Knowledge Enrichment Seminar for
NSS Economics Curriculum

Macroeconomics Series (3): Economic Growth and Development

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Economic Growth and Development

Teaching Tips:

- Define clearly the concept of economic growth and development (Economic growth can simply be defined as a rise in GDP or GDP per capital. Economic development is a broad concept encompassing economic growth and other developmental dimensions. It can be defined as "a multidimensional process involving major changes in social structure, popular attitudes, and national institutions, as well as the acceleration of economic growth, the reduction of inequality, and the eradication of poverty (Todaro and Smith 2009: 16)."

Economic Growth and Development

Teaching Tips:

- Tell student why we concern economic growth and development (about 3 billion of population is in a state of underdevelopment. The world population is about 6.8 billion in 2009).

- Use empirical data and cases as far as possible to illustrate your discussion.

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1. Measurement of economic growth and development

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1.1 Measurement of economic growth and development

- Change in real GDP

- Change in real GDP per capita
  - Real GDP per capita: A measure of living standard
  - Real GDP per worker: A measure of productivity

- Human Development Index: A comprehensive measure of socioeconomic development

1.1 Measurement of economic growth and development

- **Human Development Index (HDI)** is developed by the United Nations Development Program (UNDP) to analyze systematically and comprehensively the comparative status of socioeconomic development in different countries.

1.1 Measurement of economic growth and development

◆ The HDI attempts to rank all countries on a scale of 0 (lowest human development) to 1 (highest human development) based on three goals or end products of development:

1. *longevity* as measured by life expectancy at birth;

2. *knowledge* as measured by a weighted average of adult literacy (two-thirds) and mean years of schooling (one-third), and

3. *standard of living* as measured by real per capita gross domestic product adjusted for the differing purchasing power parity (PPP) of each country's currency to reflect cost of living and for the assumption of diminishing marginal utility of income (well--being increases with income but at a decreasing rate).

1.1 Measurement of economic growth and development

◆ Using these three measures of development and applying a formula to data for 177 countries, the HDI ranks countries into three groups: low human de-velopment (0.0 to 0.499), medium human development (0.50 to 0.799), and high human development (0.80 to 1.0).

1.1 Measurement of economic growth and development
Income Index

- adjusted income is found by simply taking the natural log of current income. Then, to find the income index, one subtracts the natural log of 100 from the natural log of current income. Real per capita income could not possibly have been less than $100 PPP. The difference gives the amount by which the country has exceeded this "lower goalpost."

1.1 Measurement of economic growth and development
Income Index

- To put this achievement in perspective, consider it in relation to the maximum that a country could reasonably aspire to over the coming generation. The UNDP takes this at $40,000 PPP. So we then divide by the difference between the log of $40,000 and the log of $100 to find the country's relative income achievement. This gives each country an index number that ranges between 0 and 1. For example, for the case of Bangladesh, whose 2004 PPP GDP per capita was $1,870, the income index is calculated as follows:

$$\text{Income index} = \frac{[\log (1{,}870) - \log(100)]}{[\log (40{,}000) - \log(100)]} = 0.49$$

(4.1)

1.1 Measurement of economic growth and development
Income Index

◆ With a value of the income index about midway through the maximum and minimum points (0.49 is close to 0.5), for the case of Bangladesh, it indicates that income of $1,870, which is already enough to reach nearly halfway to the maximum value that the index can take.

1.1 Measurement of economic growth and development
Life expectancy Index

◆ To find the life expectancy (health proxy) index, the UNDP starts with a country's current life expectancy at birth and subtracts 25 years. The latter is the lower goalpost, the lowest that life expectancy could have been in any country over the last generation.

1.1 Measurement of economic growth and development
Life expectancy Index

◆ Then the UNDP divides the result by 85 years minus 25 years, or 60 years, which represents the range of life expectancies expected over the previous and next generations. That is, it is anticipated that 85 years is a maximum reasonable life expectancy for a country to try to achieve over the coming gener-ation. For example, for the case of Bangladesh, whose population life expectancy in 2004 was 63.3 years, the life expectancy index is calculated as, follows:

$$\text{Life expectancy Index} \quad = \quad \frac{63.3 - 25}{85 - 25} \quad = \quad 0.64$$

(4.2)

1.1 Measurement of economic growth and development
Adult Literacy Index

◆ The *education index* is made up of two parts, with two-thirds weight on literacy and one-third weight on school enrollment. Because gross school enrollments can exceed 100% (because of older students going back to school), this index is also capped at 100%. For the case of Bangladesh, adult lit-eracy is estimated (rather uncertainly) at 41 %, so

$$\text{Adult Literacy Index} \quad = \quad \frac{41.0 - 0}{100 - 0} \quad = \quad 0.41$$

(4.3)

1.1 Measurement of economic growth and development
Adult Literacy Index

◆ For the *gross enrollment index*, Bangladesh estimates that 57% of its primary, secondary, and tertiary age population are enrolled in school, so the country receives the following value:

$$\text{Gross enrollment index} = \frac{57 - 0}{100 - 0} = 0.57$$

(4.4)

1.1 Measurement of economic growth and development
Adult Literacy Index

◆ Then, to get the overall education index, the adult literacy index is multiplied by two-thirds and the gross enrollment index is multiplied by one-third. This choice reflects the view that literacy is the fundamental characteristic of an educated per-son. In the case of Bangladesh, this gives us

$$\text{Education index} = \frac{2}{3} (\text{adult literacy index}) + \frac{1}{3} (\text{gross enrollment index})$$

$$= \frac{2}{3} (0.41) + \frac{1}{3} (0.57) = 0.46$$

(4.5)

1.1 Measurement of economic growth and development
Final Index

In the final index, each of the three components receives equal, or one-third, weight. Thus

$$HDI = \frac{1}{3}(\text{income index}) + \frac{1}{3}(\text{life expectancy index}) + \frac{1}{3}(\text{education index})$$

(4.6)

For the case of Bangladesh,

$$HDI = \frac{1}{3}(0.49) + \frac{1}{3}(0.64) + \frac{1}{3}(0.46) = 0.53$$

(4.7)

1.1 Measurement of economic growth and development
Advantages of HDI

◆ One major advantage of the HDI is that it does reveal that a country can do much better than might be expected at a low level of income and that substantial income gains can still accomplish relatively little in human development.

◆ Further, the HDI points out clearly that disparities in income are greater than disparities in other indicators of development, at least health and education measures. Moreover, the HDI reminds us that by *development* we clearly mean ***broad human development,*** not just higher income. Many countries, such as some of the higher-income oil producers, have been said to have experienced "growth without development."

1.1 Measurement of economic growth and development
Advantages of HDI

◆ Health and education are inputs into the national production function in their role as components of **human capital**, meaning productive investments embodied in persons. Improvements in health and education are also important development goals in their own right. We cannot easily argue that a nation of high-income individuals who are not well educated and suffer from significant health problems that lead to their living much shorter lives than others around the globe has achieved a higher level of development than a low-income country with high life expectancy and wide-spread literacy. A better indicator of development disparities and rankings might be found by including health and education variables in a weighted welfare measure rather than by simply looking at income levels, and the HDI offers one very useful way to get at this.

1.1 Measurement of economic growth and development
Criticisms of the HDI

◆ One is that gross enrollment in many cases overstates the amount of schooling because in many countries a student who begins primary school is counted as enrolled without considering whether the student drops out at some stage.

◆ Equal (one-third) weight is given to each of the three components, which clearly has some value judgment behind it, but it is difficult to determine what this is. Note that because the variables are measured in very different types of units, it is difficult even to say precisely what equal weights mean.

1.1 Measurement of economic growth and development
Criticisms of the HDI

◆ Finally, there is no attention to the role of quality. For example, there is a big difference between an extra year of life as a healthy, well-functioning individual and an extra year with a sharply limited range of capabilities (such as being confined to bed). Moreover, the quality of schooling counts, not just the number of years of enrollment. Finally, it should be noted that while one could imagine better proxies for health and education, measures for these variables were chosen partly on the criterion that sufficient data must be available to include as many countries as possible.

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1.1 Measurement of economic growth and development
Some further remarks

◆ Table 2.4 shows the Human Development Index 2004 data for a sample of 25 developed and developing nations ranked from low to high human development (column 3) along with their respective real GDP per capita (column 4) and a measure of the differential between the GDP per capita rank and the HDI rank (column 5).

◆ Clearly, this is one of the critical issues for the HDI. If country rankings did not vary much when the HDI is used instead of GDP per capita, the latter would serve as a reliable proxy for socioeconomic development, and there would be no need to worry about such things as health and education indicators.

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1.1 Measurement of economic growth and development
Some further remarks

- We see from Table 2.4 that the country with the lowest HDI (0.311) in 2004 was Niger, and the one with the highest (0.965) was Norway.

- It should be stressed that in the big picture, the HDI has a strong tendency to rise with per capita income, as wealthier countries can invest more in health and education, and this added human capital raises productivity. But what is so striking is that despite this expected pattern, there is still such great variation between income and broader measures of well-being. For example, Guinea and Nigeria have essentially the same average HDI despite the fact that real income is 89% higher in Guinea.

1.1 Measurement of economic growth and development
Some further remarks

- Many countries have an HDI significantly different from that predicted by their income. South Africa is a dramatic case: with an HDI of 0.653, it ranks just number 121. The GDP ranking of South Africa is 55 (i.e. 55-121 = -66). Despite a somewhat lower income than South Africa, Chile ranks number 38 with an HDI of 0.859, well above that predicted on the basis of its income. Chile's GDP ranking is 56 (i.e. 56-38 = 18).

1.1 Measurement of economic growth and development
Some further remarks

Human Development Index for 23 Selected Countries (2004 Data)				
Country	Relative Ranking (lowest to highest)	Human Development Index (HDI)	Real 2004 GDP Per Capita (PPP, U.S. $)	GDP Rank Minus HDI Rank
Low Human Development				
Niger	177	0.311	779	−7
Ethiopia	170	0.371	756	+1
Malawi	166	0.400	646	+10
Tanzania	162	0.430	674	+13
Angola	161	0.439	2,180	−32
Guinea	160	0.445	2,180	−30
Nigeria	159	0.448	1,154	−1
Medium Human Development				
Bangladesh	137	0.530	1,870	+7
Pakistan	134	0.539	2,225	−6
South Africa	121	0.653	11,192	−66
Peru	82	0.767	5,678	+12
China	81	0.768	5,896	+9
Saudi Arabia	76	0.777	13,825	−31
Brazil	69	0.792	8,195	−5
High Human Development				
Malaysia	61	0.805	10,276	−4
Costa Rica	48	0.841	9,481	+13
Chile	38	0.859	10,874	+18
United Kingdom	18	0.940	30,821	−5
United States	8	0.948	39,676	−6
Canada	6	0.950	31,263	+4
Norway	1	0.965	38,454	+3

Source: Data from United Nations Development Program, *Human Development Report, 2006* (New York: Oxford University Press, 2006), tab. 1.

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2. Factors affecting growth of an economy

2. Factors affecting growth of an economy
2.1 Productivity: Its Role and Determinants

A. Why Productivity Is So Important

1. Example: Robinson Crusoe
a. Because he is stranded alone, he must catch his own fish, grow his own vegetables, and make his own clothes.
b. His standard of living depends on his ability to produce goods and services.

2. Definition of **productivity**: the amount of goods and services produced for each hour of a worker's time.

3. A country's standard of living depends on its ability to produce goods and services.

2. Factors affecting growth of an economy
2.1 Productivity: Its Role and Determinants

B. How Productivity Is Determined

1. Physical Capital
a. Definition of **physical capital**: the stock of equipment and structures that are used to produce goods and services.
b. Example: Crusoe will catch more fish if he has more fishing poles.

2. Human Capital
a. Definition of **human capital**: the knowledge and skills that workers acquire through education, training, and experience.
b. Example: Crusoe will catch more fish if he has been trained in the best fishing techniques.

2. Factors affecting growth of an economy
2.1 Productivity: Its Role and Determinants

B. How Productivity Is Determined

3. Natural Resources

a. Definition of **natural resources: the inputs into the production of goods and services that are provided by nature, such as** land, rivers, and mineral deposits.

b. Example: Crusoe will have better luck catching fish if there is a plentiful supply around his island.

c. *Are Natural Resources a Limit to Growth?* Empirical evidence points out that as the population has grown over time, we have discovered ways to lower our use of natural resources. Thus, some economists are not so worried about shortages of natural resources.

2. Factors affecting growth of an economy
2.1 Productivity: Its Role and Determinants

B. How Productivity Is Determined
4. Technological Knowledge

a. Definition of **technological knowledge: society's understanding of the best ways to produce goods and services**.

b. Example: Crusoe will catch more fish if he has invented a better fishing lure.

2 Factors affecting growth of an economy
2.1 Productivity: Its Role and Determinants

C. *For Teachers Only: The Production Function*

1. A production function describes the relationship between the quantity of inputs used in production and the quantity of output from production.

2. The production function generally is written like this:

$$Y = A\,F(L, K, H, N)$$

where Y = output, L = quantity of labor, K = quantity of physical capital, H = quantity of human capital, N = quantity of natural resources, A reflects the available production technology, and $F(\cdot)$ is a function that shows how inputs are combined to produce output.

2. Factors affecting growth of an economy
2.1 Productivity: Its Role and Determinants

C. *For Teachers Only: The Production Function*

3. Many production functions have a property called constant returns to scale.

a. This property implies that as all inputs are doubled, output exactly double.

b. This implies twill hat the following must be true:

$$xY = A\,F(xL, xK, xH, xN)$$

where x = 2 if inputs are doubled.

2. Factors affecting growth of an economy
2.1 Productivity: Its Role and Determinants

C. *For Teachers Only: The Production Function*

c. This also means that if we want to examine output per worker we could set $x = 1/L$ and we would get the following:

$$Y/L = A\ F(1,\ K/L,\ H/L,\ N/L)$$

This shows that output per worker depends on the amount of physical capital per worker (K/L), the amount of human capital per worker (H/L), and the amount of natural resources per worker (N/L).

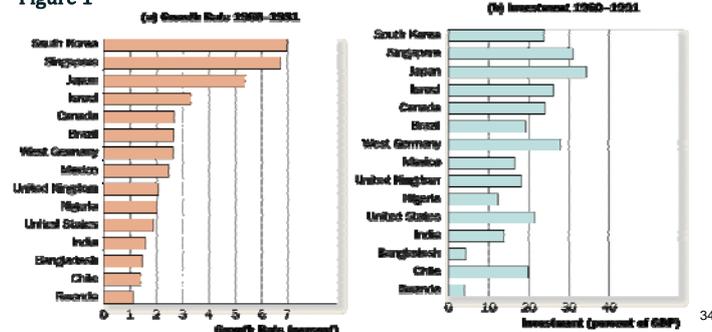## 2. Factors affecting growth of an economy
2.2 Economic Growth and Public Policy

A. The Importance of Saving and Investment

1. Because capital is a produced factor of production, a society can change the amount of capital that it has.
2. However, there is an opportunity cost of doing so; if resources are used to produce capital goods, fewer goods and services are produced for current consumption.

Figure 1

2 Factors affecting growth of an economy
2.2 Economic Growth and Public Policy

    A. The Importance of Saving and Investment

    3. Figure 1 shows economic growth rates and investment amounts of 15 countries for 1960 to 1991.

      a. Countries that devote a large share of GDP to investment tend to have high growth rates.
      b. However, from the data given it is difficult to determine cause and effect.

2 Factors affecting growth of an economy
2.2 Economic Growth and Public Policy

    B. Diminishing Returns and the Catch-Up Effect

    1. Definition of **diminishing returns: the property whereby the benefit from an extra unit of an input declines as the quantity of the input increases.**

      a. As the capital stock rises, the extra output produced from an additional unit of capital will fall.
      b. Thus, if workers already have a large amount of capital to work with, giving them an additional unit of capital will not increase their productivity by much.
      c. In the long run, a higher saving rate leads to a higher level of productivity and income, but not to higher growth rates in these variables.

2 Factors affecting growth of an economy
2.2 Economic Growth and Public Policy

B. Diminishing Returns and the Catch-Up Effect

2. An important implication of diminishing returns is the Catch-Up Effect.

a. Definition of **catch-up effect: the property whereby countries that start off poor tend to grow more rapidly than countries that start off rich.**
b. When workers have very little capital to begin with, an additional unit of capital will increase their productivity by a great deal.
c. This helps explain why (referring to Figure 1) South Korea had a growth rate more than three times larger than the United States even though both countries devoted a similar share of GDP to investment.

2 Factors affecting growth of an economy
2.2 Economic Growth and Public Policy

C. Investment from Abroad

1. Saving by domestic residents is not the only way for a country to invest in new capital.

2. Investment in the country by foreigners can also occur (e.g. China).

a. Foreign direct investment occurs when a capital investment is owned and operated by a foreign entity.
b. Foreign portfolio investment occurs when a capital investment is financed with foreign money but operated by domestic residents.

2. Factors affecting growth of an economy
2.2 Economic Growth and Public Policy

C. Investment from Abroad

3. Some of the benefits of foreign investment flow back to foreign owners. But the economy still experiences an increase in the capital stock, which leads to higher productivity and higher wages.

4. The World Bank is an organization that tries to encourage the flow of investment to poor countries.

a. The World Bank obtains funds from developed countries such as the United States and makes loans to less-developed countries so that they can invest in roads, sewer systems, schools, and other types of capital.

b. The World Bank also offers these countries advice on how best to use these funds.

2. Factors affecting growth of an economy
2.2 Economic Growth and Public Policy

D. Education

1. Investment in human capital also has an opportunity cost.

a. When students are in class, they cannot be producing goods and services for consumption.

b. In less-developed countries, this opportunity cost is considered to be high; as a result, children often drop out of school at a young age.

2. Because there are positive externalities in education, the effect of lower education on the economic growth rate of a country can be large.

3. Many poor countries also face a "brain drain"—the best educated often leave to go to other countries where they can enjoy a higher standard of living.

2. Factors affecting growth of an economy
2.2 Economic Growth and Public Policy

D. Education

4. *In the News: Promoting Human Capital*

a.Many young children in less-developed countries work because their families need the income.
b.Gary Becker has proposed that the governments of these countries pay families to send their children to school rather than to work. The government should provide financial support to the parents who allow their children to attend school regularly.

2 Factors affecting growth of an economy
2.2 Economic Growth and Public Policy

E. Property Rights and Political Stability

1. Protection of property rights and promotion of political stability are two other important ways that policymakers can improve economic growth.

2. There is little incentive to produce products if there is no guarantee that they cannot be taken. Contracts must also be enforced.

3. Countries with questionable enforcement of property rights or an unstable political climate will also have difficulty in attracting foreign (or even domestic) investment.

2. Factors affecting growth of an economy
2.2 Economic Growth and Public Policy

F.   Free Trade

1.   Some countries have tried to achieve faster economic growth by avoiding transacting with the rest of the world.

2.   However, we know that trade allows a country to specialize in what it does best and thus consume beyond its production possibilities.

3.   When a country trades wheat for steel, it is as well off as it would be if it had developed a new technology for turning wheat into steel.

4.   The amount a nation trades is determined not only by government policy but also by geography.

2. Factors affecting growth of an economy
2.2 Economic Growth and Public Policy

G.   Research and Development

1.   The primary reason why living standards have improved over time has been due to large increases in technological knowledge.

2.   Knowledge can be considered to be a public good.

3.   Most governments in developed countries promotes the creation of new technological information by providing research grants and providing tax incentives for firms engaged in research.

4.   The patent system also encourages research by granting an inventor the exclusive right to produce the product for a specified number of years.

2. Factors affecting growth of an economy
2.2 Economic Growth and Public Policy

G.   Research and Development

5.   *Case Study: The Productivity Slowdown and Speedup*

a.   From 1959 to 1973, output per hour worked grew at a rate of 3.2 percent per year. From 1973 to 1995, productivity grew by only 1.5 percent per year. Productivity accelerated again in 1995, growing by 2.6 percent per year over the next six years.

b.   The causes of the changes in productivity growth are elusive.

c.   It does not appear that this slowdown can be blamed on decreases in physical capital or human capital.

d.   Many economists believe that these changes have occurred as a result of changes in the amount of technological innovation.

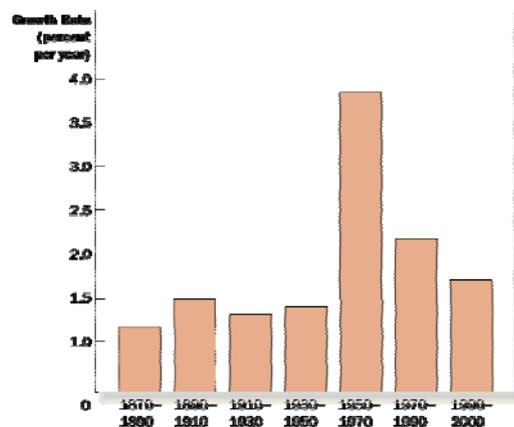e.   Figure 2 shows the average growth of real GDP per person in the developed world since 1870.

2. Factors affecting growth of an economy
2.2 Economic Growth and Public Policy

G.   Research and Development

Figure 2

2. Factors affecting growth of an economy
2.2 Economic Growth and Public Policy

H.   Population Growth

1.   Stretching Natural Resources

a.Thomas Malthus (an English minister and early economic thinker) argued that an ever-increasing population meant that the world was doomed to live in poverty forever.
b.However, he failed to understand that new ideas would be developed to increase the production of food and other goods, including pesticides, fertilizers, mechanized equipment, and new crop varieties.

2.   Diluting the Capital Stock

a.High population growth reduces GDP per worker because rapid growth in the number of workers forces the capital stock to be spread more thinly.
b.Countries with a high population growth have large numbers of school-age children, placing a burden on the education system.

2. Factors affecting growth of an economy
2.2 Economic Growth and Public Policy

H.   Population Growth

3.   Some countries have already instituted measures to reduce population growth rates.

4.   Policies that foster equal treatment for women should raise economic opportunities for women leading to lower rates of population.

5.   Promoting Technological Progress
a.   Some economists have suggested that population growth has driven technological progress and economic prosperity.
b.   In a 1993 journal article, economist Michael Kremer provided evidence that increases in population lead to technological progress.

2. Factors affecting growth of an economy
2.2 Economic Growth and Public Policy

I.   *The Sachs Solution to the African Problem*

1.   This is an article that economist Jeffrey Sachs wrote for *The Economist* (29 June 1996).

2.   Sachs points out that four factors can account for Africa's low growth rates:
a.   Trade barriers
b.   Excessive tax rates
c.   Low savings rates
d.   Adverse geographic and resource structural conditions (especially the high incidence of inaccessibility to the sea)

3. The desirability and costs of economic growth

3. The desirability and costs of economic growth – points to be considered

3.1 Trade-off between current and future consumption

3.2 Income distribution

- Consider two cases: Country A has 100 people and each of them earns annual incomes of $50,000 and the GDP of Country A is $5 million. Country B also has 100 people and 10 of them earn annual income of $500,000 and 90 suffer from possessing nothing. Which country have is better off?
- A choice between equity and efficiency

3.3 Resources exhaustion, pollution and sustainable development

- Sustainability refers to the balance economic growth and environment preservation. In economic terms, it is a balance between current and future economic growth.
- Sustainability emphasizes the importance of fulfilling the needs of current generation without compromising the needs of future generation.
- Another embedded meaning of sustainability is that the stock of overall assets should remain constant or rises over time.

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3. The desirability and costs of economic growth - points to be considered

3.4 GDP and economic well-being: shortcomings of the GDP?

- GDP measures both an economy's total income and its total expenditure on goods and services.

- GDP per person tells us the income and expenditure level of the average person in the economy.

- GDP, however, may not be a very good measure of the economic well-being of an individual.

    1. GDP omits important factors in the quality of life including leisure, the quality of the environment, and the value of goods produced but not sold in formal markets.
    2. GDP also says nothing about the distribution of income.
    3. However, a higher GDP does help us achieve a good life. Nations with larger GDP generally have better education and better health care.

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3. The desirability and costs of economic growth – points to be considered

3.5 Case Study: International differences in GDP and the quality of life

Country	Real GDP per Person (2002)	Life Expectancy	Adult Literacy (% of Population)	Internet Usage (% of Population)
United States	$35,750	77 years	99%	55%
Germany	27,100	78	99	41
Japan	26,940	81	99	45
Mexico	8,970	73	91	10
Russia	8,230	67	99	4
Brazil	7,770	68	86	8
China	4,580	71	91	5
Indonesia	3,230	67	88	4
India	2,670	64	61	2
Pakistan	1,940	61	42	1
Bangladesh	1,700	61	41	<0.5
Nigeria	860	52	67	<0.5

GDP and the Quality of Life

The table shows GDP per person and three other measures of the quality of life for twelve major countries

Source: Human Development Report 2004, United Nations

1. Table 3 shows real GDP per person, life expectancy, adult literacy rates, and Internet usage for 12 countries.

2. In rich countries, life expectancy is higher and adult literacy and Internet usage rates are also high.

3. In poor countries, people typically live only into their 50s, only about half of the adult population is literate, and Internet usage is very rare.

4. International and regional comparison

4. International and regional comparison

4.1 Catching up or not?

- Some newly industrializing countries (NICs), such as Singapore, South Korea, Taiwan and Singapore, recorded spectacular growth.

- The following table records the growth from 1973 to 1996, the year preceding the Asian financial crisis that started in 1997. In this table, you can see the average annual growth rate of the East Asian NICs was much higher than that of the industrialized countries in the West. Let me list the figures of some selected countries to illustrate the point.

4. International and regional comparison

4.1 Catching up or not?

Table 4.1   Annual growth rates for selected countries

Economy	Annual growth (average) (percent)
Singapore	6.1
Hong Kong	5.1
China	5.4
S Korea	6.8
Indonesia	3.6
Thailand	5.6
Malaysia	4.0
Japan	2.5
USA	1.6
UK	0.5
France	1.5
W Germany	1.8

4. International and regional comparison

4.1 Catching up or not?

- In the above table, Taiwan was not listed. From 1980 to 1990, the average annual GDP growth rate of Taiwan was 7.9%, so Taiwan's growth rate was at least on a par with, if not greater than, the other East Asian NICs. You should note that the growth rate used for Taiwan was in GDP, not GNP. Although these measures are slightly different, we'll treat them as roughly equivalent for our purposes here. Also, the period used for Taiwan was from 1980 to 1990, not 1973 to 1996, but it is still indicative of Taiwan's overall economic growth. Japan's lower growth rate was due to its economic problems that started in 1990 and in fact still continue.

4. International and regional comparison

4.1 Catching up or not?

- South Korea and Singapore had about the same real GDP per capita as Sri Lanka and Bangladesh in 1960, but South Korea and Singapore surged ahead with higher growth rate over the next 30 years and Sri Lanka and Bangladesh lag far behind.

- However, for most of the developing countries, no clear evidence shows that low-income countries fall in the tendency of catching up.

- Then, why do some countries can achieve more rapid growth?

4. International and regional comparison

- ## 4.1 Catching up or not?
- Catch up in more advanced countries

➢ The figure plots real GDP per capita in 1960 against growth in real GDP from 1960 to 2000 for several advanced countries.

➢ It is noted that richer countries, such as the US, grew slower than less rich countries such as Japan, Ireland, and Spain.
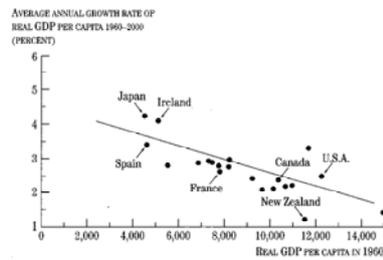
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4. International and regional comparison

- ## 4.1 Catching up or not?
- Catch up in more advanced countries

Evidence of Catch-up in More Advanced Countries, 1960-2000

For the advanced countries shown in the diagram, GDP per capita growth has been more rapid for those that started from a lower level of GDP per capita. Thus, there has been catching up, as shown by the catch-up line drawn through the points.

4. International and regional comparison

• 4.1 Catching up or not?

- **Catch-up in the Whole World**
- ➤ Figure 4 includes both DCs and LCDs.

- ➤ Very low income countries, such as Bangladesh and Ethiopia, demonstrate very slow growth rate. Some high income region/countries such as Hong Kong and South Korea are also countries of high growth rates.
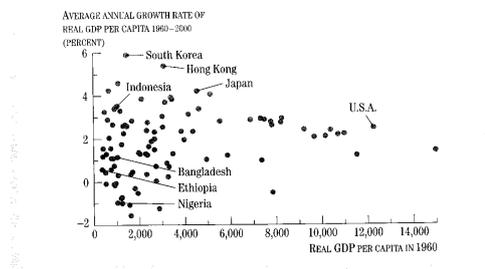
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4. International and regional comparison

• 4.1 Catching up or not?
- **Catch-up in the Whole World**

Lack of Catch-up for Developing Countires, 1960-2000
Unlike the states in the United States or the advanced countries, there has been little tendency for poor countries to grow more rapidly than rich countries. The gap between rich and poor has not closed.

4. International and regional comparison

4.2 The East Asia Miracle

Development Strategy of NICs

1. Import-substituting industrialization (ISI)

The theoretical foundation of import substitution as a measure of industrialization may have first come from the 'development economists' in the 1940s and 1950s. Raul Prebisch of the Economic Commission for Latin America (ECLA) under the Economic and Social Council of the United Nations is one of its representatives. These development economists felt that the LDCs were lagging far behind and there was no way for them to compete with the developed countries in trade unless international organizations and major industrial countries took extraordinary measures to help them. The only other way for developing countries was to hide behind a protective tariff and develop their own industry (Gilpin 2001, 308).

4. International and regional comparison

4.2 The East Asia Miracle

Development Strategy of NICs

2. Export-oriented industrialization

The adoption of export-oriented industrial policy by the East Asian countries in the 1960s coincided with an explosion of world trade at that time. The GATT, which was established in 1948 to promote free trade, began bearing fruit. So the timing of the shift to EOI by these countries was just right. There are other reasons for these countries adopting the EOI policy. With the exception of South Korea, the other East Asian Dragons, Taiwan, Hong Kong and Singapore, do not have large domestic markets. They have to export. Furthermore, there was great influence from the American advisors as Taiwan and South Korea worked closely with the US on defence as well as other matters. The US encouraged them to export.

4. International and regional comparison

4.2 The East Asia Miracle

Development Strategy of NICs

3. Foreign exchange rates

The manipulation of foreign exchange rates alluded to above is also an important policy some governments use to promote economic development. Developing countries are typically short of foreign currencies earned via exchange. They have to use it prudently. It is not uncommon for such countries to have two rates for foreign exchange. One is the official rate set by the government. The other is largely determined by market forces. The Central Bank of Taiwan, to take an example, introduced above, set two rates: one for imports and another for exports. For imports (usually raw materials, equipment, machines needed for productive enterprises), the rate was set higher, so that less foreign exchange would be spent. For exports, it was set lower. This was intended to make Taiwanese products more competitive in the world market.

4. International and regional comparison

4.2 The East Asia Miracle

Development Strategy of NICs

4. Foreign direct investment (FDI) and technology transfers

Developing countries lack both capital and technology, and developed countries can provide both.

4. International and regional comparison

4.2 The East Asia Miracle

Development Strategy of NICs

5.   Export processing zones

In this approach, a government identifies — after considering geography, marketing, transportation, power supply, labour supply and a host of other factors — and constructs export processing zones. All three words in the term 'export processing zone' are significant. First, it indicates an identifiable zone with definite boundaries. This zone is not considered to fall within the tariff territory of the national jurisdiction. What the industries do in the zone is to process either raw materials or components into finished or semi-finished products. After this processing is done, the manufacturers must export these products, i.e., not sell them within the tariff territory of the host country.

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4. International and regional comparison

4.2 The East Asia Miracle

Development Strategy of NICs

6.   Research and development (R & D)

The R & D capability of enterprises is extremely important for the quality of their products and for future product development.

7.   Industrial parks

Since R & D is so important, the NICs have emulated the developed countries in setting up industrial parks. As with export processing zones, it's the government that designs and provides the infrastructure for these industrial parks.

4. International and regional comparison

4.2 The East Asia Miracle

Development Strategy of NICs

8. Developmental State Theory

1. prioritizes economic growth and production, as opposed to consumption and distribution, as the fundamental goals of state action

2. recruits a highly talented, cohesive, and disciplined economic bureaucracy on the basis of merit

3. concentrates bureaucratic talent in a guiding agency (for example Japan's MITI) charged with the task of industrial transformation

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4. International and regional comparison

4.2 The East Asia Miracle

Development Strategy of NICs

8. Developmental State

4. institutionalizes close links between bureaucratic and business elites in order to exchange information and promote cooperation on key decisions as a basis for effective policy-making (for example, targeting industrial growth areas)

5. insulates policy networks from day-to-day special interest pressures and growth-compromising demands

6. implements developmental policies by virtue of a mixture of institutionalized government-industry networks and public control over key resources such as finance (Weiss and Hobson 1995, 149).

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THANK YOU!