



Human Capital, Education, Health.

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AUCA

9 million tragedies each year

- 9 million children die before their 5th birthday each year
- 1.5 million of these children die of diarrhoea (mostly in South Asia and sub-Saharan Africa)
- Another 1.75 million die of malaria (90% of them in Africa)
- But both diarrhoea and malaria are preventable and curable at small costs
- Curing diarrhoea normally requires salt and sugar diluted in clean water (ORS) preventing dehydration.
- Malaria prevention requires sleeping inside an insecticide treated bed net (bed nets are not expensive)

Banerjee and Duflo ask: Why are low-hanging fruits unplucked?

- A mere \$100 spent on chlorine can prevent 32 cases of diarrhea. In Zambia only \$0.18 USD (PPP) worth of chlorine can purify water for a family of six, and reduce diarrhea among children by 48%. Yet only 10% of families use it.
- A treated bed net costs \$14 USD (PPP) in Kenya and lasts for 5 years. It reduces the malaria risk of a baby by 30%.
- Avoiding malaria can enable a child to earn 50% more in her adult life. In Kenya that translates into a \$14 investment giving an extra income of \$295 a year (with 30% chance).
- Yet very few make that investment. **Why?**

More low-hanging fruits

- Breast-feeding: Only 40% world's infants are breast-fed exclusively for six months (WHO recommends)
- Piping water to homes: a low-tech solution
- Polio vaccination and other immunisation measures (cheap and simple)
- Yet people often avoid them
- **Why ?**
- Is it the case that the poor don't care for good health?

Don't the poor care for good health?

- Yes they do.
- Evidence from India, Kenya and many other countries show that people spend large sums of money on **emergency medical care**
- India: Private hospitals and nursing homes make good business and at least 20 to 30% of their patients come from low income groups
- Yet, when it comes to spending a small amount on preventive health care (like purifying water), people seem to be very reluctant.

Randomized control treatment in Zambia: demand for Chlorine

- **Is cost an issue? To some extent 'yes'**
- Some households offered a discount voucher to buy a bottle of Chlorine at \$0.16 (market price is \$0.18), only 50% wanted to buy it.
- When the subsidy was raised to buy the same at \$0.07, demand shot up.
- **But still 25% people did not buy the product!!**

Randomized control treatment: demand for bed nets in Kenya

- Bed nets were sold at different prices starting from zero to the market price; demand indeed was sensitive to price. **So cost is an issue.**
- But strangely demand was not sensitive to incomes.
- **Rich and poor alike failed to see the connection between malaria and losing incomes in future.**
- Habit or inability to see the future consequences can be a reason.

Supply side problems or demand side problems?

- **Supply side**: poor health care service of the government to blame.
- Indian experience: Poor people often don't **trust** the government nurses and doctors.
- Lack of compassion, history of community conflicts, caste based prejudices often reinforce **mistrust**.
- The hospital staff are not trained to communicate compassionately with the poor and uneducated.

Supply side problems

- In countries affected by civil war or terrorism delivering immunisation is difficult
- In Pakistan the international health workers were shot when they went to give polio vaccines (2012)
- Afghanistan, Nigeria and Pakistan are the only countries to have new polio cases. Religious extremism and superstitions are problems here.

Supply side problems or demand side problems?

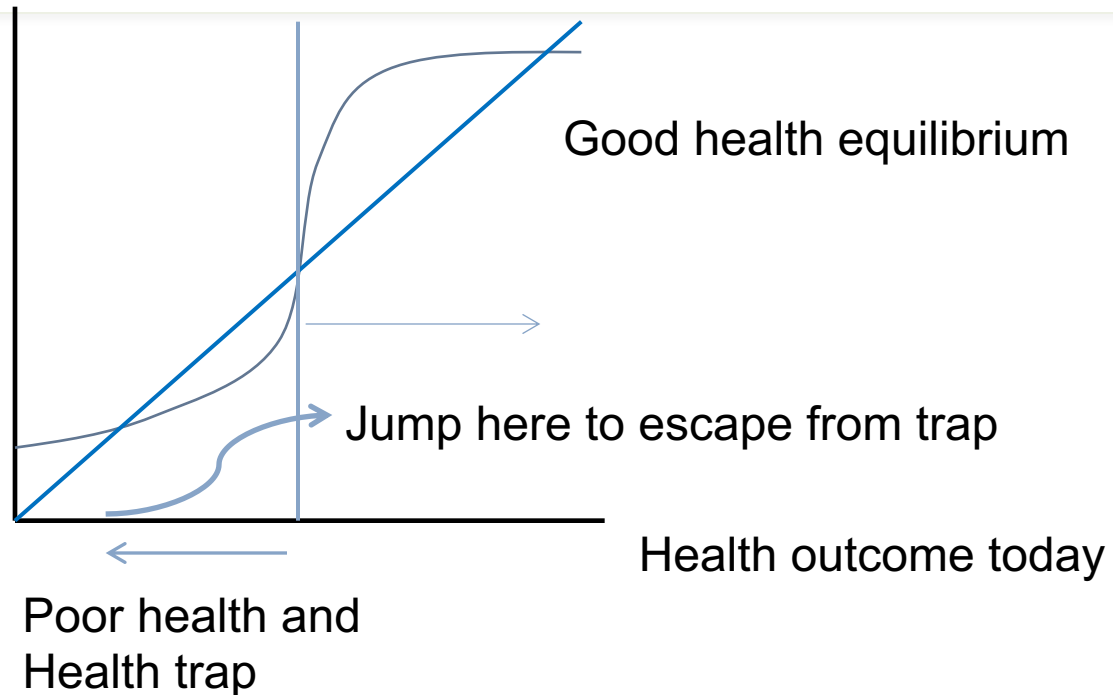
- **Demand side:** Even when the costs are not significant, demand for preventive health care is low.
- Self discipline: purifying water everyday is a tiresome chore.
- Using bed net on a hot night is less pleasant.
- Lack of information about 'low-hanging fruits' !!
- **So the problems are both on the demand and supply sides**

Health trap?

- Myopia or a lack of demand for preventive health care is consistent with behaviours of a person/family caught in a health trap.
- Once in the trap, people do not (correctly) see the benefits of small investments (such as buying Chlorine)
-

Health trap- the S-curve is back again

Health outcome tomorrow



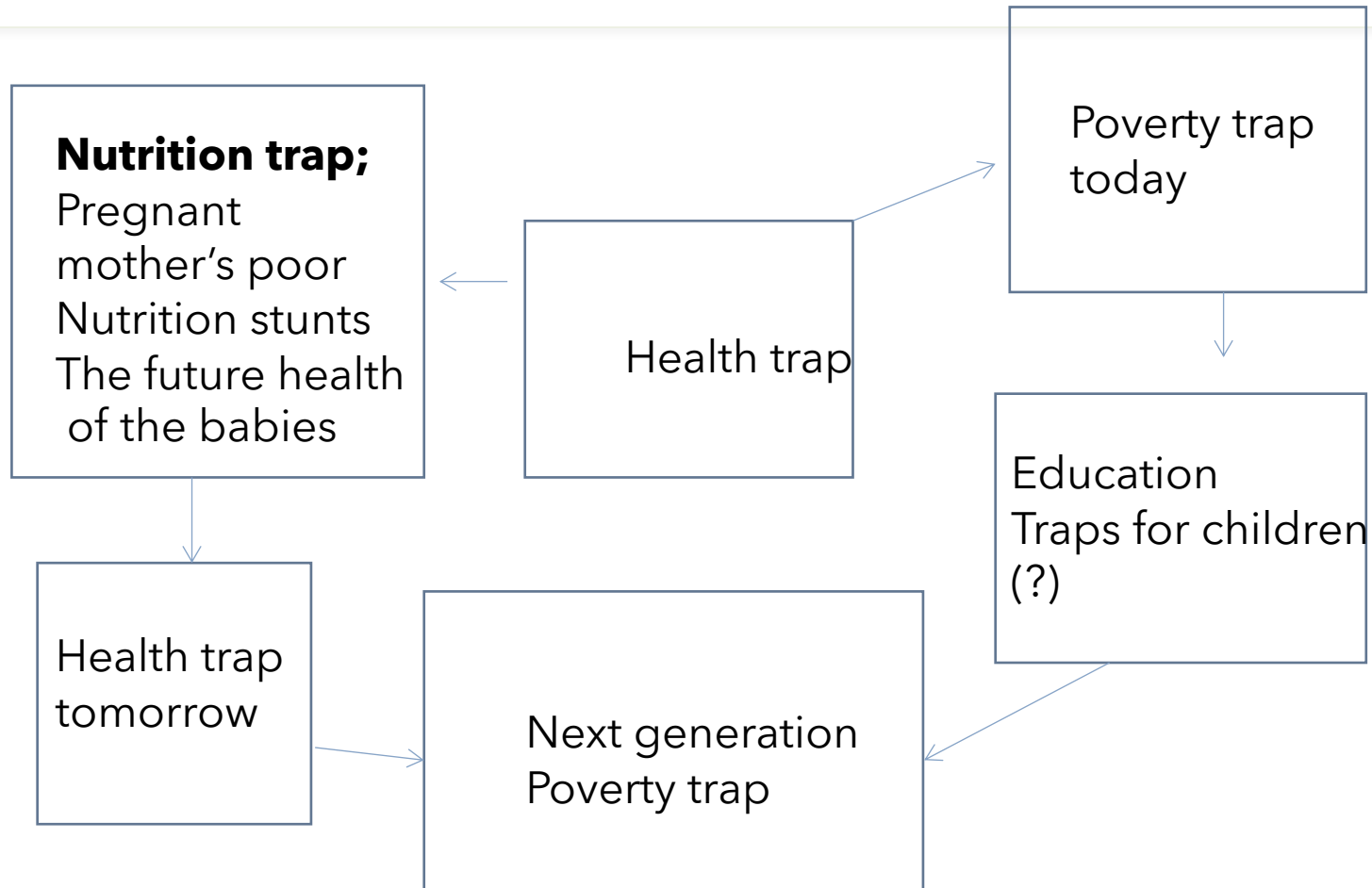
Health trap (the vicious cycle):

Today's poor health → low productivity today → low income today
→ Lower savings → low income tomorrow →
→ poor health tomorrow

From inside the Health trap

- Some countries like India, Zambia and Kenya are caught in a health trap.
- Unless large investments are made, there is very little chance of coming out of the trap, -- a rational behaviour. Large investment is a like a ladder to escape the trap.
- Even when large investments are made (like UN or WHO initiatives), the ladder may not be in the right place, or people may not know how to step onto them.

Health trap creates other traps



Childhood stunting: Life beyond 5 years of age presents new challenges

- Childhood stunting: Around one in three children under age 5 – 178 million in total – suffers severe or moderate stunting.
- By the time these children enter school, malnutrition will have diminished their potential for learning – a disadvantage they will carry into adulthood.
- The highest regional rates of stunting are found in central and eastern Africa and South Asia.
- Of the forty-nine countries where stunting prevalence rates are in excess of 30%, thirty are in sub-Saharan Africa. All south Asian countries (except Sri Lanka) figure in this list.

Progress in child health: monitoring low birth weight (less than 2.5 KG)

- Recent international estimates suggest that about 19 million infants – 14% of all newborns – are delivered with low birth weight (UNICEF, 2008).
- More than half of these births take place in South Asia: over one in four of the region's children are delivered with low birth weight. These children face a heightened risk of early mortality: low birth weight is an underlying factor in 60% to 80% of deaths in the first month.

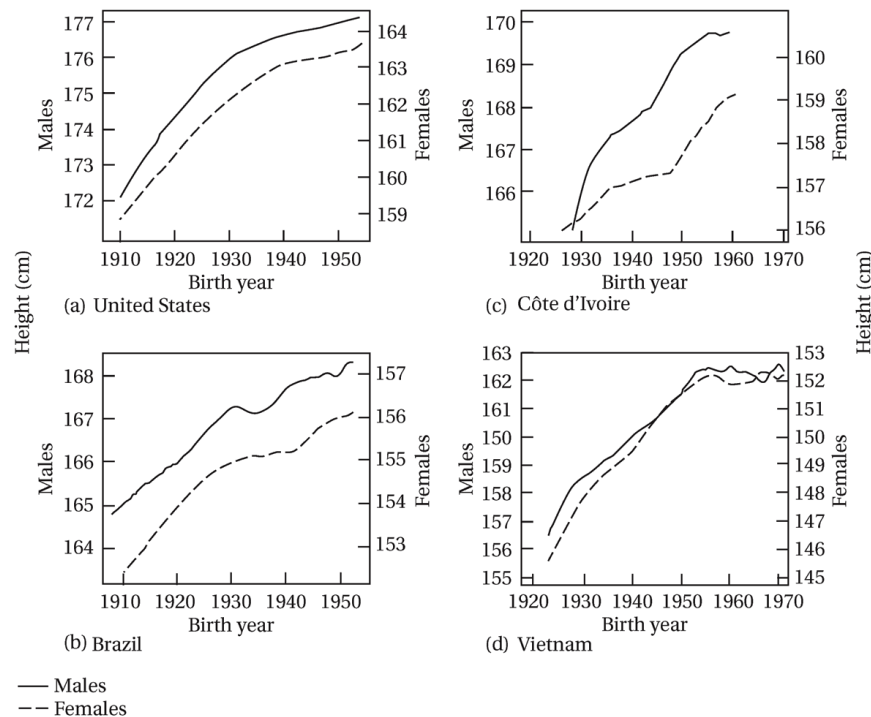
Malnutrition and stunting in Kyrgyzstan

- 22% of children mortality is caused by malnutrition (WB, 2011)
- Stunting among children under 5-years has decreased from 25% in 1997 to 12,9% in 2014 (MICS, 2014)
- 41% of infants were fed only by breastfeeding

Childhood stunting: link with the past

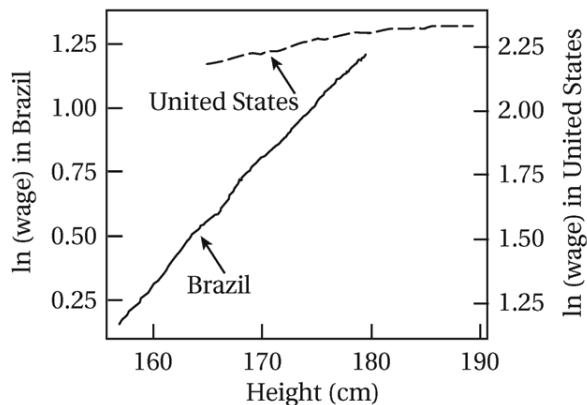
- Various studies on India's childhood stunting suggests that current income of the family does not guarantee good health of the child.
- Mother's own health and diet during pregnancy determines how well the infant will cope with health risk in her early years.
- Discrimination against women and girl children makes this problem worse.

Adult Stature by Birth Cohort: With development we will get taller

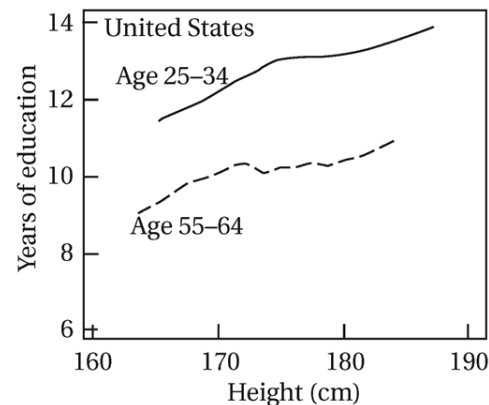


Source: John Strauss and Duncan Thomas, "Health, nutrition, and economic development," *Journal of Economic Literature* 36 (1998): 766-817; see also Strauss and Thomas, "Health and wages: Evidence on men and women in urban Brazil," *Journal of Econometrics* 77 (1997): 159-185. Reprinted with the permission of the American Economic Association.

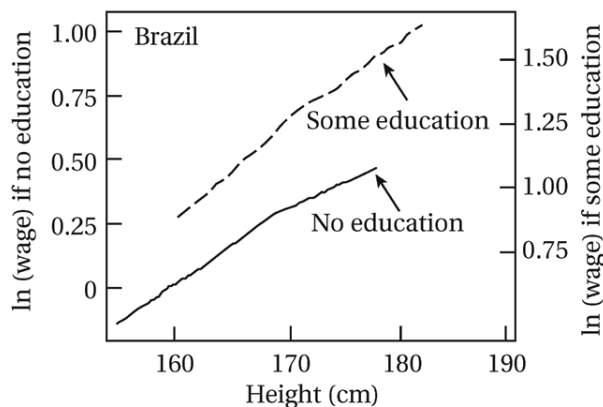
Wages, Education, and Height of Males in Brazil and the United States



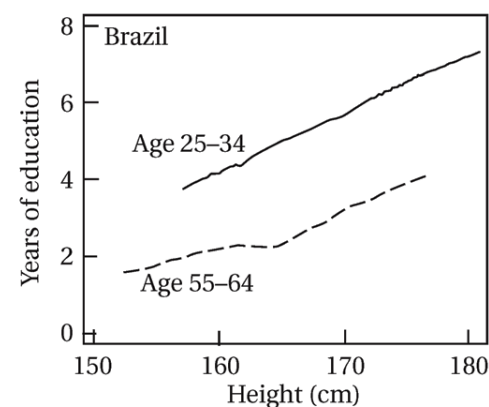
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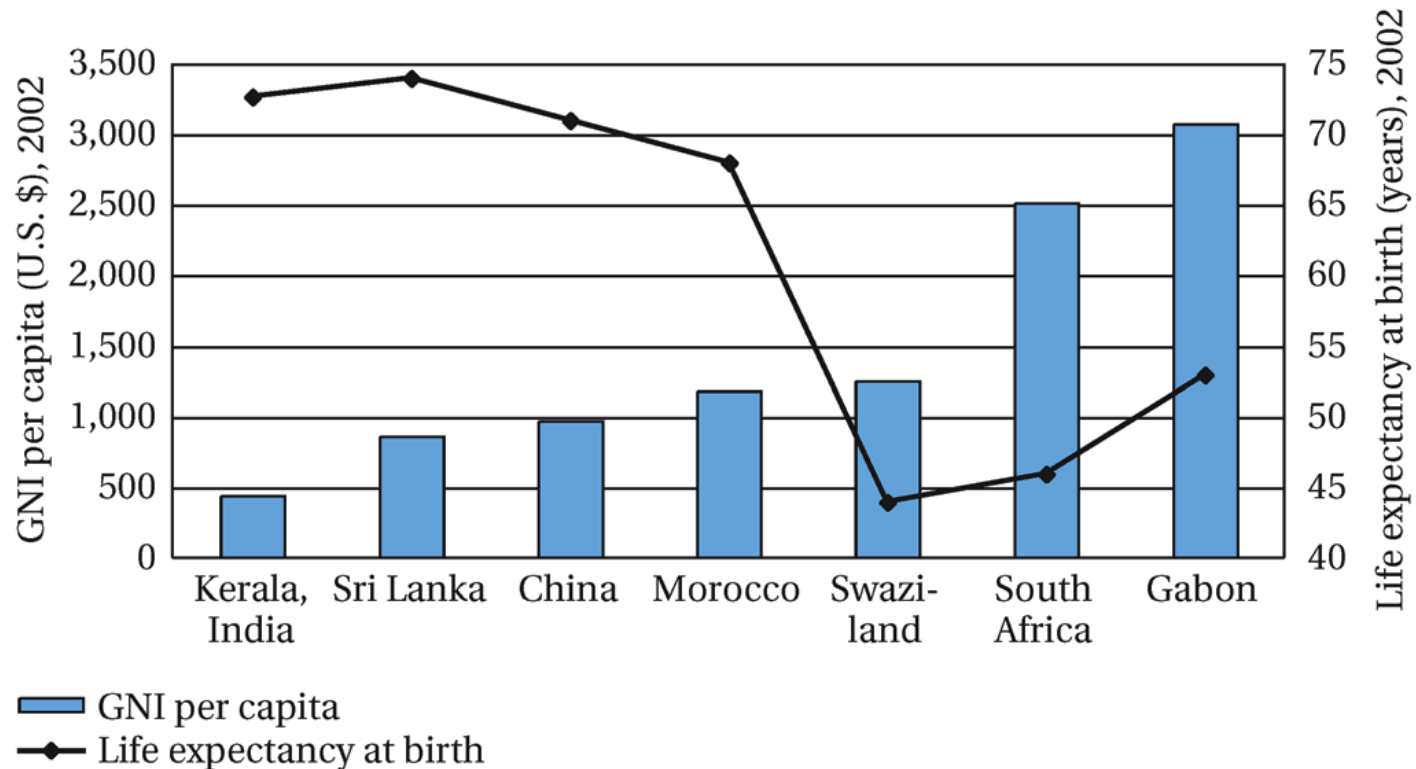
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Source: John Strauss and Duncan Thomas, "Health, nutrition, and economic development," *Journal of Economic Literature* 36 (1998): 766-817; see also Strauss and Thomas, "Health and wages: Evidence on men and women in urban Brazil," *Journal of Econometrics* 77 (1997): 159-185. Reprinted with the permission of the American Economic Association.

GNI per Capita and Life Expectancy at Birth, 2002: Income is no guarantee for long life



Source: World Bank, *World Development Indicators, 2004* (Washington, D.C.: World Bank, 2004), tabs. 1.1 and 2.19. Copyright © 2004 by the World Bank. Reprinted with permission.

Inter-linkage between Education and Health

- Health and education are important objectives of development

Good health pays long term dividend via many channels and over long periods of time

- Greater health capital will improve the returns to investments in education
- Greater education capital will improve the returns to investments in health

UNESCO report (Monitoring Education for All, 2010)

- In twenty-two countries, 30% or more of young adults have fewer than four years of education, and this rises to 50% or more in eleven sub-Saharan African countries.
- In twenty-six countries, 20% or more of young adults have fewer than two years of schooling and, in some countries, including Burkina Faso and Somalia, the share is 50% or more.

UNESCO report (Monitoring Education for All, 2010)

- Around 1/3rd of all children in developing countries, or 175 million annually, enter primary school having experienced malnutrition that irreparably damages their cognitive development.
- Participation in early childhood care and education programmes remains uneven. Coverage levels are especially low in **South Asia** and **West Asia**, and **sub-Saharan Africa**.
- For example, in Egypt, children from the wealthiest households are 28 times more likely to be in pre-school than children from the poorest households.

Progress on Education for All

- Overall progress towards universal primary education in the past decade has been encouraging.
- In 2007, some 72 million children were out of school – a 28% decline from the start of the decade. In 2000 the number of out-of-school children was 100 million.
- Since 1999, enrolment rates in sub-Saharan Africa have been increasing five times as fast as during the 1990s, with countries including Benin, Ethiopia, Mozambique and the United Republic of Tanzania registering rapid advances.
- In addition, gender disparities in primary school have been narrowing.

Progress on Education for All

- Nevertheless, the world is not on track to meet the universal primary education goal. Current trends will leave some 56 million children out of school in 2015 - and there are worrying indications that the rate of progress towards universal primary education is slowing.

Two-thirds of the total decline in out-of-school numbers since the Dakar conference (when the MDG goals were adopted) took place from 2002 to 2004.

- Since 2004 progress has slowed down.

Uneven progress in different regions

- Out-of-school numbers have fallen far more rapidly in South Asia, **driven by rapid advances in India**, than in sub-Saharan Africa.
- Most of the countries that are off track for achieving universal primary education by 2015 are low-income countries that, having started from a low base, are either increasing enrolments impressively but too slowly (as in Burkina Faso and the Niger) or stagnating (as in Eritrea and Liberia). Countries affected by conflict figure prominently in this group.

Uneven progress in different regions

- More surprisingly, higher-income countries such as the Philippines and Turkey are in danger of failing to achieve the target, largely because of deeply entrenched national inequalities.

Gender divide

- Deep-rooted inequalities and disparities linked to wealth, gender, ethnicity, language and location are holding back progress in many countries.
- While gender gaps are narrowing, they remain very large in much of South and West Asia and sub-Saharan Africa.
- In twenty-eight countries, there are still fewer than nine girls in school for every ten boys. Closing the gender divide will require a sustained effort to change attitudes that diminish the value of girls' education, along with practical policies that create incentives for greater equity.

Gender bias: *Female rates as a percentage of male rates(2000)*

	Adult literacy	Mean years of schooling	Primary enrolment	Secondary enrolment
Algeria	76	18	97	106
Bangladesh	62	29	102	110
Egypt	65	41	96	95
Mexico	96	96	101	103
Nigeria	80	28	-	-
South Korea	-	61	100	100
Sudan	69	45	83	-

Ratio of female to male enrolments in primary and secondary schools (%)

	1990	2000
Chile	98	88
India	68	78
Morocco	67	83
Niger	54	67
Pakistan	47	61
Tunisia	82	100
Turkey	77	84

The Gender Gap: Women and Education

- Young females receive less education than young males in nearly every developing countries
- Closing the educational gender gap is important because,
 - The rate of return on women's education is higher than that of men in developing countries
 - It increases productivity and lowers fertility
 - Educated mothers have a multiplier impact on many generations
 - It can break the vicious cycle of poverty and inadequate schooling for women

Table 8.1 Rates of Return to Investment in Education by Level of Education, Country, Type, and Region

Country Type and Region	Social Rate of Return (%)			Private Rate of Return (%)		
	Primary	Secondary	Higher	Primary	Secondary	Higher
Developing						
Sub-Saharan Africa	24	18	11	41	27	28
Asia	20	13	12	39	19	20
Latin America	18	13	12	26	17	20
Developed	14	10	9	22	12	12

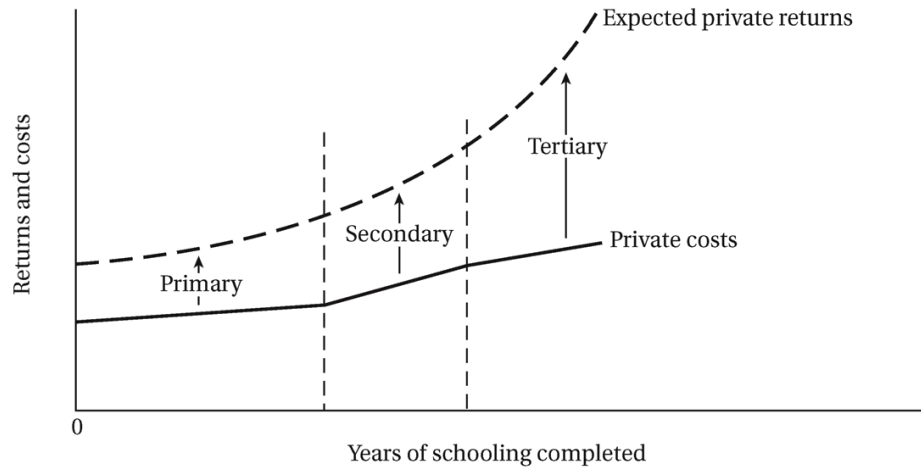
Source: George Psacharopoulos. "Returns to investment in education: A global update," *World Development* 22 (1994): 1325–1343, tab. 1. Copyright © 1994. Reprinted with the permission of Elsevier.

Note: How these rates of return were calculated is explained in note 20 at the end of this chapter.

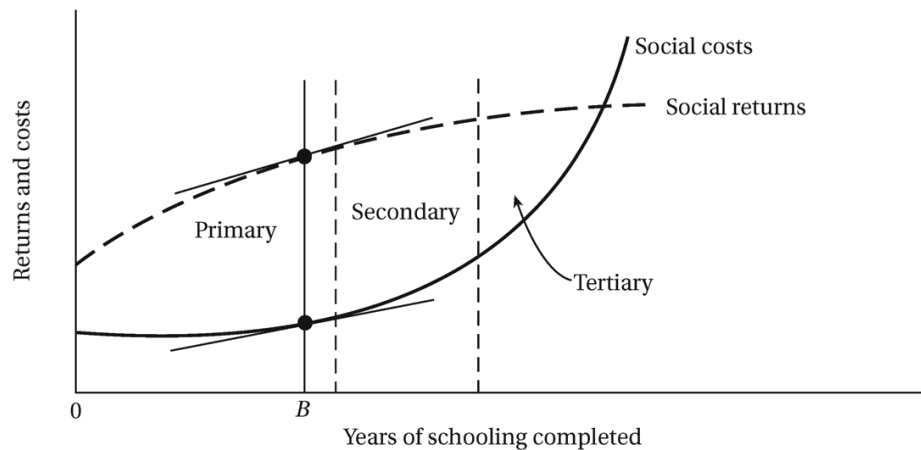
Disparity in private and social rate of returns has important implications

- While individuals make decisions based on private rate of returns, social welfare will depend on the social rate of returns.
- The following slide shows that while at a private level we may see returns are maximum at the college level, social rate of return may be maximum at the primary level.
- This explains why sometimes there is wide disparity between private decisions and social needs.

Figure 8.5 Private versus Social Benefits and Costs of Education: An Illustration



(a) Private returns and costs



(b) Social returns and costs

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Demand for education: A puzzle

- Evidence suggests people do care for their education, but they often miss the opportunity of plucking low-hanging fruits like sending every child to school.
- Free schools often fail to attract even poor kids (lack of trust and confidence, government failure)

Demand for education: A puzzle

- Sometimes many parents seem to concentrate their resources on a select child (the brightest boy!) by spending a large sum on him, and let other children be disadvantaged for life?
- Is it a 'life boat syndrome' (driven by extreme resource constraint), or a 'betting' behaviour (a possible win will pull the whole family out of poverty many years later)?

Is there an education trap?

- MIT economists Banerjee and Duflo believe that poor people's low demand for education can be better explained by a **misperception that there is education trap.**
- If one believes in the education trap, one would think that unless one completes full schooling, or goes to college, there is very little benefits.
- But research shows that every year of education brings in some incremental returns, which suggests there is no education trap after all.

Improving Health and Education: Increasing Incomes is Not Sufficient, nor are market solutions

- Increases in income often do not lead to substantial increases in investment in children's education and health
- Significant market failures in education and health require policy action
- So concerted actions by the private sector and government and non-governmental sector are to be taken to eradicate illiteracy and malnutrition.

To sum up

- Primary education has improved everywhere, but not in the secondary education onward; lot more to do on health.
- Reasons:
 - Private rate of returns highest at the college level, but people are credit constrained to advance beyond school
 - Bottlenecks for continuation of the girl students in schools
 - Further problems arising from the labour market (undesirable opportunities for children or young workers, little absorption of skills)
 - Governments have ignored complementarity between health and education (China and Bangladesh are very good examples for other developing countries to address the twin problems together)