The Economics of Superstar Firms

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Motivation

- **超级明星经济学：起源**
- Rosen（AER，1981）:各个领域都是极少数的人带来了最大的生产率
- 现实中：Winners take all；资源集中VS反垄断
- **许多以单个大企业为切入点的文章，虽然并没有直接说superstar的概念与定义，但激起我们对于市场中的“巨头/龙头/超级明星”的兴趣**
- 沃尔玛等大型商场对本地零售的冲击（Jia,2008）
- 柯达的倒闭使得罗切斯特高科技产业集群受到重创，发明家数量下降49.2%（Moretti *et al.*,2021）
- The establishment of Million Dollar Plants （Greenstone *et al.*, 2010；Bloom *et al.*, 2019）
- 全球第4的独角兽——服装电商SHEIN将供应链总部从南京迁到广州，对本地纺织服装产业集群的影响（我们自己的研究）

什么是超级明星企业？

一些提法

- 中文：龙头企业、巨头企业、超大企业、大厂、独角兽企业、链主企业…
- 英文：Superstar, Large firm/plants，granular（颗粒化：少数大型企业主导了经济格局）

关键特征

- 自己很强（生产率、销售额、市场份额）
- 产业链/生产网络中有着重要的地位

Today's Discussion

- **讨论2篇英文文章**
  - Autor, QJE, 2020.
  - Amiti, JIE, 2024.

- **这2篇英文文章各自所聚焦话题的延伸文献**
  - 话题一：超级明星企业的宏观经济影响，特别地，整体福利和劳动收入份额
  - 话题二：微观层面，“大”如何作用于“小”，超级明星对非超级明星的影响

- **相关中文文献与研究思考**
  - 我们可以继续做什么样的研究
  - 超级明星经济学不局限于关注企业

Autor, D., Dorn, D., Katz, L. F., Patterson, C., & Van Reenen, J. (2020). The fall of the labor share and the rise of superstar firms. *The Quarterly journal of economics*, *135*(2), 645-709.

Background

- **The decline in the labor share is common in many countries for decades.**
  - Traditional explanations: decline in the relative price of capital, international trade and outsourcing, and weakening of labor market institutions.
  - Existing empirical assessments typically rely on industry or macro data, obscuring heterogeneity among firms.
- **Contribution**
  - Provide microeconomic evidence on the evolution of labor shares at the firm level.
  - Formalize a “superstar firm” model of the labor share change.
  - Present a substantial body of evidence and clear facts from the past 30 years.

Superstar Firm Model

- **Demand Structure**

$$q(p_\omega) = p_\omega^{-\sigma} d(Ap_\omega)$$

满足这种需求结构的一个例子

$$U = q^0 + \alpha \int_{\omega\in\Omega} q_\omega d\omega - \frac{1}{2}\gamma \int_{\omega\in\Omega} (q_\omega)^2 d\omega - \frac{1}{2}\eta \left(\int_{\omega\in\Omega} q_\omega d\omega \right)^2$$

$$q(p_\omega) = p_\omega \left[\frac{1}{p_\omega A} - \frac{1}{\gamma} \right]$$

在CES的基础上增加了可变弹性，这是一个乘数。其中A是一个内生变量（可以理解为“市场韧性”或“整体价格水平”的倒数），它使需求函数具有非齐次性（即需求不仅取决于自身价格，还取决于整个市场的价格水平A）。

对 $d(\cdot)$ 的假设（Marshall's Second Law）：

- $d(p) > 0$
- $d'(p) < 0$（随价格增加，需求减少）
- $d \ln d(p) / d \ln p < (\sigma - 1)$
- $d^2 \ln d(p) / (d \ln p)^2 < 0$

——意味着消费量高（或价格低）时，需求的绝对弹性更低。

Superstar Firm Model

- **Entry, pricing and markups**
  - Fixed cost to entry: κ， random productivity z distribution with pdf $\lambda(z)$
  - Unit cost：c=1/z
  - Firms choose p_ω to maximize the profit $(p_\omega - c_\omega)\, q(p_\omega)$
  - F.O.C $q(p_\omega) + (p_\omega - c_\omega) q'(p_\omega) = 0$

$$\frac{p_\omega - c_\omega}{p_\omega} = -\frac{1}{p_\omega}\frac{q(p_\omega)}{q'(p_\omega)} = -\frac{1}{\varepsilon(p_\omega)}$$

投入要素只有劳动时，labor share是加成率的倒数

$$\varepsilon(p_\omega) \equiv d\ln q(p_\omega)/d\ln p_\omega$$

$$q(p_\omega) = p_\omega^{-\sigma} d(Ap_\omega)$$

$$\varepsilon(p_\omega) = Ap_\omega d'(Ap_\omega)/d(Ap_\omega) - \sigma$$

$$m_\omega = m(Ap_\omega)$$

$$m(p) \equiv \frac{\sigma - pd'(p)/d(p)}{\sigma - 1 - pd'(p)/d(p)}$$

$$S_\omega \equiv \frac{wV}{p_\omega q_\omega} = \frac{c_\omega}{p_\omega} = \frac{1}{m_\omega}$$

Superstar Firm Model

- **Firm and industry level results**

$$\frac{\partial p(c_\omega, A)}{\partial c_\omega} = \frac{m(p_\omega)}{1 - m'(p_\omega)c_\omega} > 0$$

$$m(p) = 1 - \frac{1}{Apd'(Ap)/d(Ap) - \sigma + 1}$$

$$c^* = \bar{p}/A.$$

Markup 随着边际成本严格递减

存在一个成本的临界值，只有当企业生产成本小于这个值才会生产/进入市场

低边际成本（高生产率）企业定价更低、销量更大，但加成率更高

当竞争变得很激烈（tough），例如全球化、市场扩张，成本的临界值会降低（市场变得特别卷）；与此同时，市场环境让需求变得更具有弹性

因此市场环境变化可能带来两种相反的力量：1.仍然留在市场“一般般”的企业自身markup下降，劳动份额上升；2.能力差的企业活不下去了，再分配效应占主导，只剩superstar，总体劳动份额下降。

Superstar Firm Model

- **Proposition and Discussion**
  - Large frms will have lower labor shares.
  - Tougher markets (lower c*) shift the labor share distribution leftward in log-convex cases
- **简单直觉**
  - c*是企业的生存门槛，只有边际成本更低的企业才能生存， c*越低意味着只有非常强的企业才留下来了，因此把低c*描述为市场变得tougher（更残酷）
  - Log-convex的分布拥有特别“厚”或“重”的右尾。这意味着出现极端高值（即生产率非常高的“超级明星企业”）的概率，比我们常见的分布（如正态分布）要大得多。
  - Log-concave分布，如正态分布、指数分布。它们的尾部较“薄”，出现极端值的概率很低。大多数企业集中在平均生产率附近。

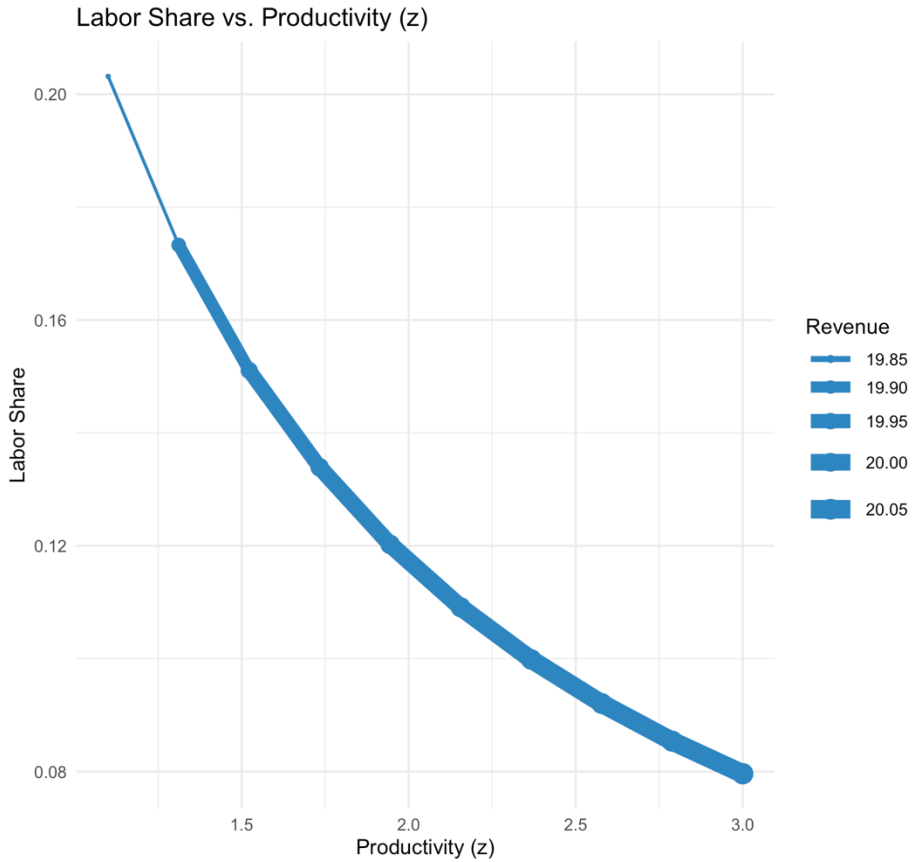
Superstar Firm Model

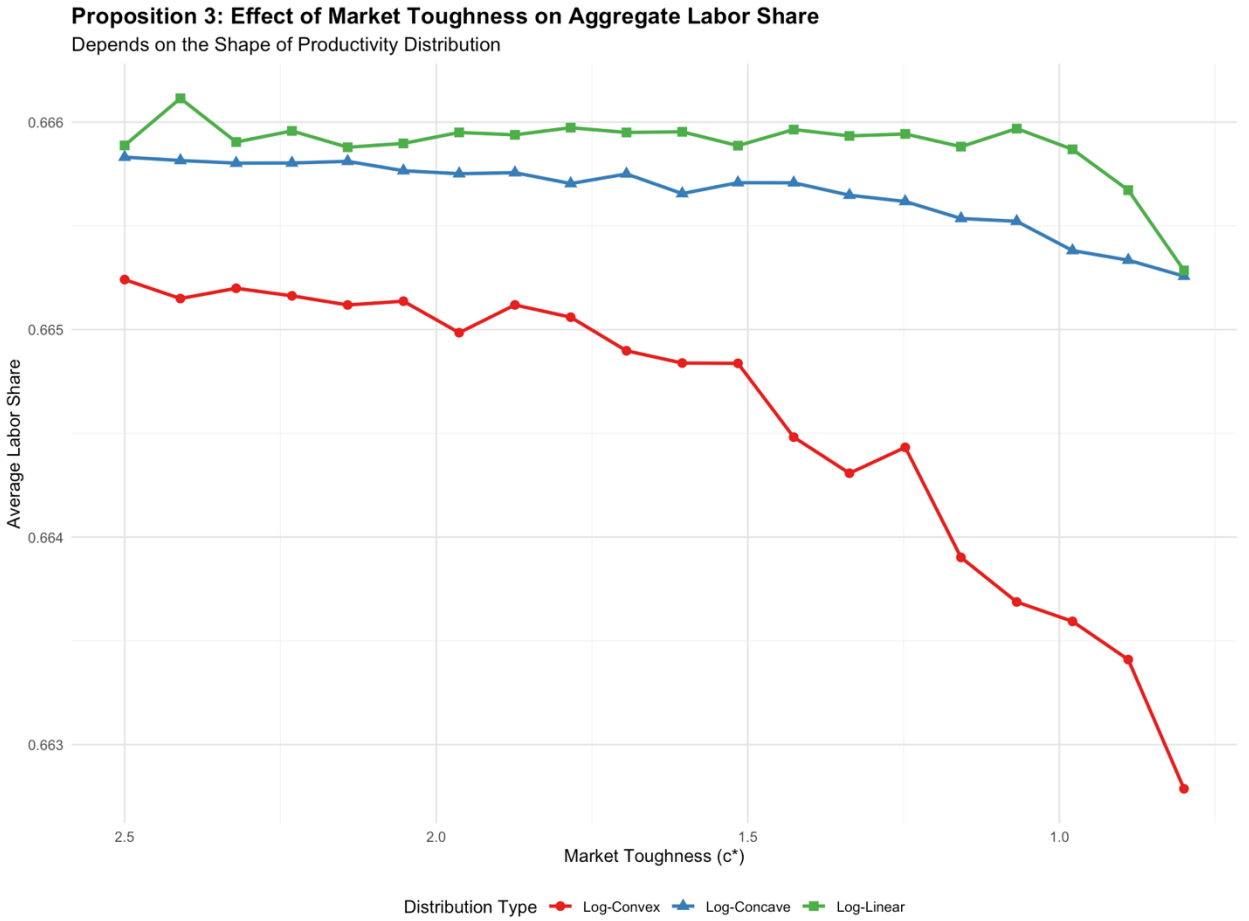
- **Simulation**

  生成模拟数据直观看看

```r
# Parameters
N_FIRMS <- 1000
MARKET_SIZE <- 100
WAGE <- 1
ALPHA <- 2
GAMMA <- 1
ETA <- 0.5
SIGMA <- 3
P_BAR <- 10

# Superstar firm model class equivalent in R
SuperstarFirmModel <- list(
```





Data and Variable

- **Data**
  - U.S. Economic Census, which is conducted every five years and surveys all establishments in selected sectors based on their current economic activity.
  - 1982–2012 for six large sectors: manufacturing, retail trade, wholesale trade, services, utilities and transportation, and finance.
  - Industry-level panel data set covering OECD countries since 1980.

- **Key Variable**
  - Labor share=salary/value added（or sales value for non-manufacture industry）
  - Industry Concentration：CR4, CR20, and HHI （Sales/employment）
  - Markup：Estimated by Production Function

Prediction of the model

(1) Industry sales will increasingly concentrate in a small number of firms

(2) Industries where concentration rises most will have the largest declines in the labor share

(3) The fall in the labor share will be driven largely by reallocation rather than a fall in the unweighted mean labor share across all firms

(4) Between-firm reallocation component of the fall in the labor share will be greatest in the sectors with the largest increases in market concentration

(5) The industries that are becoming more concentrated will exhibit faster growth of productivity

(6) The aggregate markup will rise more than the typical firm's markup

(7) These patterns should be observed not only in U.S. firms but also internationally

Empirical tests of the prediction

- *Superstar rises, labor share falls*

Industries where concentration rose the most were those where the labor share fell by the most.

Only manufacture Industry

$$\Delta S_{jt} = \beta \Delta \mathrm{CONC}_{jt} + \tau_t + u_{jt}$$

TABLE II

INDUSTRY-LEVEL REGRESSIONS OF CHANGE IN SHARE OF LABOR ON CHANGE IN CONCENTRATION, MANUFACTURING

	5-year changes			10-year changes		
	CR4 (1)	CR20 (2)	HHI (3)	CR4 (4)	CR20 (5)	HHI (6)
1 Baseline	−0.148***	−0.228***	−0.213**	−0.132***	−0.153***	−0.165*
	(0.036)	(0.043)	(0.085)	(0.040)	(0.055)	(0.093)
2 Compensation share of value added	−0.177***	−0.266***	−0.256**	−0.139***	−0.151**	−0.183
	(0.045)	(0.056)	(0.110)	(0.053)	(0.071)	(0.125)
3 Deduct service intermediates from value added in labor share	−0.339***	−0.514***	−0.502***	−0.261***	−0.353***	−0.303
	(0.064)	(0.074)	(0.175)	(0.056)	(0.065)	(0.275)
4 Value added-based concentration	−0.219***	−0.337***	−0.320***	−0.210***	−0.251***	−0.289***
	(0.028)	(0.045)	(0.060)	(0.037)	(0.054)	(0.075)
5 Industry trends (four-digit dummies)	−0.172***	−0.290***	−0.243**	−0.196***	−0.240***	−0.220*
	(0.043)	(0.047)	(0.100)	(0.059)	(0.088)	(0.128)
6 1992–2012 subperiod	−0.187***	−0.309***	−0.261**			
	(0.043)	(0.061)	(0.102)			
7 Including imports (1992–2012)	−0.163***	−0.285***	−0.233***			
	(0.036)	(0.052)	(0.089)			
Coefficient on Δ (imports/value added)	18.809***	20.467***	20.957***			
	(3.027)	(3.213)	(3.187)			
8 Control for initial capital/value added	−0.146***	−0.231***	−0.214***	−0.122***	−0.148***	−0.161*
	(0.035)	(0.042)	(0.084)	(0.040)	(0.053)	(0.092)
Coefficient on initial capital/value added	−1.242***	−1.295***	−1.278***	−2.535***	−2.648***	−2.669***
	(0.308)	(0.324)	(0.292)	(0.595)	(0.598)	(0.563)
9 Employment-based concentration measure	0.036	0.024	0.160**	0.018	0.029	0.082
	(0.036)	(0.033)	(0.075)	(0.035)	(0.040)	(0.083)

Notes. $N = 2{,}328$ (388 industries × 6 five-year periods) in columns (1)–(3) (except $N = 1{,}552$ in rows 6 and 7) and $N = 1{,}164$ (388 industries × 3 10-year periods) in columns (4)–(6). Each cell displays the coefficient from a separate OLS industry-level regression of the change in labor share on period fixed effects and the change in the concentration measure indicated at the top of each column. Industries are weighted by their total value added in the initial year, and standard errors in parentheses are clustered by four-digit industries. The models in rows 2 and 3 replace the baseline outcome variable (the change in payroll divided by value added) with the ratio of total compensation to value added, and payroll to value added net of intermediate services, respectively. Row 4 replaces the baseline regressor (the change in sales concentration) with the change in concentration of value added, and row 9 uses concentration measures based on employment. Row 5 augments the baseline model with a full set of four-digit industry dummies, and thus controls for linear time trends in each industry. Rows 7 and 8, respectively, extend the baseline specification with controls for the change in the ratio of imports to value added, and the initial level of capital to value added. Since the import measure is only available since 1992, the row (7) model is estimated only for five-year changes during the 1992–2012 period, while row 6 indicates estimates from the baseline regression for this shorter period. * $p \leqslant .10$, ** $p \leqslant .05$,*** $p \leqslant .01$.

Empirical tests of the prediction

- *Rising Concentration Correlates with Falling Labor Shares 2*

6 different sectors

TABLE III

INDUSTRY REGRESSIONS OF THE CHANGE IN THE PAYROLL-TO-SALES RATIO ON THE CHANGE IN CONCENTRATION, DIFFERENT SECTORS

	Stacked 5-year changes			Stacked 10-year changes		
	CR4 (1)	CR20 (2)	HHI (3)	CR4 (4)	CR20 (5)	HHI (6)
1 Manufacturing	−0.062***	−0.077***	−0.112***	−0.035	−0.034	−0.088**
$n = 2{,}328; 1{,}164$	(0.013)	(0.025)	(0.026)	(0.021)	(0.033)	(0.037)
2 Retail	−0.034*	−0.084**	−0.041	−0.043**	−0.067**	−0.068***
$n = 348; 174$	(0.020)	(0.037)	(0.025)	(0.018)	(0.029)	(0.023)
3 Wholesale	−0.038***	−0.040**	−0.084**	−0.037**	−0.036*	−0.064
$n = 336; 168$	(0.014)	(0.017)	(0.041)	(0.018)	(0.019)	(0.048)
4 Services	−0.091	−0.128***	−0.350***	−0.093	−0.137***	−0.377**
$n = 570; 258$	(0.057)	(0.039)	(0.084)	(0.070)	(0.042)	(0.156)
5 Utilities/Transport	−0.110***	−0.111**	−0.320***	−0.064	−0.096**	−0.226**
$n = 144; 48$	(0.031)	(0.050)	(0.082)	(0.044)	(0.038)	(0.098)
6 Finance	−0.221**	−0.252***	−0.567**	−0.236**	−0.274***	−0.723**
$n = 124; 62$	(0.084)	(0.091)	(0.208)	(0.095)	(0.084)	(0.295)
7 Combined	−0.077***	−0.088***	−0.150***	−0.060***	−0.076***	−0.118***
$n = 3{,}850; 1{,}901$	(0.017)	(0.022)	(0.028)	(0.018)	(0.023)	(0.032)

Empirical tests of the prediction

- *Between-Firm Reallocation Drives the Fall in the Labor Share*

企业i增加值占行业的份额

$$S = \sum \omega_i S_i = \bar{S} + \sum (\omega_i - \bar{\omega})(S_i - \bar{S})$$

平均增加值份额

$$\omega_i = \frac{P_i Y_i}{\sum_i P_i Y_i}$$

简单考虑只有2期

$$\Delta S = S_1 - S_0 = \Delta \bar{S} + \Delta \left[\sum (\omega_i - \bar{\omega})(S_i - \bar{S}) \right]$$

$$\Delta S = \Delta \bar{S}_S + \Delta \left[\sum (\omega_i - \bar{\omega})(S_i - \bar{S}) \right]_S + \omega_{X,0}(S_{S,0} - S_{X,0}) + \omega_{E,1}(S_{E,1} - S_{S,1}).$$

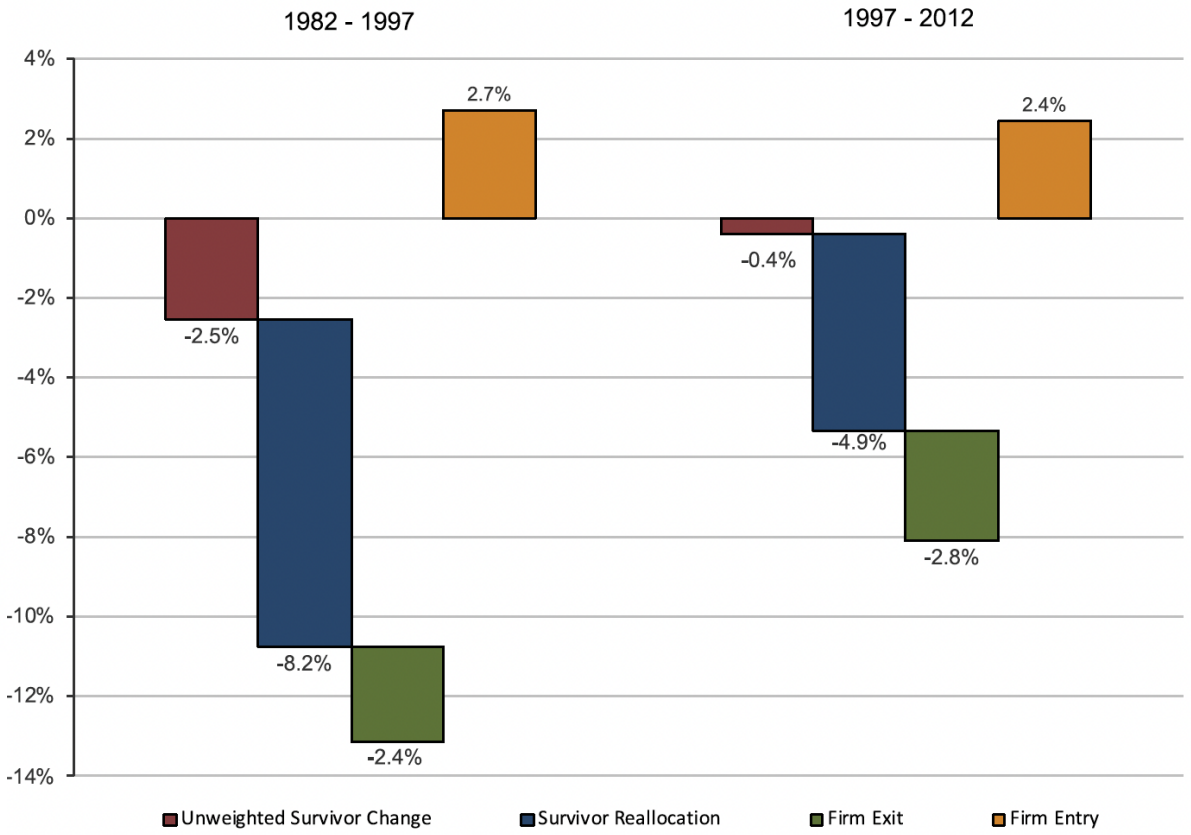


FIGURE VII

Melitz-Polanec Decomposition of the Change in Labor Share in Manufacturing

Empirical tests of the prediction

- *Between-Firm Reallocation Drives the Fall in the Labor Share*

TABLE IV

DECOMPOSITIONS OF THE CHANGE IN THE LABOR SHARE, MANUFACTURING

	Δ Unweighted mean of survivors (1)	Survivor reallocation (2)	Exit (3)	Entry (4)	Total (5)
Panel A: Payroll share of value added					
1982–1987	−3.03	−1.75	−0.59	0.86	−4.52
1987–1992	2.60	−5.26	−0.90	0.98	−2.58
1992–1997	−2.08	−1.24	−0.89	0.89	−3.32
1997–2002	0.00	−0.76	−1.00	0.69	−1.08
2002–2007	−3.06	−1.53	−1.12	1.23	−4.48
2007–2012	2.64	−2.61	−0.63	0.51	−0.09
1982–2012	−2.93	−13.15	−5.14	5.15	−16.07
Panel B: Compensation share of value added					
1982–1987	−0.78	−5.66	−0.47	0.98	−5.93
1987–1992	3.73	−5.69	−1.00	1.05	−1.91
1992–1997	−2.78	−1.90	−0.93	0.97	−4.64
1997–2002	−2.07	1.11	−1.09	0.79	−1.25
2002–2007	1.26	−6.21	−1.20	1.55	−4.60
2007–2012	0.40	−0.32	−0.77	0.53	−0.15
1982–2012	−0.24	−18.67	−5.46	5.89	−18.48

Empirical tests of the prediction

- *Between-Firm Reallocation Drives the Fall in the Labor Share 3*
- *Between-Firm Reallocation Is Strongest in Concentrating Industries 4*

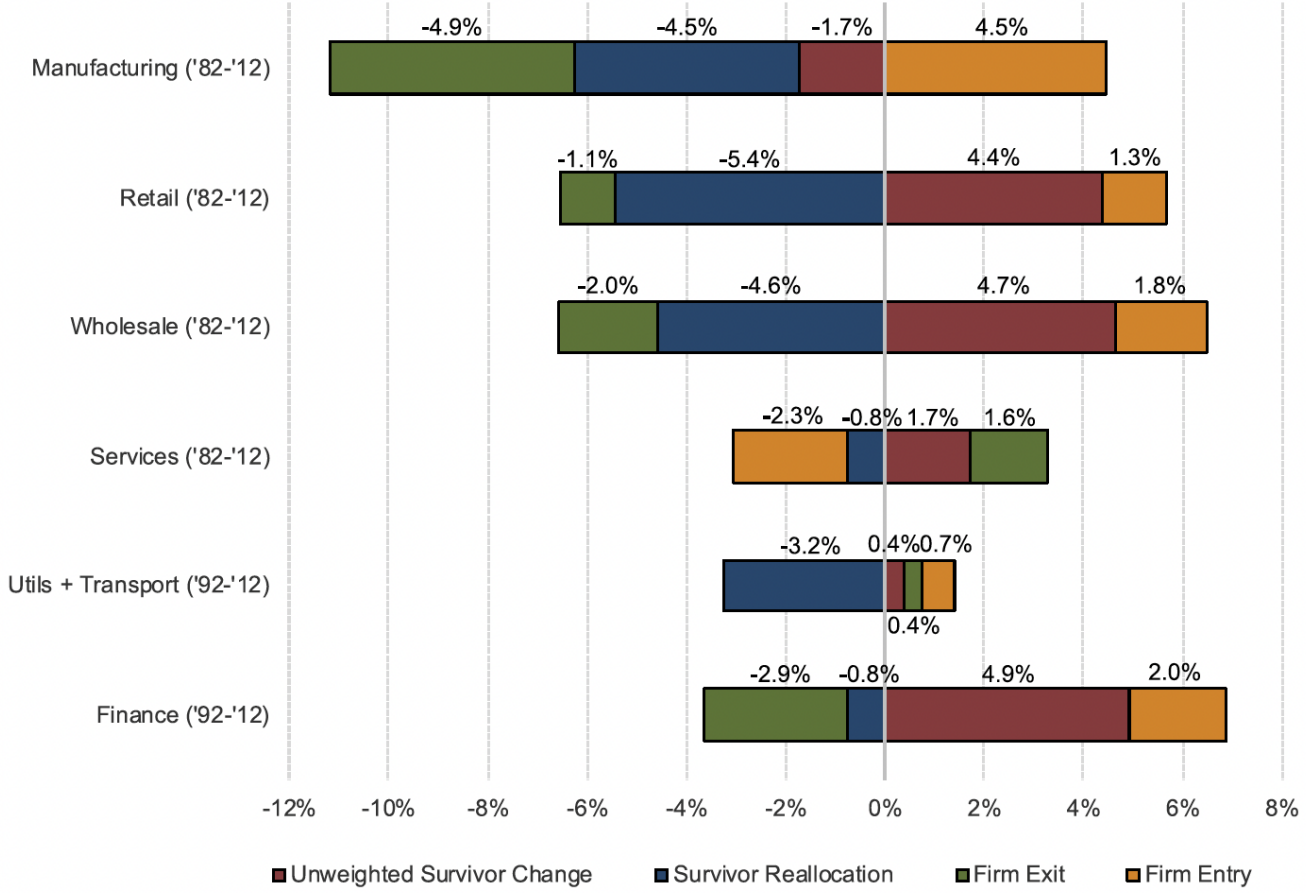
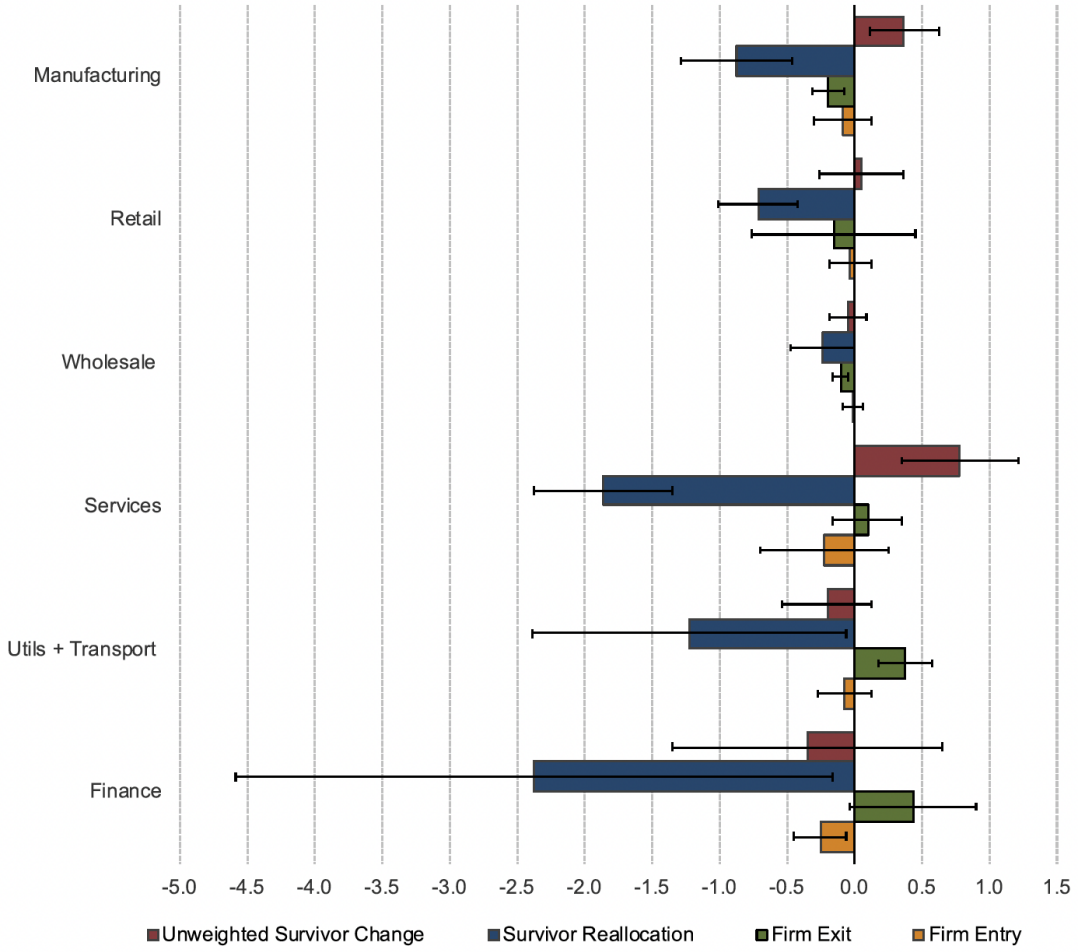


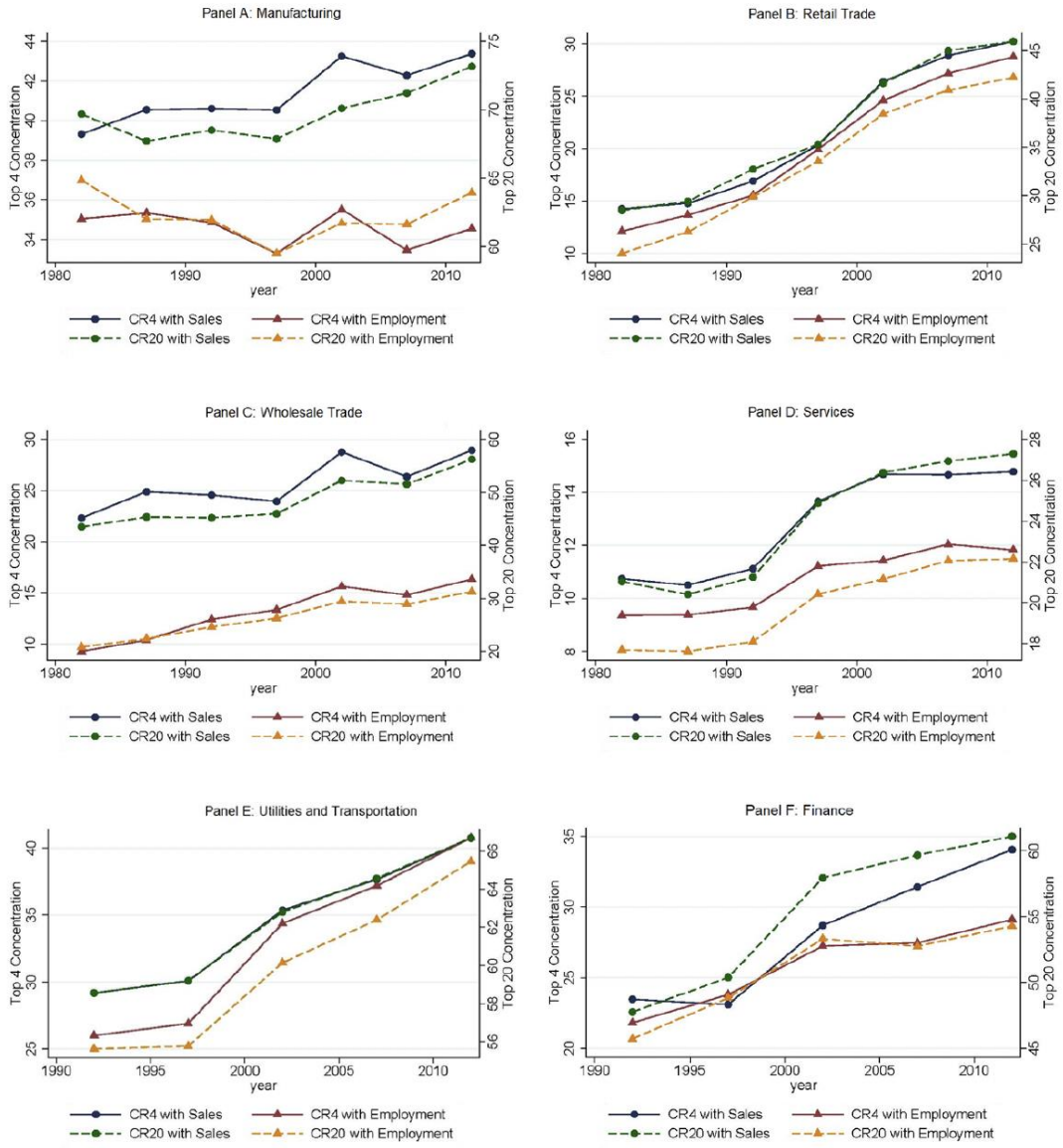
FIGURE VIII

Melitz-Polanec Decomposition of the Change in Labor Share in All Six Sectors



Empirical tests of the prediction

- *Between-Firm Reallocation Is Strongest in Concentrating Industries 4*



Empirical tests of the prediction

- Rising concentration is more prevalent in dynamic industries that exhibit faster technological progress 5

CHARACTERISTICS OF CONCENTRATING INDUSTRIES

	CR4 (1)	CR20 (2)	HHI (3)
Panel A: Manufacturing only			
1 Patents per worker	0.090**	0.057***	0.056**
	(0.006)	(0.022)	(0.022)
2 Value added per worker	0.126***	0.074***	0.067***
	(0.028)	(0.020)	(0.025)
3 Capital per worker	0.092**	0.026	0.081***
	(0.041)	(0.022)	(0.029)
4 Five-factor TFP	0.055***	0.024*	0.028*
	(0.019)	(0.013)	(0.017)
5 Payroll per worker	0.013	0.005	0.016
	(0.018)	(0.011)	(0.010)
6 Material costs per worker	0.120***	0.074***	0.068***
	(0.028)	(0.018)	(0.023)

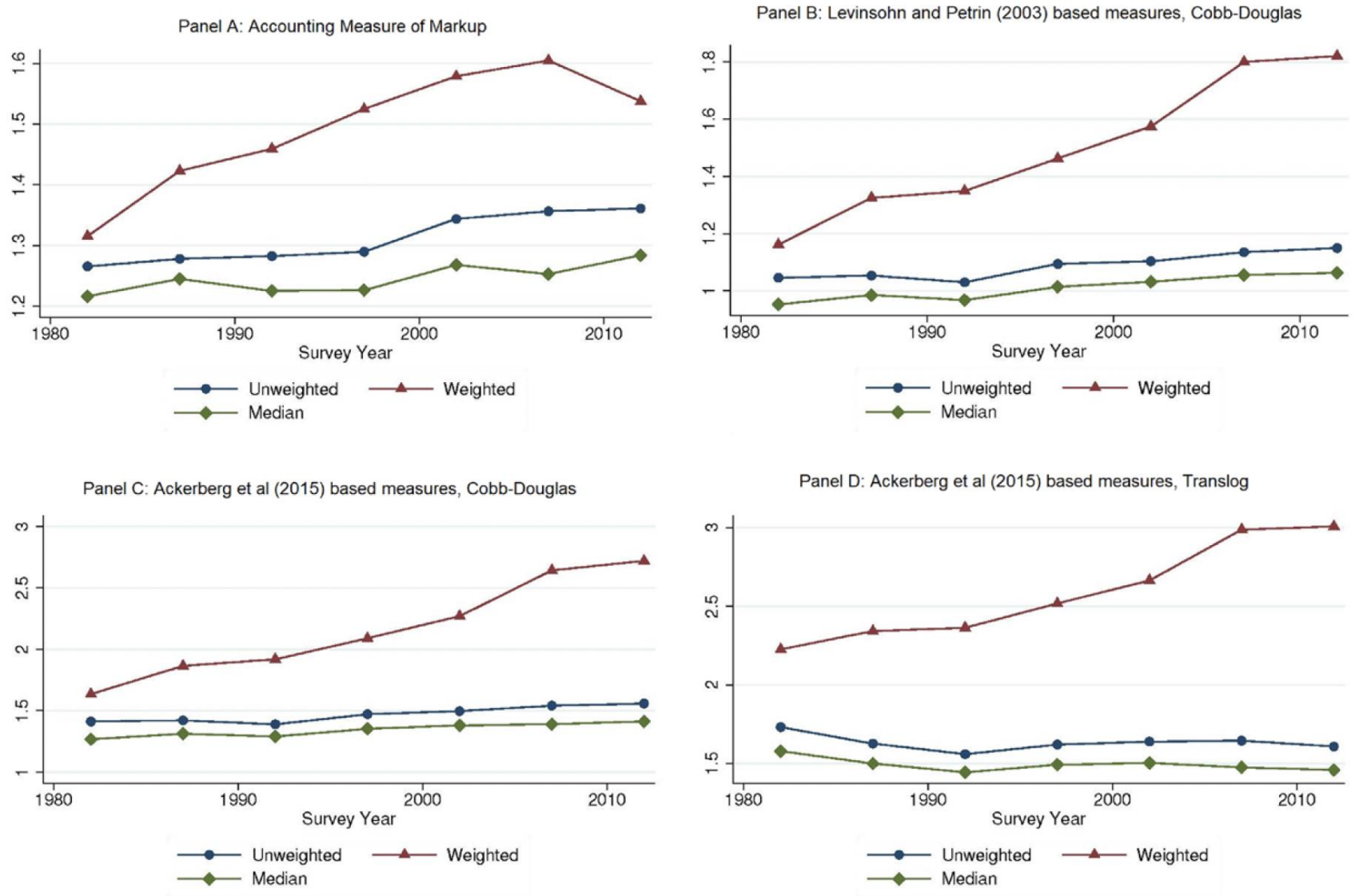
CHARACTERISTICS OF CONCENTRATING INDUSTRIES

	CR4 (1)	CR20 (2)	HHI (3)
Panel B: All sectors			
7 Manufacturing sales per worker	0.125***	0.067***	0.069***
	(0.027)	(0.018)	(0.016)
8 Retail sales per worker	0.049	0.098	0.027
	(0.048)	(0.067)	(0.023)
9 Wholesale sales per worker	0.16***	0.207***	0.031**
	(0.058)	(0.042)	(0.013)
10 Services sales per worker	0.082	0.125***	0.041**
	(0.055)	(0.036)	(0.019)
11 Utilities/transportation sales per worker	0.415***	0.304***	0.117***
	(0.096)	(0.092)	(0.023)
12 Finance sales per worker	0.270*	0.216*	0.144***
	(0.143)	(0.111)	(0.052)
13 Combined sales per worker	0.155***	0.147***	0.053***
	(0.031)	(0.026)	(0.011)

行业层面检验集中度与创新/生产率等指标之间的关系

Empirical tests of the prediction

- *Markup changes* 6



Comments

- 用详实和高质量的数据、简洁且可信的方法研究了一个重要的问题。有清晰的事实描述，并留下新的思考的角度。
- 作者并未对竞争环境变化的影响因素（例如技术）进行更细致的讨论。
- 另外，作者承认存在超级明星企业滥用市场支配地位从而限制竞争的情况，但在本文的分析中没有排除这种机制。
- 忽视了大企业存在的地方化效应，特别是产业链中的明星企业在本地企业成长中发挥的作用。

这一主题下的延伸文献

关于超级明星企业的基本事实

- Kwon, S. Y., Ma, Y., & Zimmermann, K. (2024). 100 years of rising corporate concentration. *American Economic Review*, *114*(7), 2111-2140.
- Ma, Y., Pugsley, B., Qin, H., & Zimmermann, K. (2025). Superstar firms through the generations (No. w34194). *National Bureau of Economic Research.*
  - 美国国税局100年来的企业财务信息记录
  - 企业集中度不断上升的事实
  - 研发和信息技术与集中度的上升密切相关
  - 制造业中超大型企业可追溯至100年前，行业中的更替也是显著的；批发零售业中并未观察到顶级明星企业“经久不衰”

这一主题下的延伸文献

超级明星是如何形成的？

- Firooz, H., Liu, Z., & Wang, Y. (2025). Automation and the rise of superstar firms. *Journal of Monetary Economics*, *151*, 103733.
  - 自动化是推动超级明星企业崛起的重要力量
  - 其通过固定成本机制与劳动力替代机制影响市场结构

这一主题下的延伸文献

超级明星有什么宏观经济影响

- Choi, J., Levchenko, A. A., Ruzic, D., & Shim, Y. (2024). Superstars or supervillains? Large firms in the South Korean growth miracle (No. w32648). *National Bureau of Economic Research.*
  - 超级明星企业对韩国的“汉江奇迹”做出了重要贡献
  - 反事实（基于典型案例）：三星如果表现与其他企业平均水平相同，2011年韩国的GDP将下降6.4%，福利下降1.04%。
  - 尽管集中度上升，明星企业对价格加成和对工资压低的幅度很小（约4%）。
  - 评论：核心的反事实分析建立在“其他所有企业行为不变”的假设上。但是如果三星、现代等巨头没有崛起，资源（资本、人才、订单）很可能被重新配置到其他企业，这些企业可能因此成长起来，从而部分抵消巨头缺失带来的负面影响。

Amiti, M., Duprez, C., Konings, J., & Van Reenen, J. (2024). FDI and superstar spillovers: Evidence from firm-to-firm transactions. *Journal of International Economics*, *152*, 103972.

Research Question

- Previous literature is predominantly focused on the potential "costs" and negative consequences of this trend（Autor, 2020）. These include:
  - Market power: Their monopoly and monopsony power .
  - Political influence: Their lobbying strength.
  - Anti-competitive effects: Fears that their dominance stifles competition.
- Do superstar firms generate positive spillovers?-Yes
- How Can?- knowledge/ "*know how*" rather than scale economies or demand shocks.

Contribution

➢Beyond FDI: A Broader Conception of Spillover Sources

- Existing Literature: Heavily focused on spillovers from Multinational Enterprises (MNEs) and Foreign Direct Investment (FDI), with inconclusive and often mixed findings.
- This paper: Expands the scope by demonstrating that spillovers originate from “superstar” attributes—high productivity, large size, and export intensity—regardless of foreign ownership. It shows that large domestic firms and exporters generate productivity spillovers of similar magnitude to MNEs.– Size matters.

Data

- Data
  - Business-To-Business (B2B) transactions dataset containning the annual value of sales between all VAT-registered firms in Belgium.
  - Firm Financial and Operational Data

- Definition of Superstar Firm
  - Multinational firms, with at least ten percent share of inward or outward FDI
  - Non-wholesale exporters with at least ten percent export share
  - Large firms in terms of the top 0.1 percentile of total sales.

Empirical strategy

- Event study difference-in-difference design

We classify a firm i as a treated firm if it starts to sell to firm j of treatment type K for the first time and the amount sold to at least one of the treatment type K firms constitutes at least ten percent of its total sales in that period.

$$y_{i,t} = \sum_{\ell=-5}^{5} \beta_{\ell-1} I_{i,\ell} + \delta_i + \gamma_{s,t} + \epsilon_{i,t}.$$

Baseline Results

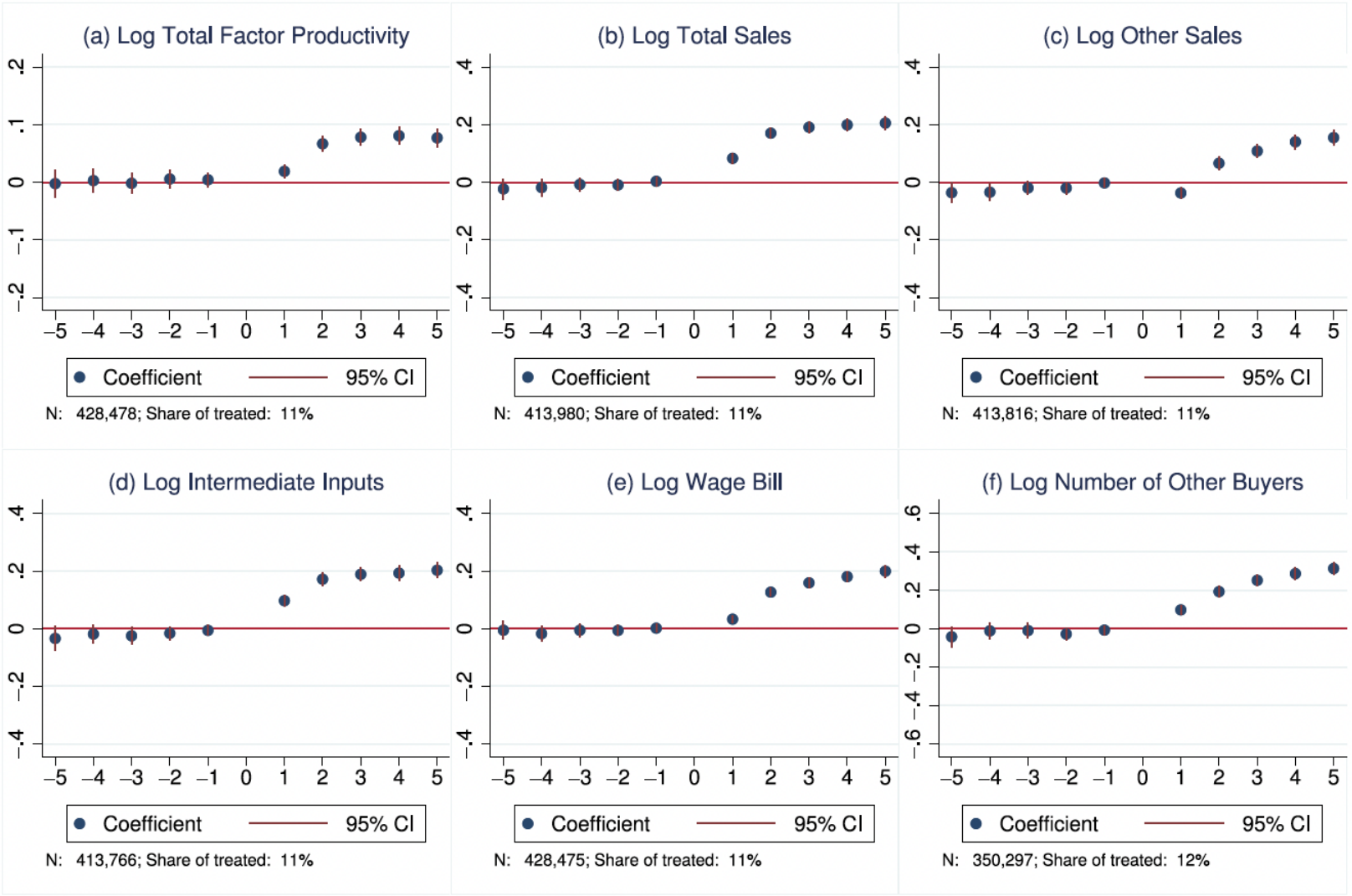


Fig. 3. Gains from selling to Large Firms.

There are positive causal effects on productivity from forming a relationship with a superstar firm.

Baseline Results

Table 4
Links to pure superstars.

	Log Total Factor Productivity (1)	Log Total Sales (2)	Log Other Sales (3)	Log Intermediate Inputs (4)	Log Wage Bill (5)	Log Number of Other Buyers (6)
Multinationals						
2 or more years before event	0.006	0.004	−0.006	0.005	−0.008	0.010
	(0.009)	(0.013)	(0.013)	(0.013)	(0.011)	(0.019)
t1: Year of event	0.015*	0.081***	−0.038***	0.104***	0.040***	0.085***
	(0.008)	(0.012)	(0.014)	(0.014)	(0.010)	(0.019)
1 or more years after event	0.083***	0.193***	0.137***	0.215***	0.179***	0.315***
	(0.009)	(0.013)	(0.015)	(0.016)	(0.012)	(0.020)
Observations	257,515	246,145	246,021	245,891	257,514	192,743
Adjusted R^2	0.723	0.871	0.866	0.888	0.860	0.863
% Share of Treated	8.99	8.81	8.76	8.82	8.99	7.22
Exporters						
2 or more years before event	0.006	−0.005	−0.020	−0.012	0.012	0.016
	(0.010)	(0.013)	(0.014)	(0.015)	(0.011)	(0.020)
t1: Year of event	0.003	0.063***	−0.040**	0.073***	0.019**	0.077***
	(0.009)	(0.013)	(0.018)	(0.014)	(0.010)	(0.020)
1 or more years after event	0.063***	0.139***	0.093***	0.135***	0.138***	0.257***
	(0.010)	(0.014)	(0.016)	(0.015)	(0.012)	(0.020)
Observations	284,238	271,877	271,732	271,519	284,238	215,197
Adjusted R^2	0.723	0.863	0.861	0.885	0.872	0.831
% share of treated	6.01	5.93	5.88	5.93	6.01	5.00
Large-Sales Firms						
2 or more years before event	0.015	−0.011	−0.019	−0.025	−0.008	−0.025
	(0.013)	(0.018)	(0.018)	(0.021)	(0.016)	(0.025)
t1: Year of event	0.028**	0.097***	−0.047**	0.103***	0.033**	0.075***
	(0.013)	(0.017)	(0.021)	(0.021)	(0.014)	(0.025)
1 or more years after event	0.086***	0.182***	0.065***	0.168***	0.150***	0.205***
	(0.014)	(0.019)	(0.024)	(0.023)	(0.018)	(0.027)
Observations	390,153	376,275	376,229	376,057	390,150	318,160
Adjusted R^2	0.723	0.880	0.877	0.895	0.871	0.877
% share of treated	2.44	2.39	2.38	2.39	2.44	2.12

Other Outcomes

Table OB4: Gains from selling to Superstars on other Performance Outcomes

	Firm survival	Log employment	Log tangible fixed assets	Log intangible assets	Log markup	Profits	Export value	Import value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
MNE								
t1: Year of event	0.078***	0.038***	0.072***	0.256***	-0.006***	0.204	0.006	0.003
	(0.001)	(0.006)	(0.011)	(0.037)	(0.002)	(1.273)	(0.009)	(0.014)
1 or more years after event	0.056***	0.153***	0.151***	0.266***	-0.010***	10.736***	0.061***	0.071***
	(0.002)	(0.007)	(0.015)	(0.039)	(0.002)	(1.406)	(0.012)	(0.014)
Observations	935,626	291,845	291,322	287,156	229,034	291,845	291,845	291,845
Adjusted R^2	0.088	0.847	0.817	0.621	0.850	0.665	0.935	0.846
Exporters								
t1: Year of event	0.076***	0.024***	0.063***	0.156***	-0.005***	-1.235	0.008	0.010
	(0.002)	(0.007)	(0.013)	(0.043)	(0.002)	(1.420)	(0.005)	(0.010)
1 or more years after event	0.062***	0.124***	0.119***	0.197***	-0.007***	8.681***	0.016	0.033***
	(0.003)	(0.008)	(0.017)	(0.045)	(0.002)	(1.554)	(0.010)	(0.012)
Observations	1,048,974	306,256	305,755	301,279	242,218	306,256	306,256	306,256
Adjusted R^2	0.089	0.854	0.816	0.638	0.851	0.661	0.664	0.613
Large								
t1: Year of event	0.074***	0.034***	0.078***	0.172***	-0.008***	3.938**	0.045***	0.027
	(0.002)	(0.006)	(0.012)	(0.037)	(0.002)	(1.755)	(0.017)	(0.020)
1 or more years after event	0.057***	0.138***	0.147***	0.221***	-0.010***	15.129***	0.121***	0.128***
	(0.003)	(0.008)	(0.016)	(0.038)	(0.002)	(1.997)	(0.023)	(0.027)
Observations	1,269,427	428,478	427,778	423,057	344,674	428,478	428,478	428,478
Adjusted R^2	0.084	0.859	0.814	0.630	0.846	0.660	0.831	0.798

Why?

Auction Matching Model

➢ The Auction Matching Model for Superstar firms and their suppliers

- K_1Superstar Markets: Each is a monopoly dominated by a single "superstar" firm.
- K_2Competitive Markets: Perfectly competitive.

$$\pi_{0i} = \tilde{\eta}\left(\frac{1}{c_i}\right)^{\eta-1} \qquad \pi_{1i} = \tilde{\eta}\left(\frac{1}{\gamma c_i}\right)^{\eta-1}$$

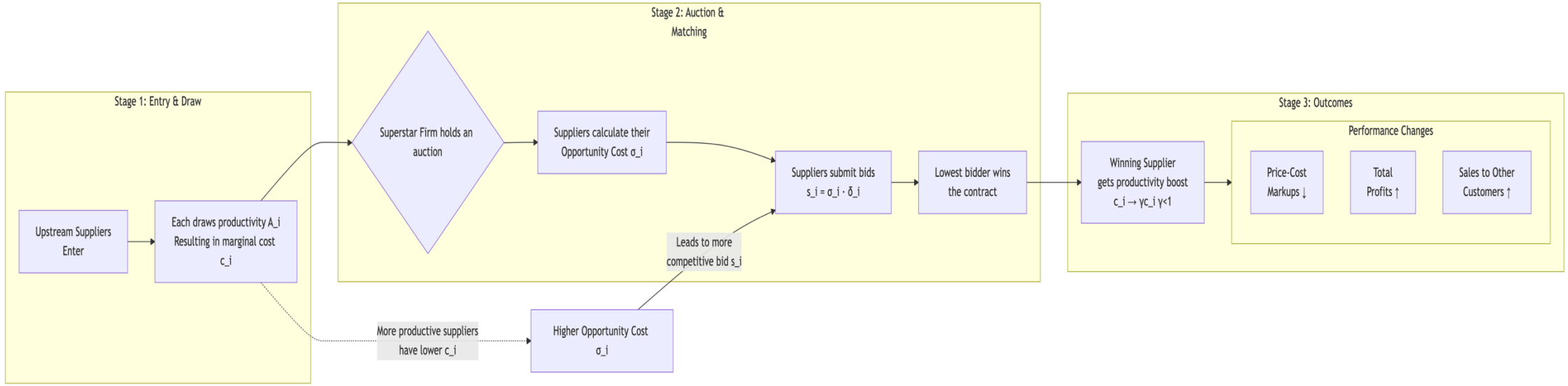
$$\sigma_i = \pi_{0i} - \pi_{1i} \qquad \max_{Z_i}(Z_i - \sigma_i) \times \Pr(\text{Winning}|Z_i)$$

- The first term is the payoff to winning the auction, which is increasing in Z, and the second term is the probability of winning the auction, which is decreasing in Z.
- Thus the firm faces the usual trade-off between profits if one wins and the probability of winning. The firm's optimal bidding strategy in the auction is:

$$s_i = \sigma_i \delta_i;\ where\ \delta_i = 1 + \frac{\int_{\sigma_i}^{\bar{\sigma}} [1 - F(\bar{\sigma})]^{I-1} d\bar{\sigma}}{\sigma_i [1 - F(\sigma_i)]^{I-1}}$$

$$D_i = 1\{s(\phi_i) < s(\phi_{i'})\}, \forall i' \neq i\ such\ that\ i, i' \in \mathcal{H}$$

Auction Matching Model



Proposition 1. Forming a relationship with a Superstar firm results in increases in (i) TFP, (ii) outputs (total sales, total sales to firms other than the multinational, more buyers), and (iii) inputs (intermediates, labor and capital).

Proposition 2. The firms who form superstar relationships will experience (i) a fall in price-cost markups and (ii) increasing profits.

Proposition 3. The firms who form relationships with a Superstar (i) have higher TFP; and (ii) are larger (as they have higher TFP).

Mechanism: Productivity Spillover

- Heterogeneity of treatment effects depending on characteristics of the Superstar firm.

Spillover Mechanisms - Heterogeneity of treatment effects depending on characteristics of the Superstar firm.

Dependent variable:	Log TFP Indicator Variable				Log Other Buyers Indicator Variable			
	R&D	ICT	Skill labor	RC	R&D	ICT	Skill labor	RC
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
MNE								
1 or more years after event	0.075***	0.071***	0.073***	0.072***	0.292***	0.284***	0.282***	0.267***
	(0.006)	(0.007)	(0.007)	(0.009)	(0.014)	(0.015)	(0.014)	(0.017)
x indicator variable	0.045***	0.036***	0.038***	0.016*	0.127***	0.096***	0.134***	0.072***
	(0.010)	(0.009)	(0.010)	(0.009)	(0.026)	(0.020)	(0.022)	(0.019)
Observations	291,845	291,845	291,845	291,845	219,944	219,944	219,944	219,944
Adjusted R^2	0.724	0.724	0.724	0.723	0.858	0.858	0.858	0.858
Exporters								
1 or more years after event	0.060***	0.061***	0.061***	0.062***	0.250***	0.253***	0.232***	0.238***
	(0.007)	(0.008)	(0.008)	(0.009)	(0.015)	(0.016)	(0.017)	(0.017)
x indicator variable	0.046***	0.017*	0.013	0.008	0.136***	0.050**	0.077***	0.062***
	(0.013)	(0.010)	(0.010)	(0.010)	(0.032)	(0.022)	(0.021)	(0.021)
Observations	329,274	329,274	329,274	329,274	232,931	232,931	232,931	232,931
Adjusted R^2	0.727	0.727	0.727	0.727	0.827	0.827	0.827	0.827
Large								
1 or more years after event	0.067***	0.070***	0.068***	0.072***	0.228***	0.230***	0.217***	0.220***
	(0.007)	(0.008)	(0.007)	(0.009)	(0.014)	(0.016)	(0.015)	(0.017)
x indicator variable	0.055***	0.013	0.028**	0.005	0.156***	0.051**	0.145***	0.052***
	(0.012)	(0.010)	(0.011)	(0.010)	(0.031)	(0.021)	(0.025)	(0.020)
Observations	428,478	428,478	428,478	428,478	350,297	350,297	350,297	350,297
Adjusted R^2	0.724	0.724	0.724	0.724	0.872	0.872	0.872	0.872

Mechanism: Non-productivity

➢Relationship Capability

Spillover Mechanisms - Heterogeneity of treatment effects depending on characteristics of the Superstar firm.

Dependent variable:	Log TFP Indicator Variable				Log Other Buyers Indicator Variable			
	R&D	ICT	Skill labor	RC	R&D	ICT	Skill labor	RC
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
MNE								
1 or more years after event	0.075***	0.071***	0.073***	0.072***	0.292***	0.284***	0.282***	0.267***
	(0.006)	(0.007)	(0.007)	(0.009)	(0.014)	(0.015)	(0.014)	(0.017)
x indicator variable	0.045***	0.036***	0.038***	0.016*	0.127***	0.096***	0.134***	0.072***
	(0.010)	(0.009)	(0.010)	(0.009)	(0.026)	(0.020)	(0.022)	(0.019)
Observations	291,845	291,845	291,845	291,845	219,944	219,944	219,944	219,944
Adjusted R^2	0.724	0.724	0.724	0.723	0.858	0.858	0.858	0.858
Exporters								
1 or more years after event	0.060***	0.061***	0.061***	0.062***	0.250***	0.253***	0.232***	0.238***
	(0.007)	(0.008)	(0.008)	(0.009)	(0.015)	(0.016)	(0.017)	(0.017)
x indicator variable	0.046***	0.017*	0.013	0.008	0.136***	0.050**	0.077***	0.062***
	(0.013)	(0.010)	(0.010)	(0.010)	(0.032)	(0.022)	(0.021)	(0.021)
Observations	329,274	329,274	329,274	329,274	232,931	232,931	232,931	232,931
Adjusted R^2	0.727	0.727	0.727	0.727	0.827	0.827	0.827	0.827
Large								
1 or more years after event	0.067***	0.070***	0.068***	0.072***	0.228***	0.230***	0.217***	0.220***
	(0.007)	(0.008)	(0.007)	(0.009)	(0.014)	(0.016)	(0.015)	(0.017)
x indicator variable	0.055***	0.013	0.028**	0.005	0.156***	0.051**	0.145***	0.052***
	(0.012)	(0.010)	(0.011)	(0.010)	(0.031)	(0.021)	(0.025)	(0.020)
Observations	428,478	428,478	428,478	428,478	350,297	350,297	350,297	350,297
Adjusted R^2	0.724	0.724	0.724	0.724	0.872	0.872	0.872	0.872

Mechanism: Non-productivity

➢Dating agency & Signal

- 成为超级明星企业的供应商本身是一个质量认证，使得超级明星企业网络内的其他公司更愿意与该供应商合作。（金牌供应商）

Table 6
Dating agency mechanism.

Superstar Treatment:	MNE		Exporters		Large	
Number of other buyers:	In network (1)	Out of network (2)	In network (3)	Out of network (4)	In network (5)	Out of network (6)
Mean of dependent variable	1.03	12.90	0.18	10.17	0.75	18.00
Year of event	0.389	−0.148	0.047	0.059	1.842**	0.000
	(0.251)	(0.261)	(0.078)	(0.191)	(0.932)	(0.345)
1 or more years after event	1.178***	3.722***	0.474***	2.840***	2.549***	4.187***
	(0.201)	(0.384)	(0.105)	(0.212)	(0.770)	(0.573)
Observations	219,944	219,944	232,931	232,931	350,297	350,297
Adjusted R^2	0.939	0.864	0.882	0.894	0.802	0.927
Expected number of buyers in network	0.251		0.089		0.631	
Odds of actual number compared to expected number	4.69:1		5.30:1		4.25:1	

Robust Check

- Placebo experiment (concern: spillover just comes from a new business relationship)
- End relationship with superstar
- Robust Estimation with Heterogeneous Treatment Effects(staggered)
- Alternative Definitions of Superstar Firms

Conclusion and Discussion

➢Comments

- The discussion from narrow "FDI spillovers" to the broader and more fundamental concept of "superstar spillovers," linking a firm's success to its productivity and size rather than its foreign ownership.

- It documents, for the first time, non-productivity channels like "relationship capability spillovers" and the "dating agency" effect, significantly enriching our understanding of how networks create value.

- The analysis focuses exclusively on the benefits to suppliers. It does not quantify the costs incurred by the superstar firms (e.g., training, monitoring, collaborative engineering) to generate these spillovers.

- Leverage exogenous shocks, such as the opening or closure of a superstar plant for non-economic reasons (e.g., environmental regulations, political events), to obtain even cleaner identification.

这一主题下的延伸文献

超级工厂富士康

➢Jianpeng Deng, Hong Ma and Hongbing Wei, 2025, Super Factory Comes to Town: Identifying the Agglomeration Spillovers from Foxconn Factory in Henan, *Working Paper*.

- 超级工厂如何影响周围小厂
- 基于栅格与富士康的地理距离&富士康入驻前后年份进行实证设计（Geographic DID Approach）
- 显著改善了河南（郑州、开封）本地更邻近富士康的制造业企业的生产率
- 在简约估计的基础上，进一步构建了一个量化空间一般均衡模型（考虑了Agglomeration Forces），结果显示：富士康对本地制造业部门的就业和工资都有促进作用（1单位富士康的labor带来制造业部门额外5.6单位的就业）
- 评论：这篇文章没有进一步细分制造业企业，未能说明它们与富士康是否存在实际的上下游关系。所使用工企的数据虽然变量全面，但没有包括更小规模的企业。

这一主题下的延伸文献

超级工厂的知识溢出

- Giroud, X., Lenzu, S., Maingi, Q., & Mueller, H. (2024). Propagation and amplification of local productivity spillovers. *Econometrica*, *92*(5), 1589-1619.
  - 超级明星企业/工厂带来的集聚效应会在生产网络中传递与放大。
  - 超大型工厂的开设不仅能提高本地现有工厂的生产率，还能提升数百英里外遥远工厂的生产率——这些工厂隶属于大型多工厂、多区域企业，且通过旗下某一工厂接触到了本地生产率溢出效应，学习到了先进的管理经验等等。
  - 这其中的关键机制在于生产网络中的知识溢出。

这一主题下的延伸文献

“大”如何影响（与之有产业关联的）“小”

- Cheng, S. F., Vyas, D., Wittenberg-Moerman, R., & Zhao, W. (2025). Exposure to superstar firms and financial distress. *Review of Accounting Studies*, *30*(2), 1355-1396.
  - 超级明星企业改变了市场竞争格局
  - 与超级明星企业经营业务重叠程度得分排在前10%的非超级明星（“暴露在超级明星之中”）有着更高的股价不确定性、退市概率和破产概率
  - 如果是超级明星的供应商，受影响更小
  - 评论：文章中所谓的非超级明星“小”企业也全部都是上市公司。

这一主题下的延伸文献

“大”如何影响（与之有产业关联的）“小”

- Talamas Marcos, M. Á. (2025). Surviving Competition: Neighbourhood Shops versus Convenience Chains. *Review of Economic Studies*, 92(1), 553–585.
  - 零售业中集中度上升的问题（数据不及制造业那么丰富细致）
  - 研究墨西哥社区商店（Neighborhood Shop）与连锁便利店（Chain-run Convenience Store）之间的市场竞争
  - 711为代表的大品牌连锁店扩张，使得小微零售业市场主体（社区小便利店）退出

相关话题的中文文献

- Autor2020的中国检验
- 2008-2016税调数据

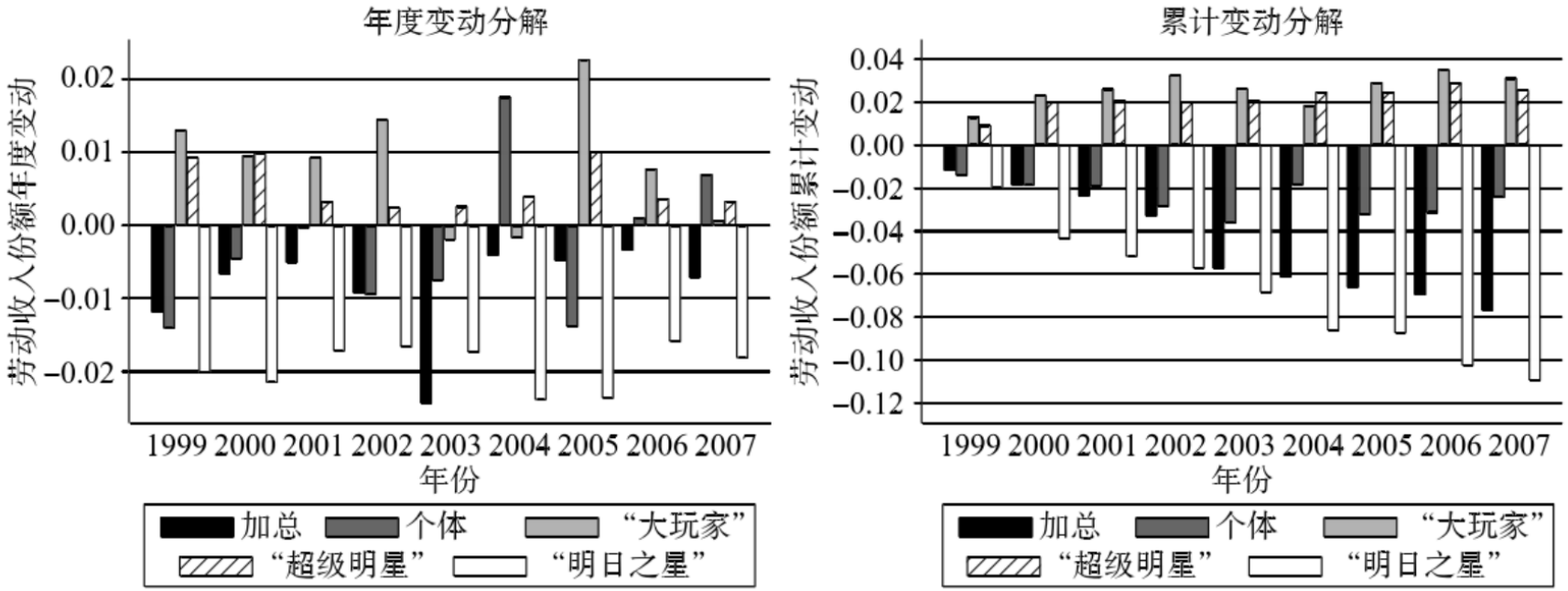


图 3　加总劳动收入份额变化分解(1998—2007 年)

注：该图给出等式(6)对应指标变化情况。图例由左至右依次表示加总劳动收入份额年度和累计变化 $\Delta\lambda_t$，个体劳动收入份额年度和累计变化 $\Delta\bar{\lambda}_t$，以及三种情境指标的年度和累计变化，即“大玩家”：$\Sigma\{(\omega_{it-1}-\bar{\omega}_{it-1})[\lambda_{it}-\lambda_{it-1}-(\bar{\lambda}_{it}-\bar{\lambda}_{it-1})]\}$，“超级明星”：$\Sigma\{[\omega_{it}-\omega_{it-1}-(\bar{\omega}_{it}-\bar{\omega}_{it-1})](\lambda_{it-1}-\bar{\lambda}_{it-1})\}$ 和“明日之星”：$\Sigma\{[\omega_{it}-\omega_{it-1}-(\bar{\omega}_{it}-\bar{\omega}_{it-1})][\lambda_{it}-\lambda_{it-1}-(\bar{\lambda}_{it}-\bar{\lambda}_{it-1})]\}$。所有的数值均基于平衡面板数据计算得出。

➢ **测算**

- 二位数行业中当年资产总额列居全国前50名的企业界定为龙头企业
- 将投入产出系数作为权重测度产业链龙头企业

➢ **主要发现**

- 是动力
- 机制：降低成本、提高TFP

➢ **评论**

- 机制也像“动力”本身，是结果变量，并未进一步解释为什么会以大带小

附表 1　2003-2013 年城市龙头企业平均数量及排名（前 30 名）

城市	均值 (个)	排名	城市	均值 (个)	排名
上海市	79.27	1	泉州市	20.82	16
苏州市	54.27	2	重庆市	19.64	17
北京市	53.91	3	佛山市	19.27	18
深圳市	53.55	4	成都市	18.01	19
天津市	36.00	5	嘉兴市	17.45	20
广州市	35.36	6	烟台市	16.45	21
杭州市	34.45	7	武汉市	16.36	22
绍兴市	33.82	8	厦门市	15.55	23
无锡市	29.00	9	潍坊市	15.55	24
东莞市	28.82	10	威海市	15.27	25
宁波市	28.82	11	哈尔滨市	13.91	26
南京市	25.09	12	温州市	13.55	27
青岛市	25.09	13	西安市	13.30	28
大连市	24.50	14	东营市	12.36	29
沈阳市	21.45	15	淄博市	11.82	30

➢主要发现

- 利好：平均而言，工业机器人应用促进了企业劳动收入份额的提高。
- 隐忧：工业机器人应用提升了企业自身市场势力及其相对市场势力，促进“超级明星效应”的形成，使得劳动收入份额下降（没检验，解释有这个可能，所以说是“隐忧”）。

孟珊珊、李艳、杨汝岱：《市场结构、创新收益供应链分配与产业发展》，《经济研究》2024年第12期。

➢核心问题

- “大树”在市场中扮演的角色
- 大树底下好乘凉or大树底下寸草不生

➢主要发现

- 行业内市场力量较强、处于垄断地位的上游龙头企业会“攫取”下游企业的创新收益，进而出现创新收益的供应链分配现象。

➢评论

- 文章在引言和事实描述部分选择了具体的超大型企业，很直观很接地气，后面做实证却仍然是上市公司、税调的大样本，反而把机制解释得不太清晰。
- 作者也提到了下游的、更靠近消费端的平台企业，比较遗憾没有看到对这些“大树”的进一步探讨。
- 当然，数据限制了研究的设计。

➢宏观金融、财税领域

- 彭俞超等：《货币政策与市场结构：来自龙头企业供应链资金占用的证据》，《经济研究》2025年第5期。
- 钟尧、李佶冬、崔小勇：《中国企业纳税规模分布和超级明星企业的有效税率》，工作论文，2025。

➢调研中的发现

- “希音村”：大型电商平台促进供应商集聚、产业链配套、吸纳就业、派生消费
- 东莞：华为、OPPO和VIVO等大厂带来了相关上下游配套的产业集群

研究思考与启发

- 描述事实的工作非常重要。对规模以下的企业，尚没有规范而全面的普查数据。
- 政府或产业政策的作用。政策引导的企业选址与设厂该如何权衡全局与局部的利弊。
- “超级大”=？垄断或者“吸血”吗？必然带来福利损失吗？
- 传统企业与平台企业的相同和不同。例如，同样是大厂，富士康和美团影响就业与工资或对其他部门中小企业产生溢出作用的逻辑是一样的吗？平台类企业和数字经济领域的新问题。
- 对超级明星经济学的关注不局限于企业。资源集中、规模超大、Winners take all是现实世界中的普遍现象。

- 大国大城、大都会/都市圈、超级明星城市？
- 摩天大楼
- 顶尖发明人带来的创新

Thanks！