

# Before Modern Economic Growth



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EBH24, LECTURE 1



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## PLAN

1. What Happened in History? 
2. A segmented, constrained and (relatively) equal world 

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# 1. What happened in History?





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# 1. What happened in (Econ.) History?

- Not much
- Essentially, a period of low growth rates (perhaps since the 10,000 bC (Neolithic) was replaced 200 years ago by a period of high growth rates
- In the words of the Nobel-prize winner Douglass North :
  - ["If we make a new 24 hour clock for the time of civilization \(...\) the last 250 years – just 35 minutes on our new 24 hour clock – are the era of modern economic growth"](#)
- This pattern is known as the ' hockey stick' (See Also Text 1, Figure 1)
- Explaining this shape is the essential question of Econ Hist

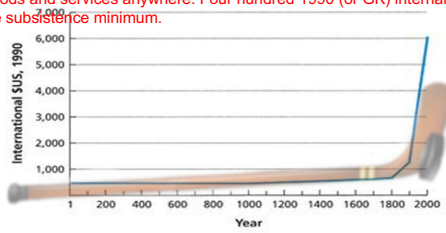


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## Econ Hist in 1 Graph

International dollars are a hypothetical currency used for comparison of living standards across time and space. International dollars are adjusted for **inflation within countries over time** and for **differences of cost of living between countries**. International dollars is a unit whose purchasing power is fixed, so that 1 international dollar can buy the same goods and services anywhere. Four hundred 1990 (or GK) international dollars is the subsistence minimum.



1.2 Gross world product per capita (1990 International Dollars)

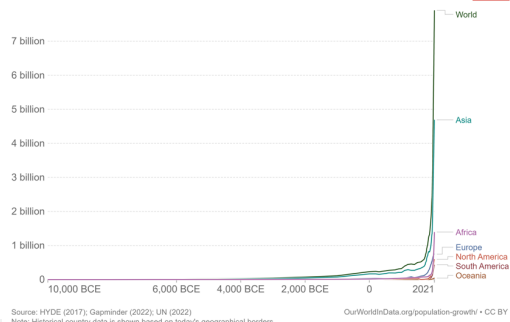
Source: Bolt, J., and J. L. van Zanden. 2013. "The First Update of the Maddison Project: Re-Estimating Growth Before 1820." *Maddison Project Working Paper 4*.

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## Econ Hist in 1 Graph 2.0

Population, 10,000 BCE to 2021



Source: HYDE (2017); Gapminder (2022); UN (2022)  
Note: Historical country data is shown based on today's geographical borders.  
OurWorldInData.org/population-growth • CC BY

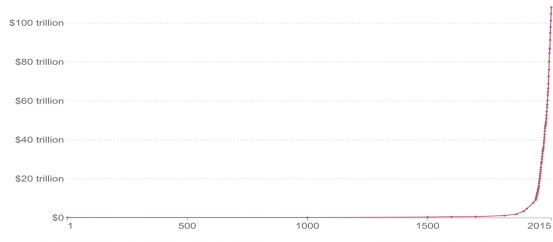


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## Econ Hist in 1 Graph 3.0

World GDP over the last two millennia

Total output of the world economy. This data is adjusted for inflation and differences in the cost of living between countries.



Source: Our World In Data based on World Bank & Maddison (2017)  
Note: This data is expressed in international \$' at 2011 prices.

OurWorldInData.org/economic-growth • CC BY



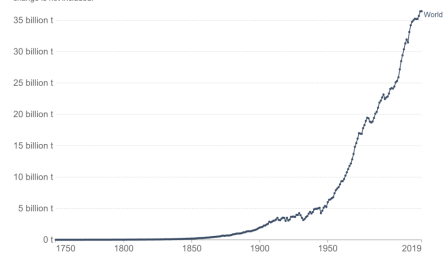
<https://ourworldindata.org/grapher/gdp-wor>

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## Econ Hist in 1 Graph 4.0

Annual CO<sub>2</sub> emissions

Carbon dioxide (CO<sub>2</sub>) emissions from the burning of fossil fuels for energy and cement production. Land use change is not included.



Source: Global Carbon Project  
Note: CO<sub>2</sub> emissions are measured on a production basis, meaning they do not correct for emissions embedded in traded goods.



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## Modern Economic Growth

In aggregate terms, Modern Economic Growth displays three features:

- Growth in the total volume of output (from 1800 to 2020, world GDP increased by a factor of 50)
- Growth in total population (from 1800 to 2020, world population increased by a factor of 7, from c. 1 to c. 7 billion)
- Growth in per capita income (from 1800 to 2020, average per capita income increased by a factor of 10, from c. 700 to 7000 GK dollars)

(Recent concerns also brought to the fore the issue of pollution, which increases in tandem with economic growth )

## Details on MEG

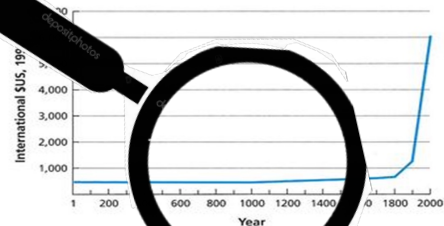
Year	World Pop (million)	World Output (million US \$ 1990)	World Output <i>per capita</i> (US \$ 1990)
1000	0,268	117,000	435
1500	0,438	248,000	566
1600	0,556	331,000	595
1700	0,603	371,000	615
1820	1,042	695,000	667
2001	6,149	37,194,000	6,049

Source: Maddison (2007)

## 2. The Pre-MEG World



## Econ Hist in 1 Graph



1.2 Gross world product per capita (1990 International dollars)

Source: Bolt, J., and J. L. van Zanden. 2013. "The First Industrial Revolution: The Maddison Project: Re-Estimating Growth Before 1820." Maddison Project Working Paper 4.

## A Segmented World

- The graphs shown aggregate the entire world, but is this representative?
- Until the 19th century, the globe was segmented into several almost self-sufficient economies with stark contrasts, that can be divided into 2 categories,
  - Local Economies
  - World Economies

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## A Segmented World (2)

- Local Economies** were small self-sufficient communities:
- Little or no trade with other economies
  - Little specialization/division of labour
  - Marginally above subsistence level (400 1990USD)
  - Low-intensity usage of natural resources (hunter-gatherers, low-intensity cultivation)

- World Economies** were self-sufficient in essential goods:
- Trade of non-essential goods, absolute advantage goods (spices, silk and other luxuries) with other economies
  - Advances in specialization and division of labour (as manifest in high urbanization rates)
  - Above subsistence level (c. 1.5 above 400 USD)
  - High-intensity usage of natural resources (irrigation, specialization in farming)

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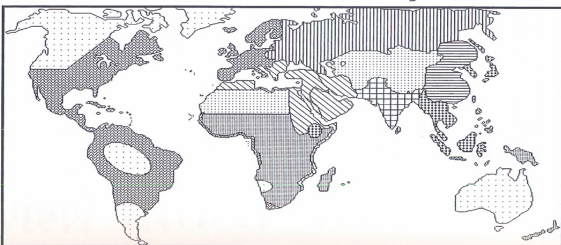


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## The Economies of the World, c. 1750



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**Table 1: Levels of per capita GDP, 1–2030 AD (1990 international Geary-Khamis dollars)**

	1	1000	1500	1820	1950	1973	2006	2030
Western Europe	576	427	772	1,202				
US	400	400	400	1,257				
Other Western offshoots*	400	400	400	761				
<b>West</b>	<b>569</b>	<b>426</b>	<b>754</b>	<b>1,202</b>				
China	450	466	600	600				
India	450	450	550	533				
Japan	400	425	500	669				
Other Asia	421	520	565	578				
Latin America	400	400	416	691				
Eastern Europe & Former USSR	406	400	498	686				
Africa	472	428	416	421				
<b>Rest</b>	<b>453</b>	<b>457</b>	<b>537</b>	<b>581</b>				
<b>World</b>	<b>467</b>	<b>453</b>	<b>567</b>	<b>667</b>				
Inter-regional Spread	1.4:1	1.3:1	1.9:1	3:1	21.3:1	19.9:1	18.2:1	22.6:1
West–Rest Spread	1.3:1	0.9:1	1.4:1	2.1:1	5.6:1	5.6:1	5.2:1	4.4:1

Inter-regional spread is the ratio of the highest income to the lowest

\* Australia, Canada and New Zealand. Source: www.gdc.net/Maddison, and Maddison (2007a), p. 382.

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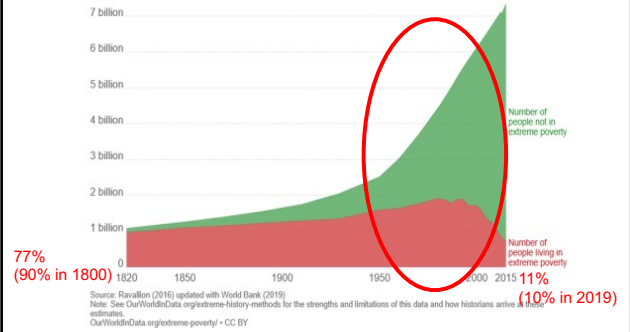
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# Inequality

- Despite the wide differences between local and world economies, the differences between world regions were not a large multiple pre-1820 (like today)
- Essentially, the world regions were nearly uniformly poor (i.e. low per capita GDP)
  - low GDP pc
  - low wages (i.e. low returns from labour AND low productivity)
- Estimates are hard to find, but even in 1800, 90% of the world pop lived in extreme poverty

# World population living in extreme poverty, 1820-2015

Extreme poverty is defined as living on less than 1.90 international-\$ per day. International-\$ are adjusted for price differences between countries and for price changes over time (inflation).



# Low specialization and little world trade

- Natural resources constrained per capita output
- low GDP pc
- low wages (i.e. low returns from labour low productivity)
- Low productivity meant that there was little scope for specialization of the world economies
- The largest world economy in 1700 (China), foreign trade (silk, china, tea, lacquer, pearls and limited imports of silver) represented about 1% of GDP

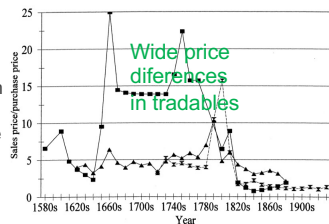


Figure 4. Spice and commodity prices in Amsterdam vs Southeast Asia, 1580-1920.

# The main World Economies

GDP (in million 1990 USD): India, China and Europe

	1	1000	1500	1600	1700	1820
India	29	34	61	74	91	111
China	34	27	62	96	83	229
Europe	14	11	44	66	81	159

Source: Maddison Homepage

### The main World Economies

GDP per capita (in 1990 USD):  
India, China and Europe

	1	1000	1500	1600	1700	1820
India	450	450	550	550	550	533
China	450	450	600	600	600	600
Europe	576	425	797	888	1.028	1.234

Source: Maddison Homepage;



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### What happened in (Econ.) History?

- The period before 1800 (or 1815 or 1820, depending on the authors) was one of overall growth
  - As measured by the real GDP (the monetary value in real terms of all goods and services produced in a given economy in a given year)
- Yet, this overall growth was not accompanied by growth in productivity, as measured by GDP per capita, which stagnated (India or China) or grew at a low pace
- Thus, GDP growth was a function of population growth (see next graph)



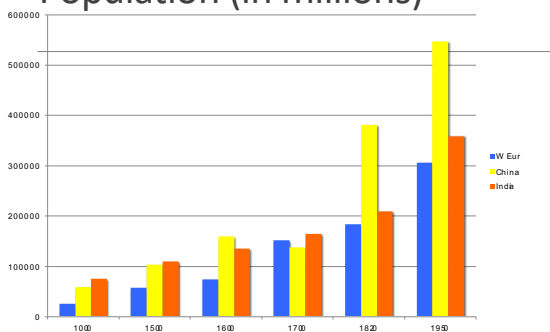
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### Population (in millions)



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