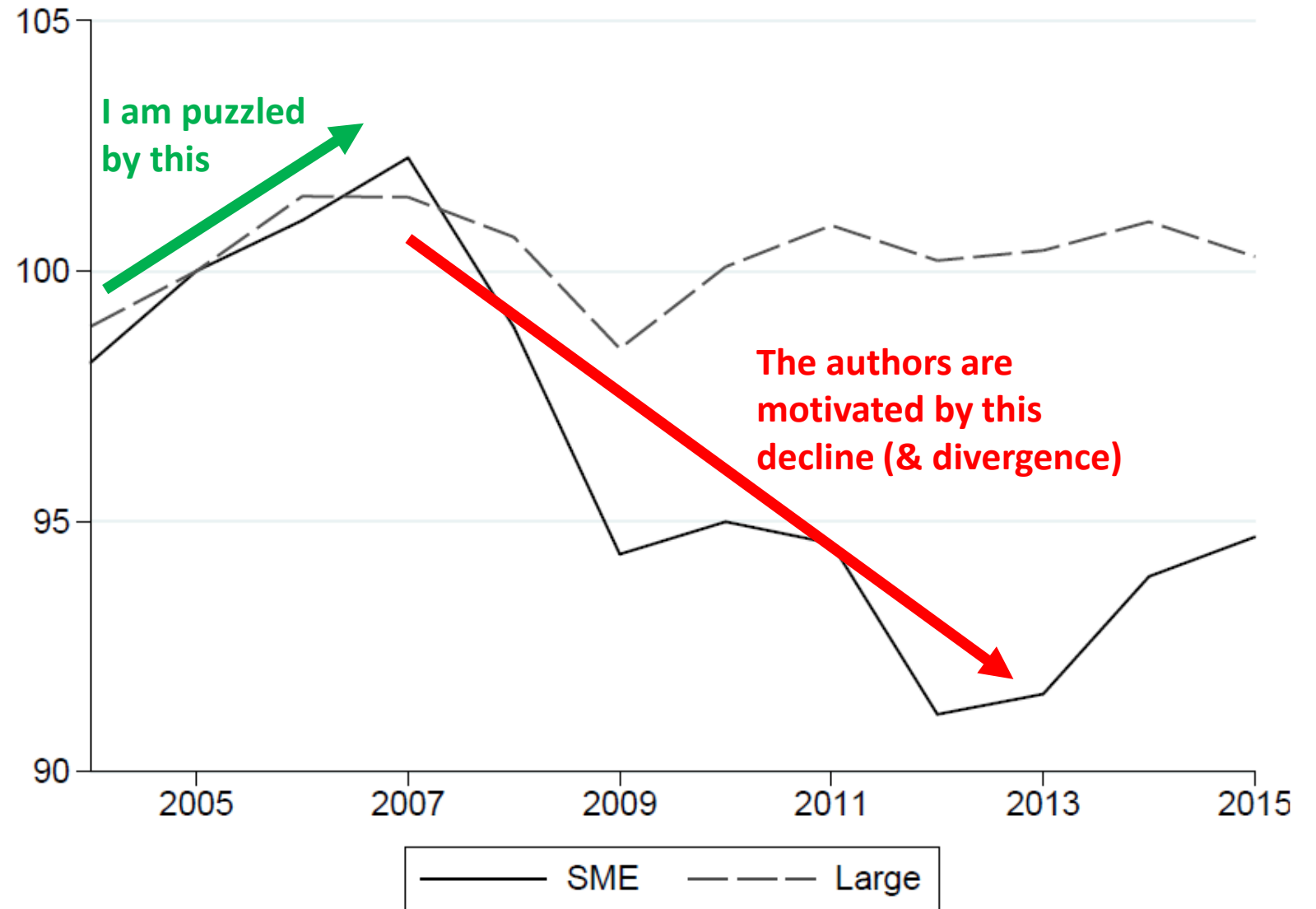
- Much productivity literature focuses on manufacturing; these authors have all (revenue) TFP for all industries
- Much productivity literature focuses on publicly traded firms; these authors have the whole firm distribution
- Linked bank/firm data!
- Intuitive research design, well explained

# Discussion points

1. Thinking more about the “puzzle”
2. Weights and aggregate implications
3. Revenue-based TFP measurement and causal mechanisms
4. Smaller points (won't discuss)

# 1. The puzzle

Figure 1: TFP level path for SMEs and large firms



# Evidence from U.S.: Small firms have negative (labor) productivity growth

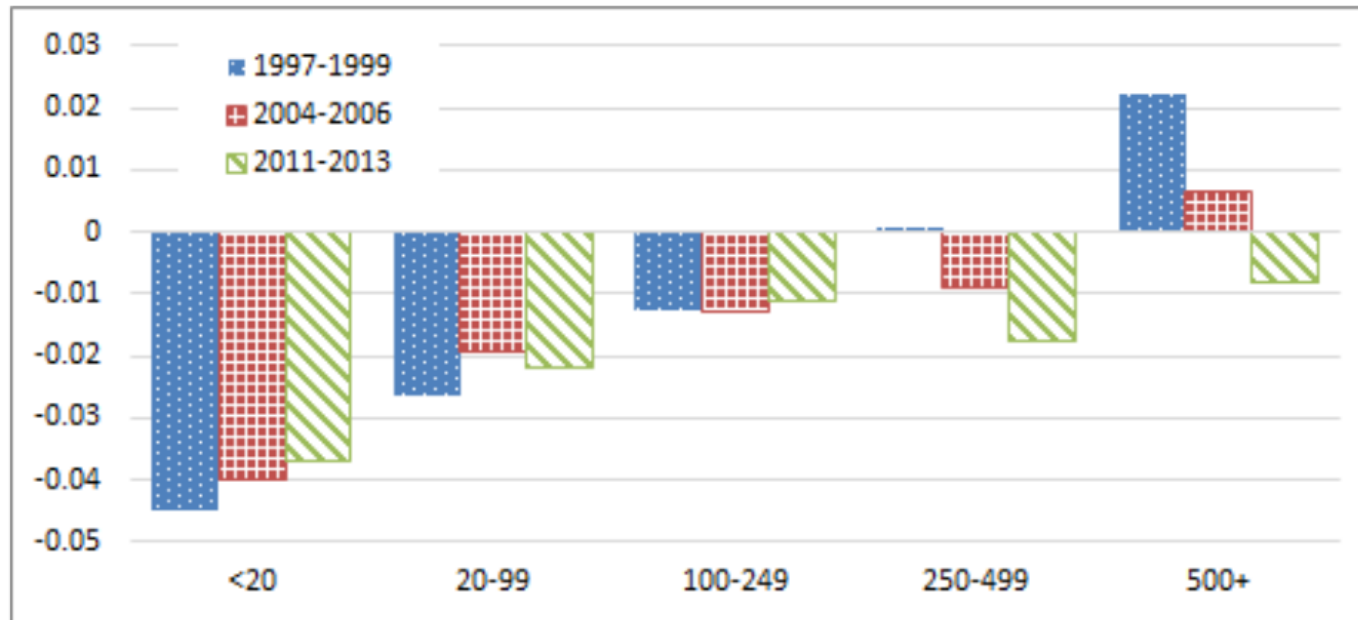


Figure A4: Within-firm Productivity Growth by Firm Size (DOP Method)  
Author calculations from RE-LBD

# What's “normal” productivity growth for small European firms?

- Authors treat 2004-2007 as normal
- What does pre-2004 pattern look like? (also helpful for 2001 placebo exercise)
  - Could 2004-2007 be an anomaly?
- Could credit supply regressions suggest that small firms had access to lax credit conditions in 2004-2007, boosting (revenue) productivity growth?
  - Could explain financial results

## 2. Weights and aggregate implications

- Paper is partly about “the Great Productivity Slowdown”
  - But difficult to map paper results to aggregate patterns
- Authors study *unweighted* average productivity in charts and regressions
  - Dominated by smallest firms and therefore difficult to map to aggregate productivity implications
- Activity-weighted results could differ, and have clearer aggregate implications

# Evidence from U.S.: Weights matter even within size bins

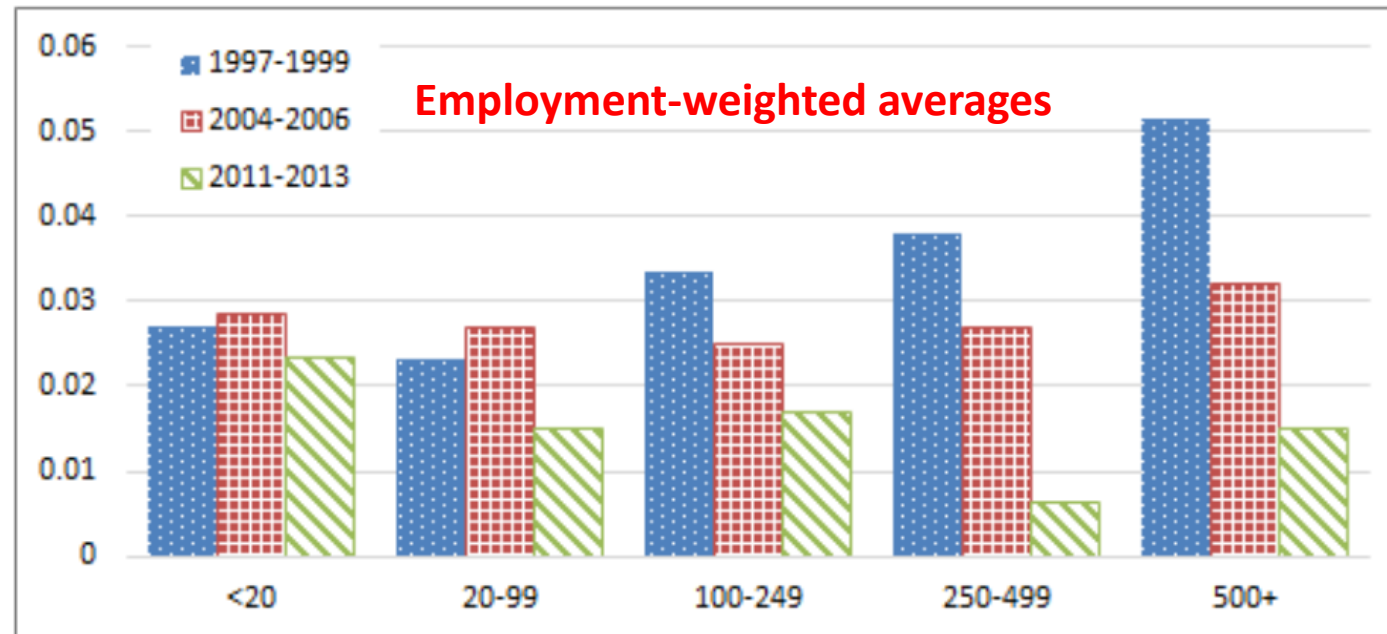


Figure A5: Within-firm Productivity Growth by Firm Size (FHK Method)  
Author calculations from RE-LBD



## 2. Weights and aggregate implications

- Results can be dominated by small firms (even within size classes) that are *negligible for aggregate productivity*
  - In the US, weighted vs. unweighted differences are largest for smallest firms
- Suggestions:
  - Consider employment- or revenue-weighted regressions
    - If results differ from unweighted regressions, it would be interesting!
    - Unweighted results are important from firms' perspective
    - Weighted results are important for aggregates
  - Broader implications could be understood with simple decompositions mapping SME slowdown to aggregate slowdown
- Understanding aggregate implications is important for the paper's contribution

### 3. Revenue TFP and mechanisms

- Using a revenue-based TFP measure (revenue per input)
- Revenue-based productivity measures predict input growth
  - For constant TFPQ, high marginal revenue product  $\Rightarrow$  input growth  $\Rightarrow$  decline in marginal revenue product.
  - Consistent with this, authors find initial TFP level has negative correlation with TFP growth (Table 3, column 2).
- Is the decline in TFP growth driven by decline in revenue growth, or increase in input growth?
  - What is mechanism linking credit conditions to TFP growth? Wouldn't credit supply constraints restrict input growth, with potential to *increase* revenue TFP?

# 4. Smaller issues

- TFP measurement
  - (Much) more detail on capital and labor (hours?) measurement would be helpful.
  - Equation 1 suggests you are estimating a production function; in fact you are estimating a revenue function.
  - This method for estimating revenue elasticities has advantages but can be noisy; consider checking robustness to other TFP measurement concepts (see, e.g., Decker Haltiwanger Jarmin Miranda 2020 AER).
  - Relatedly, what is the mechanism for credit conditions reducing TFP growth? If tight credit restricts firm inputs, measured TFP could go either way.
- Bank relationship defined in 2015; are these relationships really sticking during the pre-to-post GFC period?
  - What if weakened firms chose weakened banks post-GFC?
- Much productivity literature (esp. in manufacturing) focuses on establishments instead of firms
  - How is industry code assigned for firms in multiple-industries? This is a major issue for large firm comparisons (which are all within industry). Can you observe (and control for) multiple industries? Check robustness to including only single-industry firms?
  - Productivity is also difficult to compare across single- and multi-establishment firms. Multi-establishment firms are diversified and can share credit. Can you count establishments by firm?
- What is happening across the productivity distribution? What if you restrict sample to 90<sup>th</sup>+ percentile firms (by productivity, within size class)? How does it compare with the median firm?
  - This is another way of addressing the “frontier firms” question.

# Thanks

- Great paper on an interesting, timely topic