

Economics 1: Fall 2010

J. Bradford DeLong, Michael Urbancic, and a
cast of thousands...

http://delong.typepad.com/econ_1_fall_2010/

Ladies and Gentlemen, to Your i>Clickers...

- What is the most likely outcome for the U.S. budget come 2060?
 - A. We will have raised taxes to pay for government health spending.
 - B. We will have cut doctors wages and enslaved them by drafting them into a socialist national health service.
 - C. We will have abandoned our commitment to providing state-of-the-art health care to the sick and not just the wealthy.
 - D. The health care fairy will have figured out a way for us all to have all the medically-appropriate care we need for a surprisingly low private and public budgetary cost.
 - E. The federal government as we know it will have collapsed, and those of us still alive will be starring involuntarily in a remake of “Mad Max: Beyond Thunderdome”

Administrivia

- Complex dance for the midterm...
 - Want to get more space...
 - Want to avoid the ten-minute cattle drive...
 - Ashley, Attila, Ignacio, Sinaia, and Stephen sections will take the midterm in Lewis 100
 - Anne, David, Gautam, Haozhe, Michaela, and Sandley sections will take the exam in Wheeler Auditorium
- Reviews for midterm...
 - Friday here, 12-1...
- Thank you for taking the midterm...
 - It's about us, not about you—feedback device...

Economics 1: Fall 2010: Economic Growth

J. Bradford DeLong

September 27, 2010, 12-1
Wheeler Auditorium, U.C. Berkeley

Ladies and Gentlemen, to Your i>Clickers...

- When was the Neolithic Revolution—the invention of agriculture?
 - A. 50,000 BC
 - B. 10,000 BC
 - C. 3,000 BC
 - D. 400 BC
 - E. 1 AD

The Bird's Eye View: Before the Invention of Agriculture

- Population Status
 - Maybe 100K in 48,000 BC?
 - Buff
 - And tall
 - Short-lived—life expectancy of 25?
 - Maybe 5M in 8000 BC?
- Growth rate:
 - That is $40000/25 = 1600$ generations
 - $\ln(50) = 4$
 - $4/1600 = 0.0025 = 0.25\%/generation$
 - A healthy settled population with ample food doubles every generation
- Life was nasty
 - You live a healthy life, but you watch your children die, and you die young

The Bird's Eye View: Agrarian Societies

- Population Status
 - Maybe 5M in 8200 BC?
 - Short: from 5'9" to 5'1"
 - Upper classes different
 - Lose your teeth
 - Petri dishes for bacteria
 - Maybe 750M by 1800?
- Growth rate:
 - That is $10000/25 = 400$ generations
 - $\ln(150) = 5$
 - $5/400 = 0.0125 = 1.25\%$ /generation
 - A healthy settled population with ample food doubles every generation
- Life was brutish—and short
 - Life expectancy of 25?
 - And you are really bored
 - Your back doesn't do too well either
- So you live an unhealthy life, and you watch your children die, and you die young

Guessing at Some Numbers

Year	Population	Income
-8000	5	\$500
0	170	\$500
1500	500	\$500
1800	750	\$600
1900	1500	\$1200
2007	6300	\$7000

Malthusian stagnation

Period	Real GDP Growth	TFP Growth (1)
-8000-0	0.04%	0.01%
0-1500	0.07%	0.02%
1500-1800	0.2%	0.09%
1800-1900	1.38%	0.89%
1900-2007	3.38%	2%

Toward a human world?

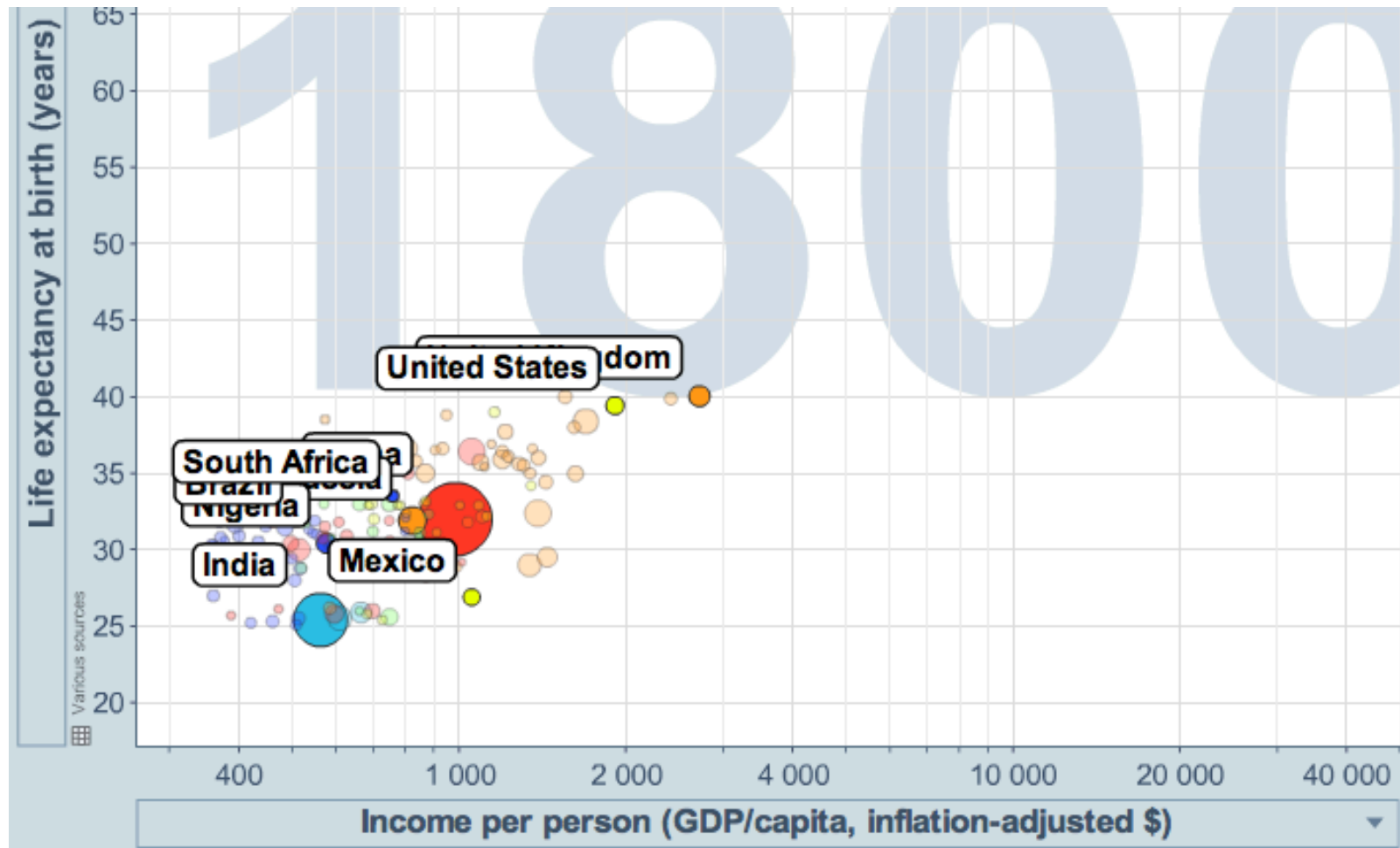
Where is the innovation?

- Growth rates of population
 - HG: 0.01%/year
 - AS: 0.05%/year
 - EM: 0.2%/year
 - >1800: 1.0%/year
- Growth rates of technological and organizational knowledge
 - HG: ????
 - AS: 0.01%/year
 - EM: 0.09%/year
 - IS: 2%/year
- Growth rates of global GDP
 - AS: 0.05%/year
 - EM: 0.2%/year
 - EIS: 1.4%/year
 - IS: 3.4%/year

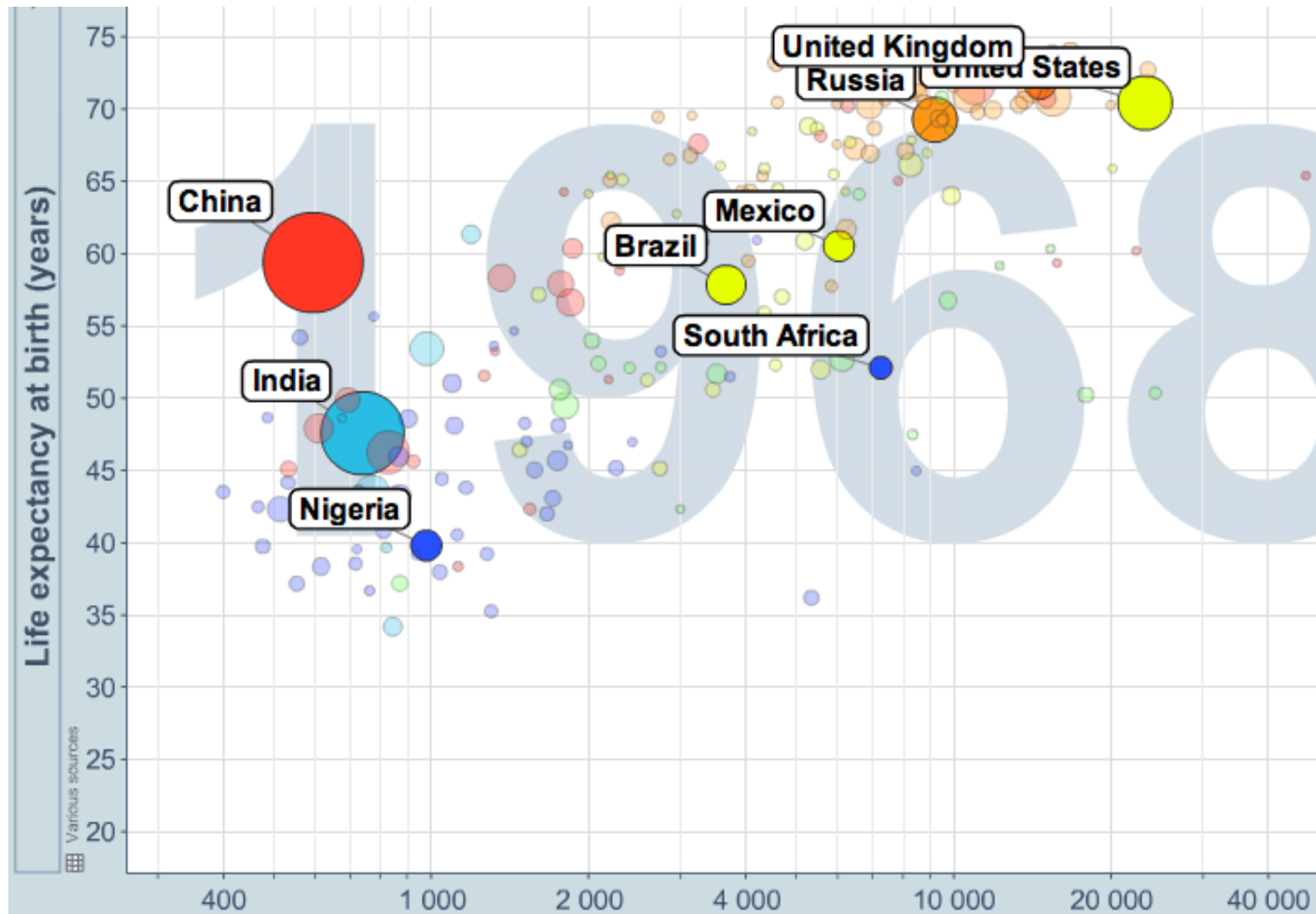
The Big Historical Questions

- What happened after 1800, and even more so after 1900?
 - We call it the Industrial Revolution
- What happened after 1500?
 - Not the market economy
 - Limited government
 - The Columbian Exchange
- What did not happen before 1500?
 - They were, after all, about as smart as we are...
- We are going to dodge the big historical questions
 - Simply note that they exist, and go on to describing what is

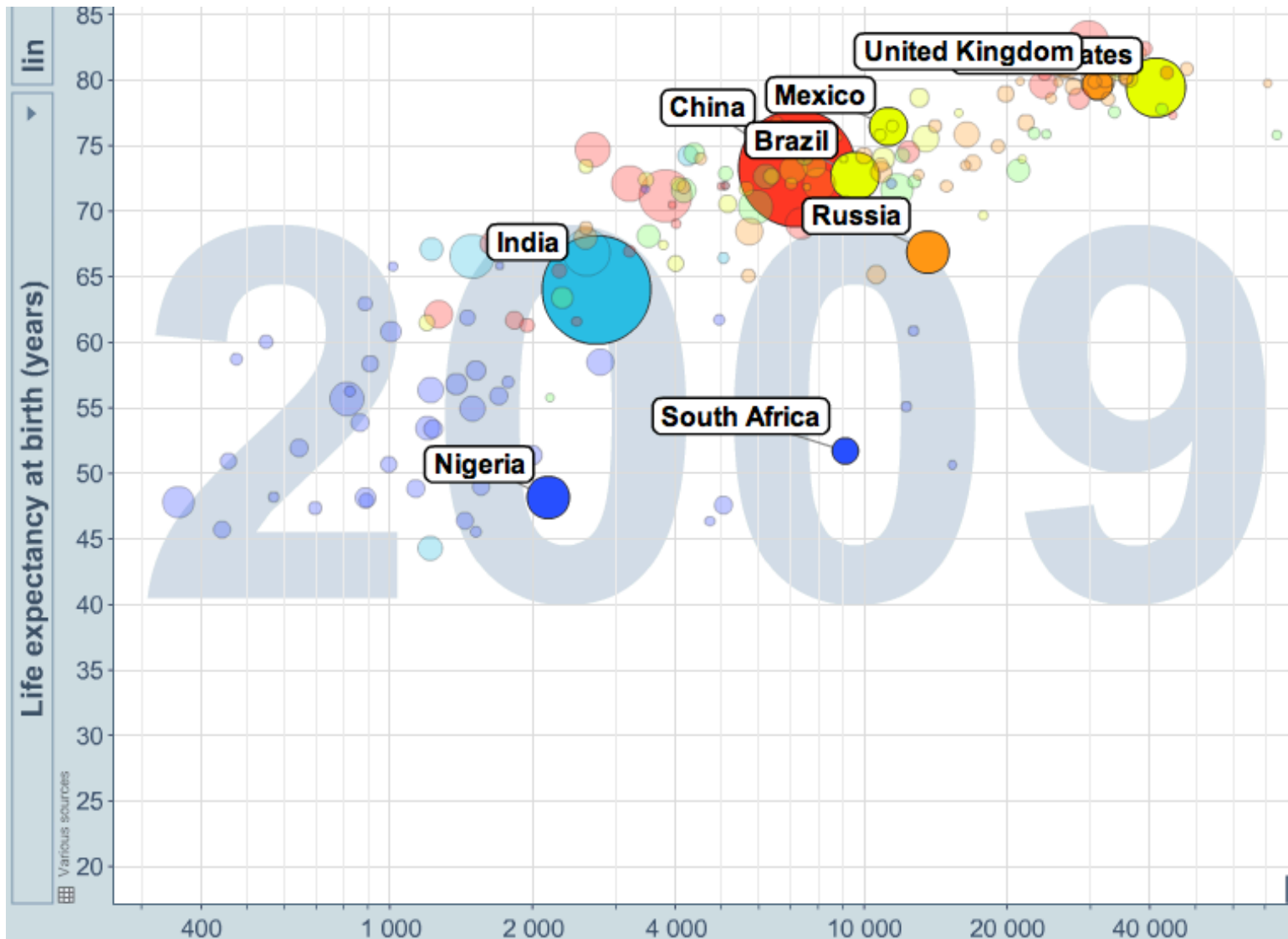
1800



The Great Divergence to 1968



Convergence to 2009



Why Divergence to 1968?

- The agrarian legacy
 - China's population has grown by a factor of 7 since 1800
 - Egypt's by a factor of 30
 - If most of your people are still unmechanized farmers, that is a huge set of headwinds
- The infrastructural task
 - Even if most of your people aren't unmechanized farmers and live in cities, a rapid population growth rate means a large investment burden
- Difficulties of technology transfer
- Difficulties of government
 - Communism
 - Corruption

Ladies and Gentlemen, to Your i>Clickers...

- Were Chinese living standards on average?
 - A. Higher in 1820 than in 1968, and higher today than in 1968.
 - B. Higher in 1820 than in 1968, and higher in 1968 than today.
 - C. Lower in 1820 than in 1968, and higher in 1968 today?
 - D. Lower in 1820 than in 1968, and higher today than in 1968?

Why Convergence After 1968?

- End of High Communism
- Expansion of world trade
- Technology transfer
- But if you look at it, the big difference between before 1968 and after 1968 is the different destinies of two countries
 - China
 - India
 - If you count one-country-as-one, rather than one-person-as-one, it is hard to see a pattern

Test Your Knowledge

- What was the rate of population growth before the Neolithic Revolution?
- What was the rate of population growth during the Agrarian Age?
- What do we know about average living standards both before the Neolithic Revolution and during the Agrarian Age?
- What do we know about the pace of improvement of global knowledge during the Agrarian Age?
- How does the pace of growth of global knowledge during the Agrarian Age compare to the pace of growth since the Industrial Revolution began?