Remaking Industrial Policy: Avoiding Pitfalls, Meeting New Challenges

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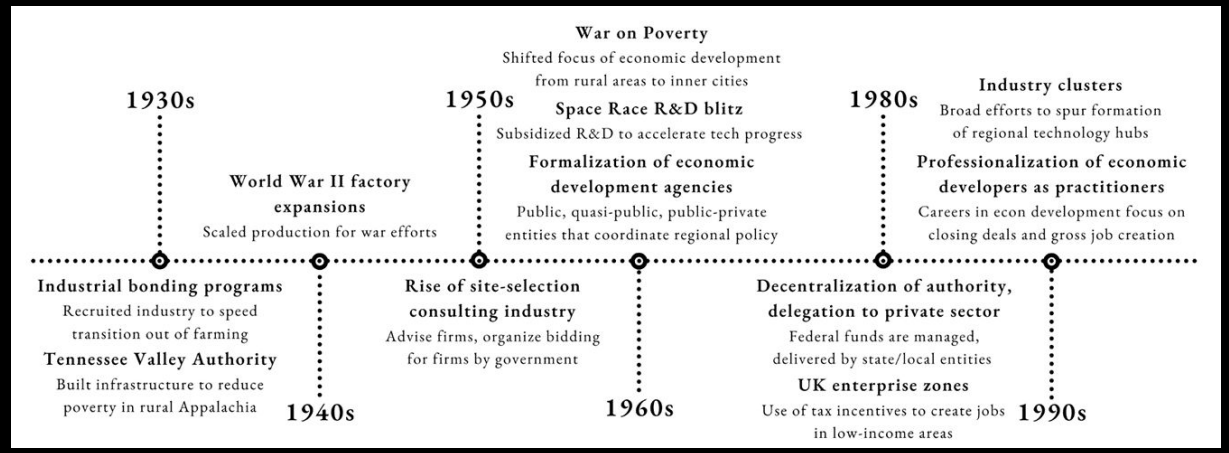
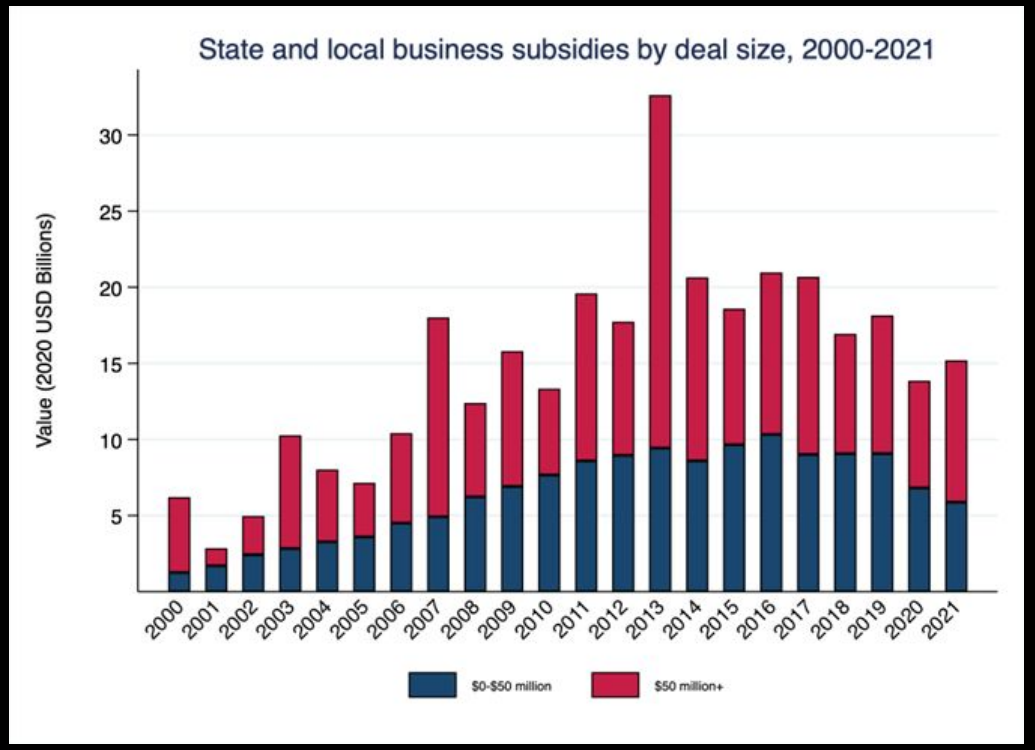
Industrial policy has a long history, and never went away



- In the US, “industrial” policy goes back to Alexander Hamilton (1791) and land-grant colleges (1862)
- Reagan, Thatcher, Pinochet all practiced IP, despite their free-markets rhetoric
- Today, it is carried out self-consciously, in pursuit of multiple objectives



Source: Hanson et al. (2024)

What is industrial policy?

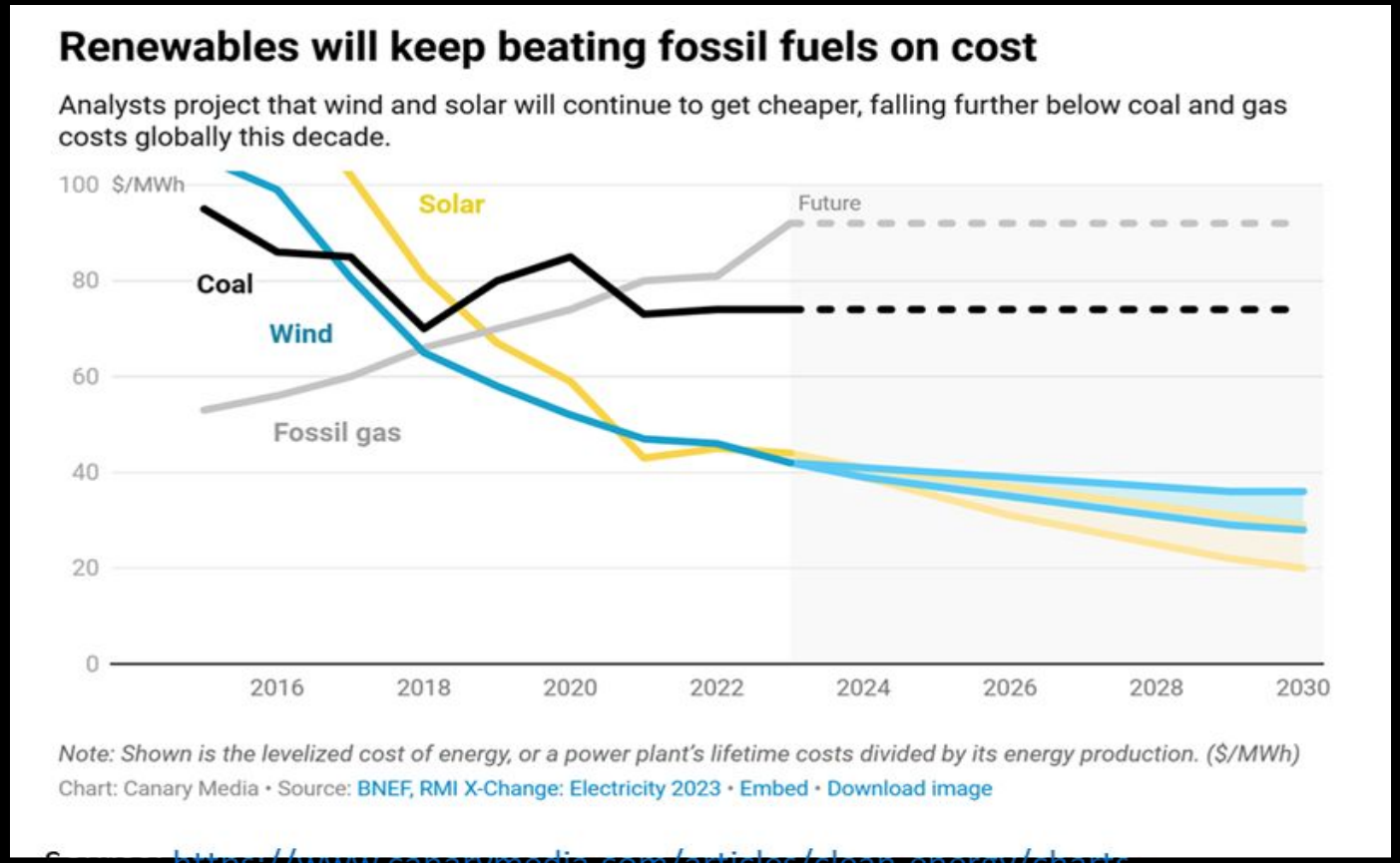
- Definition: government policies that explicitly target the transformation of the structure/productivity of economic activity in pursuit of some public goal
  - "we promote *X* but (implicitly) not *Y*"
- What's not industrial policy?
  - "Horizontal" policies that do not have much effect on structure of economic activity
    - fiscal and monetary policies, social policy
  - Or policies that do not explicitly target structural change (even when they have that effect)
    - e.g., funding of engineering education, tax credits for R&D in general, social transfers to poor families that may be concentrated in lagging regions

Economists' caricature of industrial policy…

- Objective: internalizing learning, innovation spillovers
- Remedy: Pigovian subsidies
- Focus on manufacturing, hi-tech sectors
- Risks
  - Lack of information ("governments cannot pick winners")
  - Political capture (Solyndra)
- Pre-requisites
  - Good information
  - Arms'-length relationship with firms
  - Strict conditionality/discipline (East Asian exception: "hard" states)
- Evidence
  - Rarely works

…is out of date

Example: The renewables success story



Source: https://www.canarymedia.com/articles/clean-energy/charts-renewables-are-on-track-to-keep-getting-cheaper-and-cheaper

Industrial policy + learning curve:

heavy subsidies =>
capacity increase =>
learning by doing =>
cost reduction =>
price reduction =>
market expansion =>
capacity expansion =>
…

China’s green industrial policies

- More than subsidies
  - variety of instruments: directed credit, public investment in R&D and infrastructure, government procurement, demonstration programs, public VC, regulatory changes, industry consolidation
  - explicit, self-conscious experimentation
  - mutually supportive (and occasionally competing) roles of national, provincial, and municipal government
  - collaborative approach (both with local governments and businesses)
  - revision and flexibility in implementation (as in redesign/removal of incentives or consolidation efforts)
- Formal evidence: cities that provided production subsidies experienced increases in innovation and production in solar panels (synthetic diff-in-diff, Banares-Sanchez et al., 2024)
- Political economy
  - Driven by a mix of motives: recognition that fossil-fuel driven model unsustainable; commercial/competitive advantage
  - Second-best motives: Fighting climate change by creating winners (carrots) rather than losers (sticks)

Political advantages of green subsidies

- Carrots instead of sticks
  - creates winners
- Create national advantages
  - competitive, geopolitical
  - overcomes free riding incentives
- Enlarge coalition in favor of green transition
- Reduce costs of phasing out fossil fuels

=> Green subsidies as path to carbon pricing

The broader case for industrial policy, beyond spillovers

- Technological (and other) externalities
  - E.g., dynamic learning externalities, spillovers
- Coordination failures
  - E.g., upstream-downstream linkages with IRS, agglomeration, clusters
- Missing public inputs
  - E.g., particular infrastructure, specialized workforce skills, sector-specific legal/admin frameworks
- Second-best factors
  - E.g, under-pricing of carbon emissions

==> optimal policy depends on specific rationale + political/admin. considerations

Industrial policies don’t always work: what does Solyndra’s failure show us?

- A case of (very public) failure, after having been touted by Obama administration as flagship of green industry promotion
- Inevitability of supporting some ventures that will fail
  - cf. venture capital
- Question is: how does overall portfolio perform?
  - Tesla also received a similar loan from govt
- Impossibility of picking winners
- But letting losers go is feasible
- Solyndra was a failure only to the extent that (a) it could have been avoided with what was known ex ante; and/or (b) was allowed to persist for too long
  - public debate makes too little distinctions of this kind

Negative reputation among economists is due to practical arguments

- Inadequate information: governments lack knowledge about where market imperfections are
  - “governments cannot pick winners”
- Bad politics: governments are prone to political capture by powerful insiders
- Thus, debate on IP revolves not around its theoretical merits, but around sharply conflicting views regarding the relative importance and pervasiveness of these obstacles
  - “look at how difficult it all is…”
  - “but look at countries in East Asia who have done it …”

The debate on industrial policy

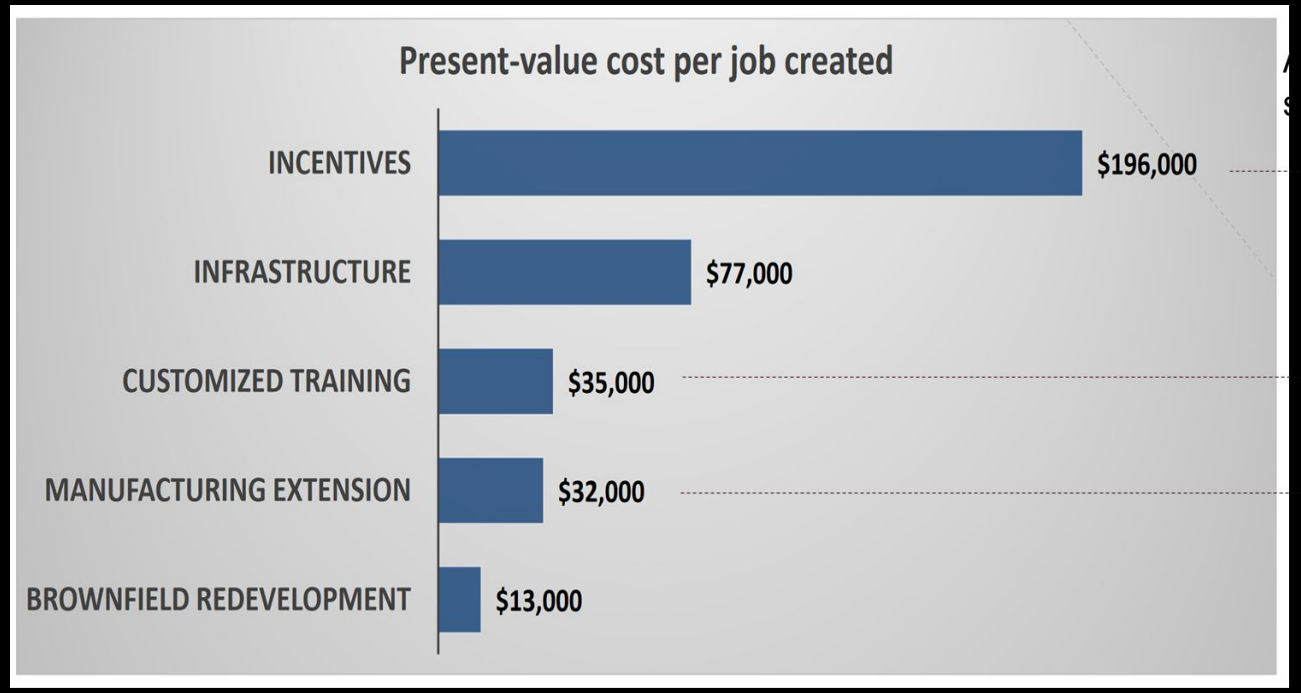
- The unproductive debate: “whether”
  - regardless of the arguments in favor and what economists/technocrats say, governments will practice it anyhow
- The productive debate: “how”
  - in all other areas of government policy (such as education or macro stabilization), it is recognized that the market-failure arguments for intervention can be exploited by powerful insiders and overwhelmed by informational asymmetries
  - but debates revolve around *how* to improve policy, not on *whether* governments should intervene
- What do history and current challenges imply about the “how”?

Example: Place-based policies

- UK: Criscuolo et al. (2019), “Some Causal Effects of an Industrial Policy” (*AER* 2019)
  - causal effects on employment (and other outcomes) of regional investment subsidies in UK
  - identification through changes in eligibility criteria for regions, set by EU
  - Positive employment effects, especially for SMEs
- Italy: Cingano et al. (2022); Incoronato & Lattanzio (2023)
  - regional subsidies had a positive effect on job creation, increasing employment by 17% over a 6-year period.
  - Subsidies aimed at jump-starting development in the South succeeded in creating increased agglomeration of workers and firms locally in the long run, increasing further after the policy was terminated.
- Local economic development coalitions in U.S.
  - E.g., “The Right Place” in Western Michigan
  - What works: customized public inputs (training, technology, marketing, greenfields, coordination)

What works better: customized public inputs instead of subsidies

- Excessive focus on subsidies
  - customized business services/inputs work better
  - coordination, workforce & management training, business services, technology, greenfields, regulatory assistance – financing too, when needed
- Subsidies are typically cost-ineffective



A new challenge for industrial policy: good jobs

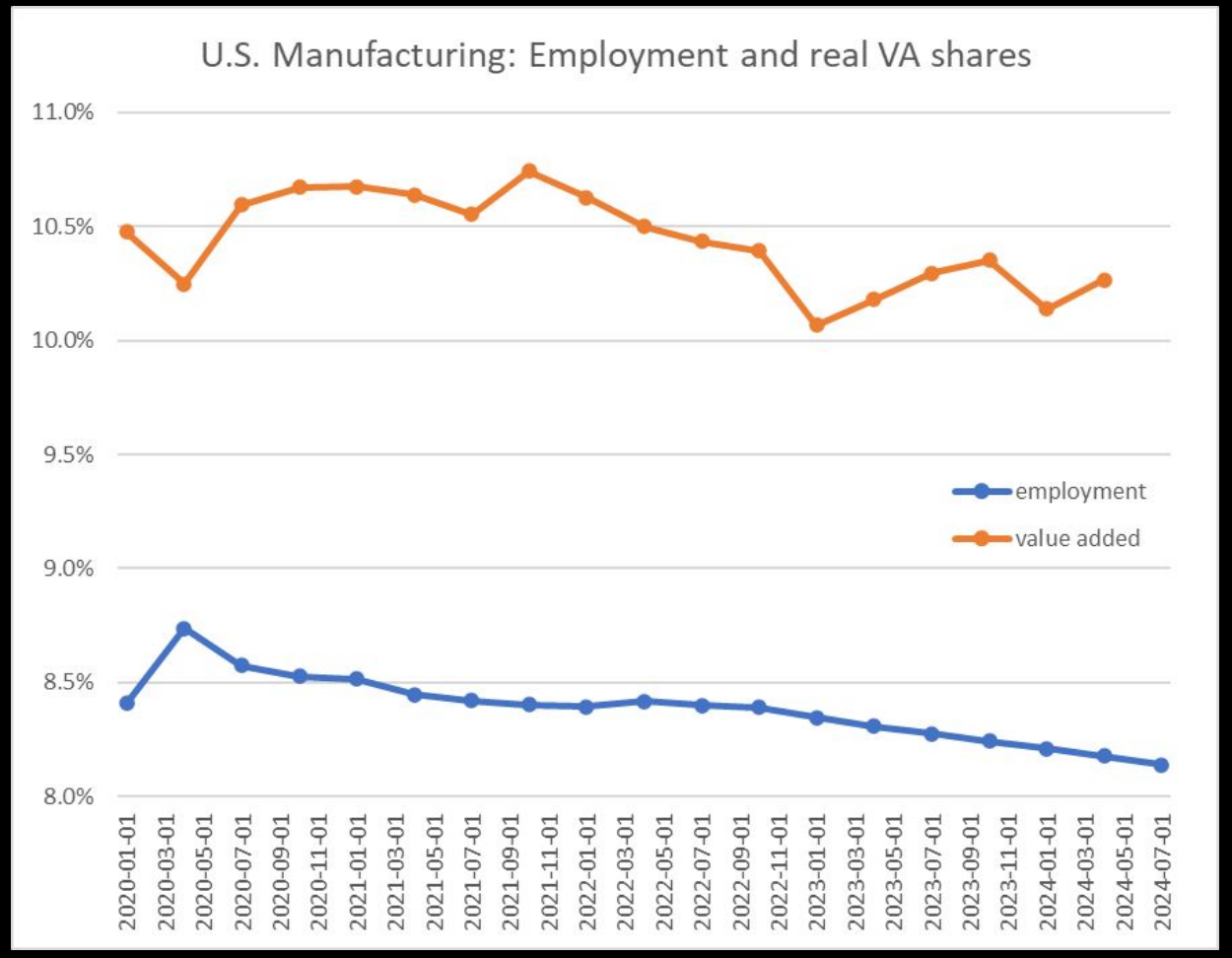
- Disappearance of good jobs (through trade, automation, and austerity shocks) has been linked to a variety of social and political ills
  - rising rates of crime, addiction, broken families, suicide
  - support for right-wing nativist political movements
  - increase in authoritarian values

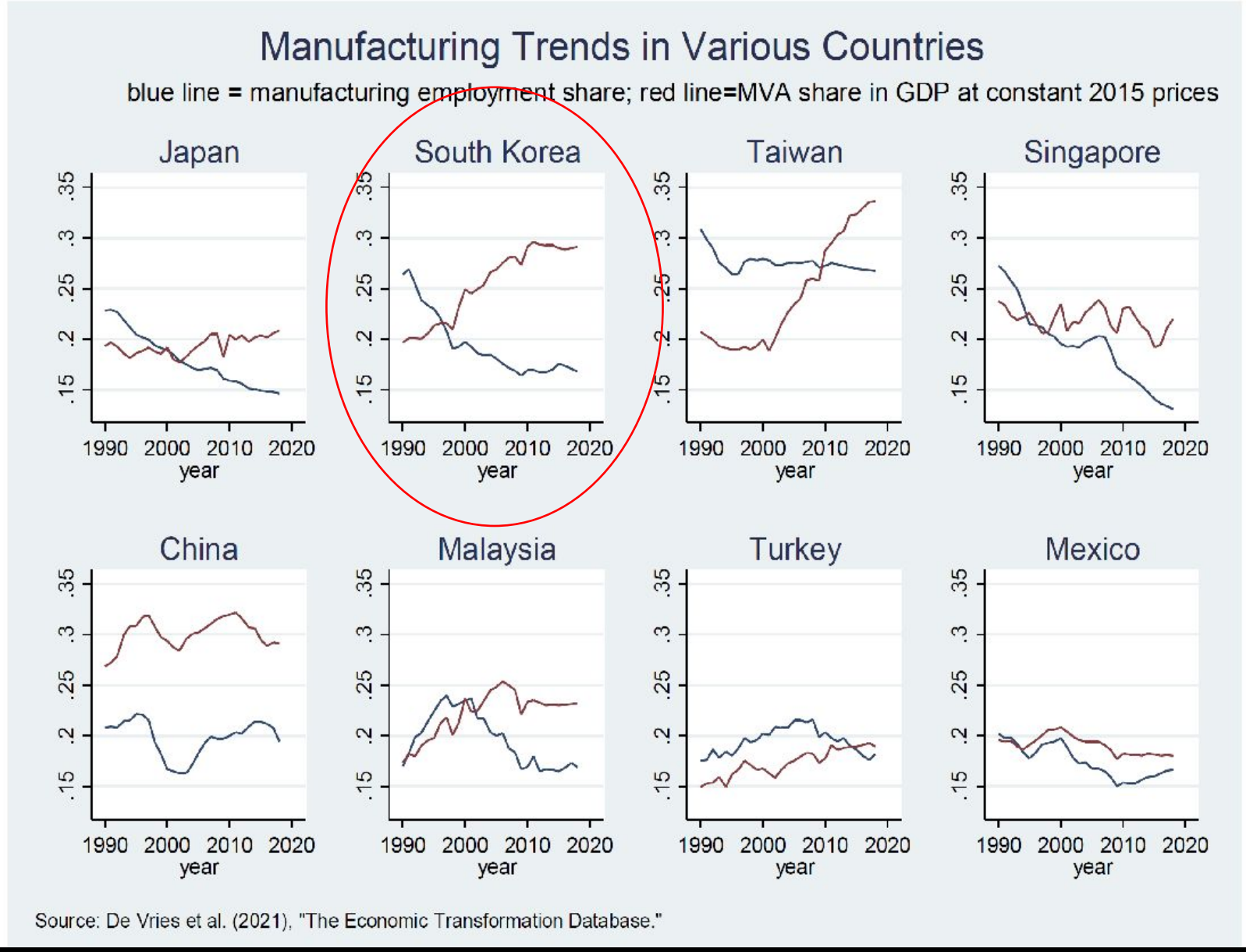
Industrial/innovation/place-based policies as complement to workforce training

- Working on demand side of labor markets
  - to ensure supply of good jobs
  - To ensure skill mix of labor demand matches skill composition of local labor supply
- Focusing on productivity
  - high wages supportable only through higher productivity
  - which depends also on quality of firms (SMEs)
- Firm-level complementarity between good firms and good jobs
  - significant share of wage dispersion due to differences in firm characteristics (Criscuolo et al., 2020)
  - more productive firms offer superior job ladders (Aghion et al., 2019)

A new focus: from manufacturing to services

- Green transition and innovation may still require focus on manufacturing
- But jobs are not and will not be in manufacturing
  - federal industrial & innovation policy focuses on manufacturing, supply-chains, the green transition, global competitiveness (e.g., CHIPS and IRA Acts)
    - good jobs as incidental, or by-product of those other objectives
  - TSMC Arizona: $65bn investment, $6bn grants, 6,000 jobs
- The future of “industrial” policy for good jobs is in services





The output-employment disconnect in manufacturing

A new focus: labor-friendly technologies

- Lack of public investment in/incentives for labor-friendly technologies
- Direction of technological innovation is endogenous
  - firms often face an envelope of technology choices, with little difference to profit/productivity, but potentially huge implications for workers (Fuchs 2022)
  - examples of digital tools and AI systems
    - long-term care: real-time info to enable care workers to exercise more autonomy and agency (e.g., vary eating schedules, undertake additional medical tasks, respond to needs of residents)
    - retail: info systems that enable specialized sales and customer services, greater autonomy in decision-making
    - education: enable provision of specialized services targeted to individuals' learning needs and objectives
- An ARPA-W for workers?

Example: Labor-absorbing services in LDCs

Name of program	Region	Dates of operation	Objective (Employment /Productivity)	Lead agency	Public sector role	Partners	Mechanisms	Formal or Information Evaluation Results	Source
1. Working with large and relatively productive incumbent firms, to incentivize them to expand their employment, either directly or through their local supply chains									
Ridesharing cab driver program (Saksham Saarthi)	South Asia	2018-Present	Employment	Government	Lead agency	Large firms (Uber & Ola)	Unemployment data sharing; Policy barriers; Firm recruitment	Successful (Informal)	Muglur et al. (2019)
2. Working with smaller firms to enhance their productive capabilities through specific public inputs									
Business plan competition in Nigeria	Africa	2011-2017	Both	Government	Lead agency	MSMEs, private firms, think tanks, educational institutions	Business competition	Successful (Formal)	McKenzie (2017)
3. The provision, to workers directly or firms, of new technologies that explicitly complement low-skill labor									
Software for community health workers in India	South Asia	2012-Present	Productivity	Government	Lead agency	Private firm (Qualcomm)	Training; Technology tool	Successful (Informal)	Hamilton and Bora (2015)
4. Vocational training with "wrap-around" services to enhance employability, job retention, and promotion									
Harambee	Africa	2011 - Present	Employment	Social Enterprise	Collaborator	Philanthropy, Global Development Agency	Training; Technology tool; Unemployment data sharing; Firm recruitment	Successful (Informal)	Carranza et al. (2022)

Source: Rodrik and Sandhu (2024)

A new governance model

- Traditional approach: top-down, arms'-length, ex ante selection of sectors/firms, hard conditionality (in principle)
  - "picking winners"
- Proposed approach: iterative, strategic collaboration, where the role of public sector is
  - goal-setting
  - discovery and provision of missing public inputs
  - coordination
  - "soft" conditionalities
  - monitoring and goal-revision
  - fostering local experimentation
- Such practices already exist (DARPA/ARPA and successful local economic development coalitions)

Economists' caricature of industrial policy…

- Objective: innovation spillovers + coordination + public inputs + 2nd best
- Remedy: Pigovian subsidies + provision of portfolio of services and inputs
- Focus on manufacturing, hi-tech sectors + labor-absorbing services & tech
- Risks (manageable)
  - Lack of information ("governments cannot pick winners")
  - Political capture (Solyndra)
- Pre-requisites (capacity is built, not presumed)
  - Good information (is dispersed widely among stakeholders)
  - Arms'-length relationship with firms (replaced by collaboration and iteration)
  - Strict conditionality/discipline (soft; provisional, open-ended and evolving)
- Evidence
  - Rarely works (context critical but recent causal evidence is much more positive)

…is out of date