Industrial Policy: Can We Go Beyond an Unproductive Confrontation?

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(1) The Industrial Policy Debate: Conceptual Issues and Neglected Facts

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- It is what is commonly known as **"selective industrial policy"** or **"targeting"** – namely, a policy that **deliberately favours particular industries** over others, **against market signals**, usually (but not necessarily) to enhance **efficiency** and promote **productivity** growth.
- Industrial policy in this sense is usually associated with the **development experiences** of **Japan** and other East Asian economies (**South Korea, Taiwan, and Singapore**) in the post-World War II period.

(1) The Industrial Policy Debate: Conceptual Issues and Neglected Facts (Cont'd)

- **Japan** was the **first country** that used the term **industrial policy** (*sangyo seisaku*) to mean **selective industrial policy**.
- By the late 1980s, it came to be **widely accepted** that strong industrial policy was also practised in **South Korea and Taiwan.**

(1) The Industrial Policy Debate: Conceptual Issues and Neglected Facts (Cont'd)

Industrial policy measures in East Asia included:

(i) Coordination of complementary investments

- the so-called Big Push

(ii) Coordination of competing investments through entry regulation

- "investment cartels", and (in declining industries) negotiated capacity cuts

(iii) Policies to ensure scale economies

- licensing conditional upon production scale, emphasis on the infant industries starting to export from early on, state-mediated mergers and acquisitions

(iv) regulation on technology imports

- Screening for overly obsolete technologies, cap on technology licensing royalties

(1) The Industrial Policy Debate: Conceptual Issues and Neglected Facts (Cont'd)

(v) Regulation on foreign direct investment

- entry and ownership restrictions, local contents requirement, technology transfer requirements, export requirements

(vi) mandatory worker training for firms above a certain size

- in order to resolve the collective action problem in the supply of skilled workers due to the possibility of "poaching"

(vii) the state acting as a venture capitalist incubating high-tech firms

(viii) export promotion

- export subsidies, export loan guarantees, marketing help from the state trading agency

(ix) government allocation of foreign exchanges, with top priority going to capital goods imports

- especially for export industries) and the bottom priority to luxury consumption good imports

(1) The Industrial Policy Debate: Conceptual Issues and Neglected Facts (Cont'd)

- Japan, South Korea and Taiwan must have had some country-specific "**countervailing forces**" that were so **powerful** that they **cancelled out** all the **harmful effects** of **market-distorting industrial policy** and still generated the **highest growth rates in human history** (**6-7%** annual growth rate in per capita income over **four decades**).
- Are these skeptics really seriously suggesting that, without industrial policy, these powerful countervailing forces would have made the East Asian countries grow at – 9%, 10%, or even 12%, when **no country in history** has ever **grown at faster than 7%** for an extended period, industrial policy or not?

Historical Rates of Economic Growth by Major Regions during and after the Age of Imperialism (1820-1950)

(annual per capita GDP growth rate, %)

Regions	1820-70	1870-1913	1913-50	1950-73
Western Europe	0.95	1.32	0.76	4.08
Western Offshoots*	1.42	1.81	1.55	2.44
Japan	0.19	1.48	0.89	8.05
Asia excluding Japan	-0.11	0.38	-0.02	2.92
Latin America	0.10	1.81	1.42	2.52
Eastern Europe and former USSR	0.64	1.15	1.50	3.49
Africa	0.12	0.64	1.02	2.07
World	0.53	1.30	0.91	2.93

*Australia, Canada, New Zealand, and the USA.

Source: Maddison (2001), p. 126, table 3-1a.

(1) The Industrial Policy Debate: Conceptual Issues and Neglected Facts (Cont'd)

- **Latin America** and **Sub-Saharan Africa**, two regions that most faithfully implemented **market-oriented reforms** during this period.
- Per capita income in the two regions grew respectively at **3.1%** and **1.6%** per year during 1960-80 (World Bank 1980, p. 99, Table SA.1)
- It grew at **0.5%** and -**0.3%** during 1980-2004 (calculated from the World Bank and the UNDP data sets).

(1) The Industrial Policy Debate: Conceptual Issues and Neglected Facts (Cont'd)

Suggested countervailing forces

Culture

- High savings rate, strict work ethic, high-quality bureaucracy

The legacy of Japanese colonialism

- High literacy and broad industrial base

Old War politics

- High foreign aid and special access to the US market

However, none of them even pass the minimum factual tests

(Chang 2007, ch. 9, on culture; Chang 2006, on Japanese colonialism and the Cold War)

(1) The Industrial Policy Debate: Conceptual Issues and Neglected Facts (Cont'd)

- The **targeted protections** that **Germany** and **Sweden** provided to their **nascent heavy industries** in the late 19th and the early 20th centuries are well known.
- **Belgium**, one of the less protected economies, provided targeted protection. In the mid-19th century, when the country's average industrial tariff was around 10%, the **textile industries** had tariffs rates of **30-60%** and **the iron industry 85%** (Milward and Saul, 1977 p. 174).
- At least for the 1870-1913 period, there is even evidence that there was a **positive correlation** between **tariff rate** and **rate of growth** (O'Rourke 2000; Vamvakidis 2002; Clemens and Williams 2004).

(2) The Industrial Policy: Historical Perspective

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- **Britain and the US** – the supposed homes of free trade – had the **world's highest levels of tariff protection** during their respective **catch-up periods** (45-55%).
- **Alexander Hamilton**, the first Treasury Secretary of the US, who first developed the **theory of infant industry protection** (Hamilton 1791).

Average Tariff Rates on Manufactured Products for Selected Countries in Their Early Stages of Development

	1820[2]	1875[2]	1913	1925	1931	1950
Austria[3]	R	15-20	18	16	24	18
Belgium[4]	6-8	9-10	9	15	14	11
Canada	5	15	n.a.	23	28	17
Denmark	25-35	15-20	14	10	n.a.	3
France	R (20)[5]	12-15	20	21	30	18
Germany[6]	8-12	4-6	13	20	21	26
Italy	n.a.	8-10	18	22	46	25
Japan[7]	R	5	30	n.a.	n.a.	n.a.
Netherlands[4]	6-8	3-5	4	6	n.a.	11
Russia	R	15-20	84	R	R	R
Spain	R	15-20	41	41	63	n.a.
Sweden	R	3-5	20	16	21	9
Switzerland	8-12	4-6	9	14	19	n.a.
United Kingdom	45-55	0	0	5	n.a.	23
United States	35-45	40-50	44	37	48	14

Source: Chang (2002), p. 17, table 2.1, largely based on Bairoch (1993), p. 40, table 3.3, except for Canada, which is from Taylor (1948), pp. 102-8 and p. 398.

(2) The Industrial Policy: Historical Perspective (Cont'd)

- Certain local governments in **Italy** (e.g., **Emilia-Romagna**) and **Germany** (e.g., **Baden-Württemberg**) also pursued effective industrial policy, promoting particular "**industrial districts**"
  - Directed credits (from local banks, often owned by the local government),
  - R&D support
  - Export marketing help (Piore and Sabel 1984).
- Interestingly, all these countries had **high growth rates** between the 1950s and the 1980s.

(2) The Industrial Policy: Historical Perspective (cont'd)

- The **US government** also ran a huge (if somewhat wasteful) **industrial policy programme** under the guise of **R&D support** for **defense** and **public health**.
- Between the 1950s and the 1980s, the US federal government financed anywhere between **47% and 65%** of national **R&D** spending, as against around **20% in Japan** and **Korea** and around **30% in Europe**.

(2) The Industrial Policy: Historical Perspective (cont'd)

- **Latin American countries** gained tariff autonomy in the 1870s and the 1880s.
- Their per capita income **growth rate shot up** from **0.1%** during 1820-70 to **1.8%** during 1870-1913
- One of the **two fastest growing regions in the world during** 1870-1913.

(3) Can the State "Beat the Market"?: Ability, Information, and Perspective

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- Government officials made investment decisions that blatantly went **against market signals**, sometimes even using **state-owned enterprises** as **vehicles**, only to build some of the most successful businesses in history.
- Some of the most spectacular examples are:
  - The four decades of protection, subsidies, and ban on foreign direct investment in the **Japanese automobile industry** before its world market success.
  - The entry of **Korea** into the steel industry through a **state-owned enterprise (POSCO)** in 1968 (when the country's per capita income was only 5% that of the US).
  - **Brazil**'s entry into the **aircraft industry**, once again through an SOE (**EMBRAER**) in 1969 (when its per capita income was only 8% that of the US).

Source: Chang 2002, ch. 2; Chang 2007, ch. 5; Chang 2008

(3) Can the State "Beat the Market"?: Ability, Information, and Perspective (Cont'd)

- Against this, Pack and Saggi (2006) admit that there are capital market failures but argue that **the solution** should be found in **developing the banking sector**, "perhaps by **allowing foreign financial intermediaries into the country**" (p. 270) that have "modern techniques of **evaluating** individual **projects** and managing the **riskiness** of their overall portfolio" (p. 285), **rather than in industrial policy**.
- However, this suggestion **rings hollow today**, when those "**modern techniques**" have created arguably the **biggest financial mess in human history**.

(3) Can the State "Beat the Market"?: Ability, Information, and Perspective (Cont'd)

- The point is that many (although not all) of the **"superior" decisions** made by the **state** were made **not because** the government officials were **omniscient** or **cleverer than businessmen**.
- But because they could look at things from **a national** and **long-term point of view**, rather than sectional, short-term point of view.

(4) Political Economy: Leadership, Bureaucracy, and Power

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- Between accepting the need for industrial and actually implementing it, there is a huge range of **political economy problems**.
- When considering that many **developing countries** are **run by flawed leaders** presiding over a **politically weak** and internally fragmented state, it seems **difficult** to imagine how industrial policy, even if it were "correct", can be **implemented well** in a developing country.

(4) Political Economy: Leadership, Bureaucracy, and Power (Cont'd)

- The existence of numerous political economy problems **should not make us believe** that therefore we have to **wait for a perfect state** to emerge before doing anything.
- In the **real world**, **successful countries** are the ones that have managed to find "**good enough**" solutions to their political economy problems and **went on to implement policies**, rather than sitting around bemoaning the imperfect nature of their political system.

(4) Political Economy: Leadership, Bureaucracy, and Power (Cont'd)

- We should find ways to devise imperfect but workable solutions to those problems.

(i) how **effective political visions** can be formed and deployed to inspire various individuals and groups to **act in a concerted manner**
(ii) how to **build nations and communities out of groups** that may have very long history of **hostility and mistrust**
(iii) how to work out **social pacts** and build lasting collations behind them
(iv) how to **partially accept** but **improve the customs** and organisational routines in the bureaucracy
(v) how to **minimise socially harmful lobbying** and **bribing** while **maximising the flows of information** between the **states** and the **private sector.**

(5) Bureaucratic Capabilities: Important, But Not in the Way We Think

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- Alan Winters, one-time head of Research Department at the Bank and now the chief economist of the UK government's DfID (Department for International Development) – *"the application of second-best economics needs first-best economists, not its usual complement of third- and fourth-raters"* declares (Winters 2003, as cited in Stiglitz & Charlton 2005, p. 37).

(5) Bureaucratic Capabilities: Important, But Not in the Way We Think (Cont'd)

- The interesting thing is that, while the **East Asian bureaucracies** were staffed by smart people, they were certainly **not "first best economists"**.
- Indeed, most of them **were not even economists**.
- The Japanese economic officials that engineered the country's "miracle" were **mostly lawyers by training**.
- Until the 1980s, what **little economics** they knew were mostly of the **"wrong" kind** – the **economics of Karl Marx and Friedrich List**, rather than neoclassical economics.

(5) Bureaucratic Capabilities: Important, But Not in the Way We Think (Cont'd)

- In **Taiwan**, most **key economic bureaucrats** were **engineers and scientists**, as is the **case in China today**.
- **Korea** also had a high proportion of **lawyers** in its economic bureaucracy until the 1970s
- The brains behind the **Korean HCI programme** in the 1970s, Oh Won-Chul, was an **engineer by training**.
- Both **Taiwan** and **Korea** had rather strong, albeit officially unacknowledged, **communist influence in its economic thinking** until the 1970s

(5) Bureaucratic Capabilities: Important, But Not in the Way We Think (Cont'd)

- **High-quality bureaucracies** are **very difficult to build** and that the **East Asian countries** were **exceptionally lucky** to have inherited them from history.
- However, **high-quality bureaucracy can be built pretty quickly**, as shown by the examples of **Korea** and **Taiwan** themselves.
- Contrary to the popular myth, **Korea** and **Taiwan did not start** their economic **"miracles"** with **high-quality bureaucracies**.
- For example, until the late 1960s, **Korea** used to **send its bureaucrats for extra training** to – of all places – Pakistan and the Philippines.

(5) Bureaucratic Capabilities: Important, But Not in the Way We Think (Cont'd)

- **Taiwan** also had a similar problem of generally **low bureaucratic capabilities** in the 1950s and most of the 1960s
- Both countries could construct high-quality bureaucracies only because they **invested in better training**, **organisational reform**, and improvement **in incentive systems**.
- In addition, there was also a lot of "**learning-by-doing**".
- By trying out industrial policy from early on, the **East Asian bureaucrats** could more **quickly pick up** and **improve the capabilities** they needed in effectively running industrial policy.

(6) Performance Measurement: Difficulties and Mitigations

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- When industrial policy is comprehensive, as it was in the case of East Asia between the 1950s and the 1980s, **objective performances** become **difficult to measure**, as virtually **all prices are "distorted".**
- There will also be efforts by **the recipients** of state help to **manipulate the performance indicators**.
- These are all **real and serious problems**, but the industrial policy debate has revealed that there are **ways to overcome them**.

(6) Performance Measurement: Difficulties and Mitigations (Cont'd)

Main recommendations are as follows:

(1) **Performance targets** should be **clearly specified** and the reporting requirements on them set, so that the **recipients cannot weasel** their ways out of bad performance. **Publicly announcing** the targets will make their manipulation more difficult.

(2) The targets should be set in **consultation with the business community**, so that they are **realistic** and do not simply reflect some bureaucratic dreams.

(6) Performance Measurement: Difficulties and Mitigations (Cont'd)

(3) Targets need to be **revised along the way**. It is important for the government to **acknowledge mistakes quickly** and change policies, as in East Asia.

(4) **Export** performance should be given a **high status** as a **performance measure**, as in the East Asian countries, especially in Korea. Export performance indicators are **far less open to manipulation** by the recipients

(6) Performance Measurement: Difficulties and Mitigations (Cont'd)

(5) Policy-makers need to **pay more attention to the trends in performance indicators**, rather than their absolute levels at any give point of time. For example, the plan to develop the **automobile industry** in **Japan** and **Korea** took literally **two, three decades** before bearing full fruits.

(7) The Importance of Export-related Industrial Policy

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- To put it bluntly, **economic development** is **impossible without good export performance**.
- The **failure to promote export** enough is one of the key reasons that the **Latin American industrial policies** were not as successful as **those in East Asia**.
- In the Latin American countries, **economic growth kept hitting** the **balance of payments constraints**.
- Even with its huge export machinery and massive government supports for exports (e.g., subsidised bank loans, tariff rebates for imported inputs used for exports, export marketing support from the state trading agency,. **Korea** found it **impossible to export enough to finance its rapid rate of capital accumulation** until the late 1980s, running a **structural trade deficit**.

(7) The Importance of Export-related Industrial Policy (Cont'd)

- **Export** is the **key to economic development** is not to say that developing countries should **liberalise their trade** and closely follow their comparative advantages.
- The widespread view is **that these industries do not need any export help because they are in line with the country's comparative advantage**, **but this is wrong**.
- Export success requires significant industrial policy even for comparative advantage-conforming industries, especially if they are "non-traditional" industries, where new productive capabilities may have to be built.

(7) The Importance of Export-related Industrial Policy (Cont'd)

- The basic problem is that **export markets** have **high fixed costs of entry**, which **smaller firms and farmers**, who are likely to dominate these comparative advantage-conforming industries, **may not be able to bear**.
- **Direct export subsidies can offset the entry costs**, but these are **now banned by the WTO**, except for the LDCs (least developed countries), and thus help should be **provided through other channels**.

(7) The Importance of Export-related Industrial Policy (Cont'd)

Key recommendations:

(1) **State marketing help** can be **crucial**, especially **smaller exporters**, as exemplified by the cases of **JETRO** and **KOTRA**, respectively the state trading agency of Japan and Korea.

(2) The state could **share risk with exporters** through schemes like **loan guarantees** for exporters and **insurance for payment defaults**.

(3) The state can help exporters, especially **small producers**, **meet** the **high quality standards** required in the export markets.

(4) The state can **indirectly help** the exporters by **providing legal and financial supports** for co-operative arrangements among them for **joint provision** of export marketing, **R&D**, **processing facilities**, and **transport facilities**.

(7) The Importance of Export-related Industrial Policy (Cont'd)

- In the 1950s, Korea's main exports were things like **tungsten ore, fish, seaweed, and basic textiles and garments**.
- In the 1960s, the government developed "non-traditional" export industries like **wigs, plywood, shoes, and cheap electronics assembly**, with the help of **massive export support programmes**, while upgrading existing export industries, especially the **textile and the garment industries**.

(7) The Importance of Export-related Industrial Policy (Cont'd)

- By the early 1970s, however, many of these export industries, especially **plywood and wigs**, **were hitting the wall**.
- **Korea** launched the **HCI (Heavy and Chemical Industrialisation)** programme, developing industries like **shipbuilding, steel, petrochemical, automobile, and high-end electronics** as **export industries**.
- This was despite the fact that it **did not have comparative advantage** in these industries **at the time**.
- **Without these industries**, however, Korea **would not have sustained its export growth** momentum beyond the 1970s.

(7) The Importance of Export-related Industrial Policy (Cont'd)

- Indeed, what **truly distinguishes** the **East Asian** countries from other developing countries is **not** that they had "**freer" trade than others.**
- After all, they had **plenty of protectionism** – average **industrial tariff rates** were **30-40%** both in **Korea** and **Taiwan** until the 1970s, while both of them had numerous **non-tariff trade barriers**.
- The real difference is that, in East Asia, free trade, **export promotion** (which is, of course, not free trade), and **infant industry protection** were **organically integrated**.

(7) The Importance of Export-related Industrial Policy (Cont'd)

- We need to debate **how exactly to mix free trade, export promotion, and infant industry protection** – across sectors and over time –in a manner that helps a country to upgrade its industrial structure and grow fast.
- We also need to discuss **the factors that determine the optimal mix of these three types** of trade policy and the timing of switching between them.