

Economia regionale e dell'innovazione
Scienze Economiche,
Lezione 1

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Aspetti organizzativi

PROGONOMANTI		DOCENTI	DATA INIZIO	LUNEDÌ	MARTEDÌ	MERCOLEDÌ	GIOVEDÌ	VENERDÌ	SABATO
ECONOMIA REGIONALE E DELL'INNOVAZIONE	12	USAI Stefano	martedì 29 settembre		h. 16-18 aula 10 bis		h. 14-16 aula 10 bis		
			da martedì 17 novembre		h. 10-12 aula 10 bis	h. 14-16 aula 10 bis	h. 10-12 aula 10 bis		
METODI QUANTITATIVI PER LE SCIENZE ECONOMICHE E AZIENDALI	6	MOLA Francesco	mercoledì 30 settembre			h. 16-18 aula anfil teatro	h. 16-18 aula anfil teatro		
SOSPENSIONE LEZIONE - METODI QUANTITATIVI PER LE SCIENZE ECONOMICHE E AZIENDALI - PER I GIORNI 7 E 8 OTTOBRE									
PROJECT MANAGEMENT	6	DESSI' Ciriaco	martedì 29 settembre	h. 10-12 aula 7			h. 10-12 aula 7		
VALUTAZIONE DELLE POLITICHE PUBBLICHE	6	DI LIBERTO Adriana	martedì 17 novembre	h. 12-14 aula 10 bis	h. 12-14 aula 10 bis	h. 14-16 Laboratorio di Informatica			
Topics in Economics			fino a 13 novembre	h. 10-12	h. 10-12	h. 10-12			



Calendario

introduzione		laboratorio EUROPA Jean Monnet	
29-Sep	2	09-Dec	44
01-Oct	4	10-Dec	47
06-Oct	6	15-Dec	50
economia regionale		16-Dec	53
08-Oct	8	17-Dec	56
13-Oct	10	19-Dec	59
14-Oct	12	presentazioni studenti	
20-Oct	14	11-Jan	61
22-Oct	16	12-Jan	63
27-Oct	18	13-Jan	65
29-Oct	20		
03-Nov	22		
economia dell'innovazione			
05-Nov	24		
17-Nov	26		
18-Nov	28		
19-Nov	30		
24-Nov	32		
25-Nov	34		
26-Nov	36		
01-Dec	38		
02-Dec	40		
03-Dec	42		



Aspetti organizzativi

- Lezioni in pdf on line (in inglese)
- Materiale didattico on line
- Orario ricevimento: giovedì dalle 12 alle 13.
- Appuntamenti fuori orario concordati per email
- Comunicazione a lezione e attraverso gli avvisi sul sito
 - <http://people.unica.it/stefanousai/>



Temi e obiettivi di apprendimento

- I programmi di ricerca e innovazione, nazionali e regionali, di specializzazione intelligente (RIS3) sono alla base della nuova strategia politica ed economica denominata EUROPA 2020 a sostegno dell'occupazione, della produttività e della coesione sociale.
- L'Europa scommette, quindi, su programmi di trasformazione economica integrati e basati sul territorio che sostengono le politiche e gli investimenti orientati a priorità, sfide ed esigenze di sviluppo basate sulla conoscenza e sull'innovazione a livello nazionale e soprattutto regionale.



Contenuti

- Per capire le ragioni di queste scelte e per capire se e quanto potranno funzionare il corso di propone di fornire una base di conoscenze analitiche sull'economia urbana e regionale e sull'economia del progresso tecnologico.
- Tali conoscenze saranno poi utilizzate per studiare come i fenomeni di concentrazione della produzione e dell'innovazione nel territorio possano determinare il successo o l'insuccesso delle regioni.
- Il corso avrà un forte orientamento ai contenuti applicati e empirici che verranno approfonditi nell'ambito di un laboratorio di tecniche di analisi statistiche ed econometriche applicate allo studio dell'innovazione e/o della produttività nelle regioni europee.



Contenuti

- Il corso si propone di affrontare alcune importanti tematiche dell'attuale dibattito scientifico sulla crescita e sull'integrazione economica con particolare attenzione agli aspetti empirici relativi della distribuzione spaziale delle attività innovative e dei processi di localizzazione delle attività produttive.
- Il corso vuole sviluppare nello studente la capacità di applicazione analitica delle nozioni e dei principi appresi in classe.

Prova di Esame

- La valutazione si comporrà di tre parti:
 - 1) presentazione in aula
 - 2) redazione di un report statistico
 - 3) esame scritto: una domanda a scelta su due sui due temi dell'economia dell'innovazione e dell'economia regionale

Testo da cui partire

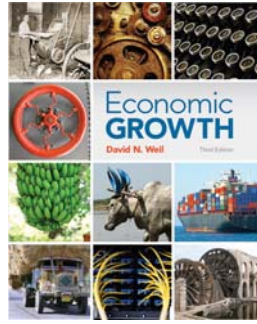
CRESCITA ECONOMICA
PROBLEMI, DATI E METODI DI ANALISI
[Weil David N.](#), Hoepli Editore, 2007

Uno sguardo d'insieme:
I fatti da spiegare - Gli strumenti con cui impostare l'analisi.

Disponibile presso biblioteca e copisteria della
Facoltà di Scienze Economiche, Giuridiche e
Politiche



THE FACTS TO BE EXPLAINED



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



Africa,
Europe and
Middle East
at night



Asia and
Australia at
night



Asia at night



Americas at night



North America at night



World at night



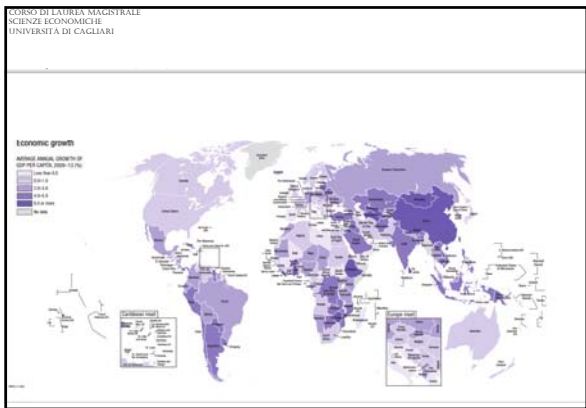
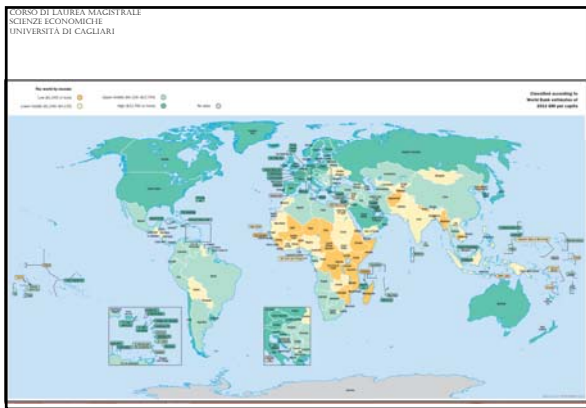
CORSO DI LAUREA MAGISTRALE
SCIENZE ECONOMICHE
UNIVERSITÀ DI CAGLIARI

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

Some updated indicators

	Population		Population density		Urban population		Gross national income				Gross domestic product	
	billions		people per sq. km		% of total population		Atlas method		Purchasing power parity		Per capita	
	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019-23	2019-23
World	7,195.1	154,324.7	59	53	78,119.9	10,663	102,197.6	14,543	2.9	1.1		
Low income	648.7	15,359.5	57	33	87.7	728	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	15,290.5	3,966	5.8	4.3		
Upper middle income	2,908.9	43,435.9	56	62	18,316.7	7,691	22,203.8	13,106	4.7	3.0		
Low & middle income	5,818.7	85,385.9	74	47	24,252.8	4,168	49,134.9	8,444	5.0	3.6		
East Asia & Pacific	2,095.8	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	1,997.9	7,114	9,711.8	13,628	9.7	9.0		
Latin America & Caribbean	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	-7.7	
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	83,328.8	26	80	82,000.0	30,812	83,285.4	40,788	1.4	0.9		
Euro area	337.3	2,758.9	128	79	13,272.8	39,390	12,801.4	37,993	-0.5	-0.8		

[Go back to WB Atlas data book](#)



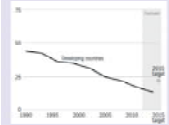
Millennium Summit

- 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.



Millennium Development Goals snapshot

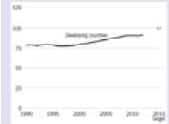
MDG 1: Eradicate extreme poverty and hunger



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.

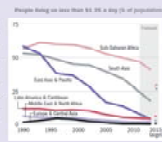
Source: World Bank PovertyNet (<http://research.worldbank.org/povertynet/>).

MDG 2: Achieve universal primary education



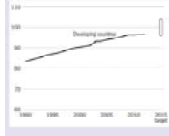
The primary school completion rate for developing countries reached 91 percent in 2012 but appears to fall short of the MDG 2 target. While substantial progress was made in the 2000s, particularly in Sub-Saharan Africa and South Asia, only East Asia and Pacific and Europe and Central Asia have achieved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

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



Millennium Development Goals snapshot

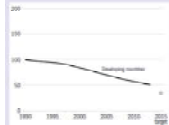
MDG 3: Promote gender equality and empower women



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 rate 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.

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

MDG 4: Reduce child mortality

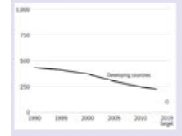


The under-five mortality rate in developing countries declined by half, from 99 deaths per 1,000 live births in 1990 to 50 in 2013. Despite this tremendous progress, developing countries as a whole are likely to fall short of the MDG 4 target of reducing under-five mortality rates by two-thirds between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

Source: United Nations Integrated Group for Child Mortality Estimation.

Millennium Development Goals snapshot

MDG 5: Improve maternal health

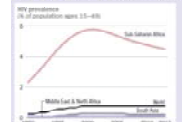


The maternal mortality ratio has steadily decreased in developing countries as a whole, from 430 in 1990 to 230 in 2013. While substantial, the decline is not enough to achieve the MDG 5 target of reducing the maternal mortality ratio by 75 percent between 1990 and 2015. Regional data also indicate large 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, unadjusted 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.

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

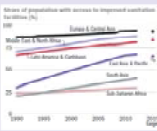
Source: World Health Organization

Millennium Development Goals snapshot

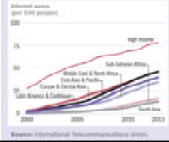
MDG 7: Ensure environmental sustainability



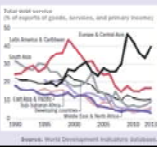
In developing countries the proportion of people with access to an improved water source rose from 70 percent in 1990 to 87 percent in 2012, achieving the target. The proportion with access to improved sanitation facilities rose from 26 percent to 67 percent, but 2.5 billion people still lack access. The large urban-rural disparity, especially in South Asia and Sub-Saharan Africa, is the principal reason the sanitation target is unlikely to be met on time.

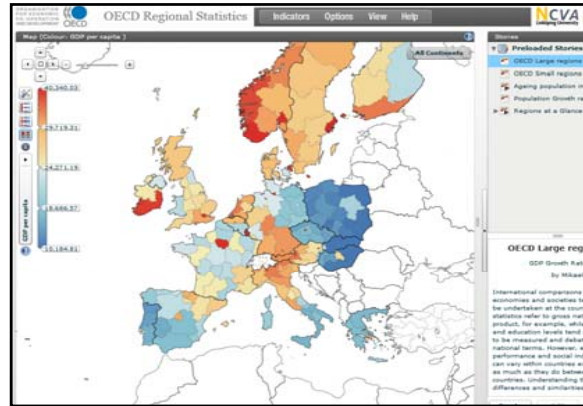


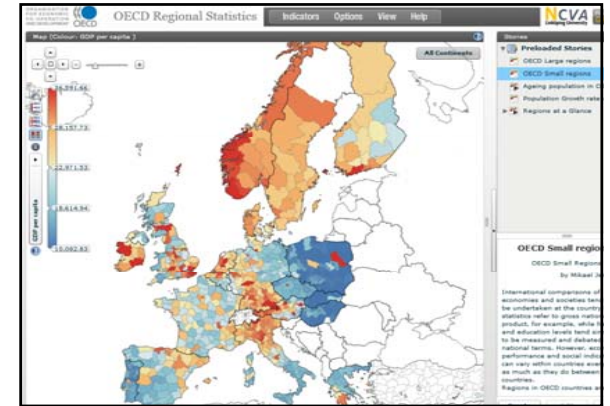
MDG 8: Develop a global partnership for development

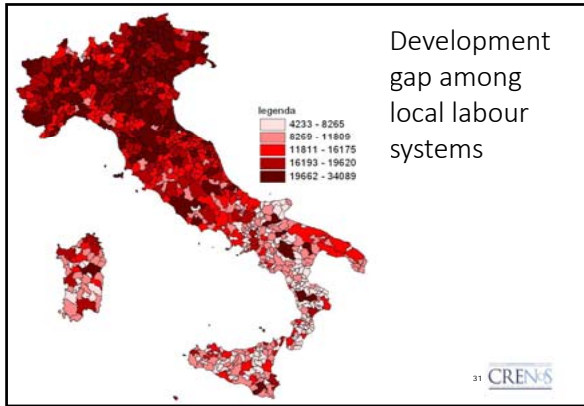


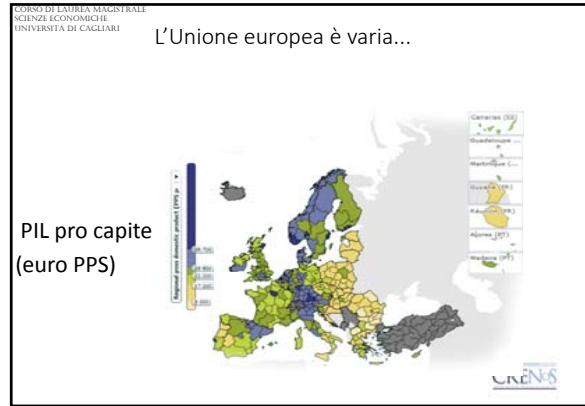
In 2000 internet use was rapidly increasing in high-income economies but barely under way in developing countries. Now developing countries are catching up. Internet users per 100 people have grown 27 percent a year since 2000. The debt-service-to-export ratio averaged 11 percent in 2012 for developing countries, half its 2000 level but with wide disparity across regions. It will likely rise, considering the 33 percent increase in their combined external debt stock since 2010.













L'Unione europea è varia...

Istruzione
terziaria



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

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	TRA1 - Erzurum, Erzincan, Bayburt	16
LU00 - Luxembourg	320	TRB1 - 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	19
NOD5 - Vestlandet	217	TRC3 - Mardin, Batman, Sirtak, Siirt	19
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	TRA2 - Agri, Kars, Igdir, Ardahan	13
AT13 - Wien	182	TRB2 - Van, Mus, Bitlis, Hakkari	11

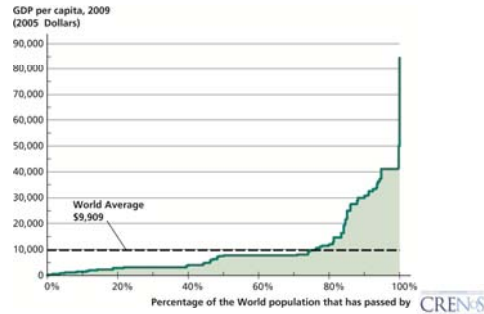
Ratio
between
richest and
poorest
region: 31

Sardinia: 79

Top Eleven Countries in Year 2009 According to Three Different Measures

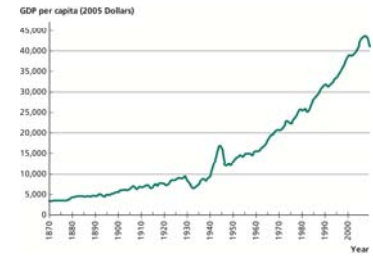
Rank	Highest GDP per Capita		Largest Economies		Most Populous Countries	
	Country	GDP per Capita (\$)	Country	Total GDP (\$ Billions)	Country	Population (Billions)
1	Qatar	56,489	United States	13.88	China	1,369
2	Luxembourg	51,287	China	12.59	India	1,199
3	United Arab Emirates	47,944	Japan	6.14	United States	307
4	Bahrain	42,264	India	4.75	Indonesia	249
5	Macau	37,627	Germany	3.49	Brazil	193
6	Norway	48,643	United Kingdom	2.37	Pakistan	181
7	Singapore	47,323	France	2.35	Bangladesh	154
8	Switzerland	46,658	France	2.34	Nigeria	148
9	Denmark	45,889	Italy	2.18	Russia	142
10	Australia	43,224	Spain	1.82	Japan	127
11	United States	41,281	Canada	1.39	Mexico	111

The Parade of World Income

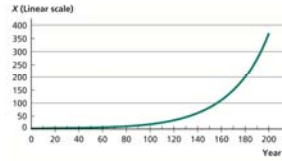


Source: Heston, Summers and Aten (2011).

GDP per Capita in the United States, 1870–2009



The Effect of Using a Ratio Scale



The formula for a trend:

$$Y_{t+1} = Y_t(1+g)$$

$$Y_{t+n} = Y_t(1+g)^n = Y_t(1+g)(1+g)^{n-1}$$

$$= Y_t(1+g)^n$$

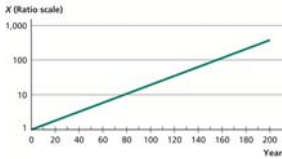
$$Y_{t+n} = Y_t(1+g)^n$$

Let's extract the logarithm on both sides:

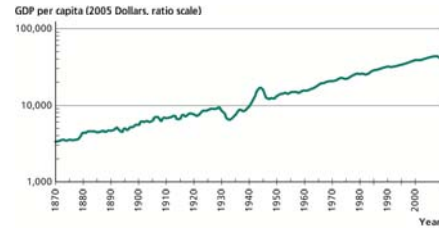
$$\log(Y_{t+n}) = \log(Y_t(1+g)^n)$$

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

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

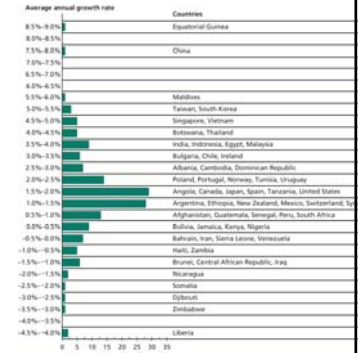


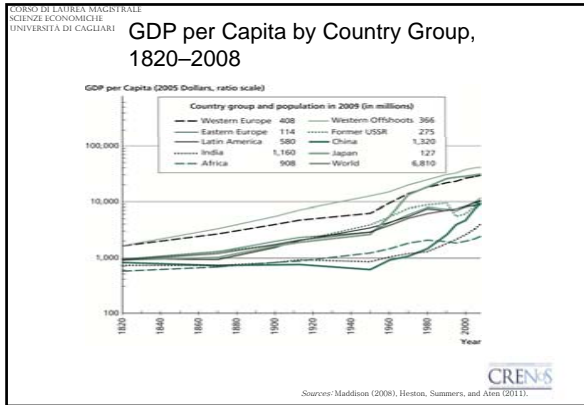
GDP per Capita in the United States, 1870–2009 (Ratio Scale)

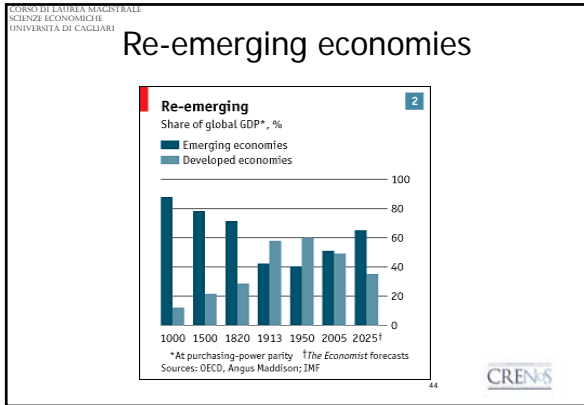


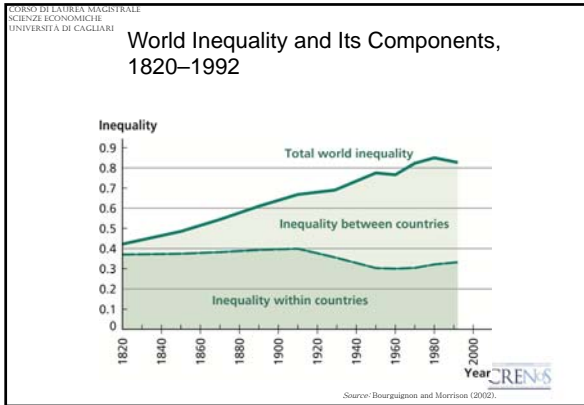
The Distribution of Growth Rates, 1975–2009

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





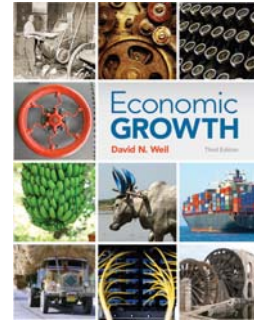




GDP per capita vs Human development index

- The two school of thoughts....
 - The importance of inequality...
- See [table](#)

A FRAMEWORK FOR ANALYSIS

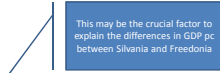


The Economics of Sylvania and Freedonia: A parable

- 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

Other potential factors

- Productivity
 - Technology: the available knowledge on how to combine inputs to produce output: it may explain another part of the gap but not all...
- Efficiency
- Fundamentals
 - Government and institutions
 - Income inequality
 - Culture
 - Geography and natural resources

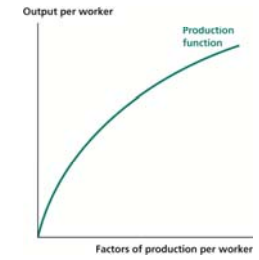


From Parable to practice

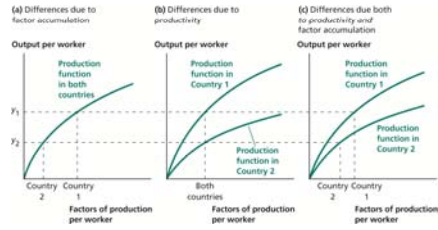
- Two main causes for growth
 - The accumulation of inputs
 - Productivity
 - Differences in technology
 - Differences in efficiency

It is important to distinguish between proximate causes and ultimate causes: **fundamentals**

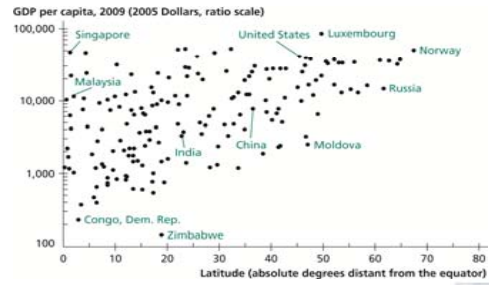
The Production Function



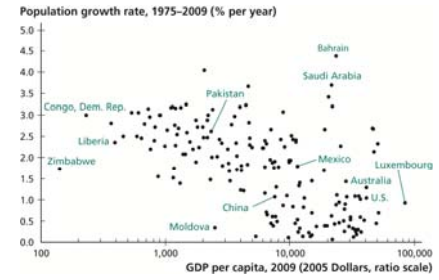
Possible Sources of Differences in Output per Worker



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



Dati: le principali fonti per l'analisi a livello nazionale e regionale

- 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/>

Ignorance

The Ignorance Project



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Pour the sparkling fresh numbers into your eyes and upgrade your worldview.

EXAMPLES

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

BUBBLE CHART ▶
