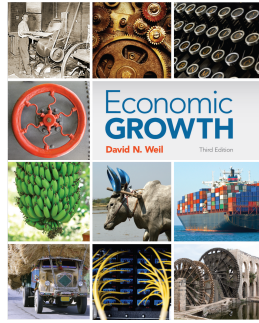


Chapter 4

**POPULATION
AND
ECONOMIC
GROWTH**



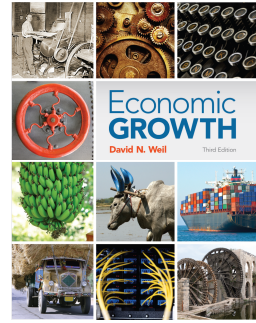
Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

ALWAYS LEARNING

PEARSON

Chapter 6

HUMAN CAPITAL

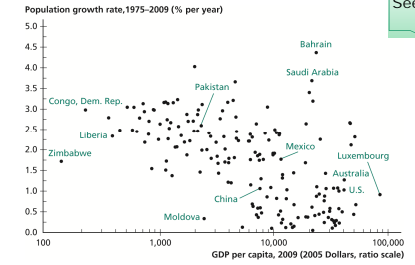


Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

ALWAYS LEARNING

PEARSON

Figure 4.1 Relationship Between Income per Capita and Population Growth

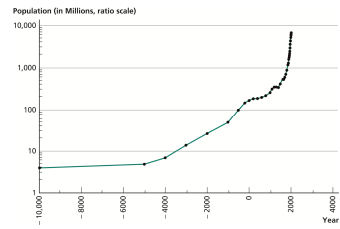


Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

ALWAYS LEARNING

PEARSON

Figure 4.2 World Population, 10,000 B.C. to A.D. 2010



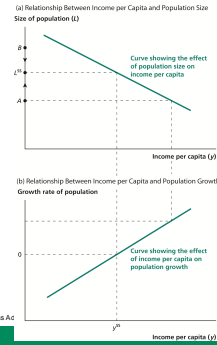
Source: Kraemer (1993).

Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

ALWAYS LEARNING

PEARSON

Figure 4.3 The Malthusian Model

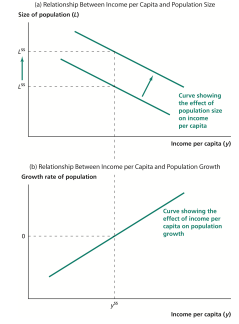


Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

ALWAYS LEARNING

PEARSON

Figure 4.4 Effect of Productivity Improvement in the Malthusian Model

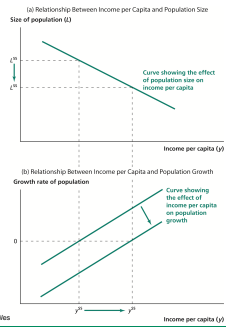


Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

ALWAYS LEARNING

PEARSON

Figure 4.5 Effect of "Moral Restraint" in the Malthusian Model



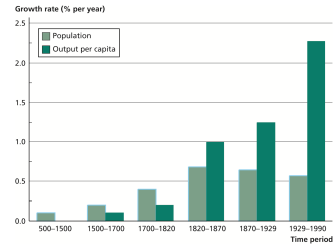
Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

ALWAYS LEARNING

PEARSON

Figure 4.6 Breakdown of the Malthusian Model in Western Europe

- Reduced fertility: the motives
 - Mortality reduction
 - Income and substitution effect of children
 - Cost of children rises while benefits decline
- Quantity-quality trade-off

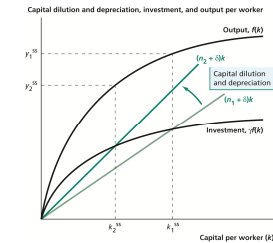


Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

ALWAYS LEARNING

PEARSON

Figure 4.7 The Solow Model Incorporating Population Growth: Capital dilution



The figure shows how raising the population growth rate from n_1 to n_2 affects the steady-state level of capital per worker (k) and the steady-state level of output per worker (y).

Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

ALWAYS LEARNING

PEARSON

Population growth and capital dilution

- The solow model extended to incorporate population growth explains how higher population growth can lower income per capita through the channel of capital dilution
- The solow model can therefore partially account for the negative correlation between income per capita and population growth

Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

ALWAYS LEARNING

PEARSON

Demographic transition: a tale of two traps...

Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

ALWAYS LEARNING

PEARSON

Country report

3/5 pages, cover included, if any
One page devoted to a statistical overview of the socio-economic background

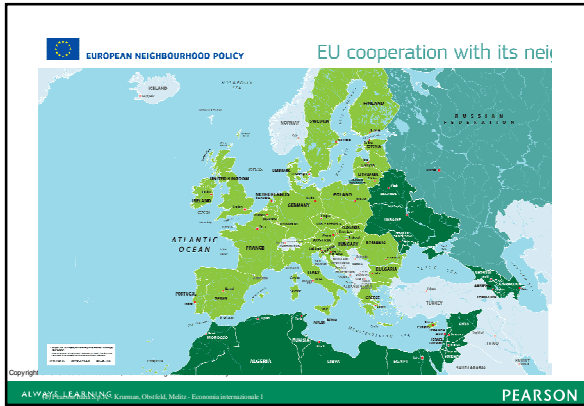
Eligible countries

- EU28
- Enlargement candidates
 - » [Albania](#), [Bosnia and Herzegovina](#), [the former Yugoslav Republic of Macedonia](#), [Iceland](#), [Kosovo*](#), [Montenegro](#), [Serbia](#), [Turkey](#)
- European Neighbouring countries
 - » [Algeria](#), [Armenia](#), [Azerbaijan](#), [Belarus](#), [Egypt](#), [Georgia](#), [Israel](#), [Jordan](#), [Lebanon](#), [Libya](#), [Moldova](#), [Morocco](#), [Palestine](#), [Syria](#), [Tunisia](#), [Ukraine](#)

Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

ALWAYS LEARNING Knowledge. Objectivity. Matter. Economics. International 1

PEARSON



Cases

- Report on a EU contry for an extra EU multinationals
- Report on a candidate country for a government body of a EU country
- Report on a EN country for an ONG based in EU
- Report on either a candidate or a EN country for EU institutions (a DG for example)

Others?

Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

ALWAYS LEARNING Pearson

Chapter 6

HUMAN CAPITAL

Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

ALWAYS LEARNING Pearson

Human capital as an input

- We focus on qualities of people who are productive
- We concentrate on qualities which are produced, as with physical capital also human capital is itself produced
- Human capital earns returns (even though workers have to work to get it whilst capital owners can relax on a beach)
- Human capital depreciates

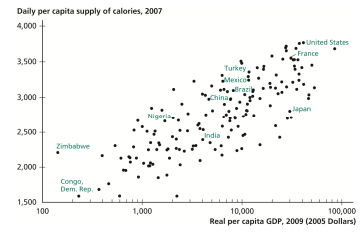
Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

ALWAYS LEARNING

PEARSON

Human capital as a form of health

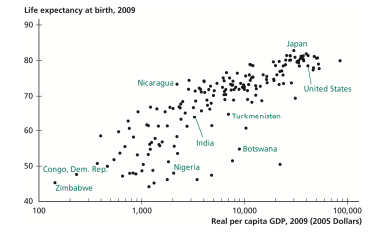
Figure 6.1 Nutrition versus GDP per Capita



Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

6-19

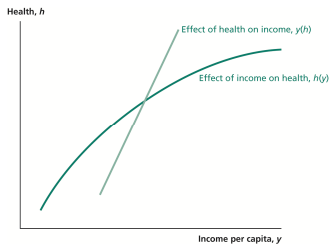
Figure 6.2 Life Expectancy versus GDP per Capita



Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

6-20

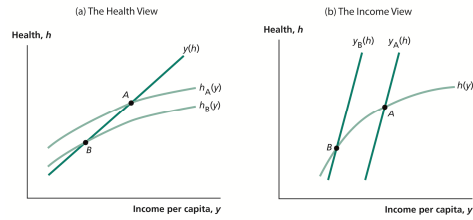
Figure 6.3 How Health Interacts with Income



Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

6-21

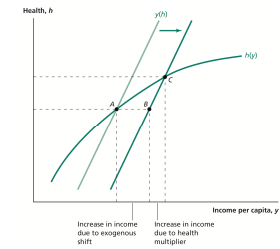
Figure 6.4 Health and Income per Capita: Two Views



Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

6-22

Figure 6.5 Effect of an Exogenous Shift in Income



Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

6-23

Human capital in the form of education

Table 6.1 Changes in the Level of Education, 1975-2010



		Percentage of the Adult Population with				
		Average Years of Schooling	No Schooling	Complete Primary Education	Complete Secondary Education	Complete Higher Education
Developing Countries	1975	3.2	47.4	32.9	8.1	1.6
	2010	6.7	20.8	68.8	31.5	5.3
Advanced Countries	1975	8.0	6.2	78.8	34.9	8.0
	2010	11.0	2.5	94.0	63.9	16.6
United States	1975	11.4	1.3	94.1	71.1	16.1
	2010	12.4	0.4	98.8	85.4	20.0

Source: Barro and Lee (2010). Data for population 25+.

Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

6-24

Education as an investment

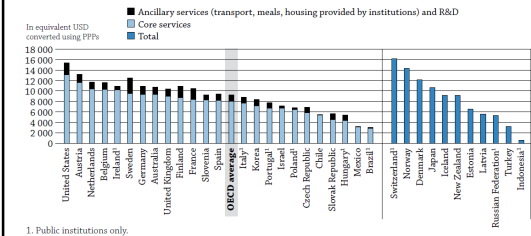


- It is costly (6% of GDP in US, 4.5% in Italy)
- Not only in terms of money but especially in terms of opportunity costs (this is true mostly for developing countries)
- The return to education is wage...a wage premium

Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

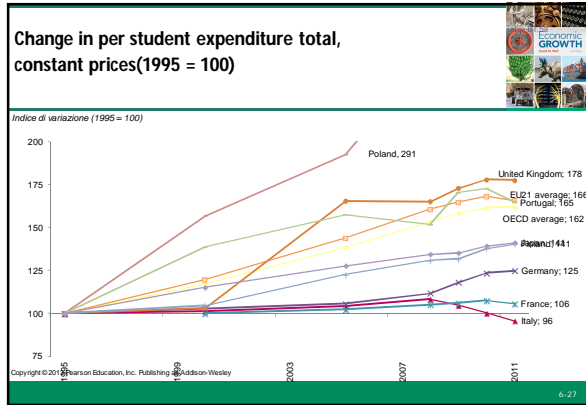
6-25

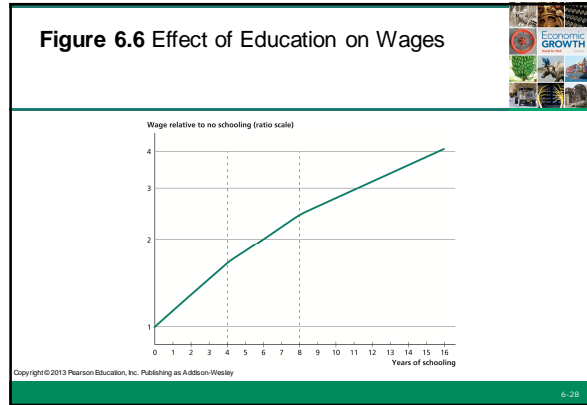
Chart B1.1. Annual expenditure per student by educational institutions, by type of service (2011)
In equivalent USD converted using PPPs, based on full-time equivalents, for primary through tertiary education



Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

6-26





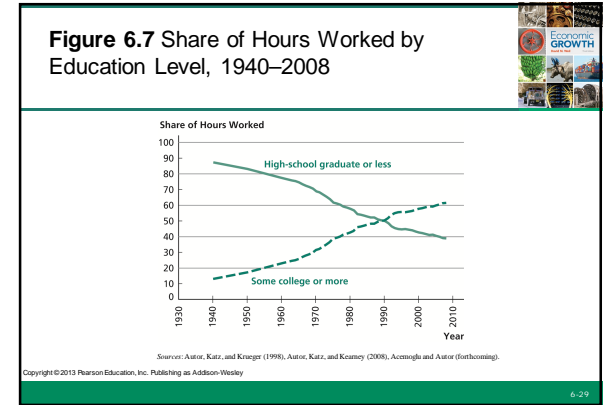


Figure 6.8 Ratio of College Wages to High-School Wages



Source: Autor, Katz, and Krueger (1998), Autor, Katz, and Kearney (2008), Acemoglu and Autor (2010).

Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

6-30

Table 6.2 Breakdown of the Population by Schooling and Wages

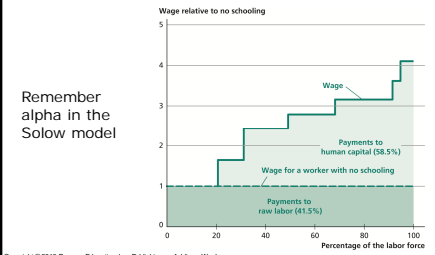
Highest Level of Education	Years of schooling	Wage Relative to No Schooling	Percentage of the Population	
			Developing Countries	Advanced Countries
No Schooling	0	1.00	20.8	2.5
Incomplete Primary	4	1.65	10.4	3.4
Complete Primary	8	2.42	16.6	12.3
Incomplete Secondary	10	2.77	19.3	17.8
Complete Secondary	12	3.16	23.2	37.4
Incomplete Higher	14	3.61	2.9	9.9
Complete Higher	16	4.11	5.3	16.6

Source: Barro and Lee (2010).

Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

6-31

Figure 6.9 Share of Human Capital in Wages in Developing Countries

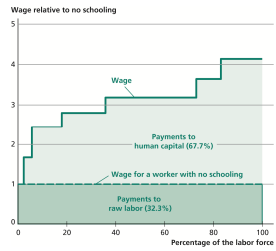


Remember alpha in the Solow model

Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

6-32

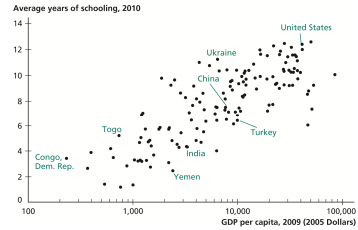
Figure 6.10 Share of Human Capital in Wages in Advanced Countries



Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

6-33

Figure 6.11 Average Years of Schooling versus GDP per Capita



Source: Barro and Lee (2010), Heston, Summers and Aten (2011).

Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

6-34

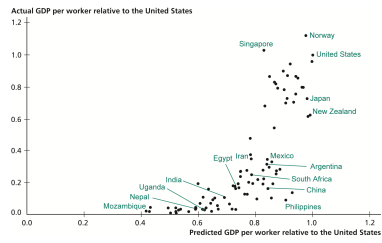
Table A7.3a. Private costs and benefits for a man attaining tertiary education (2010)
As compared with a man attaining upper secondary or post-secondary non-tertiary education, in equivalent USD converted using PPPs for GDP

Year	Direct costs	Foregone earnings	Total costs	Gross earnings benefits	Income tax effect	Social contribution effect	Transfers effect	Unemployment effect	Gross effect	Total benefits	Net present value	Internal rate of return	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
Netherlands	2010	-14 646	-95 834	-110 480	442 661	-107 999	-26 901	0	10 736	13 770	242 267	131 787	7.2%
New Zealand	2010	-9 364	-43 347	-52 711	193 910	-62 325	-3 875	-86	358	3 039	131 021	79 290	7.3%
Norway	2010	-1 066	-47 946	-49 012	274 537	-107 538	-23 197	0	23 000	4 600	171 221	122 260	8.2%
Poland	2010	-7 343	-16 028	-24 270	376 155	-30 873	-75 986	0	38 492	2 228	310 015	265 745	24.6%
Portugal	2010	-4 627	-16 181	-20 808	324 887	-89 461	-36 243	0	17 564	m	216 746	195 937	18.3%
Slovak Republic	2010	-6 183	-15 019	-21 202	290 121	-51 866	-40 961	0	38 465	1 226	236 985	215 763	21.4%
Slovenia	2010	-3 564	-26 242	-29 806	447 946	-110 866	-96 037	0	19 992	259	261 294	231 488	17.1%
Spain	2010	-8 664	-28 219	-37 883	178 900	-52 903	-14 033	0	41 874	3 791	157 629	120 546	11.2%
Sweden	2010	-3 360	-50 291	-53 651	209 467	-84 430	-9 283	0	6 454	7 755	131 945	79 094	7.4%
Switzerland	m	m	m	m	m	m	m	m	m	m	m	m	m
Turkey	2005	-1 061	-9 402	-10 463	106 985	-18 682	-16 424	0	2 761	m	74 640	64 177	19.3%
United Kingdom	2010	-20 162	-47 655	-67 817	413 163	-89 124	-49 107	-4 303	40 284	5 225	316 138	248 322	14.3%
United States	2010	-61 135	-44 678	-105 813	628 922	-210 898	-55 768	0	100 046	27 162	489 463	383 649	15.4%
OECD average		-10 563	-40 755	-51 318	347 075	-105 528	-38 085	-777	29 016	6 181	236 602	185 284	13.9%
EU21 average		-6 258	-41 078	-47 335	361 801	-112 036	-45 075	-1 123	31 620	6 135	239 503	192 167	15.1%
Italy	2008	-7 285	-50 608	-57 893	408 011	-159 562	-41 835	0	3 295	3 300	213 239	155 346	8.1%
Japan	2007	-37 215	-66 750	-103 965	326 614	-64 523	-36 039	0	20 931	m	246 983	143 018	7.4%
Korea	2010	-19 211	-34 019	-53 221	379 884	-47 100	-25 602	0	12 407	m	319 526	266 298	12.8%

Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

6-35

Figure 6.12 Predicted versus Actual GDP per Worker



Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

6-36

Important factors to explain figure 6.12

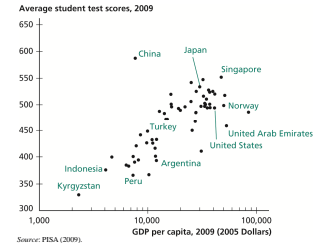


- Quality of schooling
- Externalities

Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

6-37

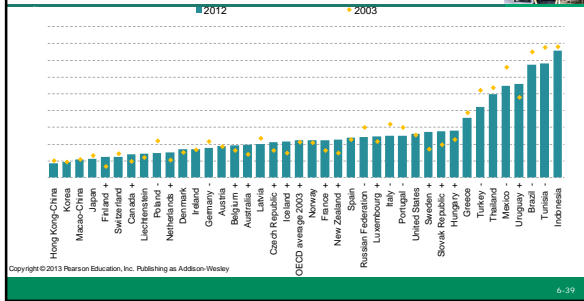
Figure 6.13 Student Test Scores versus GDP per Capita



Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley

6-38

Percentage of low performers in Maths, PISA 2003-2012



Copyright © 2013 Pearson Education, Inc. Publishing as Addison-Wesley
