Aid, Public Investment, and pro-Poor Growth Policies
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Session 2
Poverty Traps: Causes, Evidence, and Policy Implications
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- Causes of poverty traps.
- Evidence.
- Policy implications.
- Case of Ethiopia (K. El Aynaoui).

Causes of Poverty Traps
Early view: a country is poor because it is poor.

Emphasis on the **circular relationship** between income, subsistence consumption, savings, and investment (Nurkse (1953)).

But other potential causes exist. Most importantly, these causes can interact.

Example: the fertility trap; interacts with lack of human capital (female education).

- Geography.
- Lack of human capital.
- High fertility rates.
- Malnutrition and health.
- Lack of public capital (infrastructure).
- External debt burden.
- Lack of access to capital flows.
- Poor governance.
Spatial poverty traps

- A country (or region) may be faced with adverse climatic conditions or be unable to capitalize on the available physical and human capital stocks of neighboring countries (or regions).

- e.g., lack of access to the sea may limit trading opportunities,…

- …and difficult weather conditions may lead to the prevalence of certain types of disease, and therefore affect the health (productivity) of workers.

Lack of Human Capital

- Important positive externalities associated with human capital (learning by doing, etc.).

- Countries that are identical in their structural characteristics, but differ in their initial level (or distribution) of human capital, may follow different growth patterns, as a result of
  - social increasing returns to scale from human capital accumulation;
  - credit market imperfections (coupled with a fixed cost in the production of human capital);
  - the effect of parental human capital in offspring’s decisions to invest in education;
  - interactions between fertility rates and human capital accumulation (see below).

- Example: an economy with a low stock of human capital to begin with will also have low returns to education;
These low returns will limit incentives to invest in the acquisition of skills, and the country may consequently be trapped in a stage of under-development.

Conversely, if the economy starts with a high level of human capital, growth may perpetuate itself.

Decision not to invest in education can be rational from the individual's point of view.

Possible explanation for sub-Saharan Africa?

By preventing the low-skilled from making productive, but indivisible, investments in human capital, credit constraints can lead to a trap.

Credit constraints: due either to imperfect information about individuals' abilities or imperfect enforcement of loan contracts.

Degree of inequality in initial wealth distribution, which determines who can save and invest in human capital, can therefore explain a poverty trap (rationale for redistribution policies).
Inequality in Sub-Saharan Africa: Gini Coefficient

- Note: the acquisition of (lumpy) physical capital can also be subject to borrowing constraints and lead to a poverty trap…

- …For instance, poor farmers may be unable to borrow to adopt new technologies.

- May be particularly relevant for sub-Saharan African countries, where financial intermediation remains insufficiently developed in rural areas.

Fertility Traps

- Fertility decisions: affect both the supply of labor by women and decisions to invest in human capital.

- Fertility tends to be inversely related to women's wages, or the most common proxy for wages, education.

- Figures: fertility rates are correlated inversely with income per capita and the growth rate of income, and positively with the illiteracy rate for adult females and poverty.
Kremer and Chen (1999): good illustration of how the interaction between wages, fertility, and the cost of education can lead to poverty traps.

- Model is based on three major assumptions:
  - higher wages reduce fertility;
  - children of the unskilled are more likely to be unskilled;
  - skilled and unskilled workers are (gross) complements in production.

- Fertility and incentives to acquire an education depend on the structure of wages, and thus on the fraction of skilled labor in the workforce.

- The positive feedback between fertility differentials and wage inequality may lead to multiple growth paths.

- If the initial proportion of skilled workers is high enough, wage and fertility differentials between skilled and unskilled workers will be small,…

![Figure 7](image-url)
...and the economy will converge to a growth path with low inequality.

However, if the initial proportion of skilled workers is too low, inequality will be self-reinforcing...

...and the economy may approach an equilibrium with a low proportion of skilled labor

...and a high degree of inequality between the skilled and unskilled.

Malnutrition and Poor Health

- Trap may emerge because the poor may be so badly nourished that they are too weak to perform up to their physical potential.

- Low nutrition may thus engender low productivity and continued low incomes. The chronically undernourished may be so unproductive that they do not get hired at any wage.

- See figure.
- Positive correlation between malnutrition and poverty in developing countries.

- Worrying trend in sub-Saharan Africa: child malnutrition increased during the 1990s in some countries.

- Great inequality within countries, in terms of access to health services (e.g. Ghana); may reinforce a spatial poverty trap.
A global health threat: AIDS.

See UNAIDS report on CD (Session 2).

In sub-Saharan Africa: as of end 2003, about 25 million people were infected with the virus.

7.5% of the adult population (aged 15 to 49) at end 2003. Botswana: 37%, Central African Republic: almost 14%.

<table>
<thead>
<tr>
<th>Region</th>
<th>Adults &amp; children living with HIV/AIDS</th>
<th>Adults &amp; children newly infected with HIV</th>
<th>Adult prevalence (%)</th>
<th>Adult &amp; child deaths due to AIDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub-Saharan Africa</td>
<td>25.6-2.7 million</td>
<td>3.6-3.4 million</td>
<td>7.5-6.5</td>
<td>2.2-2.4 million</td>
</tr>
<tr>
<td>North Africa &amp; Middle East</td>
<td>470,000-50,000</td>
<td>42,000-6,000</td>
<td>0.2-0.4</td>
<td>25,000-50,000</td>
</tr>
<tr>
<td>South &amp; Southeast Asia</td>
<td>6.8-2.2 million</td>
<td>102,000-31,000</td>
<td>0.6-0.3</td>
<td>350,000-50,000</td>
</tr>
<tr>
<td>East Asia &amp; Pacific</td>
<td>780,000-1.1 million</td>
<td>130,000-25,000</td>
<td>0.1-0.1</td>
<td>12,000-25,000</td>
</tr>
<tr>
<td>Latin America</td>
<td>1.8-1.9 million</td>
<td>120,000-36,000</td>
<td>0.5-0.2</td>
<td>40,000-70,000</td>
</tr>
<tr>
<td>Caribbean</td>
<td>350,000-500</td>
<td>450,000-60,000</td>
<td>1.9-3.1</td>
<td>30,000-50,000</td>
</tr>
<tr>
<td>Eastern Europe &amp; Central Asia</td>
<td>1.2-0.8 million</td>
<td>180,000-260,000</td>
<td>0.5-0.0</td>
<td>21,000-37,000</td>
</tr>
<tr>
<td>Western Europe</td>
<td>320,000-400</td>
<td>30,000-40,000</td>
<td>0.5-0.3</td>
<td>2,000-3,000</td>
</tr>
<tr>
<td>North America</td>
<td>780,000-1.1 million</td>
<td>160,000-52,000</td>
<td>0.5-0.7</td>
<td>22,000-51,000</td>
</tr>
<tr>
<td>Australia &amp; New Zealand</td>
<td>12,000-21,000</td>
<td>780,000-180,000</td>
<td>0.4-0.1</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL</td>
<td>41 million</td>
<td>5 million</td>
<td>1.1%</td>
<td>3 million</td>
</tr>
</tbody>
</table>

- Impact on the size of the population at horizon 2025: could be dramatic (e.g. South Africa).

- Recent estimates: AIDS reduced the rate of output growth by anywhere between 0.5 and 1.5 percentage points per annum in sub-Saharan Africa, during the period 1992-2000.

- Effect may become larger in some countries.

- Lack of human capital may prevent a country from escaping the poverty trap.
Lack of Public Capital

- Threshold externalities associated with public capital in infrastructure may also lead to a low-growth, poverty trap (Session 3).

- If the poor constitute a majority of a country’s population, the country may be too poor to develop its infrastructure (lack of domestic revenue).

- In turn, lack of public capital in infrastructure may lead to a low-growth, poverty trap.

Public infrastructure may have a complementarity effect on private investment, in addition to a positive effect on the productivity of private inputs (see Session 3).

But this effect may subject to a threshold.

The productivity effect of public capital on private rate of return must be sufficiently high, to begin with, to stimulate private capital formation.
If this effect is too low (perhaps because of indivisibilities, due to the fact that some types of investment in infrastructure are lumpy), the economy may be stuck in a low-growth, high poverty trap.

In such conditions, small increases in public capital outlays in infrastructure would bring few benefits in terms of higher growth.

A large increase in public investment is needed to raise the public capital stock (see below).

External Debt Burden

A large burden of debt may be a deterrent to private (domestic and foreign) investment, because of perceived uncertainty and risk.

Lack of physical capital may constrain growth.

A large external public debt may also lead to a poverty trap if debt servicing absorbs a large fraction of the resources that could be available for public investment in infrastructure (Session 3).
Lack of access to Private Capital Flows

- Although there are potential costs associated with volatile short-term capital flows...

- ...foreign direct investment flows may carry some important benefits (see Agénor (2003)).

- However, sub-Saharan Africa attracts a limited amount of these flows.

Developing Countries: Net Private Capital Flows, 1993-2003

Source: IMF, World Economic Outlook (September 2002).
Note: Developing countries are defined as emerging market countries less countries in transition. 2003 is an estimation.

Billions of US$

Source: IMF, World Economic Outlook (September 2002).
Note: 2003 is an estimation.

- FDI flows are a relatively small share of gross domestic capital formation.
- FDI flows are also highly concentrated to a small group of countries…
- …and sectors: flows are linked to exploitation of natural resources (Angola, Nigeria, Namibia, Botswana), to locational advantages (Namibia, Swaziland),…
...specific investment incentives (EPZs in Mauritius), or driven by broad-based economic reforms (privatization in Ghana, Mozambique, South Africa).

Difficulties in attracting FDI reflect insufficient market size, poor infrastructure, political uncertainty and corruption,....

...restrictive policies toward foreign investment, and poor institutional environment (ineffective legal, financial and banking systems).

Incentives for FDI: used with mixed success.
Governance Traps

- Absence of enforcement of property rights: may prevent private investment.

- Growth rates differ across countries because the economic environment in which individuals operate also differs.

- Environment comprises the country’s laws, institutions, and government rules, policies, and regulations.

Application of Rule of Law Varies by Region
(based on aggregation of surveys/polls 1997-99*)

Note: Regional Averages shown for discussion purposes, and hide large intra-regional variation in each case. Thin vertical line reflects estimated margin of error.

Environment that provides adequate protection for property rights and gives agents the incentive to produce, invest, and accumulate skills is a growth-enhancing environment.

Legal reforms that strengthen creditor rights, contract enforcement, and accounting practices can stimulate financial development.

A growth-deterring environment discourages production and effort and has an adverse effect on economic performance.

e.g. a highly corrupt bureaucracy, operates as a tax on production activities.

Entrepreneurs must allocate time and resources to bribing government officials to obtain authorizations (permits and licenses) for operating.

If different groups of bureaucrats have hold-up power over an investment project, the result may be a level of capital formation that is lower than otherwise...

...because the bureaucrats may be unable to collude or coordinate, the total sum of bribes required to have the project approved may exceed the private gains from investing in the first place.

The opportunity to divert resources in this way through government may have important dynamic consequences for the allocation of talent.

Individuals who might have chosen to become entrepreneurs may instead devote their energies to rent seeking.
Evidence on Poverty Traps

- Few of the predictions and implications of the potential factors reviewed earlier have been explicitly tested against available data.

- Most of the available evidence on poverty traps is indirect—if not anecdotal.

- Evidence based on (non) convergence across countries: weak.

- Lack of evidence: makes it difficult to conclude in favor of one or another explanation of poverty traps (or constellation of factors).

- Particularly problematic from a policy point of view and the design of a poverty reduction strategy.

- Given the large number of competing hypotheses, it is crucial to devise specific tests to discriminate among them and determine which mechanisms are important for particular countries.
Policy Implications

- Key feature of recent research: whether the economy settles on a low- or high-growth equilibrium depends on some non-linearity, such as threshold externalities associated with human capital or public capital.

- Implication: temporary events may have permanent consequences.

- e.g., a natural disaster that destroys part of infrastructure capital and lowers it below a critical level may throw a country into a poverty trap...

- …from which it may not be able to emerge without some "exogenous" force.

- Or a temporary policy aimed at raising the economy’s public capital stock in infrastructure above a critical level could get a country on a high growth path.

- Such a policy, financed e.g. by aid, would not require an ever-lasting commitment by donors, but rather a concentrated effort over a few years.
Governance

- Governance.
- Public investment and the “Big Push.”
- Redistribution policies: can they hurt the poor?
- The importance of policy complementarities.

Effective public institutions are essential to avoid biasing individual choices in favor of rent seeking.

Such institutions include a strong judiciary and secure property rights.

Differences in social infrastructure (public institutions and policies that determine the environment within which agents operate) are key factors in explaining cross-country differences in income per capita.

Public Investment and the “Big Push”

- Lack of public capital in infrastructure: may lead to a low-growth, poverty trap (see above).
- A big push (large increase in public investment), may raise the public capital stock sufficiently for the complementarity effect to “kick in”…
- …raising private investment and eventually lifting the economy to a higher growth path.
- This increase may result from a large inflow of foreign aid or generous debt relief.
 Redistribution Policies

- Idea: redistribution is essential to reduce poverty rapidly in some countries, because
  - Changes in income are unlikely to be sufficient; the more pronounced the degree of inequality, the smaller the impact of economic growth on the poor.
  - If credit market imperfections lead to unequal access to education…

- …Redistributing wealth from rich to poor may help the poor to escape from poverty, by allowing them to invest in human capital.

- However: several potential problems.
  - What can be achieved through many of the income redistribution measures that are often suggested…
  - …(e.g. social funds, targeted cash and in-kind programs) is likely to be quite limited.

- 2. Little wealth to redistribute, to begin with (but argument makes more sense in a dynamic context).
  - Forced redistribution of assets (e.g. government-mandated reallocation of land): politically difficult and often a recipe for disaster.
  - Market-based land reforms (poor receive subsidies to purchase land from willing sellers): often too limited in scope to have much impact on income distribution. The poorest among the poor are often excluded.
Progressive taxation (or inheritance taxes) is either not feasible or effective, due to administrative constraints.

Transfer payments (through social safety nets) are temporary, not permanent measures to reduce poverty,…

…. such transfers may create moral hazard problems, and may not foster self-reliance and strengthen incentives to invest in skills.

Changes in income distribution may have feedback effects on growth.

Policies to increase equality (through e.g. higher taxation of the rich) may lower propensity to save of capitalists or lead to capital flight.

In turn, this may lower private investment, with an adverse effect on growth and poverty.

Policy Complementarities

Poverty and low-growth traps: can be the result of a combination of factors:

- low education and high fertility rates;

- high degree of asset inequality and capital market imperfections;

- geographical handicaps in some regions and inadequate health facilities.
Thus, a combination of policies is also required to escape from a trap.

e.g., public investment in infrastructure may not be sufficient to pull a country out of its poverty trap, because the lack of qualified and healthy workers may continue to act as a constraint.

Investment in (or subsidies to) education and health is also necessary.

In a poverty reduction strategy, understanding and exploiting policy complementarities is important.