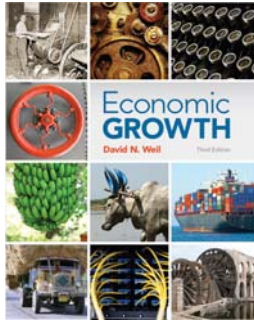


Chapter 1

**THE FACTS
TO BE
EXPLAINED**



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Incipit

“The consequences for human welfare involved in the questions about the income gap among countries are simply staggering; once one starts to think about them, it is hard to think about anything else”

Robert Lucas, Nobel prize

Two main Schools of thoughts:

- Neo classical view
- Heterodox perspective

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Africa,
Europe and
Middle East
at night



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Asia and
Australia at
night

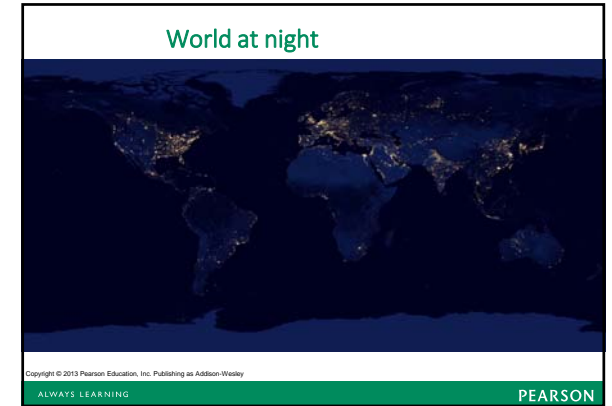


Asia at night









Some updated indicators

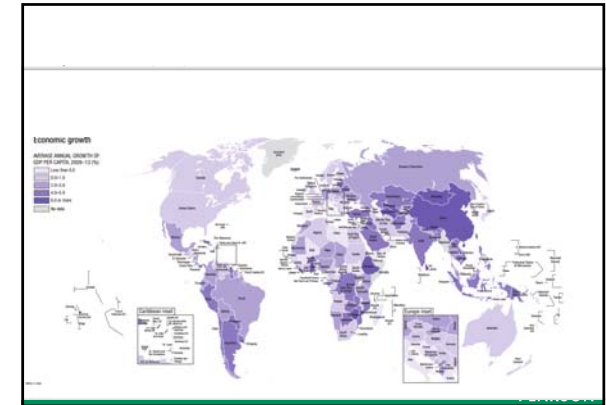
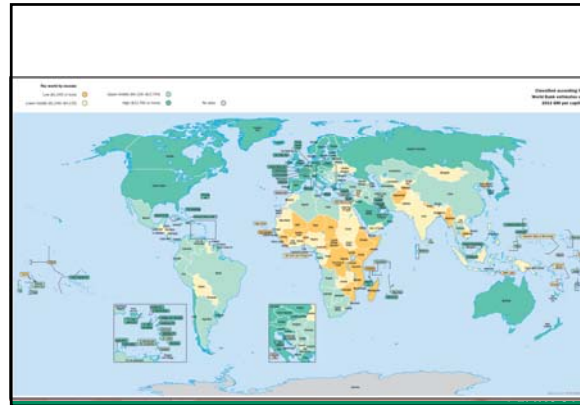
GDP is product produced within a country's borders. GNI is product produced by enterprises owned by a country's citizens.

	Population		Surface area		Population density		Urban population		Gross national income				Gross domestic product	
	billions		thousand sq. km		people per sq. km		% of total population		Atlas method		Purchasing power parity		% growth	
	2019	2019	2019	2019	2019	2019	2019	2019	\$	\$	2018-19	2018-19	2018-19	2018-19
World	7,125.1	154,324.7	59	53	76,119.9	10,663	102,197.6	14,543	2.9	1.1				
Low income	648.7	15,359.5	57	33	67.7	726	1,862.6	1,939	5.6	3.3				
Middle income	4,970.0	65,026.4	78	60	23,628.9	4,764	47,504.2	9,668	4.9	3.8				
Lower middle income	2,061.1	21,590.5	123	39	5,312.2	2,074	15,280.5	3,966	5.8	4.3				
Upper middle income	2,908.9	43,435.9	56	21	18,316.7	2,690	32,219.7	5,702	4.7	3.5				
Low & middle income	5,818.7	85,385.9	74	47	24,152.9	4,168	49,134.9	8,444	5.0	3.6				
East Asia & Pacific	2,005.8	16,270.8	126	51	11,104.7	5,536	21,319.5	10,729	7.1	6.4				
Europe & Central Asia	272.4	4,478.6	49	60	1,997.5	7,114	9,711.8	13,628	3.7	3.0				
Latin America & Carib.	588.0	19,461.7	31	79	5,610.9	9,542	8,340.8	14,185	2.5	1.3				
Middle East & N. Africa	345.4	8,771.4	40	60					-0.5	-2.7				
South Asia	1,670.8	5,136.2	350	32	2,477.5	1,483	8,405.8	5,031	6.6	5.2				
Sub-Saharan Africa	936.3	24,251.1	80	37	1,078.8	1,696	3,103.1	3,314	4.1	1.4				
High income	1,306.4	82,028.8	26	80	82,000.0	30,812	82,285.4	40,788	1.4	0.9				
Euro area	337.3	2,756.5	129	75	13,272.8	39,390	12,801.4	37,953	-0.5	-0.8				

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Millennium Summit

In September 2000, building upon a decade of major United Nations conferences and summits, world leaders came together at United Nations Headquarters in New York to adopt the [United Nations Millennium Declaration](#), committing their nations to a new global partnership to reduce extreme poverty and setting out a series of time-bound targets - with a deadline of 2015 - that have become known as the Millennium Development Goals.

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The Millennium Development Goals Report
2014

www.un.org/millenniumgoals/

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Millennium Development Goals snapshot

MDG 1: Eradicate extreme poverty and hunger

Developing countries as a whole met the Millennium Development Goal target of halving extreme poverty rates five years ahead of the 2015 deadline. Forecasts indicate that the extreme poverty rate will fall to 13.4 percent by 2015, a drop of more than two-thirds from the 1990 estimate of 43.6 percent. East Asia and Pacific has had the most astounding record of poverty alleviation, despite improvements. Sub-Saharan Africa still lags behind and is not forecast to meet the target by 2015.

People living on less than \$1.90 a day (% of population)

Source: World Bank Poverty Hub (<http://research.worldbank.org/poverty/>).

MDG 2: Achieve universal primary education

The primary school completion rate for developing countries reached 91 percent in 2012 but appears to fall short of the MDG 2 target. While substantial progress was made in the 2000s, particularly in Sub-Saharan Africa and South Asia, only East Asia and Pacific and Europe and Central Asia have achieved or are close to achieving universal primary education.

Primary completion rate (% of relevant age group)

Source: United Nations Educational, Scientific and Cultural Organization Institute for Statistics.

Coventry

Millennium Development Goals snapshot

MDG 3: Promote gender equality and empower women

Developing countries have made substantial gains in closing gender gaps in education and will likely reach gender parity in primary and secondary education. In particular, the ratio of girls' to boys' primary and secondary gross enrollment rates in South Asia was the lowest of all regions in 1990, at 68 percent, but improved dramatically to reach gender parity in 2012, surpassing other regions that were making slower progress.

Ratio of girls' to boys' primary and secondary gross enrollment rates (%)

Source: United Nations Educational, Scientific and Cultural Organization Institute for Statistics.

MDG 4: Reduce child mortality

The under-five mortality rate in developing countries declined by half, from 99 deaths per 1,000 live births in 1990 to 50 in 2013. Despite this tremendous progress, developing countries as a whole are likely to fall short of the MDG 4 target of reducing under-five mortality rates by two-thirds between 1990 and 2015. However, East Asia and Pacific and Latin America and the Caribbean have already achieved the target.

Under-five mortality rate (per 1,000 live births)

Source: United Nations Population Division (<http://www.un.org/development/desa/pd/data/>).

Coventry

Millennium Development Goals snapshot

MDG 5: Improve maternal health

The maternal mortality ratio has steadily decreased in developing countries as a whole, from 430 in 1990 to 230 in 2013. While substantial, the decline is not enough to achieve the MDG 5 target of reducing the maternal mortality ratio by 75 percent between 1990 and 2015. Regional data also indicate large declines, though no region is likely to achieve the target on time. Despite considerable drops, the maternal mortality ratio in Sub-Saharan Africa and South Asia remains high.

Maternal mortality ratio, measured estimate (per 100,000 live births)

Source: United Nations Maternal Mortality Estimation Inter-agency Group.

MDG 6: Combat HIV/AIDS, malaria, and other diseases

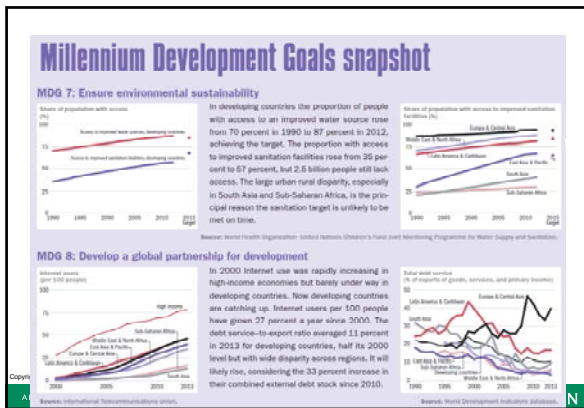
The prevalence of HIV is highest in Sub-Saharan Africa. The spread of HIV/AIDS there has slowed, and the proportion of adults living with HIV has begun to fall while the survival rate of those with access to antiretroviral drugs has increased. Global prevalence has remained flat since 2000. Tuberculosis prevalence, incidence, and death rates have fallen since 1990. Globally, the target of halving and reversing tuberculosis incidence by 2015 has been achieved.

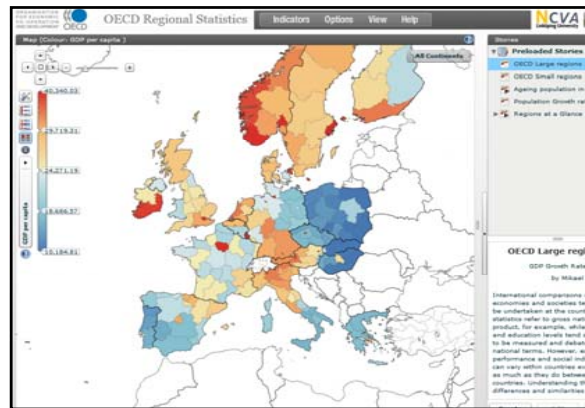
HIV prevalence (% of population ages 15-49)

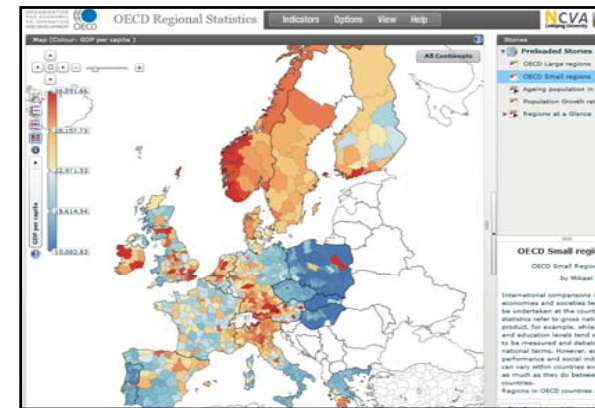
Tuberculosis prevalence, incidence, and deaths in developing countries (per 100,000 persons)

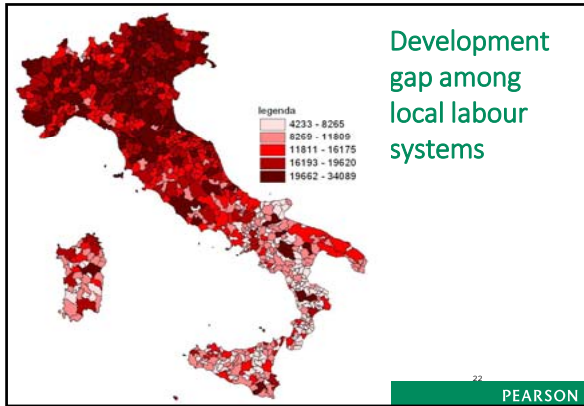
Source: World Health Organization (<http://www.who.int/>).

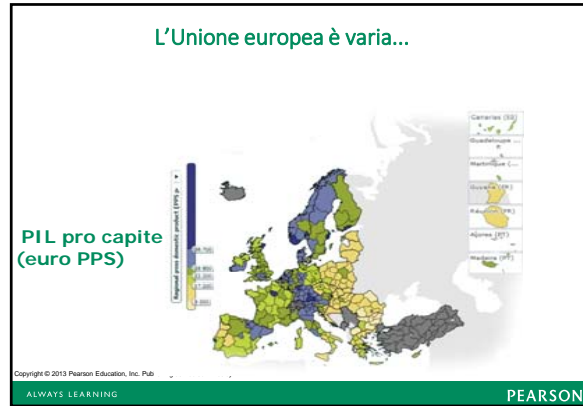
Coventry

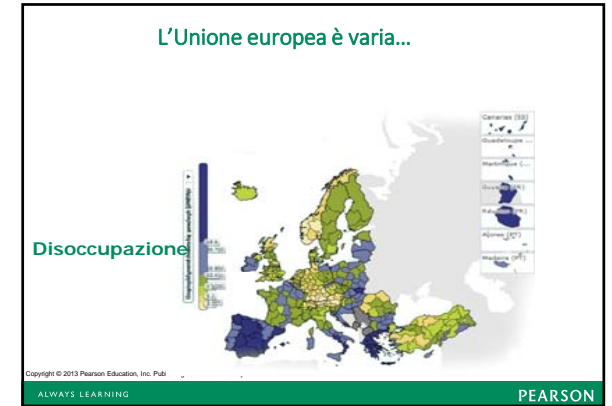












L'Unione europea è varia...

Istruzione
terziaria



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Perché una Politica di coesione UE?

	Valore massimo	Valore minimo	Rapporto
PIL pro capite (% media EU-28)	Lussemburgo 266%	Bulgaria 47%	5,7*
Tasso di occupazione (%, età 20-64)	Svezia 79,8%	Grecia 53,2%	1,5

La Politica di coesione mira a ridurre il divario esistente tra le regioni UE per raggiungere uno sviluppo economico, sociale e territoriale equilibrato.

* Negli Stati Uniti la differenza è pari solo a 2,5 e in Giappone a 2

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Gross domestic product (GDP) at current market prices by NUTS 2 regions EU28 (with Turkey)

Fifteen richest regions		2011	Fifteen poorest regions		2011
UK11 - Inner London		343	TR11 - Erzurum, Erzincan, Bayburt		16
LU00 - Luxembourg		320	TR81 - Malatya, Elazığ, Bingöl, Tunceli		16
NOD1 - Oslo og Akershus		290	BG33 - Severoiztochen		17
BE10 - Région de Bruxelles-Capitale		247	BG34 - Yugoiztochen		17
SE11 - Stockholm		224	TRC1 - Gaziantep, Adiyaman, Kilis		16
NOD4 - Agder og Rogaland		223	RO21 - Nord-Est		15
NOD5 - Vestlandet		217	TRC3 - Mardin, Batman, Sirtak, Siirt		15
DK01 - Hovedstaden		209	BG32 - Severen tsentralen		14
DE60 - Hamburg		209	BG42 - Yuzhen tsentralen		14
FR10 - Île de France		204	MK00 - Poranesna jugoslovenska Republika Makedonija		14
NL11 - Groningen		201	TRC2 - Sanliurfa, Diyarbakir		14
NOD6 - Trøndelag		188	BG31 - Severozapaden		13
FI1B - Helsinki-Uusimaa		184	TR42 - Agri, Kars, Igdir, Ardahan		13
AT13 - Wien		182	TRB2 - Van, Mus, Bitlis, Hakkari		11

Ratio
between
richest and
poorest
region: 31

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Sardinia: 79

27

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Top Eleven Countries in Year 2009 According to Three Different Measures

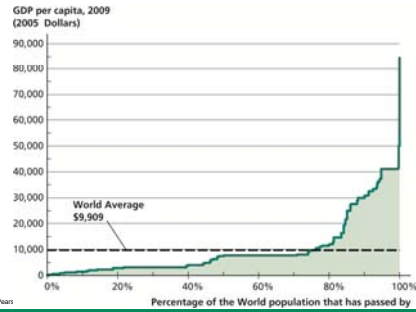
Rank	Highest GDP per Capita		Largest Economies		Most Populous Countries	
	Country	GDP per Capita (\$)	Country	Total GDP (\$ Billions)	Country	Population (Billions)
1	Qatar	58,489	United States	13.88	China	1,369
2	Luxembourg	51,287	China	12.59	India	1,199
3	United Arab Emirates	37,944	Japan	6.21	United States	307
4	Bahrain	32,264	India	4.75	Indonesia	249
5	Macau	31,627	Germany	3.49	Brazil	193
6	Norway	49,643	United Kingdom	2.37	Pakistan	181
7	Singapore	47,323	France	2.35	Bangladesh	154
8	Switzerland	46,488	France	2.31	Nigeria	149
9	Denmark	45,889	Italy	2.21	Russia	142
10	Australia	43,221	South Korea	1.22	Japan	127
11	United States	41,281	Canada	1.20	Mexico	111

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The Parade of World Income



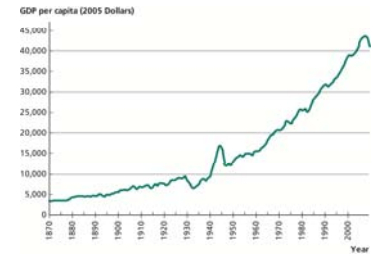
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Source: Heston, Summers, and Aten (2002)

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GDP per Capita in the United States, 1870–2009

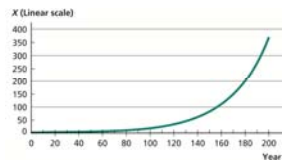


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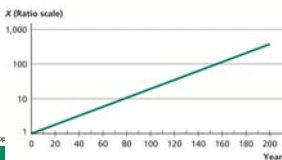
The Effect of Using a Ratio Scale



The formula for a trend:
 $Y_{t+1} = Y_t(1+g)$
 $Y_{t+2} = Y_t(1+g)^2$
 $Y_{t+n} = Y_t(1+g)^n$

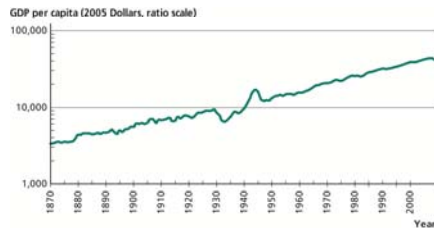
Let's extract the logarithm on both sides:

$\log(Y_{t+n}) = \log(Y_t(1+g)^n)$
 $\log(Y_{t+n}) = \log(Y_t) + n\log(1+g)$
 $\log(Y_{t+n}) = \log(Y_t) + n \cdot g$



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GDP per Capita in the United States, 1870–2009 (Ratio Scale)



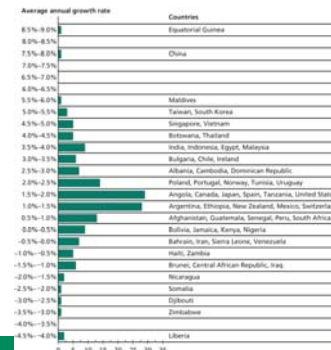
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The Distribution of Growth Rates, 1975–2009

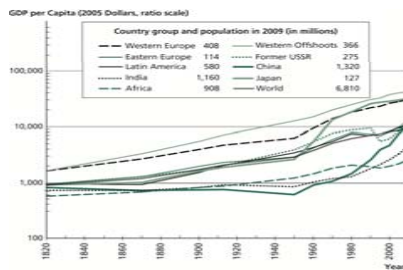
Source: Heston, Summers, and Aten (2011).



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GDP per Capita by Country Group, 1820–2008



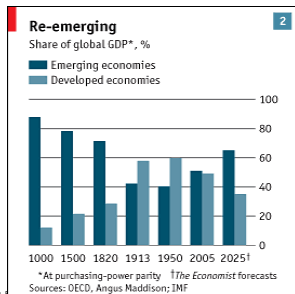
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Source: Maddison (2007) *World Economic History*, and A11

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Re-emerging economies

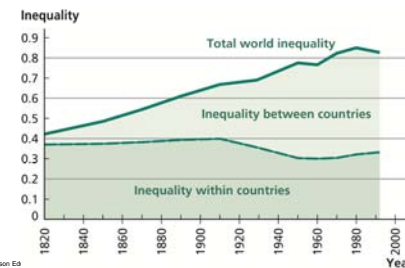


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World Inequality and Its Components, 1820–1992



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Source: Bourguignon and Morrison (2002)

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GDP per capita vs Human development index

The two school of thoughts....

The importance of inequality...

See [table](#)

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Main sources of data at national and international level

Istat

<http://www.istat.it/it/prodotti/banche-dati>
<http://dati.istat.it/index.aspx>

Eurostat:

<http://ec.europa.eu/eurostat/statistical-atlas/gis/viewer/?year=2014>
<http://ec.europa.eu/eurostat/data/database>

Oecd

<http://stats.oecd.org/Index.aspx>
<http://stats.oecd.org/oecdregionalstatistics/#story=0>

UNCTAD

- <http://unctadstat.unctad.org/EN/>

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Ignorance

The Ignorance Project



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EXAMPLES

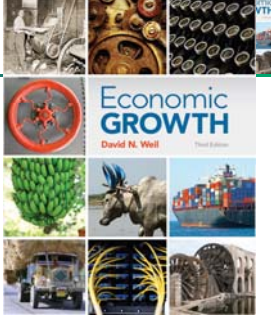
- Wealth & Health of Nations
- CO₂ emissions since 1820
- Africa is not a country
- Is child mortality falling?
- Where is HIV decreasing?

BUBBLE CHART

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Chapter 2

A FRAMEWORK FOR ANALYSIS



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The Economics of Sylvania and Freedonia: A parable

- Why is Sylvania so much poorer than its neighbour, Freedonia?
- You are hired as a consultant by the king of Sylvania: you start by computing GDP
- Same population...one eighth of the GDP
 - Capital
 - investment...saving...(32 times higher in Freedonia than in Sylvania): investment rate 4 times higher... but this would produce a difference in GDP per capita of a multiple of only 2

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Other potential factors



– Productivity

- Technology: the available knowledge on how to combine inputs to produce output
- Sylvania is 35 years behind... but this explain another part of the gap but not all...

– Efficiency

- Fundamentals
 - Government and Institutions
 - Income inequality
 - Culture
 - Geography and natural resources

This may be the crucial factor to explain the differences in GDP pc between Sylvania and Freedonia

From Parable to practice



• Two main causes for growth

- The accumulation of inputs
- Productivity
 - Differences in technology
 - Differences in efficiency

It is important to distinguish between proximate causes and ultimate causes

Figure 2.1 The Production Function

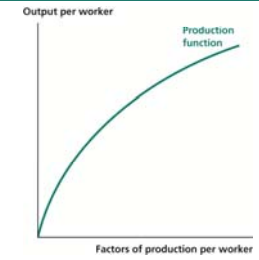
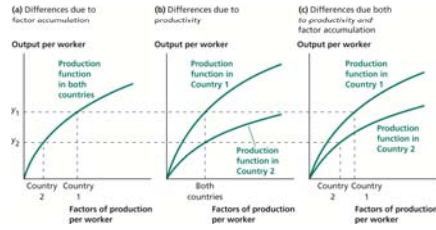


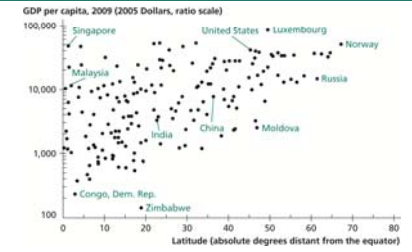
Figure 2.2 Possible Sources of Differences in Output per Worker



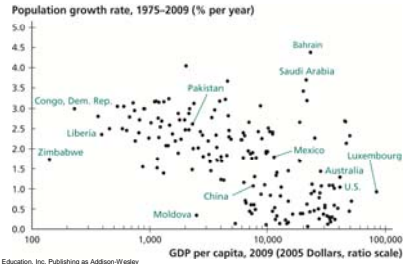
From income levels to growth rates

- What happens to Sylvania if the king is deposed and democracy replaces monarchy such as the two countries have the same fundamentals?
- Does this imply that the two countries have immediately the same GDP pc?

What can we learn from data: Relationship between Latitude and Income per Capita

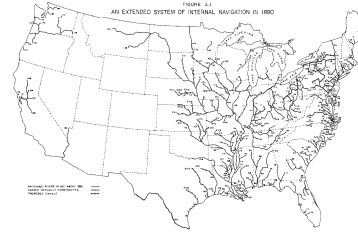


What can we learn from data: Relationship between Income per Capita and Population Growth



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Figure 2.5 Fogel's Map of a Potential Water Transport Network for 1890



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