Making Industrial Policy Work:

The Experiences of China from the Perspective of New Structural Economics

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Facilitating State and Industrial Policy

- The nature of modern income growth is a process of continuous structural transformation in technologies and industries, which increase labor productivity, and in soft and hard infrastructure in the economy, which reduce transaction costs.
- A facilitating state in a market economy is essential to overcome market failures in removing bottlenecks in hard and soft infrastructure in structural transformation.
- The industrial policy is a measure for a facilitating state.
  - The requirement of infrastructure and institution may be different and thus contents of coordination may be different, depending on industries and the stage of development.
  - The government's resources and capacity are limited. The government needs to use them strategically to target priority industries

Comparative Advantage Defying and the Failure of Industrial Policy

- The sad fact is that almost all governments in the world attempted to use industrial policies to play the facilitating role, but most failed.
- The reason is that the government's targeted industries went against the country's comparative advantages.
  - For developing countries, the targeted sectors are often too capital intensive
  - For developed countries, the targeted sectors are often too labor intensive
- Consequence of the comparative advantage-defying industrial policy
  - The firms in the industrial policy's targeted sectors were **non-viable** in the competitive market. The factor costs of production are higher than those in countries with comparative advantages in those sectors.
  - To support its investment and to ensure the firms' continuous operation, governments supported the non-viable firms through all kinds of subsidies and protections.
  - Those measures led to misallocation of resources and rent-seeking.
  - As a result, the attempts to pick winners ended up picking losers.

Latent Comparative Advantage and Picking Winners

- For an industrial policy to be successful, it should target sectors that conform to the economy's latent comparative advantage:
  - The latent comparative advantage refers to an industry that the economy has low factor costs of production but the transaction costs are too high to be competitive in domestic and international markets
  - Firms will be viable and the sectors will be competitive once the government helps the firms overcome coordination and externality issues to reduce the risk and transaction costs.
- But how can the government pick the sectors that are in line with the economy's latent comparative advantages?

Types of Industries in an Economy

- From the perspective of new structural economics, depending on an industry's distance to the global technology frontier, length of innovation cycle and strategic significance, there are five types of industries in a middle-income country:
  – Catching-up industries
  – Leading- edge industry
  – Comparative-advantage losing industries
  – Short innovation-cycle industries
  – Comparative advantage-defying strategic industries

INDUSTRY POLICY FOR CATCHING UP INDUSTRIES

- Removing binding constraints for the domestic enterprises to acquire advanced technologies from developed countries
- Encourage domestic enterprises to jointly tackle key problems in platform technologies and share them
- Facilitating firms to adopt digital technologies, artificial technologies and green technologies to improve quality, increase efficiency and quality, and even leap into a leading one.

INDUSTRY POLICY FOR MAINTAINING LEADING-EDGE INDUSTRIES' TECHNOLOGY LEADERSHIP GLOBALLY

- A developing country, especially for an upper middle-income country, may have some sectors which are on the global technology frontier, such as household electronic appliances in China and Embraer in Brazil
- To maintain technological leadership in those sectors, the firms need to have indigenous innovations in new technologies and products, which rely on R&D
- The government should support universities or research institutions for basic research related to the innovation of new technology in those sectors. Based on the breakthrough in basic research, the firms in those sectors should develop new technologies/products
- The government can also use procurement to support the new products from the sectors so the firms can reach economic scale of production quickly
- The government can support the firms' penetration into/expansion of the global market.

INDUSTRY POLICY FOR FACILITATING EXIT FROM COMPARATIVE ADVANTAGE-LOSING INDUSTRIES

- Due to the rise of wage, a middle-income country may lose comparative advantages in some existing labor-intensive sectors
- The government may adopt policies to
  - Support some firms to shift to higher value-added activities such as branding, product design, and market channel management
  - Help other firms to relocate their production to lower wage regions/countries
  - Train existing workers for jobs in other sectors

INDUSTRY POLICY FOR LEAPFROGGING IN SHORT INNOVATION-CYCLE NEW INDUSTRIES

- New products and technologies in some emerging industries, such as internet applications, artificial intelligent, and mobile equipment have short innovation cycle and require primarily human capital for innovation
- Such properties make a middle-income country, especially that with sufficient human capital and a large domestic market, a possibility to compete with high-income countries in such type of innovations
- The government in a middle-income country may encourage leapfrogging in industries by
  - Setting up incubation park
  - Encourage venture capitals
  - Strengthening intellectual property protection
  - Procurement of new products

INDUSTRY POLICY FOR COMPARATIVE ADVANTAGE-DEFYING STRATEGIC INDUSTRIES

- For the national security reason, a middle-income country may have to develop indigenously security related industries, which are capital-intensive, require long innovation cycle and are against the country’s comparative advantages.
- The government needs to subsidize firms in such industries, no matter they are owned by the state or by the private.
- The subsidies are made either directly from fiscal appropriation or indirectly by prices/market distortions.
- It is better to provide subsidy directly from fiscal resource as direct subsidy is more transparent, easier to supervise than indirect subsidies through distortions, and less costly to the economy.

Concluding Remarks

- The Middle-income trap is not a destiny for a middle-income country
- If the government in a middle-income country play a facilitating role in an effective market to enable technological innovation and industrial upgrading and diversification so as to transform its comparative advantages from latent to actual, the country can grow faster than high-income countries and avoid middle-income trap
- Industrial policies are essential for the government to play a facilitating role in the country's industrial upgrading and diversification