Discussion of "SUPERSTARS OR SUPERVILLAINS? LARGE FIRMS IN THE SOUTH KOREAN GROWTH MIRACLE"

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Discussed by Seula Kim

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Summary

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Q: What is the role of top sales firms and market concentration in Korean economy?

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- Develop a quantitative macroeconomic model featuring:
  - Heterogeneous firm productivity and export demand (Melitz 2003)
  - Heterogeneous distortions (Hsieh and Klenow 2009)
  - Oligopolistic and oligopsonistic competition (Atkeson and Burstein 2008; Berger et al. 2022)

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  - Oligopolistic and oligopsonistic competition (Atkeson and Burstein 2008; Berger et al. 2022)
- Use firm-level data from South Korea to extract key primitives:
  - Productivity, distortions, export demand
- Decompose sectoral concentration into:
  - Top-3 firms' productivity, foreign market access, top firm turnover (entry/exit), sectoral reallocation
- Quantify the contribution of top-3 firms to real GDP and welfare

Main Findings

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   ii) faster increase in foreign demand
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2. Sectoral concentration has been rising
   - 57% accounted for by sectoral reallocation
   - 43% driven by within-sector increase in the top-3 firm shares (half coming from churning)
3. Counterfactual of having the top-3 firms w/average shock process
   - Market concentration is reduced
   - Real GDP in 2011: 15% ↓
   - NPV of Welfare over 1972-2011: 4% ↓
   - Mostly from productivity shocks
   - Samsung Electronics: real GDP 6.4%, welfare 1.04% ↓; Hyundai Motors: real GDP 1.1%, weflare 0.5% ↓

Comments

Overview

Super interesting & well-written paper!

- Model + data: carefully estimating firm primitives and effectively identifying the main sources of market concentration
- Quantify the implications of top-3 firms and market concentration in the macroeconomy

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Some comments:

1. Validation of the Model & Estimates
2. Revisiting the Counterfactual Analysis
3. The Role of Firm Entry and Turnover
4. Further Investigation of the Top Firms

Validation of the Model & Estimates

$$\max_{y^H_{fj}, y^F_{fj}, l_{fj}, k_{fj}, m_{fj}} p^H_{fj} y^H_{fj} + p^F_{fj} y^F_{fj} - (1+\tau^L_{fj}) w_{fj} l_{fj} - (1+\tau^K_{fj}) \rho k_{fj} - P^M_j m_{fj}$$

subject to

$$\underbrace{y_{fj} = a_{fj} l_{fj}^{\gamma^L_j} k_{fj}^{\gamma^K_j} m_{fj}^{\gamma^M_j}}_{\text{production}}, \quad \underbrace{y^H_{fj} = \frac{1}{F_j} (p^H_{fj})^{-\sigma} (p^H_j)^{\sigma-\rho} P_j^{\rho-1} E_j}_{\text{domestic demand}}, \quad \underbrace{y^F_{fj} = (p^F_{fj})^{-\sigma} D_{fj}}_{\text{foreign demand}}, \quad \underbrace{l_{fj} = \frac{1}{F_j} w_{fj}^{-\eta} W_j^{\theta-\eta} W^{-\theta} L}_{\text{labor supply}}$$

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- Labor, capital distortions τ_{fj}^L, τ_{fj}^K

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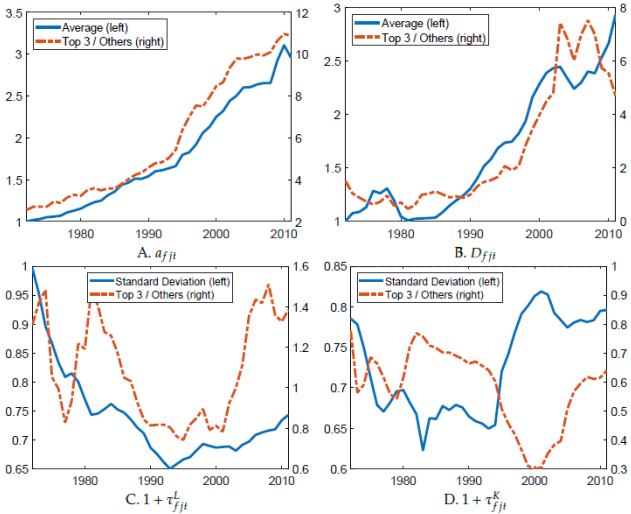
$\Rightarrow$ $\{a_{fj}\ D_{fj}, \tau_{fj}^L, \tau_{fj}^K\}$ are recovered w/ the model solutions+data

Validation of the Model & Estimates



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  : any unmodeled demand or cost conditions would be misinterpreted as distortions
  - Demand shifters, factor quality, adjustment costs
  - Heterogeneity in factor demand and elasticities
- Any relationships b/w measured a_{fj} D_{fj}, τ_{fj}^{L}, τ_{fj}^{K}?
  - Can look into their corr. w/ firm age, size, growth, exit, etc. (by time, industry, cohort)
  - Any corr. b/w distortions & fundamentals?

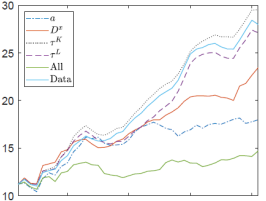
    (e.g., size-dependent subsidy or regulation, subsidies to exporters, etc.)

Validation of the Model & Estimates

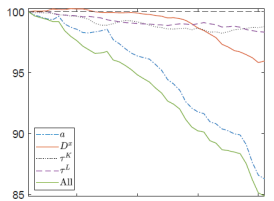
- What are $\tau_{fj}^{L}, \tau_{fj}^{K}$? How to think about them?
  - What happened in 1980s, 2000s?
  - Any candidates to fix our ideas?

    (e.g., government interventions favoring certain firms or sectors)
- Investigate historical policy changes and their corr. w/ $\tau_{fj}^{L}, \tau_{fj}^{K}$

Revisiting the Counterfactual Analysis



A. Top 3 Mfg. Concentration Ratio (%)



B. Real GDP Relative to Data (%)

Shocks	All shocks	Productivity a_{fjt}	Foreign demand D^f_{fjt}	Labor distortions $1+\tau^L_{fjt}$	Capital distortions $1+\tau^K_{fjt}$
	(1)	(2)	(3)	(4)	(5)
	Panel A. Top 3 firms within sectors				
△ Welfare (%)	−4.10	−2.79	−0.68	−0.69	−0.54
	Panel B. Samsung Electronics				
△ Welfare (%)	−1.04	−0.96	−0.38	−0.01	−0.12
	Panel C. Hyundai Motors				
△ Welfare (%)	−0.49	−0.44	−0.08	−0.04	−0.02

⇒ a_{fj} D_{fj} are effective, but not so much for τ^L_{fj}, τ^K_{fj} (despite a large variation seen before)

Revisiting the Counterfactual Analysis

- Construct counterfactual growth for top-3 firms

$$X_{fjt} = (1 + \hat{X}^{a}_{jt}) X^{c}_{fj,t-1} \text{ for } x_{fjt} \in \{a_{fjt}, D_{fjt}, 1 + \tau^{L}_{fjt}, 1 + \tau^{K}_{fjt}\}$$

where $\hat{X}^{a}_{jt} = \sum_{f \in F^{a}_{jt} \cap F^{cont,nz}_{jt}} \frac{X_{fjt} - X_{fj,t-1}}{2(X_{fjt} + X_{fj,t-1})}$: unweighted avg. growth amongst continuers by age bin

Revisiting the Counterfactual Analysis

- What are the growth diffs. b/w top vs non-top firms?
  - Previous figures compared the levels over time
  - Systematically "increasing" dispersion in levels of a_{fjt}, D_{fjt}, but not so much for $\tau^L_{fjt}, \tau^K_{fjt}$?

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  - Average across all vs. by age bins?
- How would the sample coverage affect the imputed series and implications?
  - KIS-VALUE firms are restricted to asset>2.3 mil. USD
  - Missing firms (mostly small) may affect the imputed growth and implication
  - What if we consider small but productive firms?

The Role of Firm Entry and Turnover

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- Current model and analysis abstracts from firm entry or turnover
  - The number of oligopolistic firms is fixed (N)
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  - Current exercise is only through fringe firm adjustment
- How does firm entry and dynamics interact with top firm activities and market concentration?
- How would the implications be affected with endogenous firm entry and turnover?
  - ⇒ The model can extend firm entry and exit
  - ⇒ Counterfactual analysis on firm entry, exit, reallocation, and welfare through them?

Further Investigation of the Top Firms

- Who are those top-3 firms? Basic statistics?
  - Age, size, revenue, TFPR, etc.
  - By continuers, entrants, exiters
  - Specific cohorts of firms? (e.g., HCI policy in 1970s)
  - In specific industries?
  - Dealing with multi-industry firms?
- Any anecdotal examples about their growth or relevant policy?

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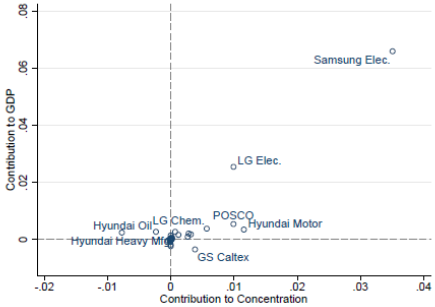

- Heterogeneity in top firms: what drives superstars vs. supervillains vs. others?
  - What is the distribution of $\{a_{fj}\ D_{fj}, \tau^L_{fj}, \tau^K_{fj}\}$ across them over time?
  - What is the source of their heterogeneity and distortions?
  - Any role of industrial policy?

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This paper:

- Documents a novel fact about rising concentration in South Korea
- Recover firm primitives & disentangle the part attributing to the rise in concentration
- Quantify the role of top firms in real GDP and welfare
- Conclude the rise of large firms as a positive phenomenon!

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Review:

- Promising paper: important question, tractable modeling, insightful results and implications
- Model and estimates validation need to be discussed
- Quantification analysis can be explored in depth
- Extension w/ firm entry, turnover
- Further details about top firms and summary statistics may help