What Disrupted Disruption?

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Technology disrupts industries

- Newspapers
- Brick-and-mortar retail
- Finance
Does technology disrupt leading firms?

Christensen, "Innovator’s Dilemma"
Does technology disrupt leading firms?
Rising industry concentration

Source: Economic Census
What disrupted disruption?

• Internet?
What disrupted disruption?

- Internet?
- China shock?
What disrupted disruption?

- Internet?
- China shock?
- Intangibles / Software
Top firm intangibles
Top firm intangibles
SW ➔ Market share
SW → Market share

Causal
WHY?
Barcode scanner

• Accessible
  • Independent >> National chains
  • Productivity gains
    • Revenue / worker: + 5%
    • Grocery prices: -1.4%

• Small competitive advantage
Walmart

- Integrated system
  - Suppliers / stores / distribution centers / headquarters

- Differentiation:
  - Greater selection
  - More responsive
  - Lower prices

- Market share: 3%, 1982
  \[\rightarrow\] 52%, 2012
Big SW → Big firm differentiation

• Retail logistics & inventory, better selection & response

• Waste management logistics, faster response

• Manufacturing CAD/CAM, more features
  • Aircraft, autos

• Targeted advertising, finer targeting
  • Google, Facebook

• Targeted credit offers, finer risk targeting
  • Top 4 banks: 57% credit cards issued
Vertical differentiation…

- Weakens incentives for smaller firms
  - Product improvements *decrease* differentiation
  - Large firm “business stealing”
    - Too much selection
    - Too many features
  - Natural oligopoly
    - Stable market shares

- Firms restrict access
  - Limit licensing
  - Restrict knowledge flows
Large firms dominate software

Firm size, excluding computer and computer service industries

- under 10
- 10 to 49
- 50 to 99
- 100 to 499
- 500 to 999
- 1000+

Share of SW Workers
Technology gap
Technology gap

• Higher “moat”
  • Less disruption
  • Greater concentration

• Slows firm growth from productivity
Disruption & productivity

• Productive firms grow faster
  • ➔ overtaking market leaders = disruption
Disruption & productivity

- Productive firms grow faster
  - $\Rightarrow$ overtaking market leaders = disruption

- Productive firms grow faster
  - Reallocating resources
  - $\Rightarrow$ raising aggregate productivity
Productive firms grow faster
Slower after 2000
Decker et al. (2020): Explains *much* of productivity slowdown.
Information technology

• Disrupts industries
Information technology

- Disrupts industries
- **Suppresses** disruption of leading firms
Information technology

- Disrupts industries
- Suppresses disruption of leading firms
- Disrupts economy