Development Policy

Lecture 12

Import-Substitution v. Export Promotion

James Riedel

Industrialization Strategy circa 1960

Major themes of the Import-Substitution Strategy

1. Leading role for the state

2. The "Big Push" / "Balanced Growth" strategy need

3. Unbalanced growth strategy also proposed

4. Big push of foreign aid needed for take off

5. Export pessimism

Industrialization Strategy circa 1960

Why the state and not the market?

1. Influence of the great depression

2. Keynesianism

3. Success of planning during WWII

4. Apparent success of the Soviet Union

5. De-colonialism

Industrialization Strategy circa 1960

Why industrialization & capital accumulation?

1. Lewis (1954) model of the dual economy

2. Lewis diagnosis (1955): too much labor, too little capital

3. Emphasis on the rate investment, not on the efficiency of investment

4. Harrod-Domar

IS circa 1960: Big push/balanced growth strategy

The logic of the state-led big push (balanced growth) strategy.

- Industrial production exhibits increasing returns to scale due to fixed costs.

- If the domestic market is small (and trade is ruled out) demand will not sufficient for first-comers to realize a profit hence industrial investment will not occur (the country will be caught in a low-level equilibrium trap).

- If many investor simultaneous invest in industrial production each will create a demand for others' product, allowing each to achieve a profitable scale of production.

- The low-level equilibrium trap is the result of "pecuniary externalities" which the government can internalize by promoting (subsidizing) coordinated investments across many sectors (i.e. implementing a "big push," "balanced growth" strategy).

The strategy was first proposed by Rosenstein-Rodan (1943) and formalized by Murphy, Shleifer and Vishny (1989)

IS circa 1960: Theory of the big push26

The low-level equilibrium trap

There are two stable equilibria, k^*_{low} and k^*_{high} and the non-stable threshold equilibrium k^*_{mid} . The trap is broken by a big push balanced growth investment strategy subsidized and coordinated by the government.
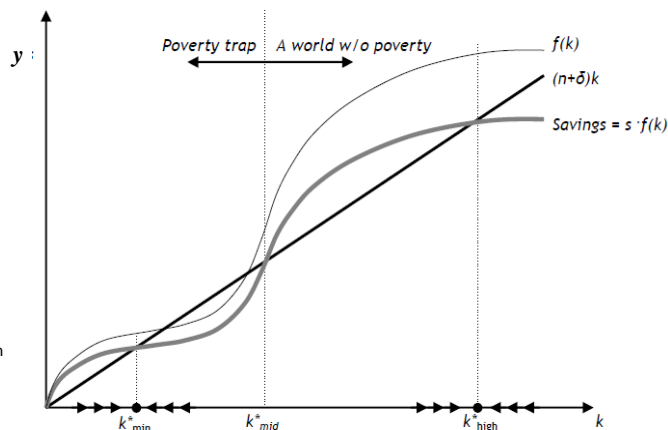
Assumptions:

$y=f(k)$

$y'>0$

$y''<0$ for $k<k^*_{min}$

$y''>0$ for $k^*_{min} < k < k^*_{mid}$

$y''<0$ for $k^*_{mid} < k < k^*_{high}$

IS circa 1960: Theory of unbalanced growth

The case for UN-BALANCED growth strategy

- The case for unbalanced growth put forward by Hirschman (1958) was based on the premise that economic development is constrained by a shortage of decision-making ability, particularly with respect to decisions to invest.

- The appropriate development strategy then is to induce autonomous investment decisions by promoting industries with strong backward and forward linkages to other sectors.

- Investment in industries with strong linkages creates that reveal investment opportunities and attract investors that would not otherwise be able to identify these investments.

- What is needed to set priorities for planned investment is a national input-output table from which planners can determine the relative strength of backward and forward linkages in different industries.

IS circa 1960: Test of linkage hypothesis

Structure of an Input-Output Table

	Sector 1	Sector 2	Sector 3	Final demand
Sector 1	X_{11}	X_{12}	X_{13}	F_1
Sector 2	X_{21}	X_{22}	X_{23}	F_2
Sector 3	X_{31}	X_{32}	X_{33}	F_3
Value added	V_1	V_2	V_3	$\Sigma V_i = \Sigma F_i = GDP$
Output	Q_1	Q_2	Q_3	ΣQ_i

Linkage hypothesis priorities

| Priority for investment	Backward linkage	Forward linkage
First	High	High
Second	High	Low
Third	Low	High
Fourth	Low	Low

Testing the linkage hypothesis

Yotopolous and Nugent (*QJE*,1973) constructed a "Hirschman compliance index" (HCI) for 40 countries and found a significant positive correlation between the HCI and per capita income growth across 40 countries.

Subsequently, Riedel (*QJE*, 1976) identified a cruciall flaw in their methodology (their failure to take into account that many developing countries import a large share of intermediate inputs). It was shown that growth is higher in open economies which produce goods with weak backward linkages because the backward linkages are typically to capital intensive industries in which they lack comparative advantage.

IS circa 1960: Role of foreign in theory

<u>Big push from foreign aid</u>

Aid offers a way to escape a low-level saving trap. k_{min} is k required to maintain subsistence. k_{low} is a stable low-level equilibrium. To get past k_{mid} and converge to k_{high} the country needs a big push from foreign saving (aid).
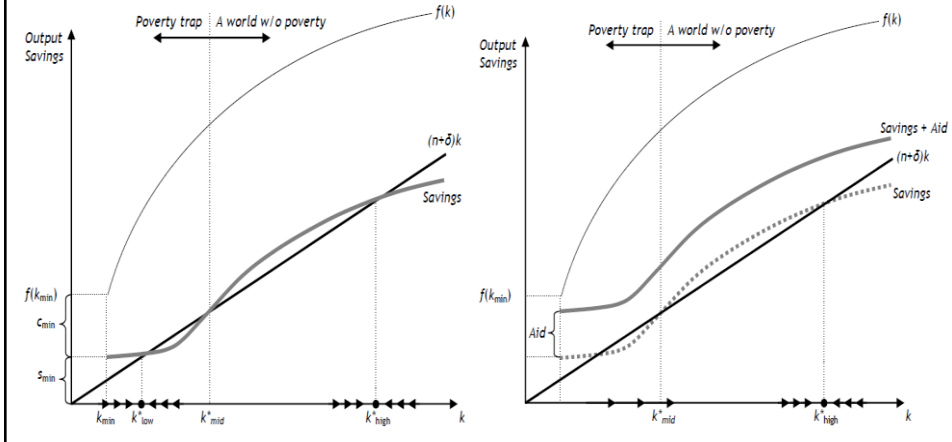
IS circa 1960: Evidence on the role of aid

<u>Easterly (2006) tested the poverty trap hypothesis and found:</u>

- "Poverty traps in the sense of zero growth for low income countries are rejected by the data for the period 1950-2001 and for all sub-periods except 1985-2001.

- Dividing the bottom 20% into two sub-groups—those that got less than average aid and those that more than average (2 to 5 times more)—no statistically significant difference in growth rates between the two groups of countries is found.

- Take-offs are not explained, according to Easterly, by aid, but instead by the quality of institutions. In fact aid played a small role in those few countries that experience a sustained take-off (see figure below).

- The data reject the notion that well governed nations that are poor can get caught in a poverty trap (see figure below).

IS circa 1960: Evidence on the role of aid

In those countries that experienced "take-off" aid play a relatively small role (Easterly, 2005)

Country Name	Foreign aid as a percent of Gross National Income, 1960-75 except where noted
China	0.00
Hong Kong	0.11
India	1.82
Indonesia	3.93
Korea, Rep./1	8.39
Singapore	0.46
Taiwan, China/1	3.75
Thailand	0.90
Median for whole sample	*2.78*

Source: World Bank World Development Indicators
/1 Data refer to average 1953-75

IS circa 1960: Evidence on the role of aid

What explains growth performance is the quality of economic institutions not whether countries have low or middle income (Easterly, 2005)
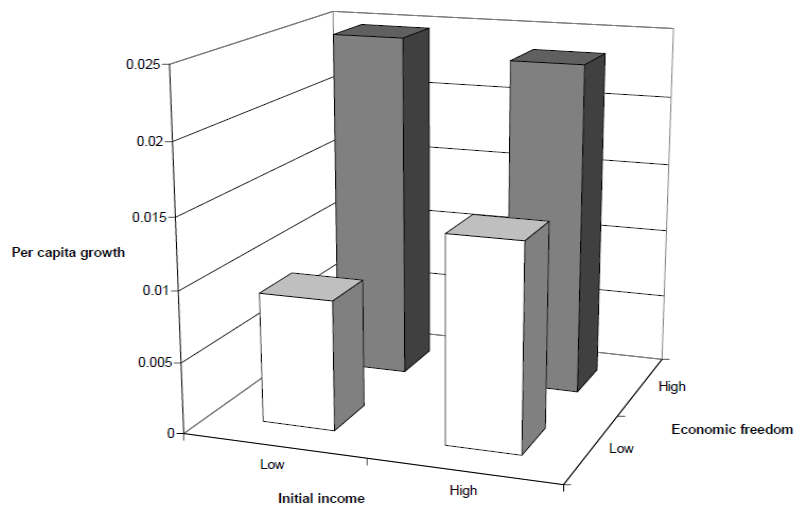
IS circa 1960: Export Pessimism

Nurkse (1954)—an advocate of big push, balanced growth, and ISI pioneer—argued trade was the engine of growth in the 19th century but could not be counted on to play that role in the 20th century because of a lack of demand for LDC exports due to:
- Low income elasticities of demand
- Rise of synthetics (rubber)
- Domestic supply in developed countries
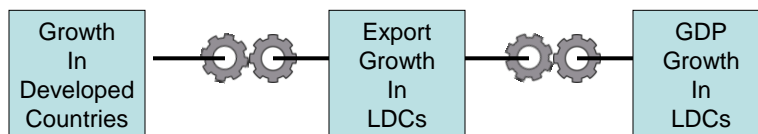- Protectionism in developed countries

Kravis (1970) showed that export success in the 19th century was supply driven, not demand driven. Because it was supply driven, only those parts of the developing world (periphery) that enjoyed "favorable conditions" were successful exporters (not all countries as the demand-determined hypothesis implies).

Moreover, he showed that demand conditions in the 20th century were at least as favorable as in the 19th century.

He thus concluded that trade was not the engine of growth in the 19th century, but rather the handmaiden of growth and it could play that role in the 20th century as well

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IS circa 1980: Export pessimism lives on

In Lewis' view, growth in developing countries is driven by exports and exports are driven by demand in developed countries. Lewis foresaw a secular slowdown in developed countries and argued that the trade engine of growth in development countries was running out of fuel (once again)

Lewis did not provide evidence that growth in LDCs is driven by exports, but he did argue that exports of LDCs are driven by growth in developed countries. Unfortunately, his view of trade relations between developed and developing countries was grossly out of date. His view of LDCs as exporters of primary products was already out of date by 1979 when he won the Nobel Prize.

LDCs had already diversified out of primary products into manufactures and the growth of manufactured exports bears no relation to growth of income in developed countries, i.e. it is supply, not demand driven.

Lewis, American Economic Review, 1980

The Structure of LDC Exports: Selected Years 1955–78 (Percentages)

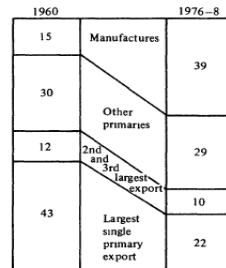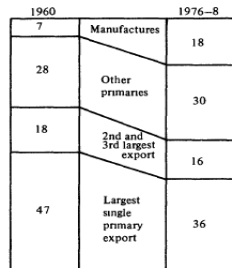|	1955	1960	1970	1978
Total exports	100	100	100	100
Food	36·5	33·6	26·5	16·4
Agricultural raw materials	20·5	18·3	10·0	4·8
Minerals, ores	9·9	10·6	12·3	4·6
Fuels	25·2	27·9	32·9	52·8
Manufactures*	7·7	9·2	17·7	20·9
Total non-fuel exports	100	100	100	100
Food	48·9	46·7	39·5	34·8
Agricultural raw materials	27·4	25·3	14·9	10·1
Minerals, ores	13·3	14·6	18·3	9·7
Manufactures*	10·4	12·8	26·4	44·4

Fig. 1. Average export structure for total sample of LDC (52 countries)
Fig. 2. Average export structure for balanced exporters (11 countries).
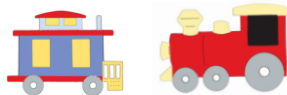
Riedel, Economic Journal, 1984

IS circa 1980: Export pessimism lives on

"The growth rate of world trade in primary products over the period of 1873 to 1913 was 0.87 time the growth rate of industrial production in developed countries; and just about the same relationship rule in the two decades to 1973…We need no elaborate statistical proof that trade depends on prosperity in industrial countries." Lewis, 1980, p.556.

Growth In Developed Countries → Export Growth In LDCs → GDP Growth In LDCs
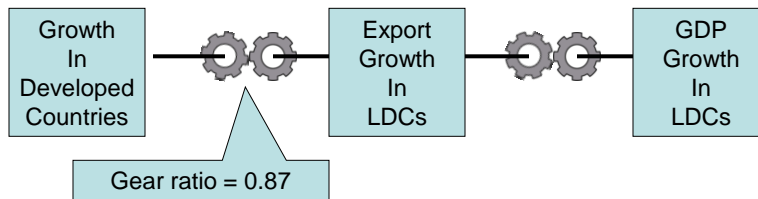
Gear ratio = 0.87

Gear ratio of LDC export growth to real income growth in Developed Countries

|	1953-78	1950s	1960s	1970s
Primary products	0.83	1.02	0.60	1.06
Manufactures			1.90	4.08

Riedel, Economic Journal, 1984

Are developing countries large or small?

Low Elasticity Case: Export supply growth leads to falling export prices (A to B) unless world demand grows at the same pace as export supply (A to C)

Infinite Elasticity Case: Export quantity depends on supply factors alone. Export supply has no effect on export price.
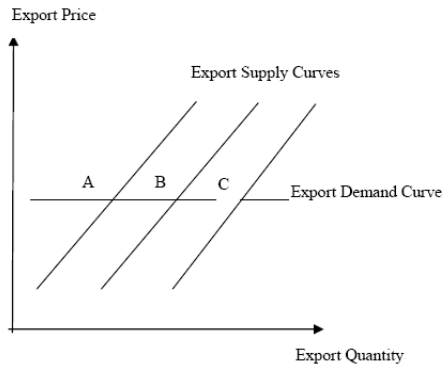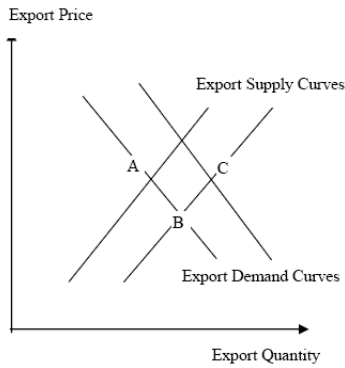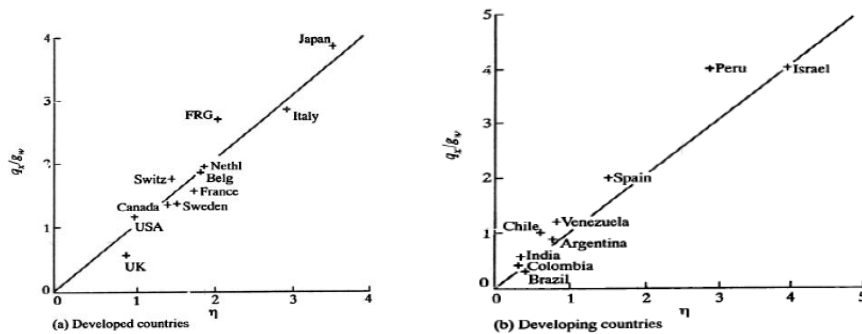
Riedel, 1995

Are developing countries large or small?

Estimates of the price elasticity (ε) and income elasticity (η) of exports demand, specify the export demand equation as:

$$q_X = \varepsilon \cdot (p_X - p_W) + \eta \cdot y_W$$

Typically the results indicate that ε = -0.5 and η = varies with proportionately with q_X, what has been dubbed the 45-degree rule:

If LDCs are price-takers why do they promote and not restrict trade?
Why have their terms-of-trade not fallen with rapid export growth?

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Are developing countries large or small?

My answer it that the econometric modeling is not appropriate for price-taking economies. Instead one estimate the inverse demand curve for exports:

$$p_X = p_w + \frac{1}{\varepsilon} \cdot q_X - \frac{\eta}{\varepsilon} \cdot y_w$$

Variable Parameter	Standard form Dependent Variable: q_X		Inverse form Dependent Variable: p_X		
	p_x/p_w ε	y_w η	p_w	q_w $1/\varepsilon$	y_w η/ε
Hong Kong	-0.70 (-3.78)	4.04 (27.00)	1.00	-0.05 (-0.83)	0.14 (0.63)
Korea	-0.84 (-2.15)	7.22 (7.93)	1.00	-0.002 (-0.005)	-0.96 (-1.00)

Sources: James Riedel, "The demand for LDC exports of manufactures: estimates from Hong Kong," *Economic Journal*, 98, 1988, 138-48; Premachandra Athukorala and James Riedel, "The small country assumption: a reassessment with evidence from Korea," *Weltwirtschaftliches Archiv*, 127, 1991, 138-51.

IS circa 1960: Trade and Industrialization Strategy

These projections were made in the 1960s by Hollis Chenery on the premise that large countries could achieve economies of scale. There was little hope for small economies that would have to rely on trade.

	1960s projection of per capita income in 1976		1960 estimate of GDP growth rates 1962-75		Per capita income in 1990
	Estimate	Realized	Estimate	Realized	
India	213	65	5.3	3.4	340
Pakistan	174	75	5.3	6.0	370
Sri Lanka	289	46	5.0	4.2	430
Taiwan	258	316	7.0	9.4	8,000
Hong Kong	488	324			10,350
South Korea	250	201	5.0	10.1	4,400
Singapore	859	268			10,450

Source: World Bank, World Development Report, 1991.

False premises of the export pessimism hypothesis

Trade and Industrialization Strategy circa 1990

Major themes:

- Export promotion strategy replaces ISI as the orthodox view

- Total Factor Productivity Growth replaces capital accumulation

- "Getting prices right" becomes the slogan of the day

- SOEs must be privatized

- FDI is good, foreign indirect investment is dangerous (Latin Debt Crisis)

- Foreign aid should be used to promote reform, not build infrastructure
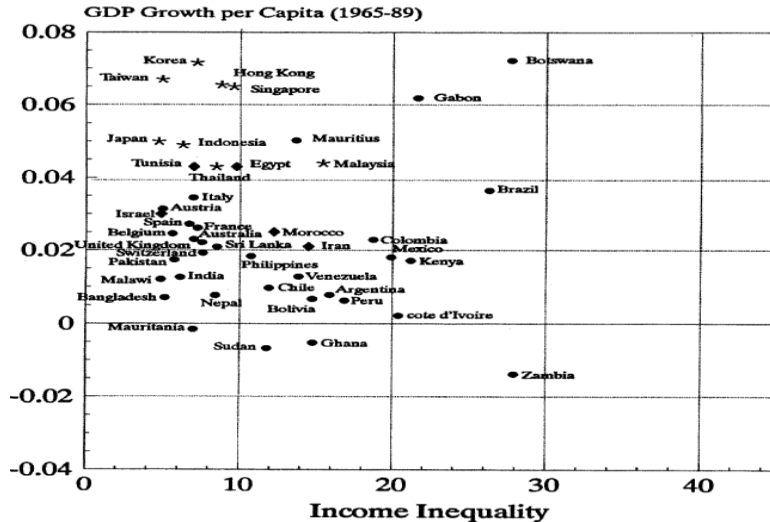
- Washington consensus is born

The Origins of the EOI strategy: The Asian Tigers

The ISI strategy was born in theory, but the EOI strategy was born in practice—the experience of the Four Asian Tigers

Page, 1994
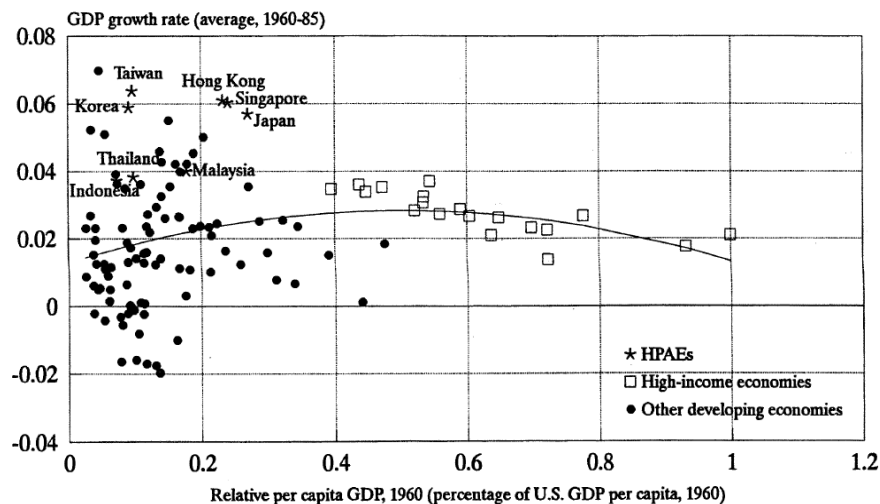
The Origins of the EOI strategy: The Asian Tigers

EOI produced not only fast growth but an equitable income distribution.

GDP Growth per Capita (1965-89)

Measured by the ratio of the income share of the richest 20% to the poorest 20%.

What is (and is not) EOI?

Definition: average EER_X = average EER_M (export promotion strategy)

average EER_X < average EER_M (import substitution strategy)

average EER_X > average EER_M (ultra export promotion strategy)

Bhagwati (1988): "average EER_X and average EER_M can and do conceal very substantial variations among different exports and among different imports"

Why not free trade?

The case EP is grounded on experience, not on theory. The theory was provided to show that what works in practice also works in theory!
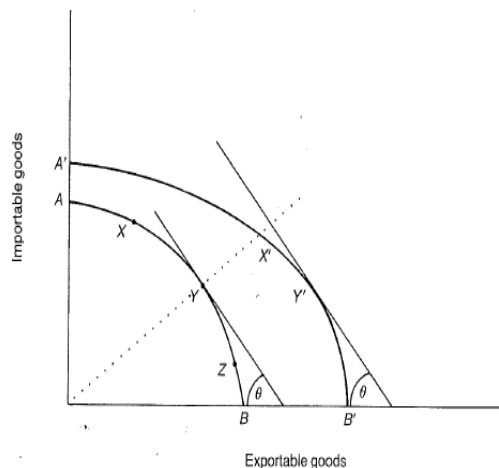
Riedel, 1991

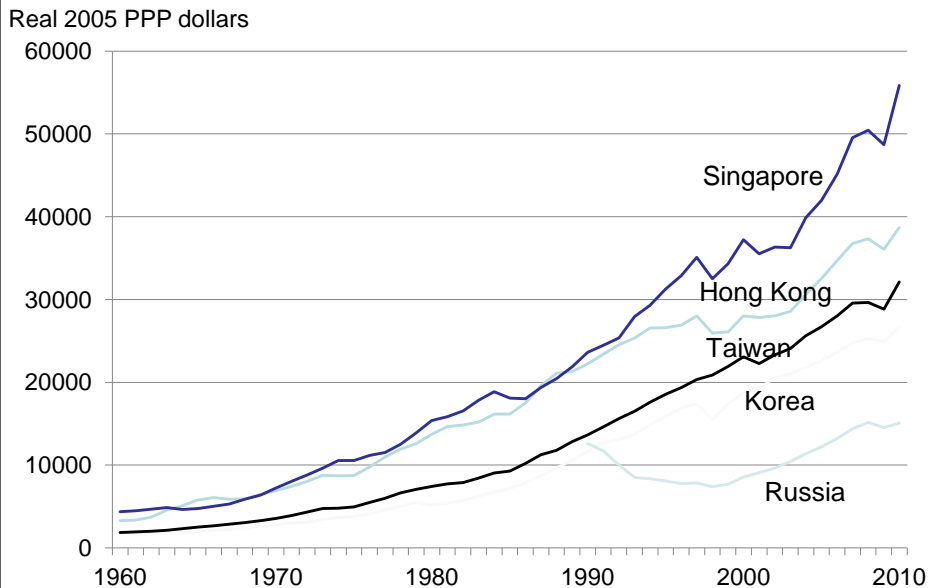## Revisionist Interpretation of EOI and the Asian Tigers

Some quotes from Paul Krugman "The Myth of Asia's Miracle" (1994)

"The newly industrializing countries of Asia, like the Soviet Union of the 1950s, have achieved rapid growth in large part through an astonishing mobilization of resources... rather than by gains in efficiency."

"Kim and Lau conclude of the four Asian "tigers" that "the hypothesis that there has been no technical progress during the postwar period cannot be rejected for the four East Asian newly industrialized countries." Young, more poetically, notes that once one allows for their rapid growth of inputs, the productivity performance of the "Tigers" falls "from the heights of Olympus to the plains of Thessaly.""

Popular enthusiasm about Asia's boom deserves to have some cold water thrown on it…future prospects for that growth are more limited than almost anyone now imagines.

The "tyranny of numbers" strikes back!

Real 2005 PPP dollars

Revisionist Interpretation of EOI and the Asian Tigers

The ISI strategy was born in theory and died in practice!

The EOI strategy was born in practice, but is still being attacked by theory.

Export-oriented industrialization and the principle of comparative advantage on which it is founded are still being debated on theoretical and empirical grounds…which is the topic for the next lecture!