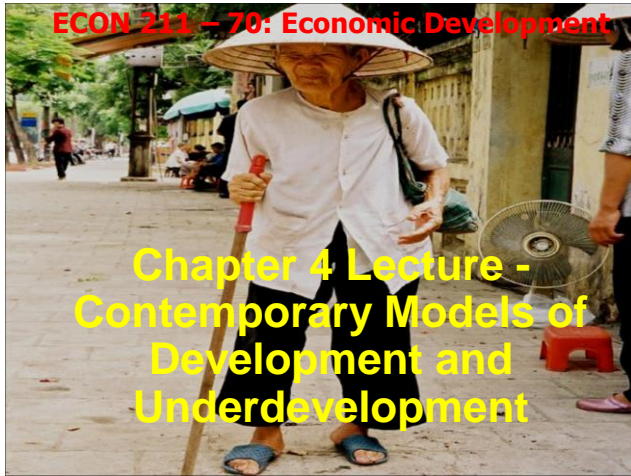


Chapter 4 Lecture - Contemporary Models of Development and Underdevelopment



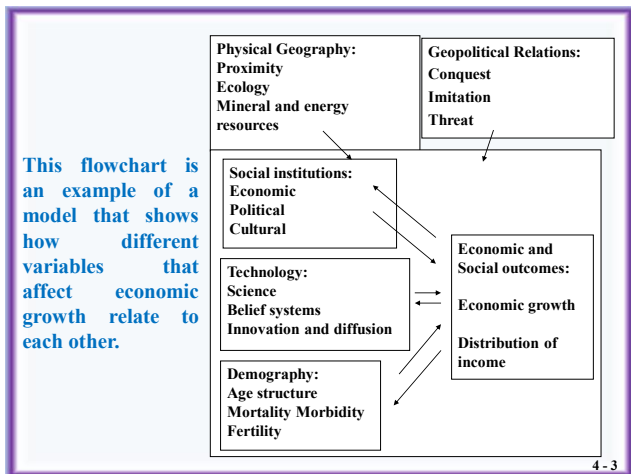
1

New Approaches to Growth

- Research reveals that GDP growth in the United States and many other countries has had to do largely, even primarily, with TFP growth (i.e., increases in productivity).
- Research has been conducted on why productivity growth has such a major impact, and one explanation is that there are increasing returns to investment in knowledge. This may be a result of positive externalities (spillovers).

Can you think of an example?

2



3

To get a better understanding of how these variables relate to each other we will need to distinguish between mechanisms and contexts and institutions

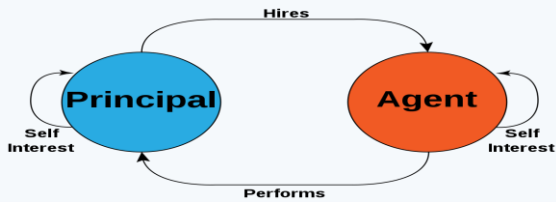
- **Mechanisms of Economic Growth**
 - Accumulation of capital
 - Division of labor
 - Innovation
 - Resource exploitation and depletion (pseudo growth)
 - Income transfers (e.g. from rich to poor) (pseudo growth)
- **Social, Physical, and Geopolitical Context**
- **Kinds of Social Institutions**
 - Economic
 - Political
 - Cultural (norms, religious beliefs, governed by sanction)
 - Scientific

4

Chapter 4 Lecture - Contemporary Models of Development and Underdevelopment

Underdevelopment as Coordination Failure

- Economic development is difficult to achieve. It has been impossible for some countries (e.g., Nigeria, Sudan), but accomplished by others (e.g., S. Korea, Singapore)
- The success or failure of economic development policies can be explained by the “principal-agent” model.



4 - 5

5

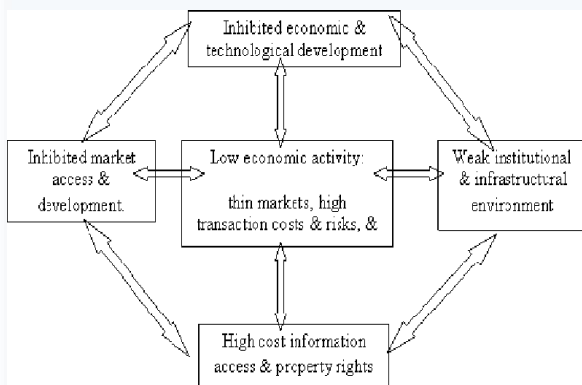
Underdevelopment as Coordination Failure

- **Principal:**
 - Government
- **Agents:**
 - Households
 - Private-sector firms
 - Public agencies
 - Government-owned enterprises
- International companies
- An effective principal is needed to coordinate actions taken by agents and achieve an optimal outcome, making all agents better-off.
- Coordination failure occurs when the principal fails to induce agents to coordinate their actions, which leads to an outcome that makes all agents worse-off.

4 - 6

6

Coordination Failure



4 - 7

7

The O-Ring Theory of Economic Development

- Production is modeled with strong complementarities of inputs (labor & capital) and interdependencies among firms (output of one firm is input of another)
- Positive assortative matching in production: skilled labor works with its peers; profitable and modernizing firms coordinate with their counterparts
- Implications of strong complementarities for economic development and the distribution of income across countries will induce countries at the same level of development to coordinate their actions
- MDCs cooperate and coordinate with each other in the development and transfer of modern technology

4 - 8

8

Chapter 4 Lecture - Contemporary Models of Development and Underdevelopment

Kremer's O-Ring Theory: A Numerical Illustration

- Suppose a Human Resources (HR) Department has four workers - two H-types and two L-types;
- Strong complementarities are present when output Q is determined by the product of the qualities, i.e. $Q = q_i q_j$
- How to allocate for efficiency: $\{HL, LH\}$ or $\{HH, LL\}$?

$$HH + LL \text{ versus } 2HL$$

- We know $(H - L) > 0$ so : $(H - L)^2 > 0$
- $(H - L)^2 = H^2 - 2HL + L^2 > 0$ thus $H^2 + L^2 > 2HL$
- That is: Mix or Match?
- This illustrates that with strong complementarity it is more efficient to match, i.e. produce using positive assortative matching

4-9

9

Kremer's "O-Ring theory": Implications

- Firms tend to employ workers of similar skills for tasks
- Workers performing the same task at a high skill firm earn higher wages than in a low skill firm
- Explains why a worker of given skill moving from a developing to a developed country receives a higher wage using the same skills
- In the model, wages increase with q at an increasing rate, so wages will be more than proportionally higher in developed countries
- When co-workers or others doing complementary work have higher skills, greater *incentive* to acquire *more* skills
- This type of income externality is by now a familiar condition in which multiple equilibria can emerge

4 - 10

10

Kremer's O-Ring Theory of Economic Development

- As a result, economies can have multiple equilibria—a bad one with low-skilled working together vs a good one high-skilled working together.
- This offers an alternative explanation to why modest individual skill differences can mushroom into huge aggregate productivity differences



Space Shuttle Challenger Disaster

O-ring Seals

4 - 11

11

Economic Development as Self-Discovery

No person is born knowing their comparative advantage; specific comparative advantage of an economy also not obvious; no alternative to trial and error...

- Hausmann and Rodrik: A Problem of Information
- Not enough to say developing countries should produce "labor intensive products," because there are thousands of them
- Industrial policy may help to identify true direct and indirect domestic costs of potential products to specialize in, by:
 - Encouraging exploration in first stage
 - Encouraging movement out of inefficient sectors and into more efficient sectors in the second stage

4 - 12

12

Chapter 4 Lecture - Contemporary Models of Development and Underdevelopment

The Growth Diagnostics Framework

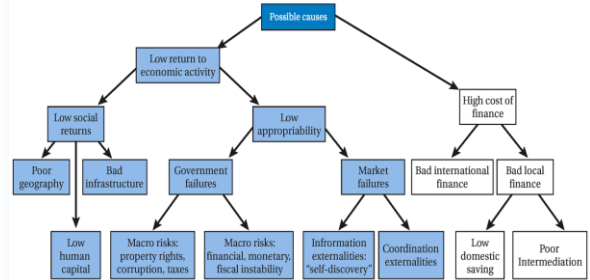
- Focus on a country's most binding constraints of economic development: low rate of return on investment and high cost of financing
- No "one size fits all" in development policy of market coordination
- Look at diagram on next slide that assumes Insufficient investment in physical, social, environmental, and human capital

4 - 13

13

The Growth Diagnostics Framework

Problem: Low levels of private investment and entrepreneurship

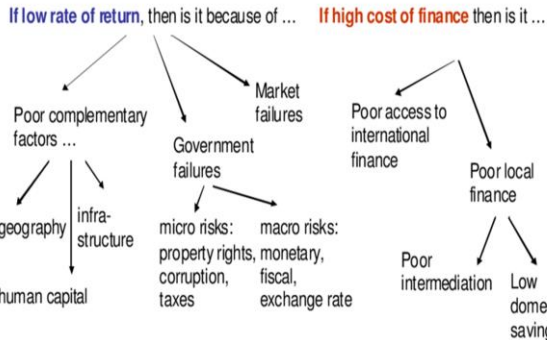


Source: Ricardo Hausmann, Dani Rodrik, and Andrés Velasco, "Getting the diagnosis right," *Finance and Development* 43 (2006), available at <http://www.inf.org/external/pubs/ft/fandd/2006/03/hausmann.htm>. Used with permission.

4 - 14

14

Growth depends on (rate of return – real interest rate)

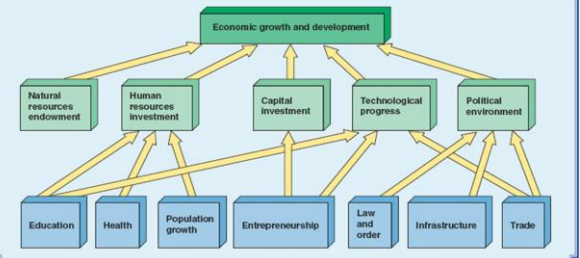


4 - 15

15

KEY CATEGORIES THAT DETERMINE ECONOMIC GROWTH AND DEVELOPMENT

There are five basic categories that interact to determine the economic growth and development of countries: natural resources, human resources, capital, technological progress, and the political environment. The exhibit also indicates important factors that influence investment in human resources, capital, technological advances, and the political environment. LDCs are faced with a formidable task. Because economic growth and development are multidimensional, LDCs must improve many factors in order to achieve economic progress.



© 2011 South-Western, a part of Cengage Learning

4 - 16

16