

*Industrial Policies: More Market  
Failures, New Objectives, New  
Instruments, New worries*

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# Outline

- More objectives/more market failures
- More instruments, Better management
- New worries

# Broad Definition

- Interventions by government to affect what is produced, how goods and services are produced, or where they are produced
  - Not limited to pushing “industry”
  - Often focused on R & D, new industries
  - Need new name

# Fell out of favor in era of neoliberalism

Belief in the efficiency of the market

- Didn't matter whether an economy produced potato chips or computer chips
- Controversy at the World Bank and IMF (even though in a sense the World Bank was inevitably engaged in industrial policy)
- Even as theory and evidence against the efficiency of the market mounted
- First welfare theorem assumed fixed (exogenous) technology
- **Knowledge is a public good**
- Inevitable conflict in private production: either restrict usage (an inefficiency) for appropriability or there will be underinvestment in R & D and (when there is learning by doing) too little production
- “Knowledge” is a form of information: My research had shown multiple market failures associated with economics of information—direct implication for economics of learning and R & D (expounded in my April, 1974 lectures to the Association of University Teachers of Economics, Manchester, England )

# I. Industrial policy is back—with a deeper understanding of market failures that help justify it

- Further problems in investment/innovation when **pricing is incomplete/wrong**
- Carbon—**green industrial policies**
- Risks—**national security**, new geopolitics/new geoeconomics (German over-reliance on Russian gas; borders did matter in pandemic)
- Risks—**lack of resilience** (evident in aftermath of pandemic)(related to broad set of market failures in networks)
- Risks—**pandemic preparedness** (public health)
- More broadly: **value of national economic sovereignty**
  - Borders still do matter

# Capital market imperfections

- May impede the ability to raise sufficient risk capital to undertake large, highly risky projects
  - Part of explanation for why it was government that created internet
- Inherent problems in financing small businesses
  - Related to “selection problem,” appropriability, poaching good borrowers
- With learning by doing (or learning-by-investment) optimal production may require firms running at a loss for an extended period of time

P. Dasgupta and J. E. Stiglitz, “Learning by Doing, Market Structure, and Industrial and Trade Policies,” *Oxford Economic Papers*, 40(2), 1988, pp. 246-268

# Broader market failures in innovation

- Not just overall level of investment
- Dissemination of knowledge—efforts to create walls
- Direction of innovation (sectoral, factor)
  - Saving unskilled labor vs. saving the planet
- Innovation strategies
  - Minor improvements, “me-too innovations”
  - Major leaps

J. E. Stiglitz and Bruce C. Greenwald, , *Creating a Learning Society: A New Approach to Growth, Development, and Social Progress*, New York: Columbia University Press, 2014. Reader’s Edition published 2015

# Still more objectives/market failures

- Location—certain areas of the country are falling markedly behind
  - Large externalities—no presumption on efficiency of choice of locations
- Inequality—with market directed innovation exacerbating inequalities, social costs not taken on board by private firms
- Coordination and planning—in absence of markets going into the future
  - Key role in East Asia



# Changed perspective

- Not about picking winners (better than the market can)
  - Though selection of right sectors, firms, technologies is crucial
- But in correcting broad range of market failures
- With understanding that “government failures” can be managed

# But industrial policy was never gone—long history in US and elsewhere

- Early success of US partially based on growth in agricultural productivity, based on extension services supported by US government (agriculture was central industry of day) under 1862 Morrill Act
- In practice, continued, even in US, mostly within the Dept. of Defense
  - Explicitly, in Clinton Administration, in duo use technologies
  - Critical innovations in DARPA
  - Basic research funded by NSF, NIH translated into commercial products by private sector
- Also, many localities engaged in what may be called “local industrial policies” as they attempted to attract certain businesses

# Around the world, there has been a history of successful industrial policies

- Latin America had (partially) successful industrial policies
  - It was debt, not poorly designed industrial policies, that led to lost decade
- Most notably, East Asia—underlying *East Asia Miracle*
  - Success based on a broad range of interventions, **including macro (exchange rates)**, savings, education, infrastructure
- Central thrust of work at World Bank and of Columbia IPD/JICA project for past two decades has been applying lessons of East Asia to Africa (with notable, but still limited, successes in East Asia and South Africa)

World Bank, *East Asia Miracle*, 1993

Robert Wade, *Governing the Market: Economic Theory and the Role of Government in East Asia's Industrialization* (1990, 2004)

Alice Amsden, *Asia's Next Giant*, 1989

J. E. Stiglitz, "Some Lessons from the East Asian Miracle," *World Bank Research Observer*, 11(2), August 1996, pp. 151-177

M. Guzman, J.A. Ocampo, and J. E. Stiglitz "Real Exchange Rate Policies for Economic Development," *World Development*, 2018 [Vol. 110](#), pp. 51-62

*Every country has an industrial policy—it's just that some don't know it yet*

- Embedded in every decision concerning expenditures (the nature of education system, infrastructure) and legal/regulatory framework
  - Preferential treatment in bankruptcy code for derivatives was an industrial policy favoring derivatives
  - Bailout policies for banks is an industrial policy favoring banks
  - Decision to emphasize/deemphasize STEM
  - Location/design of roads, ports

## II. More instruments—and new understandings of old instruments

- Procurement—increasingly powerful as role of government in economy has increased
  - Can set rules for those selling to the government shape
- Credit
  - Because of credit rationing, can be an effective tool even without subsidy
  - (Market allocation of credit not in general efficient)
  - Important to design loan contract appropriately—e.g. warrants (to get upside potential)
- Equity/joint ventures
  - Important in transfer of knowledge
  - In some areas, even the US is today in need of transfer of knowledge
  - Equity may be better in aligning interests than credit

# Direct subsidies and subsidies through tax system

- At cornerstone of IRA and CHIPS Act
- Direct subsidies
- Problem of choosing firms—problematic, political economy problems
  - Intel—did they “need” funds, given magnitude of shareholder distributions? Were they a good prospect, given how they had fallen behind?
  - Does foreign ownership matter? But American registered firms may have extensive foreign ownership?
  - Can we guarantee sufficient skin in the game? And if there is enough skin in the game, subsidies may be regressive.

# Better implementation

- Creation of independent institutions (NSF and NIH have good record)
- Continual process of review
  - Standard problem: not cutting off failing projects
- Sunset provisions—unless further justification provided
- Better contracts—so government gets upside, recipients of funds have skin the game
  - Helps with both selection and incentives

# Tax subsidies

- Avoids “choosing” firms to receive
- But magnitude of subsidies hard to estimate, may be uncapped (IRA)
- Bang for buck may be low—may be hard to target (with money going to where there is an incremental benefit, not to infra-marginal firm)



# Trade and investment policy

- Traditional tool—“infant industry” argument for protection
  - Hidden assumptions: learning spillovers and capital market imperfections
  - Learning spillovers, especially important for developing countries: *infant economy* argument for protection
- WTO largely proscribed such subsidies, with other countries allowed to impose countervailing duties to offset effects
  - TRIPS (intellectual property provision of WTO) became part of industrial policy of advanced countries—encouraging big Pharma, discouraging generics
  - Advanced countries put job protection ahead of other goals (such as green transition) in implementation

# Rules based system helped preserve traditional trade patterns

- Where developing countries produced low value-added goods
- No subsidy policy defended on the grounds that it helped create a level playing field and that a no-subsidy policy (free trade, more generally) was (Pareto) efficient
  - If standard analysis were correct, it would be in each country's interest to strip away all barriers to trade
  - But large number of questionable assumptions go into analysis—perfect risk markets (with incomplete risk markets, free trade can make all individuals in all countries worse off, another example of the theory of 2<sup>nd</sup> best); exogenous technological change—the subject of discussion here

# With learning by doing, free trade may be welfare decreasing, even compared to autarky

- Critical question: The global architecture of knowledge—how and where knowledge is produced, transmitted, and used
  - Production, processing, transmission of knowledge entails real costs just as the production of goods and services
- Old models—knowledge is transmitted through trade
  - Less important in a world with global educational institutions, freer flow of skilled labor
- Knowledge may be transmitted more easily across sectors within a country than across countries—implying that it may be important to engage in active learning within country
- Some sectors, activities, generate more learning than others

# Some implications

Consider two-sector two-country symmetric model with learning by doing, knowledge production in only one sector (M), perfectly transmitted to other sector (A) within country, no transmission across borders, symmetric Cobb-Douglas utility function

- Symmetric equilibrium unstable with free trade
- Slight advantage in one country in M accumulates
  - Other country stagnates
  - Initially benefits from terms of trade effect, but only initially
  - **With low enough discount rate, other country always prefers autarky to free trade**
- **With sufficient diminishing returns to learning, global growth is lower with free trade than with autarky, with sufficiently low discount rate and equality preferring global social welfare function, global welfare is lower with free trade, and global inequality is always higher with free trade**
- More generally, trade policy can be welfare enhancing
  - But there may be interventions that are preferable to trade interventions
  - Especially relevant in current interventions in green technologies

### III. New worries

- Advanced countries can provide more subsidies, more effective trade barriers than less developed
  - Unlevel playing field
  - Even Europe is complaining
- Backlash—countervailing duties undermining effectiveness of measures
- Europe's efforts to push green economy can undermine efforts for moving to global green economy—especially when imposed in ways that appear to be unilateral and unfair
- (Comprehensive trade agreements are a thing of the past; new agreements may be more focused but broader: green partnership agreements, entailing trade, investment, and research)

# For developing countries, manufacturing export led growth model (and associated industrial policies) will no longer work

- Growth of protectionism—East Asia benefited from short era of neoliberalism
- Manufacturing is a shrinking part of the global economy
- Labor shrinking input into manufacturing—cheap labor not as important basis of comparative advantage
- Will need to find broader development strategies, involving more complex and sophisticated industrial policies
  - Service and agricultural (?) sector—with extension services (small units of production)

Dani Rodrik and J. E. Stiglitz, “A New Growth Strategy for Developing Nations,” January, 2024. Accessible at: <https://drodrik.scholar.harvard.edu/publications/new-growth-strategy-developing-nations>

J. E. Stiglitz "From Manufacturing Led Export Growth to a Twenty-First Century Inclusive Growth Strategy: Explaining the Demise of a Successful Growth Model and What to Do About It," *Inequality in the Developing World*, Carlos Gradi, Murray Leibbrandt, and Finn Tarp (eds.), UNU-Wider Studies in Development Economics, Oxford: Oxford University Press, 2021

# Trump's undermining institutions and institutional safeguards

- Guardrails that made institutions work have been taken down
  - “Conflicts of interest” seem no longer source of concern
  - Enormous scope for abuses
  - No understanding of the role of Weberian bureaucracy
- Nationalism run amuck
  - Policies not based on reasoned understanding of full consequences

# Industrial policies are here to stay

- There is “learning by doing”—learning how to do them better
  - Decades of denigrating policies undermined learning, and more broadly state capacity
  - There will be mistakes, but that’s not an argument for abandoning them
    - Absence of mistakes suggests too little risk taking
    - We don’t abandon monetary policy just because central banks often make mistakes
- Challenge of creating fair global trade regime with industrial policies
- And even greater challenge of dealing with a post-rule of law regime
  - But in such a world, there are few safeguards against anything