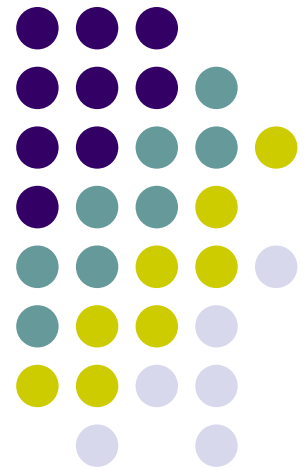
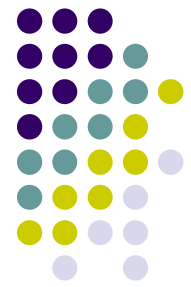


Introduction to Economics of Development

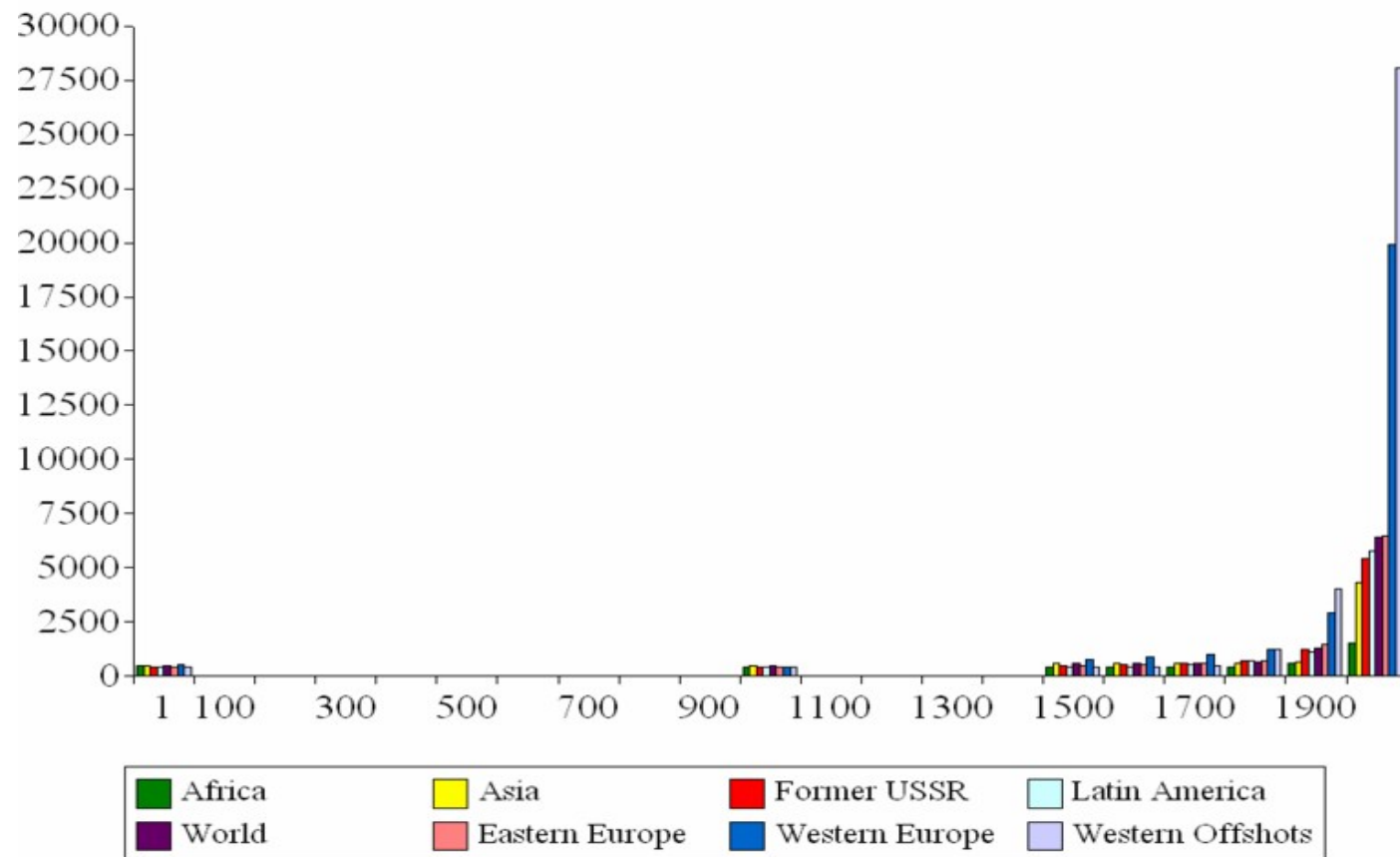
A Brief History of Economic Development
& The Puzzle of “Great Divergence”



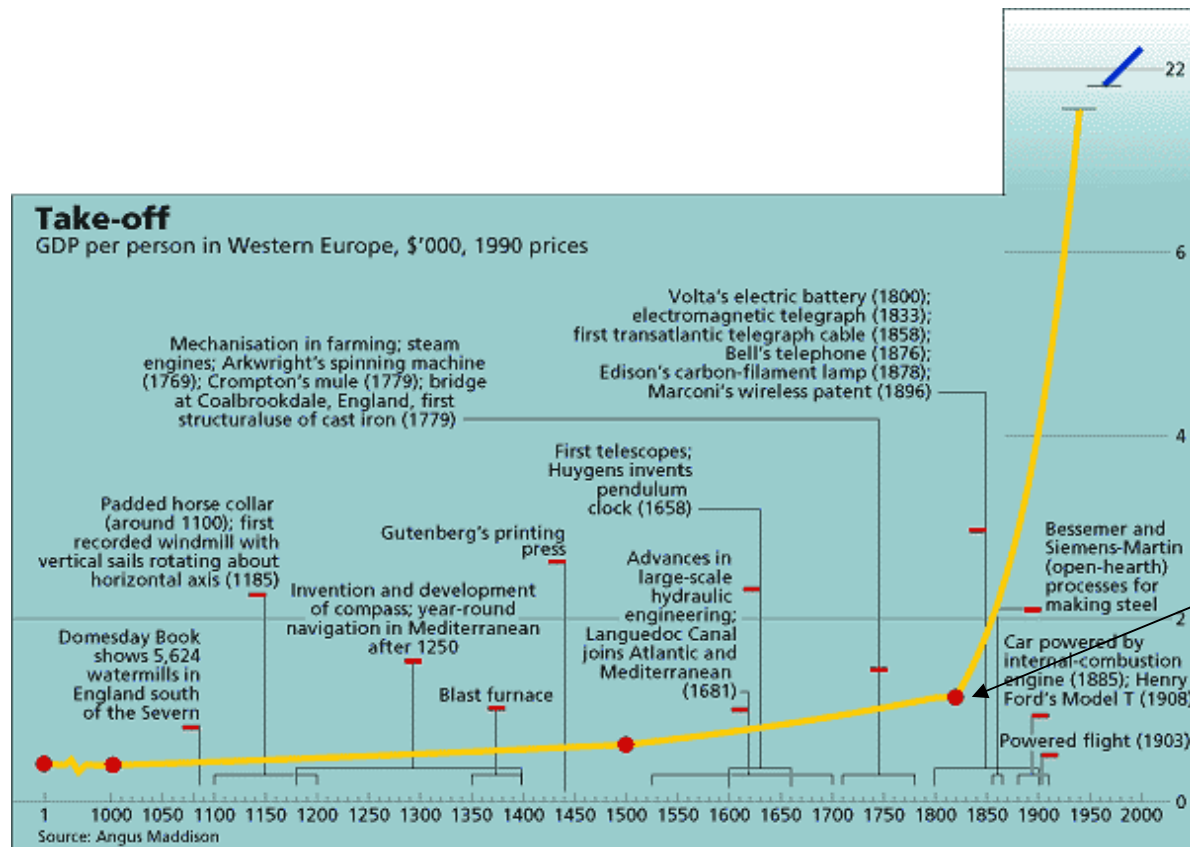


A Brief History

World GDP/capita 1-2003 A.D.



A Brief History: Economic growth in Europe



- Zero growth in the first millennium
- Almost no growth (or crawling growth at an average of 0.05%) between 1000-1050
- European sudden take-off around 1800s.

A Brief History



Table 8c. World Per Capita GDP, 20 Countries and Regional Averages, 1-2001 AD
(1990 international Geary-Khamis dollars)

	1	1000	1500	1600	1700	1820	1870	1913	1950	1973	2001
West European average	450	400	771	890	998	1 204	1 960	3 458	4 579	11 416	19 256
Eastern Europe	400	400	496	548	606	683	937	1 695	2 111	4 988	6 027
Former USSR	400	400	499	552	610	688	943	1 488	2 841	6 059	4 626
United States			400	400	527	1 257	2 445	5 301	9 561	16 689	27 948
Other Western Offshoots			400	400	408	761	2 245	4 752	7 425	13 399	21 718
Average Western Offshoots	400	400	400	400	476	1 202	2 419	5 233	9 268	16 179	26 943
Mexico			425	454	568	759	674	1 732	2 365	4 845	7 089
Other Latin America			410	431	502	663	683	1 424	2 536	4 426	5 508
Latin American Average	400	400	416	438	527	692	681	1 481	2 506	4 504	5 811
Japan	400	425	500	520	570	669	737	1 387	1 921	11 434	20 683
China	450	450	600	600	600	600	530	552	439	839	3 583
India	450	450	550	550	550	533	533	673	619	853	1 957
Other Asia	450	450	565	565	565	584	643	882	926	2 049	3 998
Asian average (excl. Japan)	450	450	572	575	571	577	550	658	634	1 226	3 256
Africa	430	425	414	422	421	420	500	637	894	1 410	1 489
World	445	436	566	595	615	667	875	1 525	2 111	4 091	6 049

A Brief History



Table 8b. Share of World GDP, 20 Countries and Regional Totals, 1-2001 AD
(per cent of world total)

	1	1000	1500	1600	1700	1820	1870	1913	1950	1973	2001
Total Western Europe	10.8	8.7	17.8	19.8	21.9	23.0	33.0	33.0	26.2	25.6	20.3
Eastern Europe	1.9	2.2	2.7	2.8	3.1	3.6	4.5	4.9	3.5	3.4	2.0
Former USSR	1.5	2.4	3.4	3.5	4.4	5.4	7.5	8.5	9.6	9.4	3.6
United States			0.3	0.2	0.1	1.8	8.8	18.9	27.3	22.1	21.4
Other Western Offshoots			0.1	0.1	0.1	0.1	1.2	2.4	3.4	3.3	3.2
Total Western Offshoots	0.5	0.7	0.5	0.3	0.2	1.9	10.0	21.3	30.7	25.3	24.6
Mexico			1.3	0.3	0.7	0.7	0.6	0.9	1.3	1.7	1.9
Other Latin America			1.7	0.8	1.0	1.4	1.9	3.4	6.5	6.9	6.4
Total Latin America	2.2	3.9	2.9	1.1	1.7	2.2	2.5	4.4	7.8	8.7	8.3
Japan	1.2	2.7	3.1	2.9	4.1	3.0	2.3	2.6	3.0	7.8	7.1
China	26.1	22.7	24.9	29.0	22.3	32.9	17.1	8.8	4.5	4.6	12.3
India	32.9	28.9	24.4	22.4	24.4	16.0	12.1	7.5	4.2	3.1	5.4
Other Asia	16.0	16.0	12.6	11.1	10.9	7.5	6.9	6.0	6.8	8.7	13.2
Total Asia (excl. Japan)	75.1	67.6	61.9	62.5	57.7	56.4	36.1	22.3	15.4	16.4	30.9
Africa	6.9	11.7	7.8	7.1	6.9	4.5	4.1	2.9	3.8	3.4	3.3
World	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0



A Brief History

Table 8b. Rate of Growth of World GDP, 20 Countries and Regional Totals, 1-2001 AD
(annual average compound growth rates)

	1-1000	1000-1500	1500-1820	1820-70	1870-1913	1913-50	1950-73	1973-2001
Total Western Europe	-0.01	0.29	0.40	1.68	2.11	1.19	4.79	2.21
Eastern Europe	0.03	0.19	0.41	1.41	2.33	0.86	4.86	1.01
Former USSR	0.06	0.22	0.47	1.61	2.40	2.15	4.84	-0.42
United States			0.86	4.20	3.94	2.84	3.93	2.94
Other Western Offshoots			0.34	5.39	3.81	2.76	4.75	2.99
Total Western Offshoots	0.05	0.07	0.78	4.31	3.92	2.83	4.03	2.95
Mexico			0.14	0.44	3.38	2.62	6.38	3.45
Other Latin America			0.28	1.52	3.51	3.61	5.16	2.74
Total Latin America	0.07	0.09	0.23	1.22	3.48	3.42	5.38	2.89
Japan	0.10	0.18	0.31	0.41	2.44	2.21	9.29	2.71
China	0.00	0.17	0.41	-0.37	0.56	-0.02	5.02	6.72
India	0.00	0.12	0.19	0.38	0.97	0.23	3.54	5.12
Other Asia	0.01	0.10	0.16	0.78	1.76	2.19	6.00	4.61
Total Asia (excl. Japan)	0.00	0.13	0.29	0.05	0.97	0.82	5.17	5.41
Africa	0.07	0.07	0.15	0.75	1.32	2.57	4.43	2.89
World	0.01	0.15	0.32	0.93	2.11	1.82	4.90	3.05

A Brief History: Economic Growth of World since 1820

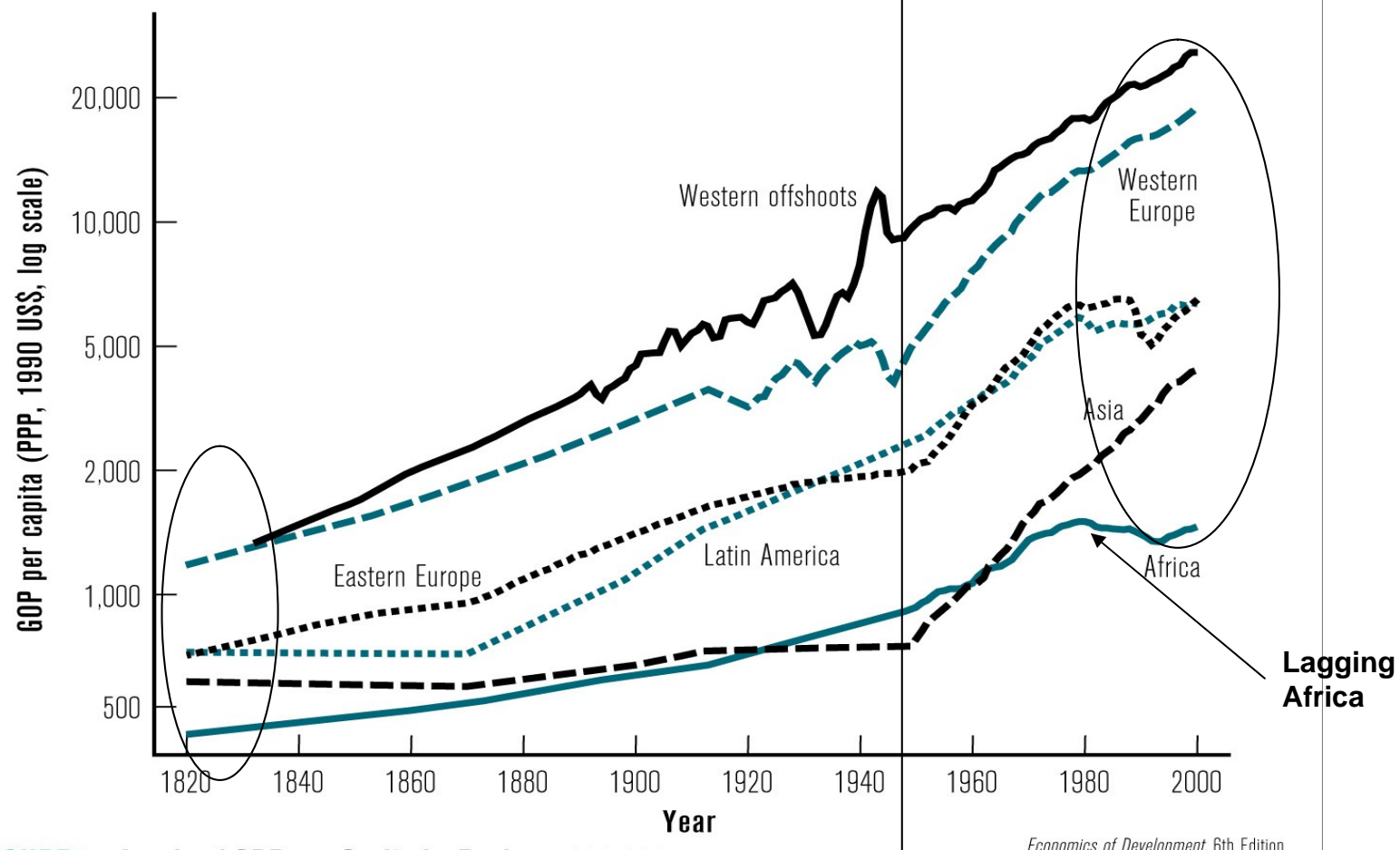


FIGURE 2.1 Levels of GDP per Capita by Region: 1820–2001

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A Brief History:

Economic Growth by Region 1970-2002



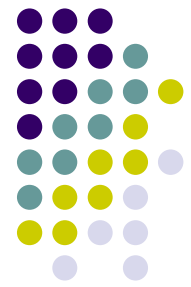
	1970-80	1980-90	1990-2002
East Asia and Pacific	4.4	5.7	6.1
Europe and Central Asia	4.4	1.2	-0.6
Latin America and Caribbean	3.1	-0.2	1.3
Middle East and North Africa	2.3	-2.0	1.0
South Asia	1.0	3.2	3.5
Sub-Saharan Africa	0.5	-1.3	0.1
High income	2.6	2.6	1.8

Source: World Bank, *World Development Indicators Online*, *World Development Indicators 2003*, *World Development Report 1995*.

- 1970-80: Fast growth in Asia, Europe and Latin America
- 1980-90 East Asia continue high growth, “Four Tigers” or newly industrialized countries (NICs).
- Sub-Saharan Africa remained stagnant, and experienced even negative growth in 80s.

TABLE 2.3 Rate of Growth in Gross Domestic Product per Capita (percent/year)

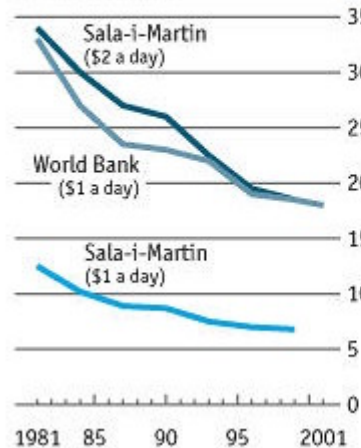
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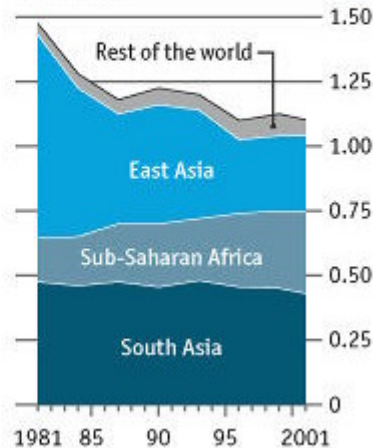
Current Trend

Still counting

Estimates of poor as % of world population



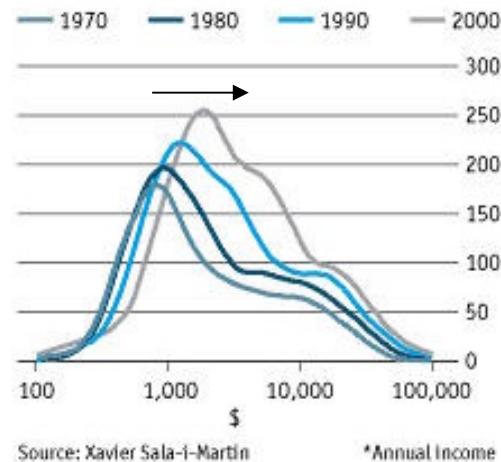
Population living on under \$1 a day, bn



- World Bank calculation, from 1981 to 2001, world population living under poverty line (\$1 per day) decreased dramatically from 33% to 18%.
- World poverty concentrates in South-East Asia (most populous region in the world) and Sub-Saharan Africa.

Bulging towards equality

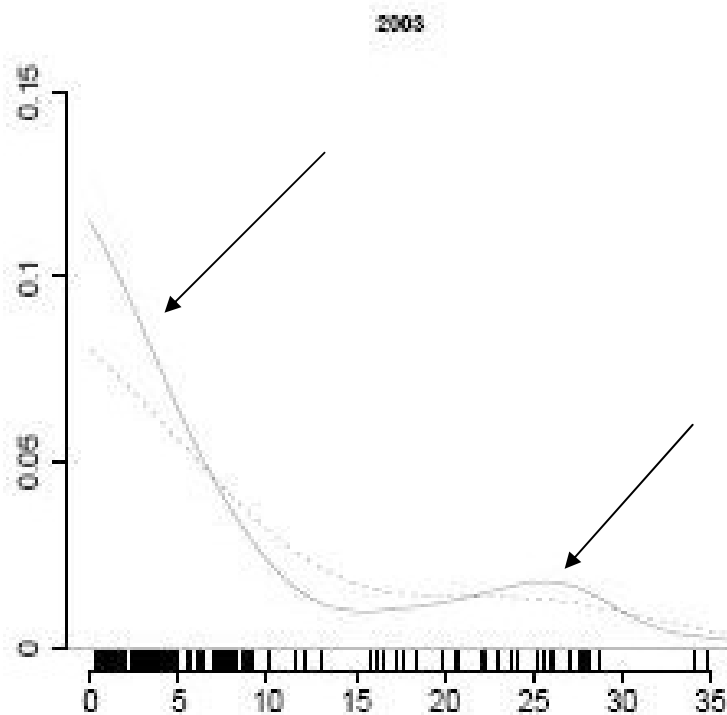
World distribution of income*, people, m



- The income distribution is right tailed, meaning most people are on the lower income segment.
- The world's inequality is slowly improving, reflected by the right shift of average world income over recent decades.

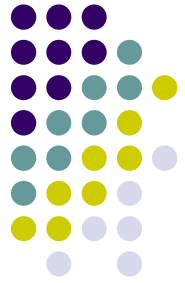
Current Trend:

“Twin Peaks” in World Income Distribution



- Looking at world average income could be very deceiving.
- Although world income inequality is improving gradually, the sharp contrast remains a major concern.
- On the left tail of the distribution, we have large percentage of population still living under absolute poverty → see the left higher peak in the graph.
- On the right side, we have another peak (though lower in percentage) where people in developed countries live in affluence, with income level centered around 28,000.

What's Happening 01/24/08



Bill Gates Calls for Kinder, "Creative" Capitalism

Microsoft Chairman Bill Gates plans to call for a revision of capitalism that uses market forces to address the needs of poor countries, which he feels are being ignored. "We have to find a way to make the aspects of capitalism that serve wealthier people serve poorer people as well," Mr. Gates will say in a speech at the World Economic Forum in Davos, Switzerland.

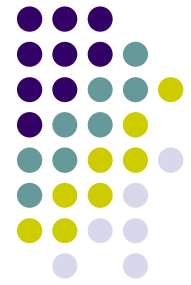


Key to Mr. Gates's plan will be for businesses to dedicate their top people to poor issues -- an approach he feels is more powerful than traditional corporate donations and volunteer work. Governments should set policies and disburse funds to create financial incentives for businesses to improve the lives of the poor, he plans to say.

Mr. Gates's argument for the potential profitability of serving the poor is certain to raise skepticism, and some people may point out that poverty became a priority for Mr. Gates only after he'd earned billions building up Microsoft. But Mr. Gates is emphatic that he's not calling for a fundamental change in how capitalism works.

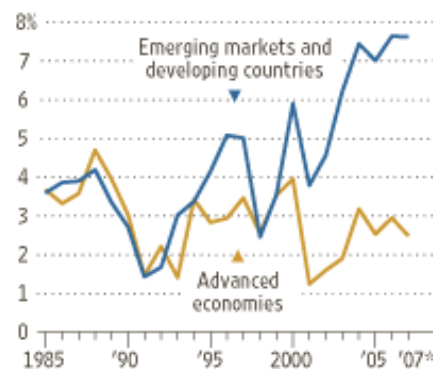
What's Happening 01/24/08

Decoupling or Re-coupling?



Two-Speed World

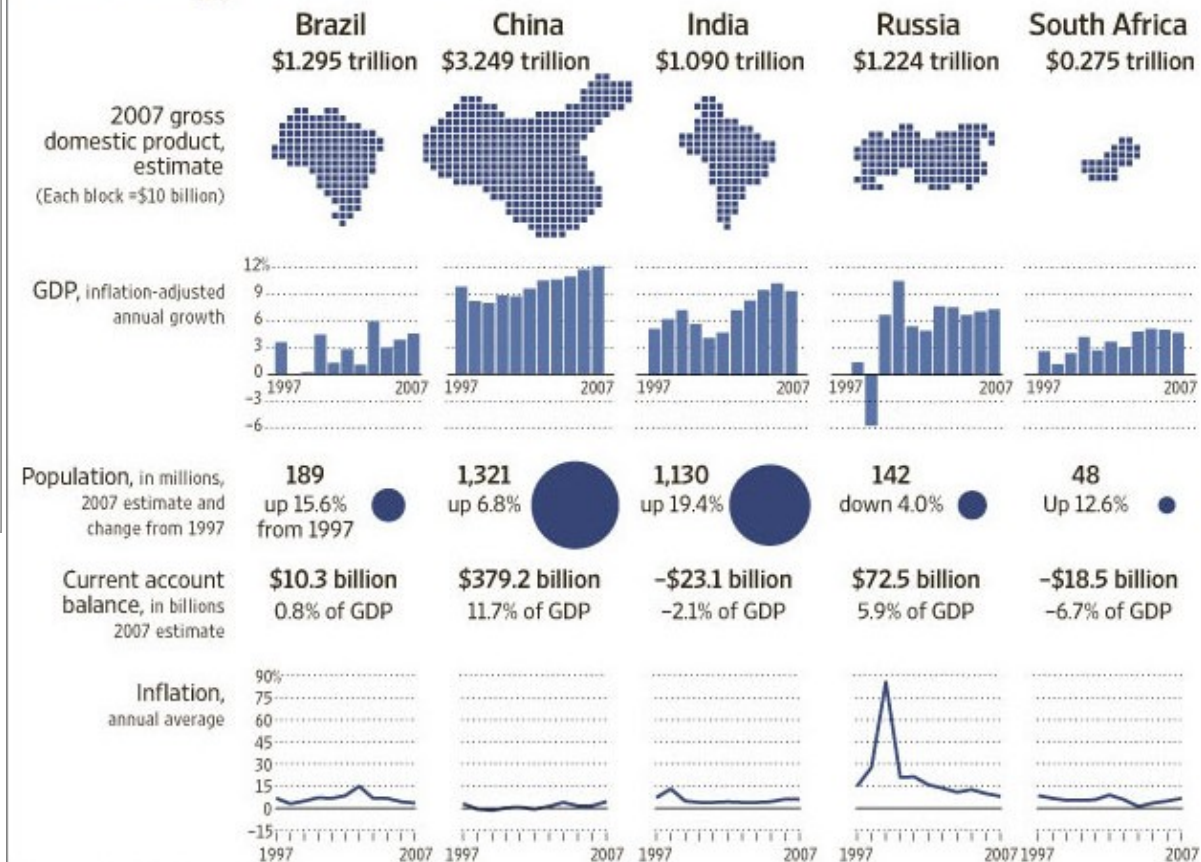
Annual inflation-adjusted economic growth



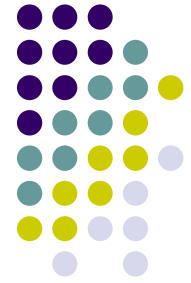
* Estimate, likely to be revised down
Source: International Monetary Fund

The Big Five

The five largest emerging-market economies, led by China, have shaken off the financial crises of the late 1990s.



Source: International Monetary Fund



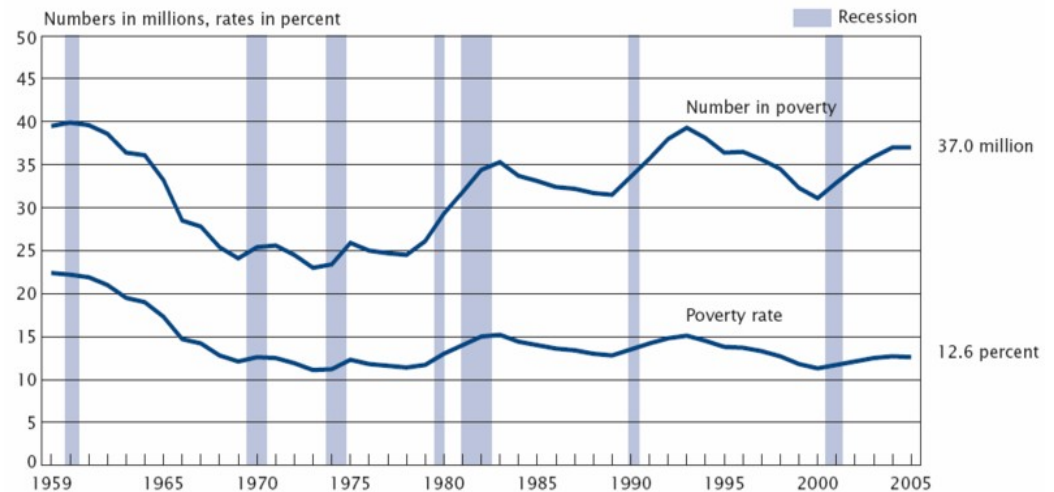
Absolute Poverty vs. Relative Poverty

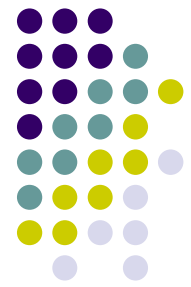
- Absolute poverty
 - World Bank “\$1 per day”
 - Same threshold across all countries
- Relative poverty
 - Country sets its own poverty line
 - The “relatively poor” in developed countries could be “super rich” in some developing countries, if no real purchasing power is discounted (below graphs use US as an example)

US Poverty Line

Persons in Family Unit	48 Contiguous States and D.C.
1	\$10,210
2	\$13,690
3	\$17,170
4	\$20,650
5	\$24,130
6	\$27,610
7	\$31,090
8	\$34,570
For each additional person, add	\$3,480

Number in Poverty and Poverty Rate: 1959 to 2005

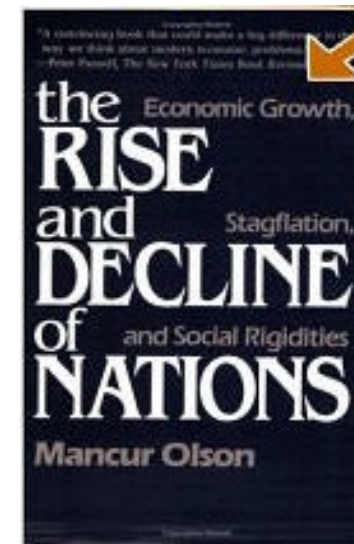


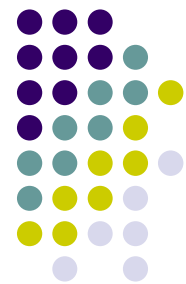


The “Great Divergence” Puzzle

Bear these questions in mind:

- Why did industrialization and technological take-off first happen in Western Europe, not anywhere else?
- Why did China fall in modern history?
- What happened in Western Europe in the 17th and early 18th centuries that failed to happen in the Western Europe of antiquity, or in China after 1400, or in the Islamic world after 1200?
- Is the rise and fall of nations inevitable?





The “Great Divergence” Puzzle

Table 8–3. The China/West European Dichotomy, 1–2001 AD

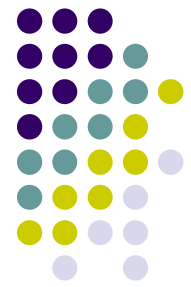
	China	West Europe
Population (million)		
1	59.6	24.7
1000	59.0	25.4
1300	100.0	58.4
1400	72.0	41.5
1500	103.0	57.3
1820	381.0	133.0
1913	437.1	261.0
1950	546.8	304.9
2001	1 275.4	392.1
Per Capita GDP (1990 int. \$)		
1	450	450
1000	450	400
1300	600	593
1400	600	676
1500	600	771
1820	600	1 204
1913	552	3 458
1950	439	4 579
2001	3 583	19 256
GDP (billion 1990 int \$)		
1	26.8	11.1
1000	26.6	10.2
1300	60.0	34.6
1400	43.2	28.1
1500	61.8	44.2
1820	228.6	160.1
1913	241.3	902.3
1950	239.9	1 396.2
2001	4 569.8	7 550.3

Stagnant Chinese economy: no growth in income per capita between 1300 and 1950.

China fell behind Western Europe after 1820.

By 1820, Chinese economy was still greater than all Western European economies combined

By 1950, Chinese economy was less than 1/5 of Western European's.

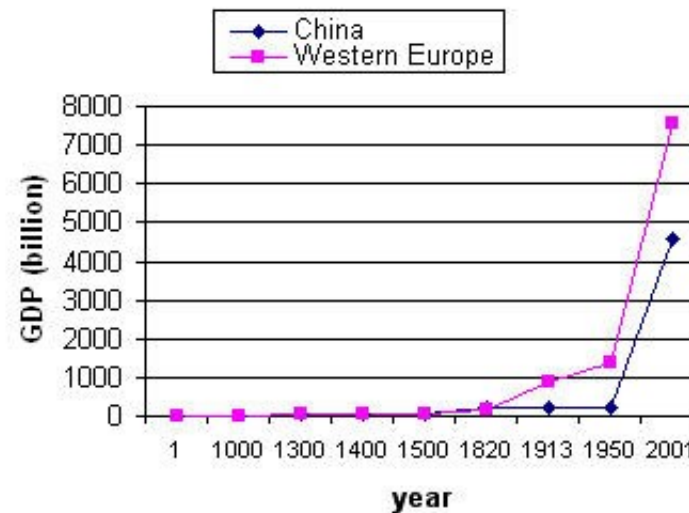
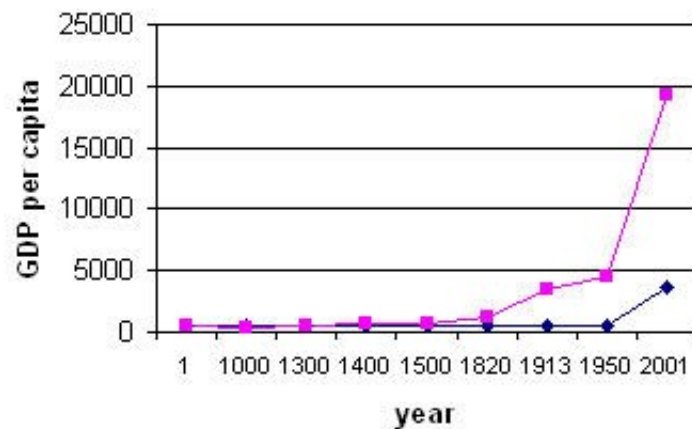


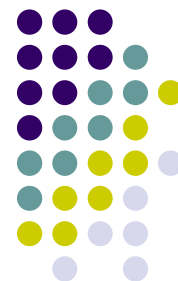
The “Great Divergence” Puzzle



The “sudden” take-off of Western Europe and fall of China remains one of the greatest puzzles in economic history.

China-Western Great Divergence



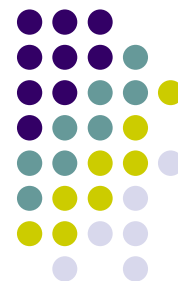


The “Great Divergence” Puzzle

- Is technology the answer?

Knowledge driven technology takes time to accumulate. That seems to explain the sudden takeoff. But why did it come along in 18th century Europe?

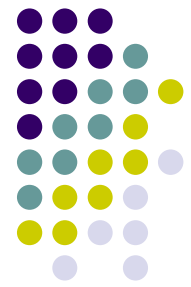
- Western science had already moved significantly ahead of that of other societies by the beginning of 17th century, yet it was another 150 years before the real surge in western growth began.
- Greater puzzle to this argument is China’s supremacy in science and technology alike was dazzling at the start of 15th century, yet there was no surge of growth happened in China.
- Science and technology can get far and then stop. The same happened to Islamic science, which achieved great sophistication around 1200.



The “Great Divergence” Puzzle

- Three contributing factors
 - Values
 - Readiness or appetite for change
 - Europe: Entrepreneurs, risk takers→ new ideas, innovations and explorations
 - China: its elites valued stability above all. New ideas, especially foreign ones, were suspect
 - Enlightened self-interest
 - Adam Smith (1776): in a free market, an individual pursuing his own self-interest tends to also promote the good of his community as a whole through a principle that he called “the invisible hand”. In *The Wealth of Nations* Smith provides an example that illustrates the simplicity of the principle:

“It is not from the benevolence of the butcher, the brewer or the baker, that we expect our dinner, but from their regard to their own self interest. We address ourselves, not to their humanity but to their self-love, and never talk to them of our own necessities but of their advantages.”
 - The will to exploit nature for man’s benefit is what we call “incentives”
 - Specialization and trade: move away from self-sufficiency



The “Great Divergence” Puzzle

- Three contributing factors
 - Values
 - Politics
 - Europe: Pluralism
 - For the past 1500 years, no unitary system of control has ever been imposed across Western Europe as a whole
 - Competition between governments, producers and traders, economic organizations
 - In religion: unified religious authority broke down with Luther’s Reformation
 - China: Highly centralized
 - China achieved unification around 200 B.C., and remained so most of the time in the next 2000 years.
 - Remained dominant in East Asia, no similar rivalry between states in Europe ever existed
 - One language, one Confucius teaching
 - Deliberate suppression of independent thoughts and local experiments



The “Great Divergence” Puzzle

- Three contributing factors
 - Values
 - Politics
 - Economic institutions
 - Western Europe
 - Property rights protection
 - Magna Carta(1215): protected private property from confiscation by the crown. Provided right incentives to economic growth
 - Other laws: contract, arbitration, etc.
 - Enlarged markets through trade
 - Among European states
 - International trade: New World, within colonies
 - China
 - Arbitrary seizure remained common in China (also in Asian and Islamic worlds), and merchants were forbidden to get too rich
 - In China, innovators were usually civil servants, with no stake of their own in growth
 - China’s old rigid civic examination system hampered promotion of the most talented in science and technology.

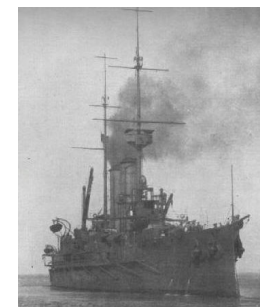
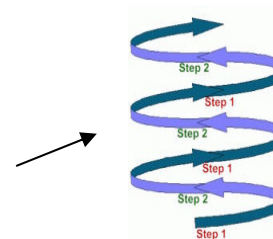


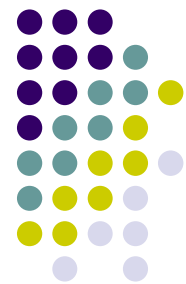


The “Great Divergence” Puzzle

- Is profit extraction from elsewhere the answer?

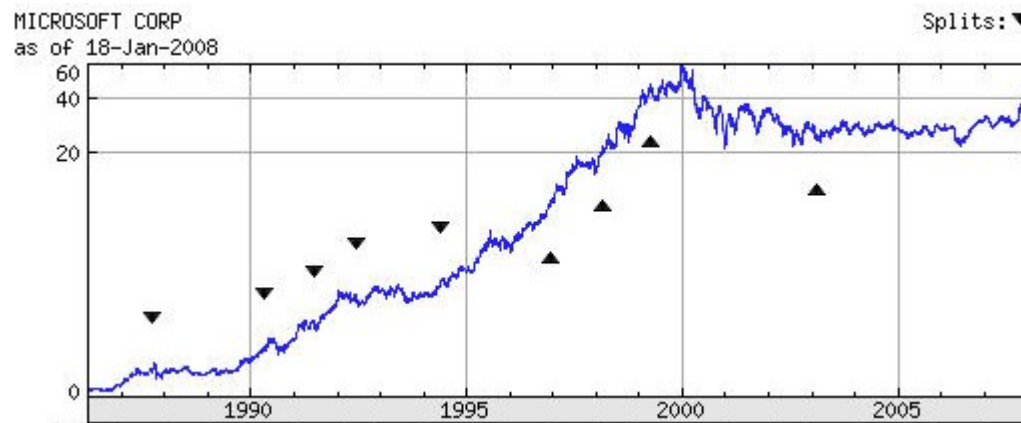
- Source of extractions
 - Colonization
 - Slave trading
 - The discovery of the New World
- The extra profits offer the much needed capital for investment, thus put Western Europe onto a “virtuous cycle”
- The discovery of New World relaxed the restraint on natural resources such as land and coal. It also provided much needed coal and cotton to fuel the industrial revolution.
- The question still remains why Western Europe first got the sea power to colonize other countries.





The “Great Divergence” Puzzle

- The rise and decline of nations
 - Is country’s economic growth similar to the growth of firms?
 - The case of Microsoft



- Was China’s own success the reason for her stagnation?
 - A theory of stagnation
 - “Winner’s Curse”

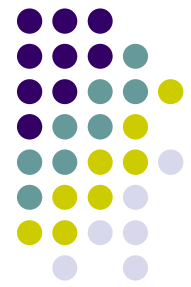
What's Happening 01/29/08



IMF GLOBAL GROWTH FORECAST

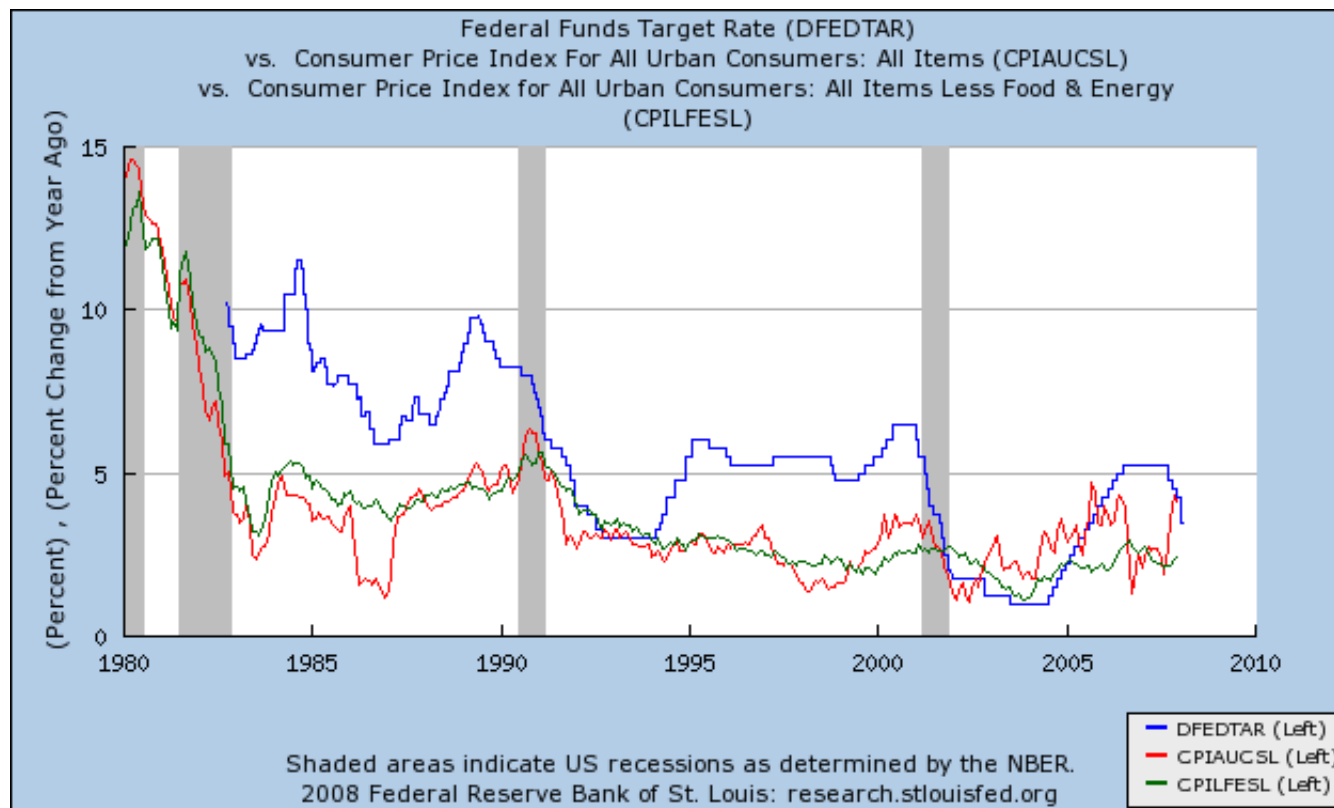
	2006 growth	2007 estimate	2008 forecast	Change*
U.S.	2.9	2.2	1.5	-0.4
Euro-zone	2.8	2.6	1.6	-0.5
Japan	2.4	1.9	1.5	-0.2
Africa	5.8	6.0	7.0	-0.2
China	11.1	11.4	10.0	0.0
Mideast	5.8	6.0	5.9	-0.1
Latin America	5.4	5.4	4.3	0.0

*Change from 2008 forecast made in October 2007



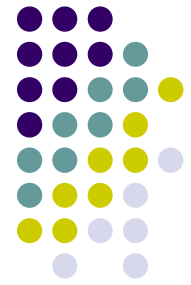
What's Happening 01/29/08

Fed to cut rate below inflation

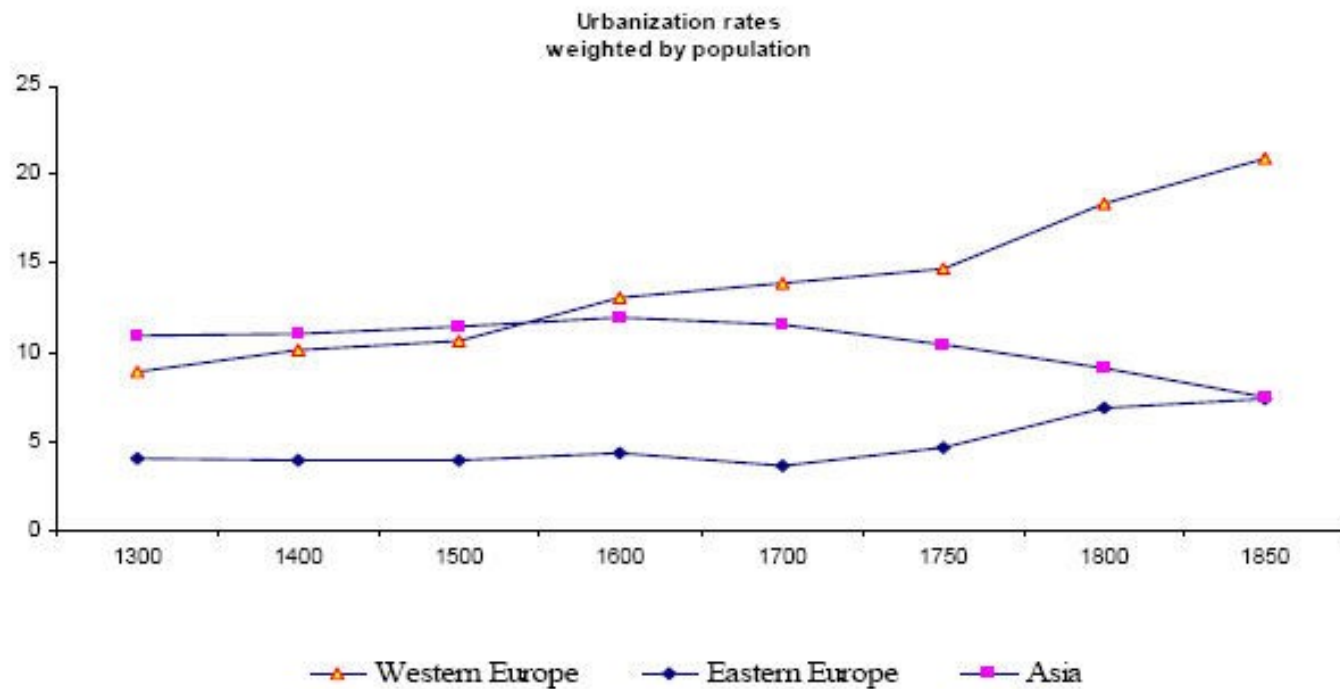


The “Great Divergence” Puzzle

Current Research Frontier



A deeper look at the rise of the Europe



The “Great Divergence” Puzzle

Current Research Frontier



A deeper look at the rise of the Europe



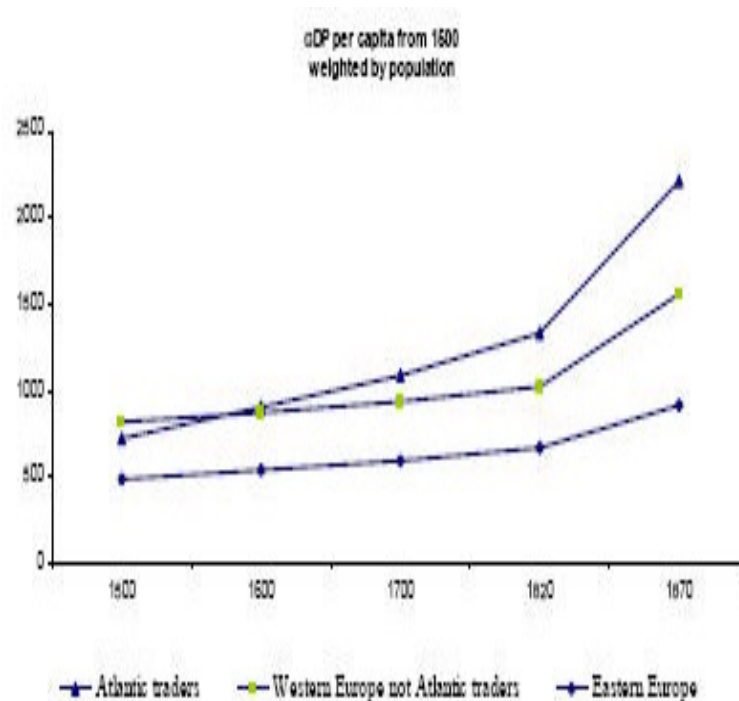
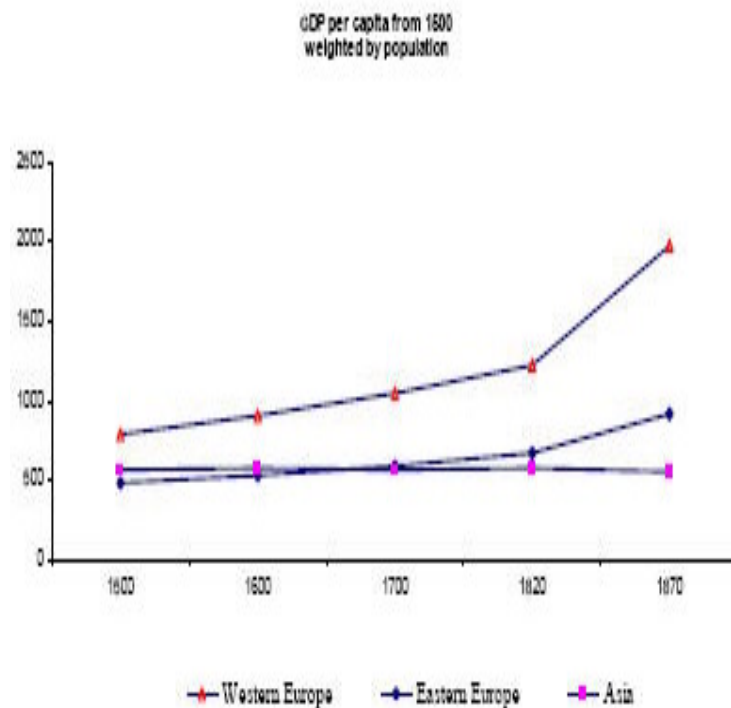
- A closer look shows most economic growth happened among Atlantic traders: Britain, France, Netherlands, Portugal and Spain.

The “Great Divergence” Puzzle

Current Research Frontier



A deeper look at the rise of the Europe



Similar story in GDP per capita

The “Great Divergence” Puzzle

Current Research Frontier

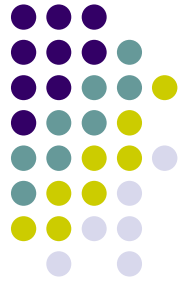


A deeper look at the rise of the Europe

- So we should change our story: It's Atlantic traders in Western Europe, NOT Western Europe as a whole that experienced the “sudden” take-off.
- The rise of Western Europe between 1500 and 1850 is largely accounted for by the growth of European nations with access to the Atlantic and in particular, by those that engaged in colonialism and transoceanic trade.

The “Great Divergence” Puzzle

Current Research Frontier



A deeper look at the rise of the Europe

- Among Atlantic traders (A most interesting hypothesis):
 - Atlantic trade and colonialism affected Europe not only directly, but also indirectly by inducing institutional changes.
 - In particular, where initial political institutions placed significant checks on the monarchy, the growth of New World and Asian Trade after 1500 strengthened merchant groups in favor of constraining the power of the monarchy further, and enabled them to demand and obtain changes in institutions to protect their property rights. These induced changes in political institutions were central to the subsequent process of economic growth.
 - In contrast, when initial political institutions were most absolutist, trade was monopolized by the crown and groups loyal to the monarchy, and a strong coalition in favor of institutional change failed to emerge.

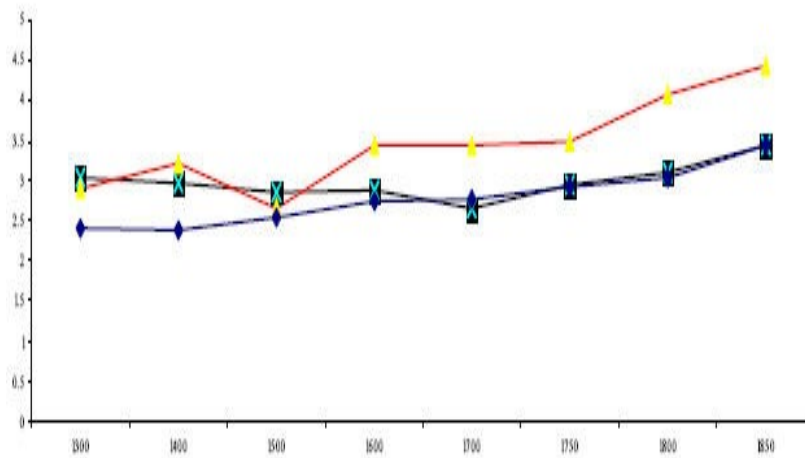
The “Great Divergence” Puzzle

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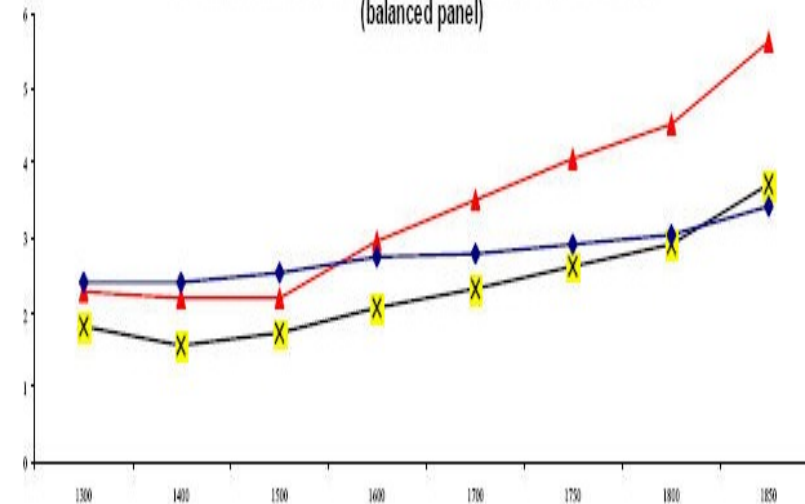
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Average of log population in Iberian Atlantic ports and other cities
(balanced panel)



- x— Iberian cities, not Atlantic ports
- △— Iberian Atlantic ports
- ◇— Inland West European cities

Average of log population in British Atlantic ports and other cities
(balanced panel)



- x— British cities not Atlantic ports
- △— British Atlantic ports
- ◇— Inland West European cities



The “Great Divergence” Puzzle

Summary

- The key is to find out what are those factors that exist in Western Europe and not existing in somewhere else, especially in China.
- Peter Temin (economic historian) sees “the industrial revolution not as coal and cotton but as an entrepreneurial and innovative economic culture that finds its most powerful expressions in coal and cotton”.
- Differences in institutions, especially those institutional changes along the way that promote “incentives”, are probably the most promising route to unravel this puzzle.