

# **Should Industrial Policy in Developing Countries Conform to Comparative Advantage or Defy it?**

**A Debate Between Justin Lin and Ha-Joon Chang**

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# Justin Yifu Lin

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- Previously for 15 years Professor and Founding Director of the China Centre for Economic Research, Beijing University.
- Author of 16 books, and in 2007 gave the Marshall lectures at the University of Cambridge, on themes related to this debate, published as *Economic Development and Transition: Thought, Strategy, and Viability* (Cambridge University Press, 2009).

# Ha-Joon Chang

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- Author, inter alia, of *Kicking Away the Ladder: Development Strategy in Historical Perspective* (Anthem Press, 2002), and *Bad Samaritans: Rich Nations, Poor Policies, and the Threat to the Developing World* (Random House, 2007).

# The case for a state role: market failures that block innovation

## Justin Yifu Lin

- **Developing economies** are ridden with market failures, which cannot be ignored simply **because we fear government failure**.
- One such market failure is caused by **important information externalities**.
- **Economic innovations** – whether they **succeed or fail** – **yield information** about **profitable and unprofitable market opportunities**.
- But because much of this information is available **not only** to the **innovators** themselves **but also** to **competitors** and potential imitators, who **do not bear any of the costs of the innovation**, it will tend to be undersupplied by the market.
- **Government subsidies** are one possible mechanism for **encouraging innovation** and **offsetting** this **first-mover disadvantage**.

# The case for a state role: market failures that block innovation

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- A **second market failure** is caused by **co-ordination problems**.
- Developing countries lag behind more developed countries, not only in technology and industrial structure, but also in human capital, infrastructure and institutions.
- For a country to **climb up** the **industrial and technological ladder**, a host of other changes also need to take place.
- Technologies become more complicated, **capital requirements** increase, the **scale of production** increases, the **size of markets** increases, and market exchanges increasingly take place at arm's length.
- **Individual firms** clearly **cannot internalise all these changes cost-effectively**, and **co-ordination among many firms** to achieve these changes will often be **impossible**.
- For this reason, **it falls to government** either to introduce such changes itself or to co-ordinate them.

# The case for a state role: market failures that block innovation

## Justin Yifu Lin

- These cases, the **positive externalities** of firm **entry** and **experimentation** and **needs for co-ordination** can justify **government intervention**, and do so in a way that is **perfectly compatible** with **neoclassical economic theory**.
- It is true that the force of this argument is lessened by the **high risk of government failures**, but **fear of poor governance does not absolve us** of responsibility for trying to design effective strategies for facilitating development.
- During the past half-century, it remains true that **there are few** if any examples of governments that have **succeeded with a purely laissez-faire approach** that does not try to come to **grips with market failures**, and far **more examples** of **rapid growth** in countries whose **governments have led effectively**.

# The facilitating state: helping the private sector exploit comparative advantage

Justin Yifu Lin

- The **optimal industrial structure** is endogenous to the **country's endowment structure** – in terms of its **relative abundance of labour and skills, capital, and natural resources**.
- Upgrading the industrial structure requires **first upgrading the endowment structure**, or **else** the resulting industrial structure will become **a drag on development**.
- The role of the **facilitating state** is to **encourage** the emergence of firms, industries, and sectors that, once launched, will make **effective use** of the country's **current comparative advantage**.

# The facilitating state: helping the private sector exploit comparative advantage

## Justin Yifu Lin

- The **facilitating state** provides the **necessary co-ordination** to **remove the barriers** to the emergence of these firms and their related industries.
- Also the state gives them a **helping nudge to overcome externalities**, but then is able to let them **grow and advance organically** because of their **comparative advantage**.
- As the competitive industries and firms grow, they will **claim larger market share** and **create** the greatest possible **economic surplus**, in the form of **profits and salaries**.
- When the **surplus is reinvested**, it earns **the highest return possible** as well, because the industrial structure is **optimal for that endowment structure**.

# The state as midwife, not permanent nursemaid

## Justin Yifu Lin

- Over time, this strategy allows the economy to **accumulate physical and human capital, upgrading the endowment structure** as well as the industrial structure and making domestic firms more competitive over time in more capital- and skill-intensive products.
- While this **comparative advantage-following approach** sounds gradual, **firms** in developing countries **can at each stage** in their development **acquire the technologies** and enter into industries **appropriate** for their **endowment structure, rather than having to do frontier innovation** themselves.
- This ability to use off-the-shelf technology and to **enter into existing industries** is what has made possible the **sustained annual GDP growth** rates of **8%** and even **10%** achieved by some of the **East Asian NIEs**.

# The state as midwife, not permanent nursemaid

## Justin Yifu Lin

- **Industrial strategies** of the often **newly-independent developing countries** in the **1950s** and **1960s** were informed by **incorrect perceptions** of the binding constraints on development.
- These countries adopted development strategies that placed a **priority on capital-intensive heavy industries**, that is, industries that made **intensive use** of a factor that **they largely lacked**, and **neglected to use** many of **the factors** that they had in great **abundance**, such as **unskilled labour** and **natural resources**.
- In effect, these policy-makers took the **optimal industrial structure** as something that they could **impose exogenously**, **rather than** something that results **from the characteristics of the economy** and changes over time.

# The state as midwife, not permanent nursemaid

## Justin Yifu Lin

- This approach can be thought of as **comparative-advantage-defying**, and it has **high costs**, both **financially** and in terms of **governance quality**.
- To implement this strategy, governments have to provide **substantial protection** and **subsidisation** to firms that are not viable without government subsidies and protection and cannot quickly become internationally competitive.
- Such firms **cannot generate** any **real surplus for society**.
- **Without a continuous flow of surplus**, it will be **far harder to finance improvements** in the **factors of production** – notably, capital and skilled labour – that are in turn necessary to make a more advanced industrial structure viable over the **medium term**.

# The state as midwife, not permanent nursemaid

## Justin Yifu Lin

- By **distorting market signals and shifting resources** from **competitive to noncompetitive** sectors, **high levels of protection** and **subsidies slow** the country's **accumulation** of **physical** and **human capital**.
- They also **encourage firms** to divert their energies from productive entrepreneurship **into rent-seeking**, which **corrupts institutions** and further **slows capital accumulation**.
- Rather **than serving as midwife** to **healthy new industries**, it is likely to find itself becoming a **long-run nursemaid** to **sickly infant** industries that **never mature**.
- The culture of **rent seeking** that is **likely to emerge** will **calcify the web of protection** even more and make later reforms more difficult.

# Comparative vs. competitive advantage

## Justin Yifu Lin

- Putting domestic firms in a position to **exploit** the country's **comparative advantage** may **sound sensible**.
- How does **exploiting comparative advantage compare** with the promotion of '**competitive advantage**', a strategy popularised by **Michael Porter** (1990) over the past two decades?
- In that literature, the **four key sources** of competitive advantage are:
  - sectors/industries that make **good use** of **factors** that are **abundant domestically**;
  - **large domestic markets**, to enable firms to achieve scale;
  - **industrial clusters**;
  - **vibrant** domestic **competition**, to encourage **efficiency** and **productivity** growth.

# Comparative vs. competitive advantage

## Justin Yifu Lin

- These requirements can be simplified.
- Consider domestic competition: if a country's strategy **defies comparative advantage**, it will generally be **unable to enforce competition**, because **non-viable firms** will **need to be protected**.
- Industrial clusters will also be hard to build and sustain, because, unless the government gives subsidies and protection, firms will not enter into this industry.
- However, the government will **not be able** to give **subsidies** and **protection** to many firms in an industry **at the same time** so as to **form an industrial cluster**.

# Comparative vs. competitive advantage

## Justin Yifu Lin

- If the country **follows its comparative advantage**, **large domestic markets** become **unnecessary**, because the industries and firms should be **able to compete on global markets**.
- Thus these **four requirements boil down** largely to **a single prescription: exploit your comparative advantage**.

# Comparative vs. competitive advantage

## Ha-Joon Chang

- **What makes some countries developed and others not** – namely, their differential abilities to develop and use technologies, or what is known as **‘technological capabilities’**.
- In the end, the rich countries are rich and the poor countries are poor because the former can use, and develop, technologies that the latter cannot use, let alone develop.
- Of course, Justin is absolutely right in saying that **deviating too much from one’s comparative advantages is to be avoided**.
- **Comparative advantage** does offer a useful guideline in telling us **how much the country is sacrificing by protecting its infant industries**.
- The more you **deviate** from your **comparative advantage**, the more you **pay in order to acquire capabilities in new industries**.

# Comparative vs. competitive advantage

## Ha-Joon Chang

- However, this **does not mean** that a country **should conform** to its **comparative advantage**, as Justin puts it.
- As I have argued, given the nature of the process of factor accumulation and technological capability-building, it is simply not possible for a backward economy to **accumulate capabilities** in **new industries without defying comparative advantage** and actually **entering the industry before** it has the **'right' factor endowments**.
- In the theory of **neoclassical comparative advantage** that Justin uses, the issue of **limited factor mobility is neglected**, resulting in the **systemic underestimation** of the costs of trade liberalisation and hence the need for good redistribution mechanisms.

# Comparative vs. competitive advantage

## Ha-Joon Chang

- More importantly, **technological capabilities** are **missing** from the **theory**, when they are really **what distinguishes developed countries from developing ones**.
- Once we realise that a lot of **technological capabilities** are **acquired** in an industry-specific manner **through actual production experiences**, we begin to see that it is by definition **necessary to defy comparative advantage** if a country is going to **enter new industries** and **upgrade its industrial structure**.
- And the **length** and the **strength** of such **protection** can be very large, as the examples of Toyota, Nokia, and countless other examples of successful infant industry protection show, and also inherently difficult to predict.

# Comparative vs. competitive advantage

## Justin Lin

- Ha-Joon summarises well our key areas of agreement: **government** has a role to play in **promoting technological and industrial upgrading**, but there are **risks in deviating too far from a country's comparative advantage**.
- Our differences lie in **how to define 'too far'** – how to interpret trade models and historical evidence, and how to promote technological learning cost-effectively.
- Ha-Joon argues that, because of **imperfect factor mobility** (in effect, adjustment costs) and **simplified assumptions** about **technology**, arguments against infant-industry protection that are based on standard trade models (such as Baldwin, 1969) **do not provide good guidance for policy**.

# Comparative vs. competitive advantage

## Justin Lin

- Clearly, there are **frictions in labour-market** adjustment to **changes in industrial competitiveness**, and **physical capital** is often **industry-specific**.
- Workers **cannot move costlessly** from one industry to another, or from one region to another, and many developing-country **governments do little to compensate the losers**.
- However, when **a country loses comparative advantage** in the **existing industry**, the **industry-specific capital** can be **relocated** in the form of **foreign direct investment** to other countries, in what has been called a **flying-geese pattern** of economic development in East Asia and many other parts of the world

# Comparative vs. competitive advantage

## Justin Lin

- Thanks to the dramatic reduction in information and transportation costs, **countries at different stages of development** could even **concentrate on different segments** of the **same industry**, each **using different technologies** and producing different products **according to comparative advantages**.
- Take the **information industry** as an example: high-income countries, like the **US**, specialise in **product/technology development**; middle-income countries, like **Malaysia**, concentrate on the **fabrication of chips**; and lower-middle-income countries, like **China**, focus on the production of **spare parts** and the **assembly of final products**.

# Comparative vs. competitive advantage

## Justin Lin

- On the one hand, it is hard to argue that an active industrial and trade policy substantially hindered growth in the Republic of Korea.
- The country did protect certain sectors with high trade barriers, and in some cases took an aggressive approach to industrial upgrading into capital-intensive industries.
- And over the past 40 years, Korea has achieved remarkable GDP growth rates, and has performed impressively on industrial upgrading, into such industries as automobiles and semiconductors.

# Comparative vs. competitive advantage

## Justin Lin

- Yet we **should not overstate** the extent to which **Korea pushed ahead** of its **comparative advantage**.
- In the **automotive sector**, for example, early in its growth period, Korean manufacturers concentrated mostly on the **assembly of imported parts** – which was **labour-intensive** and **in line** with their **comparative advantage at the time**.
- Similarly, in **electronics**, the focus was **initially on household appliances**, such as TVs, washing machines, and refrigerators, and **then moved on to memory chips**, the least **technologically complex** segment of the **information industry**.

# Comparative vs. competitive advantage

## Justin Lin

- Equally important, the Korean government had a record of **managing the protected sectors** in ways that kept them **subject to market discipline**, which made **large-scale deviation from the economy's comparative advantage impossible**.
- Industries **benefiting from protection** and **subsidisation** were required to **prove on export markets** that their **competitiveness was increasing** over time.
- In addition, the government worked hard to make sure that Korean manufacturers could **access intermediate inputs** at **world prices**, for example through duty-drawback and exemption schemes and export-processing zones.
- So the government clearly recognised that **comparative advantage mattered**, and that successful **technological upgrading** depended on firms being **influenced by world prices** for **both inputs and outputs**.
- The evidence indicates that **Korea's government** served as a **facilitating state**.

# Comparative vs. competitive advantage

## Justin Lin

- When a government chooses to **provide protection** or **incentives** to firms in sectors that **may be viable only in twenty or more years**, it will inevitably have to **draw resources from** firms in areas of **current comparative advantage**.
- This will **reduce the surpluses they** earn, and will therefore **slow capital accumulation** and the upgrading of the country's endowment structure and comparative advantage, making the **infant industry stay as an infant much longer** than otherwise.
- Excessive **protection risks institutionalising** a culture of **rent-seeking**.
- Given how important the quality of institutions and governance is to development, the **indirect effects of protection through poor governance** may be even **more damaging than the direct effects**.

# Comparative vs. competitive advantage

## Ha-Joon Chang

- There is the challenge of deciding how much to deviate from comparative advantage.
- Using the Korean and Finnish examples, Justin argues that **these countries succeeded** because **they did not deviate from their comparative advantages too much**.
- He is right in saying that **Korea's move along the 'ladder' of international division of labour** has often been carried out in small, if rapid, steps.
- Although I do not fully agree with this characterisation (for example, the moves into industries like **steel** and **shipbuilding** were **big leaps**, with virtually **no 'intermediate' steps**), I also agree that **making excessive leaps** can result in **excessive learning costs**.

# Comparative vs. competitive advantage

## Ha-Joon Chang

- Thus seen, we could suppose some kind of **inverted-U-shaped relationship** between an **economy's deviation** from **comparative advantage** and **its growth rate**.
- If it deviates **too little**, it may be **efficient in the short run**, but its **long-term growth** is **slowed down**, as it is not upgrading.
- Up to a point, therefore, **increasing deviation** from **comparative advantage** will **accelerate growth**.
- After a point, **negative effects of protection** (for example, excessive learning costs, rent-seeking) may **overwhelm the acceleration** in productivity growth that the 'infant' industries generate, resulting in **negative growth overall**.

# Comparative vs. competitive advantage

## Ha-Joon Chang

- In 1960, the **per capita income of Finland** was only **41% that of the US**, the frontier country in electronics and overall (\$1,172 vs. \$2,881).
- This **does not look like** the case of a country **sticking closely to comparative advantage**.
- If Finland's decision regarding Nokia does **not look 'wrong' enough**, how about Japan?
- In 1961, the per capita income of Japan was a mere **19% that of the US (\$563 vs. \$2,934)**, but Japan was then **protecting and promoting all sorts of 'wrong' industries** – automobiles, steel, shipbuilding, and so on.

# Comparative vs. competitive advantage

## Ha-Joon Chang

- In the case of South Korea, the state-owned steel mill, **POSCO**, which had been set up in 1968, started production in 1972, when its per capita income was **merely 5.5% that of the US** (\$322 vs. \$5,838).
- In the same year, South Korea decided to **deviate even further** from its **comparative advantage** by launching its ambitious **Heavy and Chemical** Industrialisation programme, which promoted shipbuilding, (home-designed) automobiles, machinery, and **many other 'wrong' industries**.
- In 1983, Samsung decided **to design its own semiconductors**, Korea's income was only **14% that of the US** (\$2,118 vs. \$15,008).

# Comparative vs. competitive advantage

## Ha-Joon Chang

- I think that, deep down, **Justin and I actually agree**.
- **We agree** that countries **should deviate from comparative advantage** to **upgrade their economy**, although **Justin** thinks this deviation should be **fairly small** and **I think** it can be **big**.
- However, because Justin is too faithful to neoclassical economics, he has to say that a country with an income level that is only 5% of the frontier country moving into one of the most capital intensive industries (Korea and steel) is consistent with the theory of comparative advantage.