

# Innovation, Resource Allocation, and Productivity

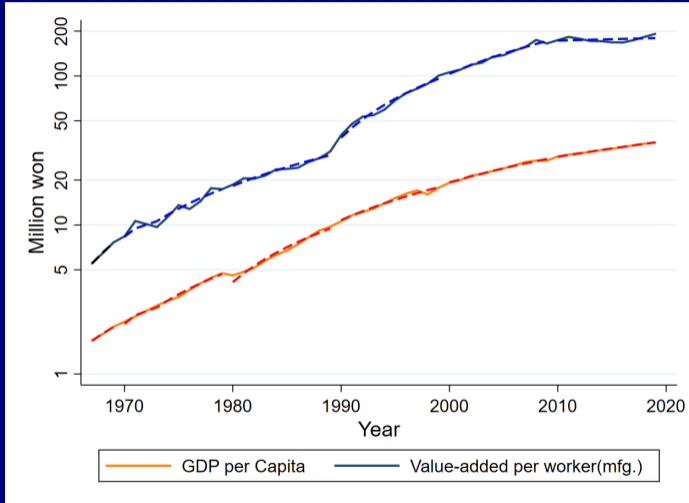
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# Korea's Growth Miracle and Slowdown

“Se-Jik Kim's Law”

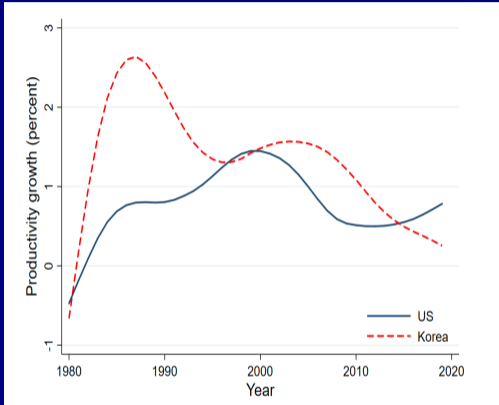


Note: GDP per capita is deflated by GDP deflator (2015=100), and value-added per worker is deflated by manufacturing industry deflator (2015=100).

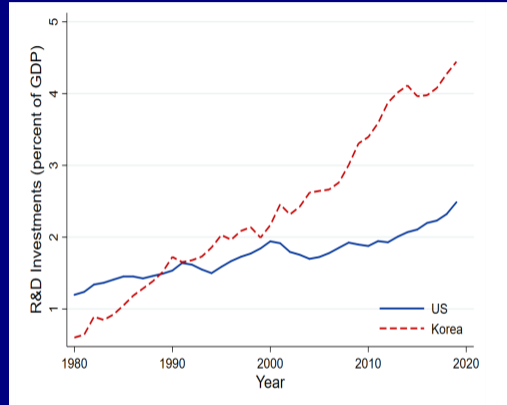
# Korea's Growth Miracle and Slowdown

- ▶ Factor accumulation
- ▶ Productivity growth
  1. Innovation
  2. Resource allocation
- ▶ (Selective) lessons from China's recent technological advances

# Productivity and Innovation (R&D)



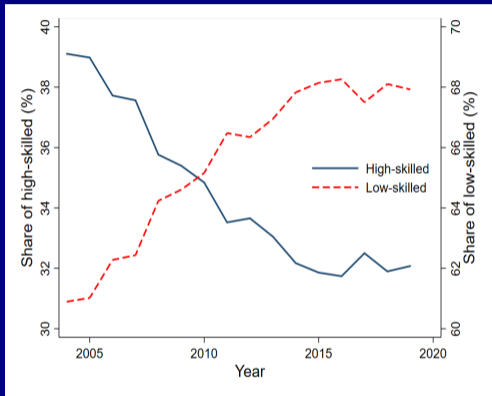
(a) TFP Growth (filtered)



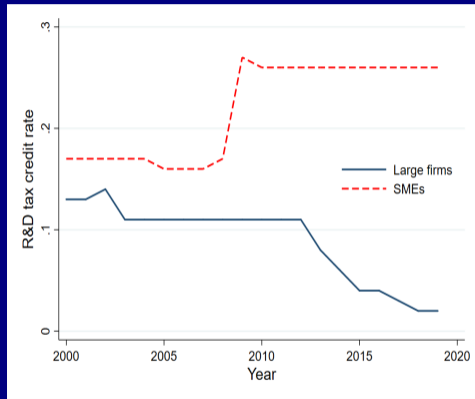
(b) R&D Investment

► Growth without innovation; Innovation without growth?

# R&D Quantity or Quality?

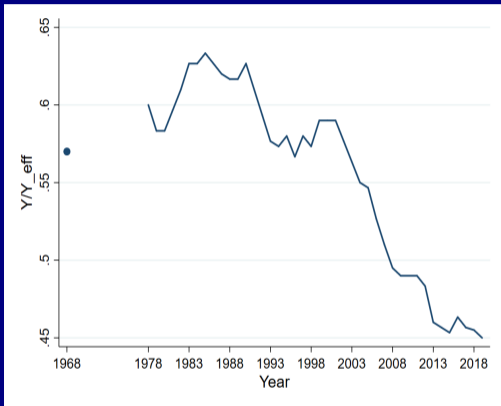


(a) Researchers with Advanced Degrees

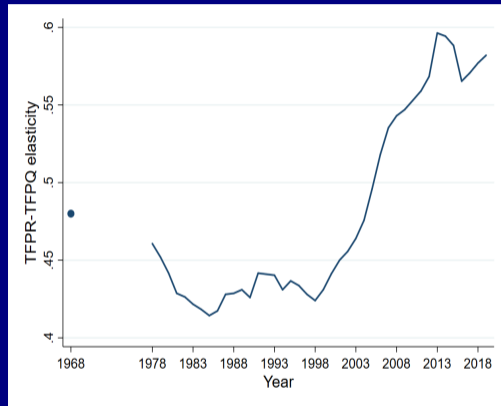


(b) Size-Dependent R&D Subsidy

# Allocative Efficiency (Manufacturing)

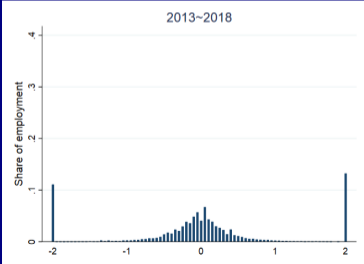
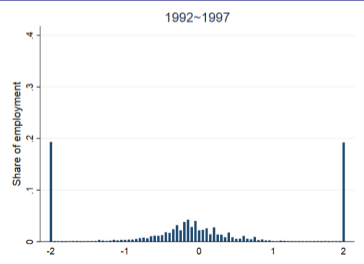
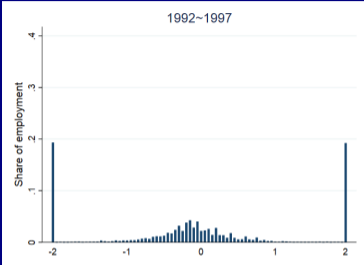
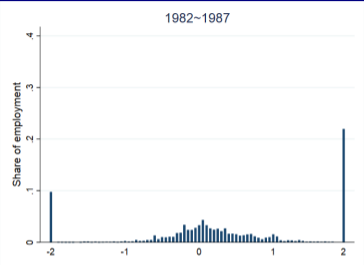


(a) Actual over Efficient (Manufacturing) GDP



(b) Plant-Level Distortion-TFP Correlation

# Creative Destruction (Employment Growth)



# Dynamic Allocative Efficiency

	Employment growth	Capital growth
Productivity: $\beta_1$	0.0274*** (0.0047)	0.2000*** (0.0082)
prod×trend: $\delta$	-0.0003 (0.0002)	-0.0038*** (0.0003)
prod×1980s: $\lambda_{80s}$	0.0199*** (0.0046)	0.1835*** (0.0087)
prod×1990s: $\lambda_{90s}$	0.0278*** (0.0057)	0.1508*** (0.0097)
prod×2000s: $\lambda_{00s}$	0.0239*** (0.0051)	0.1069*** (0.0064)
prod×2010s: $\lambda_{10s}$	0.0135*** (0.0056)	0.0758*** (0.0051)

# How China Advances in Tech

China has its share of economic problems, but in tech,

- ▶ Government-University-Private Partnerships
- ▶ Loose regulation (negative regulation) and cutthroat competition (price wars and 996 work culture)
- ▶ “Open Innovation”
- ▶ It is **neither desirable nor possible** to copy them all, but we should understand what our competition is doing.

# Challenges for Korea

- ▶ Awareness of the global competitive tsunami (China, Big Tech, industrial policy), not just within-Korea landscape
- ▶ Unwinding regulation (Korean “Draghi Report”?)
- ▶ Labor market reforms (flexicurity with a focus on retraining and job placement services)
- ▶ Contingent selective support where competitive pressure will remain
- ▶ Design of redistributive policies that take efficiency losses into account