

From Flying Geese to Leading Dragons:
New Opportunities and Strategies for Structural
Transformation in Developing Countries

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The WIDER Lecture

- World Institute for Development Economics Research was established in 1984 as the first research and training center of the United Nations University with the following objectives:
 - To undertake multidisciplinary research and policy analysis on structural changes affecting the living conditions of the world's poorest people;
 - To provide a forum for professional interaction and the advocacy of policies leading to robust, equitable and environmentally sustainable growth;
 - To promote capacity strengthening and training for scholars and government officials in the field of economic and social policy making.

Structural Transformation

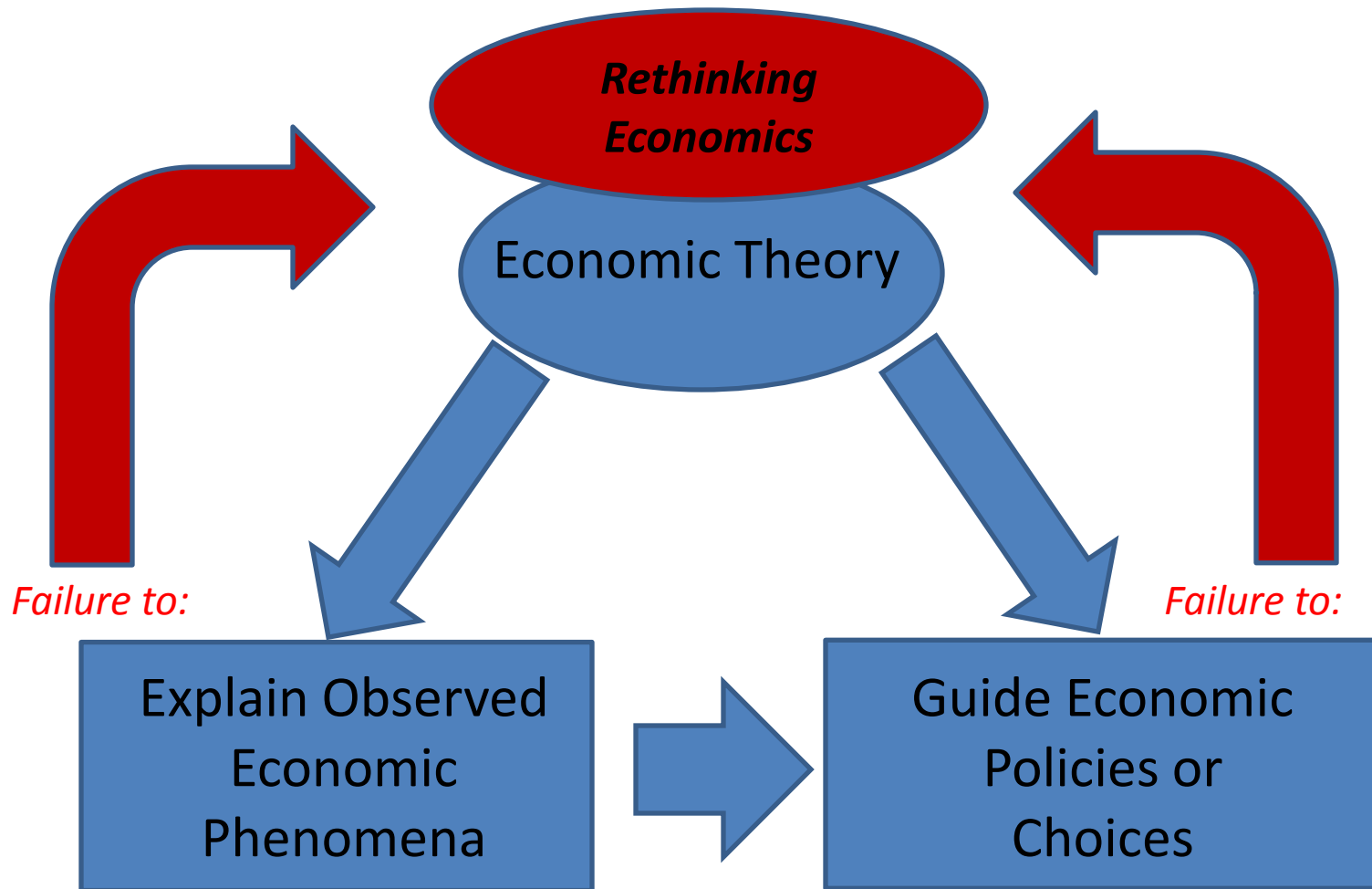
- WIDER rightly identified structural change as a priority area for development research.
- Structural change has been a neglected subject in development Economics.
- I would like to use this opportunity to rethink development economics and to revive the research and explore new opportunity in structural changes

Overview of Presentation

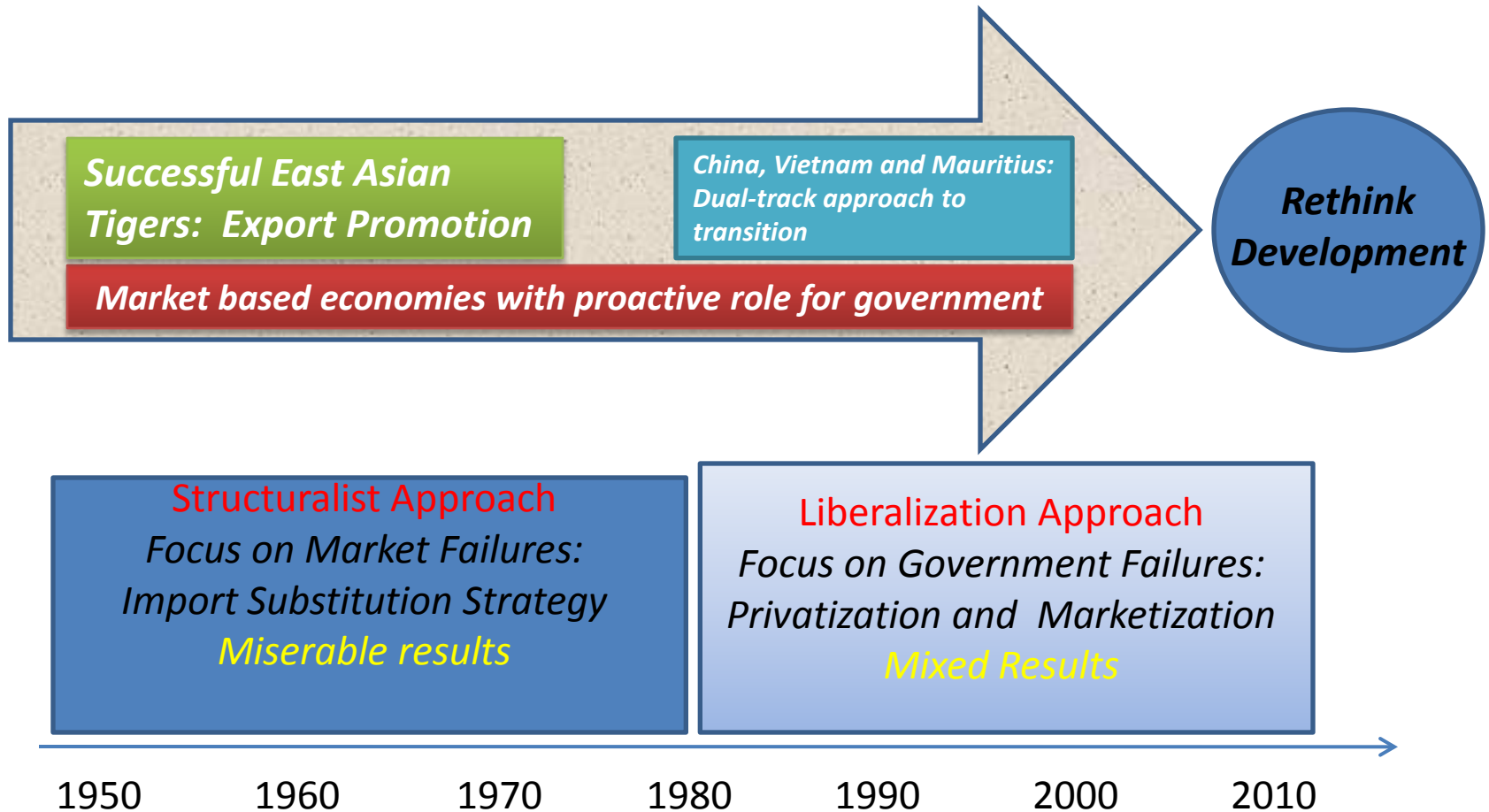
- Why do we need to rethink development
- Economic Development, Structural change and the flying geese pattern
- The New Structural Economics
- Multi-polar Growth World and Leading Dragons
- Growth Identification and Facilitation: An application of the New Structural Economics to industrial policy

WHY DO WE NEED TO RETHINK DEVELOPMENT

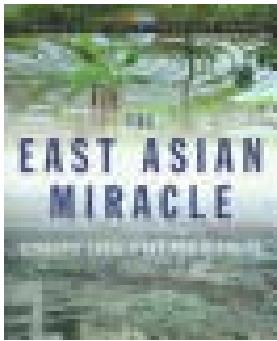
Economic Crisis and Crisis in Economics



How has economic development theory evolved?



World Bank has been in the process of rethinking economic development



Export
Orientation and
Market Friendly
Government



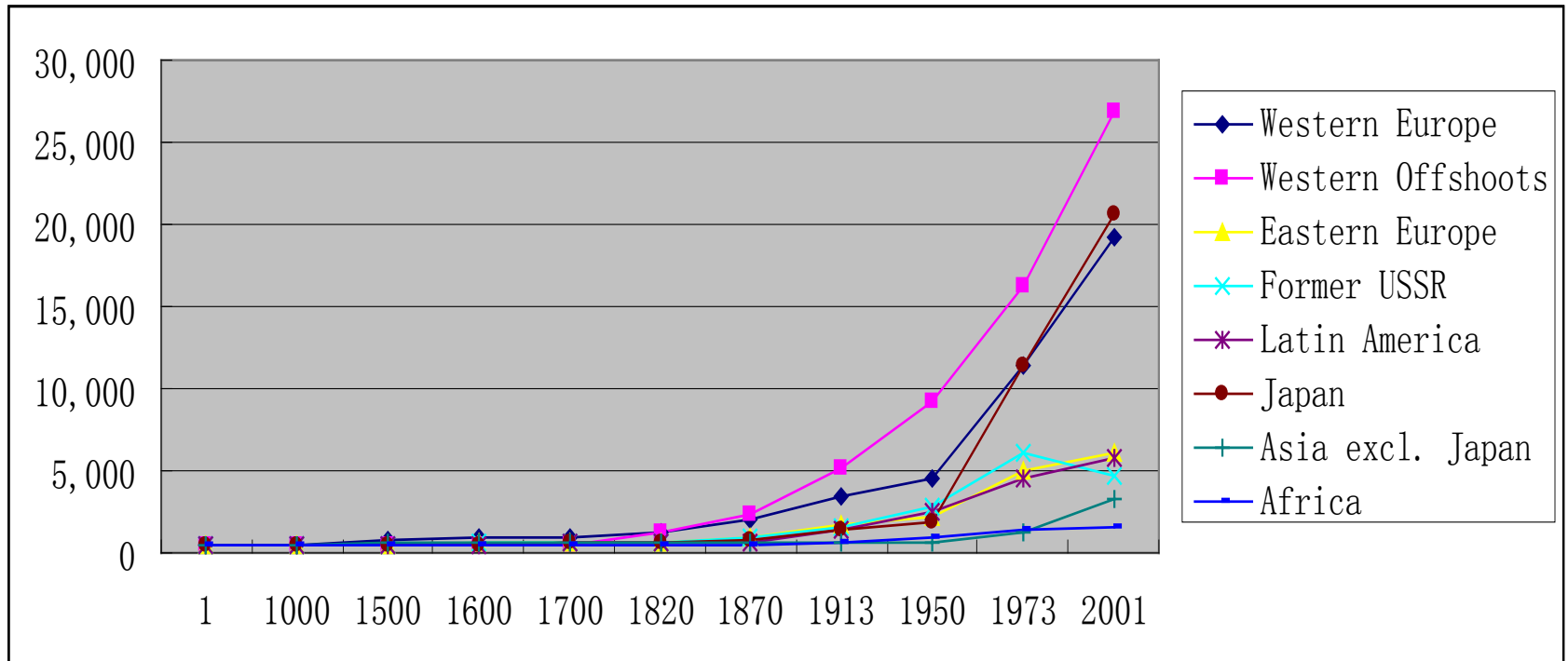
No one-size fits all



- (i) Openness;
- (ii) Macro stability;
- (iii) High rates of saving & investment;
- (iv) Market mechanism;
- (v) Committed, credible & capable government

ECONOMIC DEVELOPMENT, STRUCTURAL CHANGE AND THE FLYING GEESE PATTERN

Fast, Sustained growth is a recent phenomenon

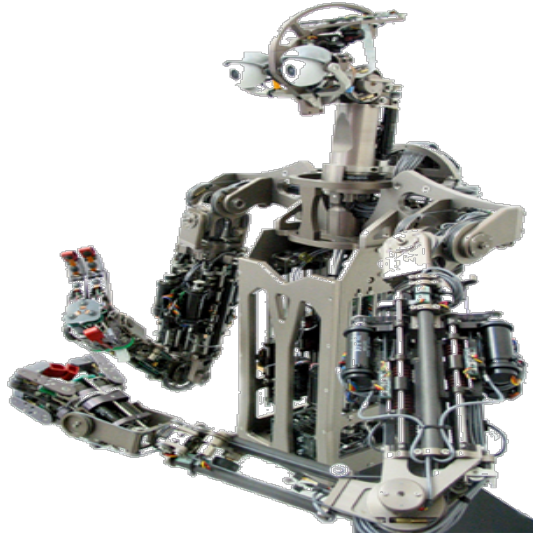


- *The fast and sustained income growth in industrialized countries is a result of continuous technological innovation **as well as structural change***

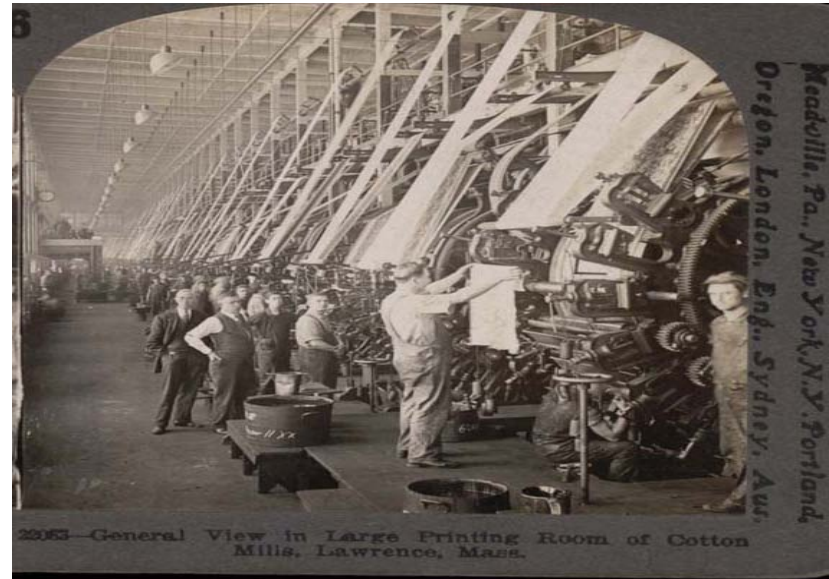
Structural Change in Early Industrializers

In the United States and other countries that led the early phase of the industrial revolution, the structure of production changed dramatically during the course of economic development, as displayed in the following graphics....

Example: USA, Now



USA, 1800s



SPECIALTIES.
 The light, fine shoes manufactured by the
BOSTON SHOEING BRICK OVERSEER

The best class of goods manufactured by this Company has received
 international, or almost better the quality of "Boston" goods.
 The names of these styles, they are all packed in cartons.

<p>Men's LIGHT RESPECTABLE (Black Upper, Wood Sole)</p> <p>The shoe represents the class of which every well-to-do man should wear for the very best. See the inside and you are satisfied.</p>	<p>Men's LIGHT RESPECTABLE (Black Upper, Soft Sole)</p> <p>A fashionable and comfortable shoe which affords excellent protection and easy walking. For the winter and fall, see inside.</p>

The names of these shoes are registered in the names of the several
 light shoes that are made, in 1870, 1875, 1880, and 1885
 styles, under 12000. The name of these shoes are shown above.

For the Complete List of Styles of These on Men's and Women's Shoes, see page 11 and 12.

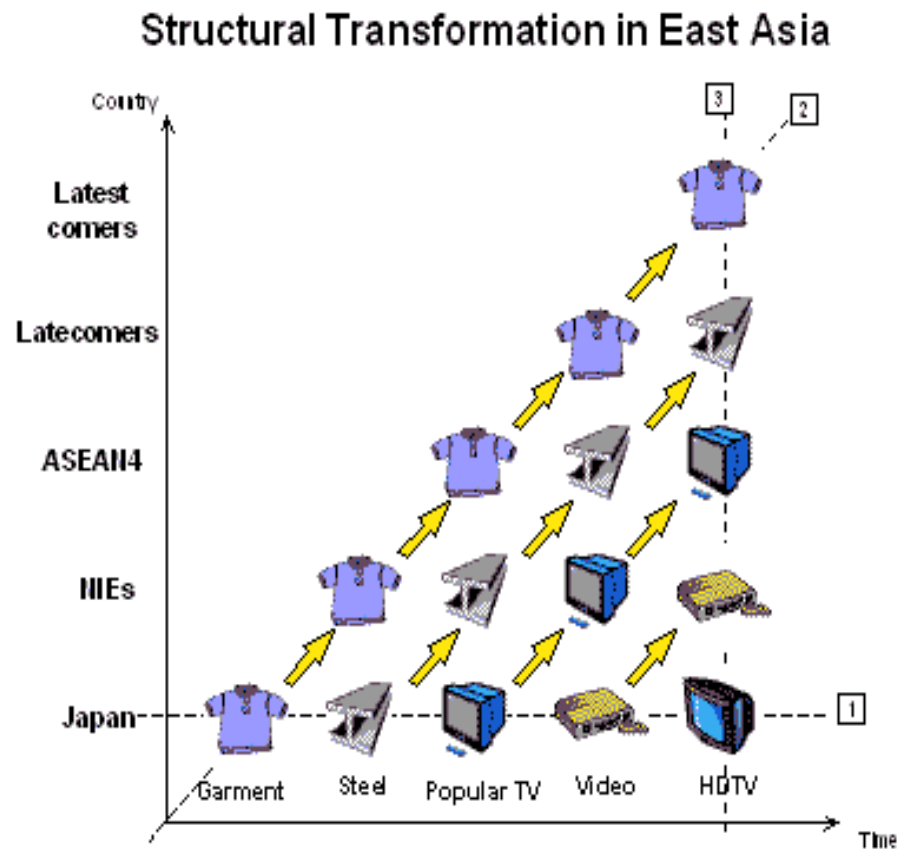
USA, 1600s



The Flying Geese Pattern

- The flying geese pattern and successful structural transformation in developing countries.
- The “flying geese” pattern describes the sequential order of the catching-up process of industrialization of latecomer economies. It focuses on three dimensions:
 - (1) the intra-industry dimension;
 - (2) the inter-industry dimension; and
 - (3) the international division of labor dimension.

Industrial Development and Flying Geese Pattern







THE STRUCTURAL ECONOMICS

Introducing...

New Structural Economics

- Application of neoclassical economic approach to understand the determinates of **economic structure and its evolution** in development

New Structural Economics (NSE): Key Concepts

- The main hypothesis: Industrial structure in a country is endogenous to its endowment structure
- Initial Endowments (determine the economy's total budgets and relative factor prices at time t) 
 - Comparative advantage 
 - Optimal industrial structure (endogenous).
- Dynamics: Income growth depends on
 - Upgrading of endowments
 - Upgrading industrial structure 
 - “hard” and “soft” infrastructure 
- *Following comparative advantage determined by the endowment structure to develop industries is the best way to upgrade endowment structure and to sustain industrial upgrading, income growth and poverty reduction.*
- *The process looks like flying geese*

New Structural Economics (NSE): Key Concepts (2)

- Firms maximize profits...choice of technology and industries based on relative factor prices...

 *Need for competitive market system*

- Industrial upgrading needs to
 - Solve coordination problems
 - Address externalities

 *Need for a facilitating state*

NSE and The Growth Commission's Stylized Facts

Growth Report

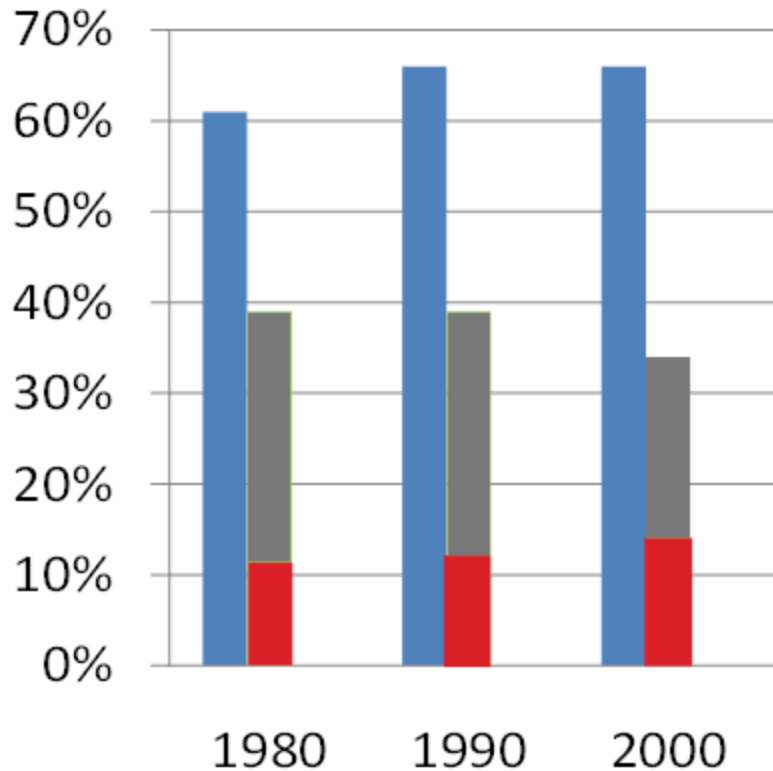
Stylized Facts:

- Policy Recommendation from NSE
 - Following comparative advantage : Conditions
 - Market economy #4
 - Facilitating State #5
- The results:
 - Openness #1
 - Competitiveness and strong external as well as fiscal accounts: fewer home-grown crises and larger scope for countercyclical fiscal policies. #2
 - Large economic surplus and high returns to investment: high rate of savings and investment. #3
- The NSE's recommendations are consistent with the *East Asian Miracle's* findings.

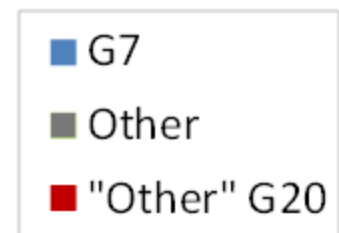
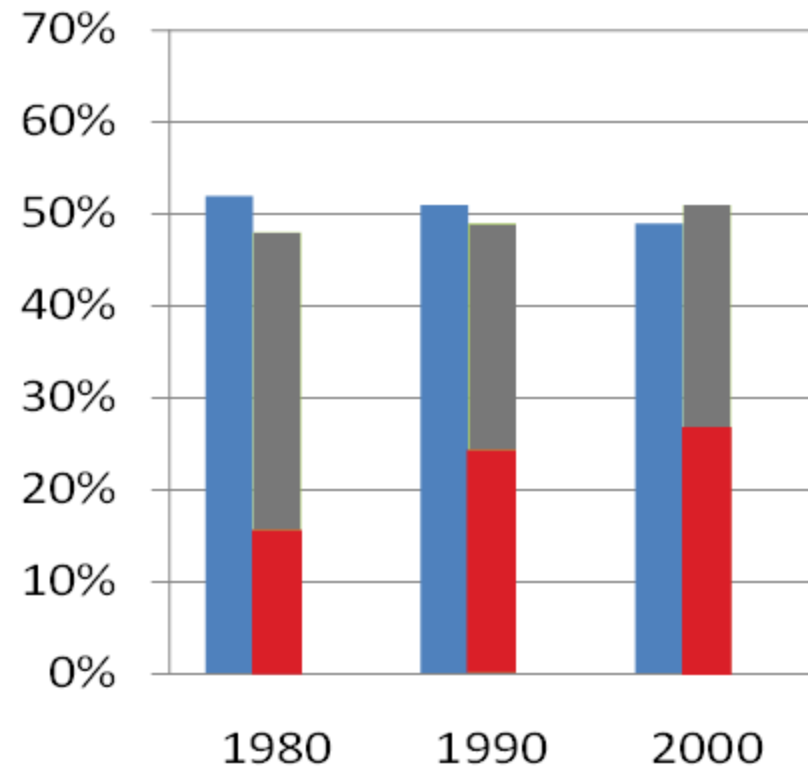
THE MULTI-POLAR GROWTH WORLD AND LEADING DRAGONS

The Global Economic Landscape was Dominated by the G7 before 2000

Share of global GNI (USD)

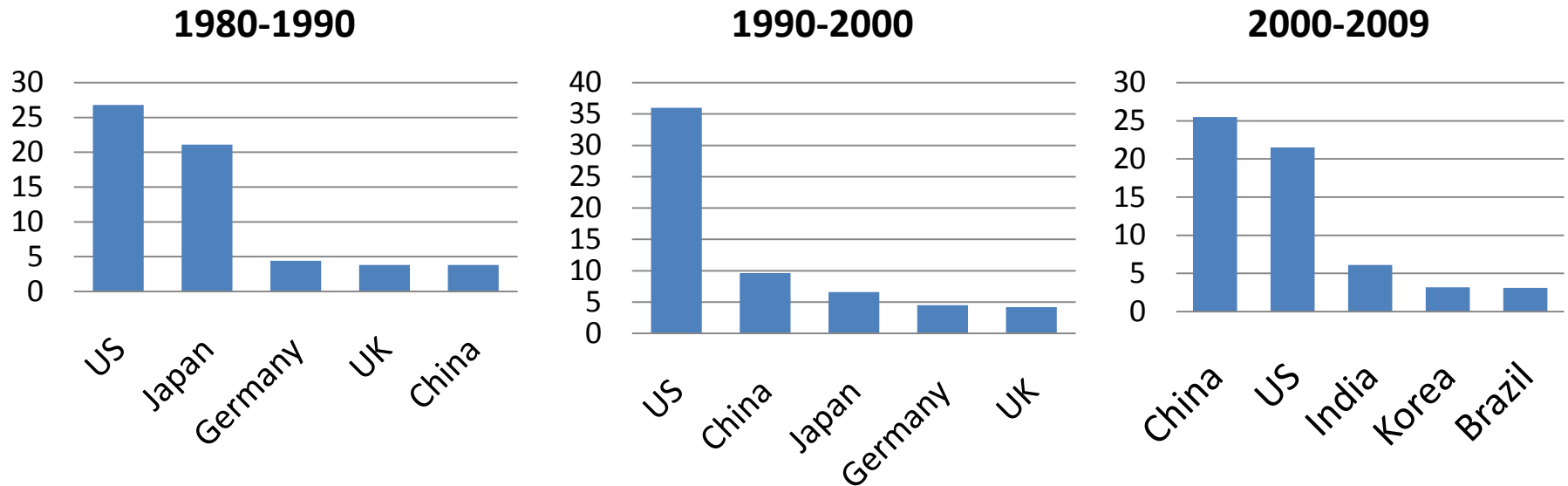


Share of global GNI (PPP)



Emergence of a multi-polar growth world

Top 5 Contributors to World Growth by Decade (%)



Now, three of the top five contributors to growth are emerging markets (MICs), and one is a newly industrialized country (NIC).

Population Size and New Growth Poles

	Brasil	China	India	Indonesia	TOTAL
Employment in manufacturing (millions)	13	85	9	13	119
Population (millions)	192	1,325	1,140	227	2,884
FDI Outflows (USD billion)	10	48	15	3	76

In the new multi-polar growth world, large emerging markets are the driving force for global economic growth.

Goose and Dragon

	year	GDP per capita, constant USD		Manufacturing		
		2000 USD	2005 USD, PPP	as % of Total Value Added	as % of Labor	employment in millions
China	2009	2206	6200	43%	17.7**	85
Japan	1960	5493	6976	35%	20**	9.7**
S.Korea	1982	3709	6123	25%	14.6	2.3
**In 1963						
*In 2002						

Whereas, past episodes of leader-follower economic catch-up followed the flying geese pattern (e.g., Japan and the Republic of Korea), the sheer scale of the Chinese economy implies a new dragon-like dimension to the process.

Leading Dragon(s)

- China has absorbed the surplus labor. The wage increase in the coming years will force China to give up the labor-intensive industries and move up the ladder to more capital-intensive and technology-intensive sectors.
- As noted in the previous slide, with 85 million manufacturing jobs, the scale of the opportunity created by the leading dragon is multiples (e.g., 9 or 40 times) the scale of earlier episodes of leading geese.
- China's upgrading to higher industries will leave a huge space for MANY low-income developing countries to enter a labor-intensive industrialization development phase. This new phenomenon can be referred as a leading dragon pattern. If India, Brazil, Indonesia and other large MICs continue their current pace of growth, a similar pattern will arise.

GROWTH IDENTIFICATION AND FACILITATION

Facilitating State and Industrial Policy

- Industrial policy is a useful tool for the state to play the facilitating role:
 - Contents of coordination will be different, depending on industries.
 - The government's resources and capacity are limited. The government needs to use them strategically.
 - To facilitate formation of clusters and obtaining agglomeration effect

Most Industrial Policies failed

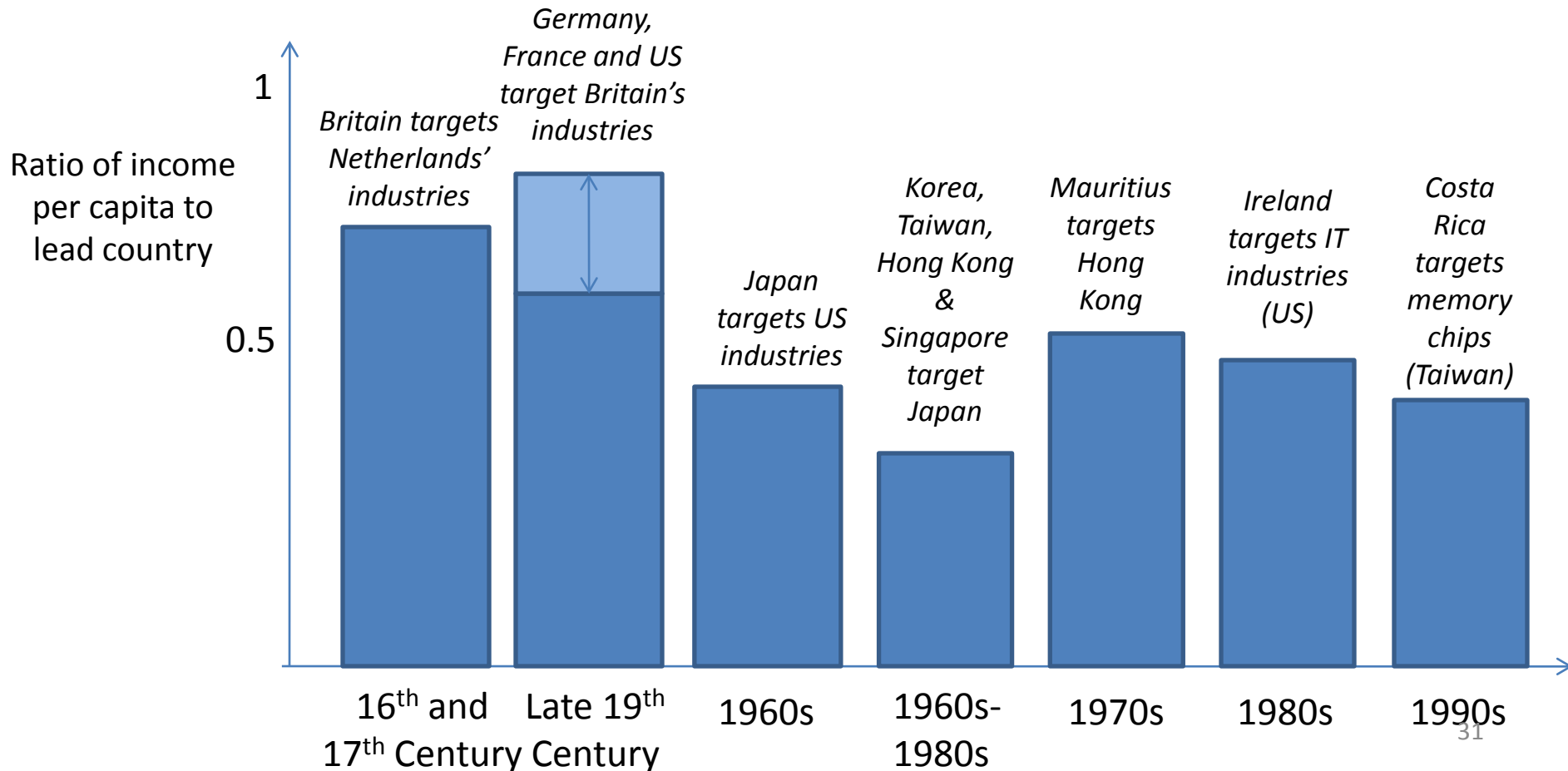
- Most governments in the developing world used industrial policies but failed. The reason was:
 - Attempt to develop industries that were too far advanced compared to their of development and went against their comparative advantages
 - The firms were non-viable in competitive markets and required government policy supports for their initial investment and continuous operations. This led to rent-seeking, corruption, and political capture.

Country	Industry	Time	Main producer at Time	Real GDP pc Latecomer Country	Real GDP pc Leading Country	Income Ratio Follower versus Leader
China	Automobile	1950s	USA	577	10,897	5%
DRC	Automobile	1970s	USA	761	16,284	5%
Egypt	Iron, Steel, Chemicals	1950s	USA	885	10,897	8%
India	Automobile	1950s	USA	676	10,897	6%
Indonesia	Ships	1960s	Netherlands	983	9,798	10%
Senegal	Trucks	1960s	USA	1,511	13,419	11%
Turkey	Automobile	1950s	USA	2,093	10,897	19%
Zambia	Automobile	1970s	USA	1,041	16,284	6%

Source: Author's calculations based on data from Maddison (1995).

Lessons From History

Historical experience shows that successful countries' industrial policies, in general, targeted industries in countries with a similar endowment structure and somewhat higher per capita income in a flying geese pattern



“Aim before you fire”

- The key lesson, from the new structural economics, is that for an industrial policy to be successful, it should target sectors that conform to the economy’s latent comparative advantage.
- We see this from the historical experience (e.g., next slide).
- But how to do it?

Growth Identification and Facilitation

Step 1:

Find fast *growing countries* with a similar endowment structure and with about 100% higher per capita income. *Identify dynamically growing tradable industries* that have grown well in those countries for the last 20 years.

Step 2:

See if some *private domestic firms* are already in those industries (of which may be existing or nascent). Identify constraints to quality upgrading or further firm entry. Take action to remove constraints

Growth Identification and Facilitation

Step 3:

In industries where no domestic firms are currently present, seek FDI from countries examined in step 1, or organize new firm incubation programs.

Step 4:

In addition to the industries identified in step 1, the government should also pay attention to spontaneous self discovery by private enterprises and give support to scale up the successful private innovations in new industries

Growth Identification and Facilitation

Step 5

In countries with poor infrastructure and bad business environment, special economic zones or industrial parks may be used to overcome these barriers to firm entry and FDI and encourage industrial clusters.

Step 6:

The government may compensate pioneer firms in the listed identified above with

- Tax incentives for a limited period,
- Direct credits for investments,
- Access to foreign exchanges

Two additional points

- Agricultural development is crucial for developing countries:
 - For poverty reduction, and
 - For providing capital and a market for industrialized goods.
- A resource-abundant country's resources will be a blessing if:
 - It has a good management of resources. (E.g., some of it must be saved for future generations, and enclave rent capture avoided.)
 - It uses (part of) the wealth generated from resources to facilitate structural transformation.

Concluding Remarks

- Economic development is a continuous process of technological innovation and structural transformation.
- The best way to achieve dynamic growth in a developing country is to follow its comparative advantage in industrial development and tap into latecomer advantages in industrial upgrading in a flying geese pattern.
- The rise of a multi-polar growth world has changed the flying geese pattern of industrial development into the leading dragons pattern.
- The growth identification and facilitation framework may help African and other low-income countries grasp this golden opportunity for industrialization and structural transformation.
- A world free of poverty will not be a dream too far.

THANK YOU