Topic 4
Economic Growth

Slides specially prepared for sec 027, complementary to those in moodle.

Agenda

- Modern Economic Growth

- Calculating Growth:

  – How to measure it

- Ingredients of modern economic growth

- Modeling growth: the production Possibilities Frontier (PPF)

- Factors that drive growth

Economic Growth

Economic Growth

Average Annual GDP per capita for Germany, Japan, and the United States

	Average Annual Growth Rate of GDP per Capita for Germany, Japan and the United States	
	1950–1960	1980–1990
Germany	6.6%	1.9%
Japan	6.8%	3.4%
United States	1.2%	2.3%

World's Economic Growth

**World GDP/capita and Population
A Two Millennium Perspective**

GDP per capita

World Population (mill)

Legend: World GDP per capita (1990 international $) — World Population (Million)

Source: Calculated from Angus Maddison, The World Economy : A Millennial Perspective, OECD: Paris, 2001

Economic Growth | PPF | What drives growth
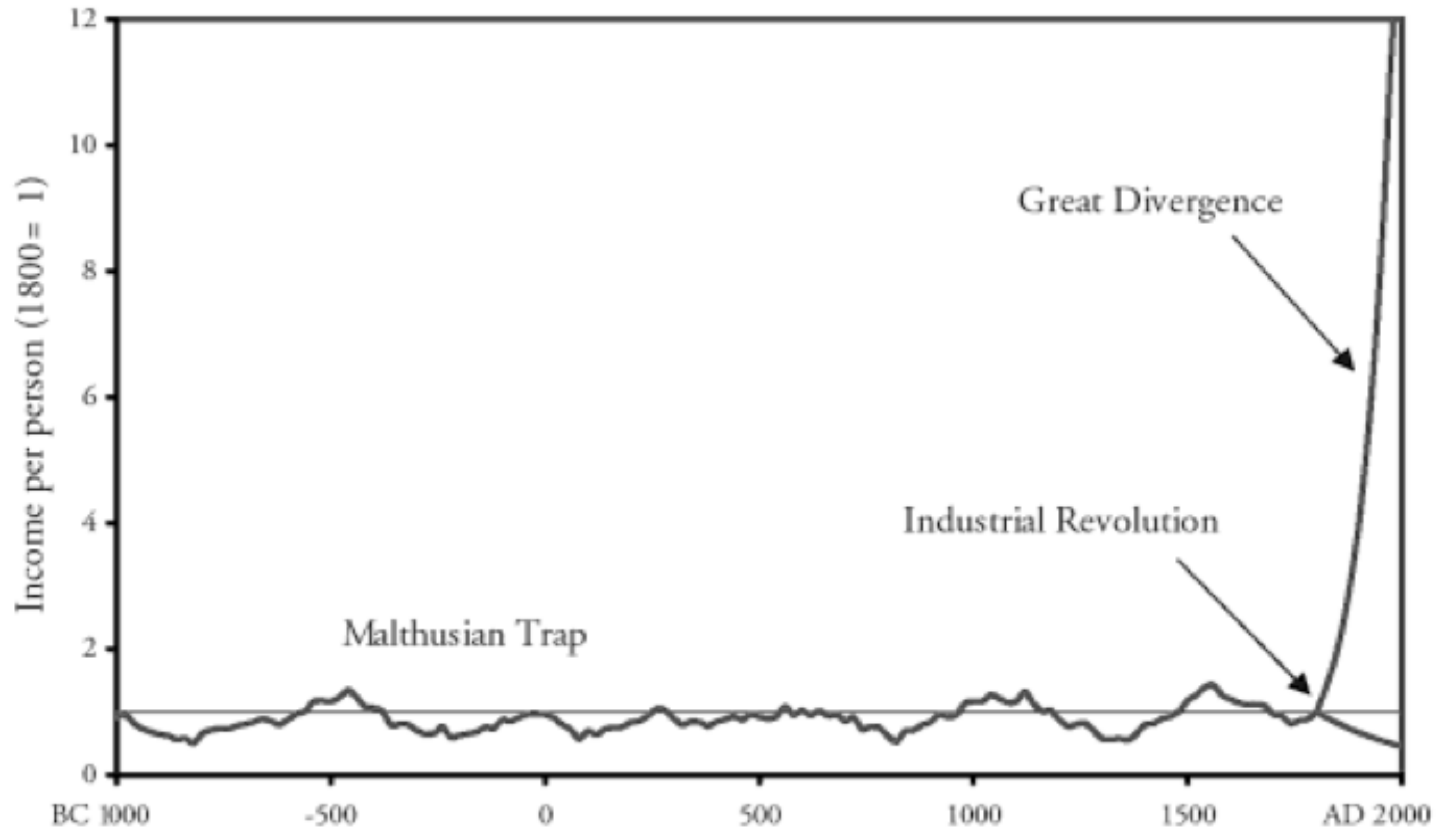
World's Economic Growth

Figure 1.1   World economic history in one picture. Incomes rose sharply in many countries after 1800 but declined in others.

Modern Economic Growth

- Malthusian Trap: Any technology improvements will result in population increases resulting in everyone still living at a subsistence level

- Definition: Modern Economic Growth is characterized by sustained and ongoing increases in RGDP pc

But is everyone better off?

- Gapminder – [Great Divergence, Growth Miracles, Growth Disasters](#)

Great Divergence

Per Capita GDP for Selected Regions or Countries (1990 international $, 1480-1998)
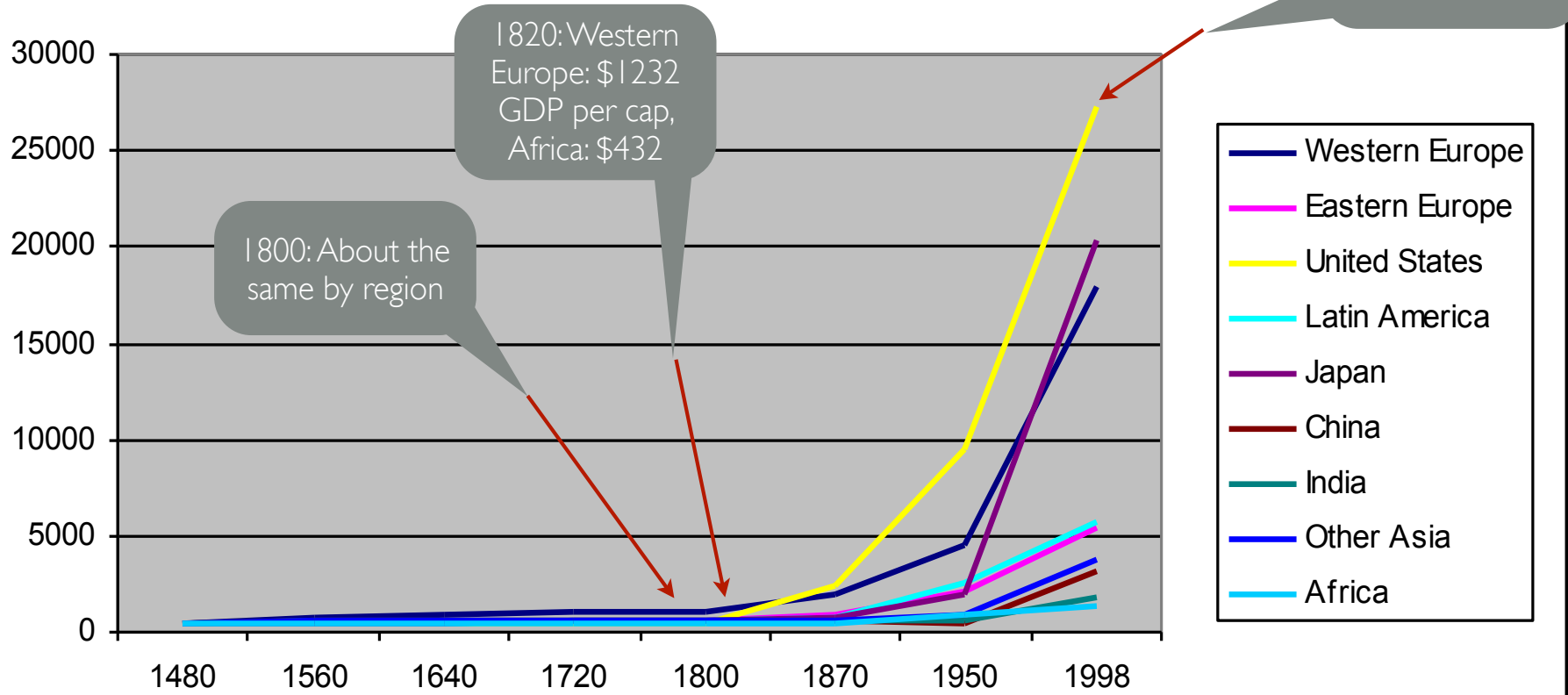
1800: About the same by region

1820: Western Europe: $1232 GDP per cap, Africa: $432

1998: USA: $27331 GDP per cap, Africa: $1368

Source: Calculated from Angus Maddison, The World Economy: A Millennial Perspective, OECD: Paris, 2001

Economic Growth | PPF | What drives growth

UNIVERSITY OF MINNESOTA
Driven to Discover℠

Miracles and Disasters

Development Miracles and Disasters

Countries in the 102-Country Data Set With Largest Changes in Relative Wealth During 1960–85 (Expressed as Factor Changes)
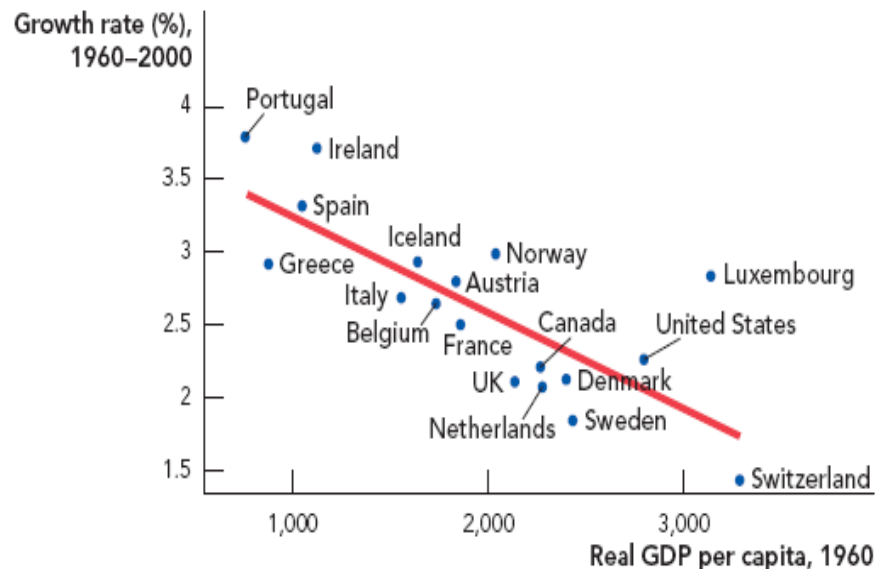
Increases		Decreases	
Country	Factor Change	Country	Factor Change
Saudi Arabia	3.32	Zambia	2.63
Lesotho	3.19	Mozambique	2.63
Taiwan	2.60	Madagascar	2.50
Hong Kong	2.59	Angola	2.38
South Korea	2.40	Chad	2.13
Egypt	2.38	Liberia	2.04
Congo	2.18	Ghana	2.00
Japan	2.10	Zaire	1.96
Singapore	2.09	Nicaragua	1.85
Syria	1.89	Afghanistan	1.75

Source of basic data: Summers and Heston 1991

Conditional Convergence The poorer the OECD country in 1960, the faster growth was between 1960–2000.

Source: Penn World Tables
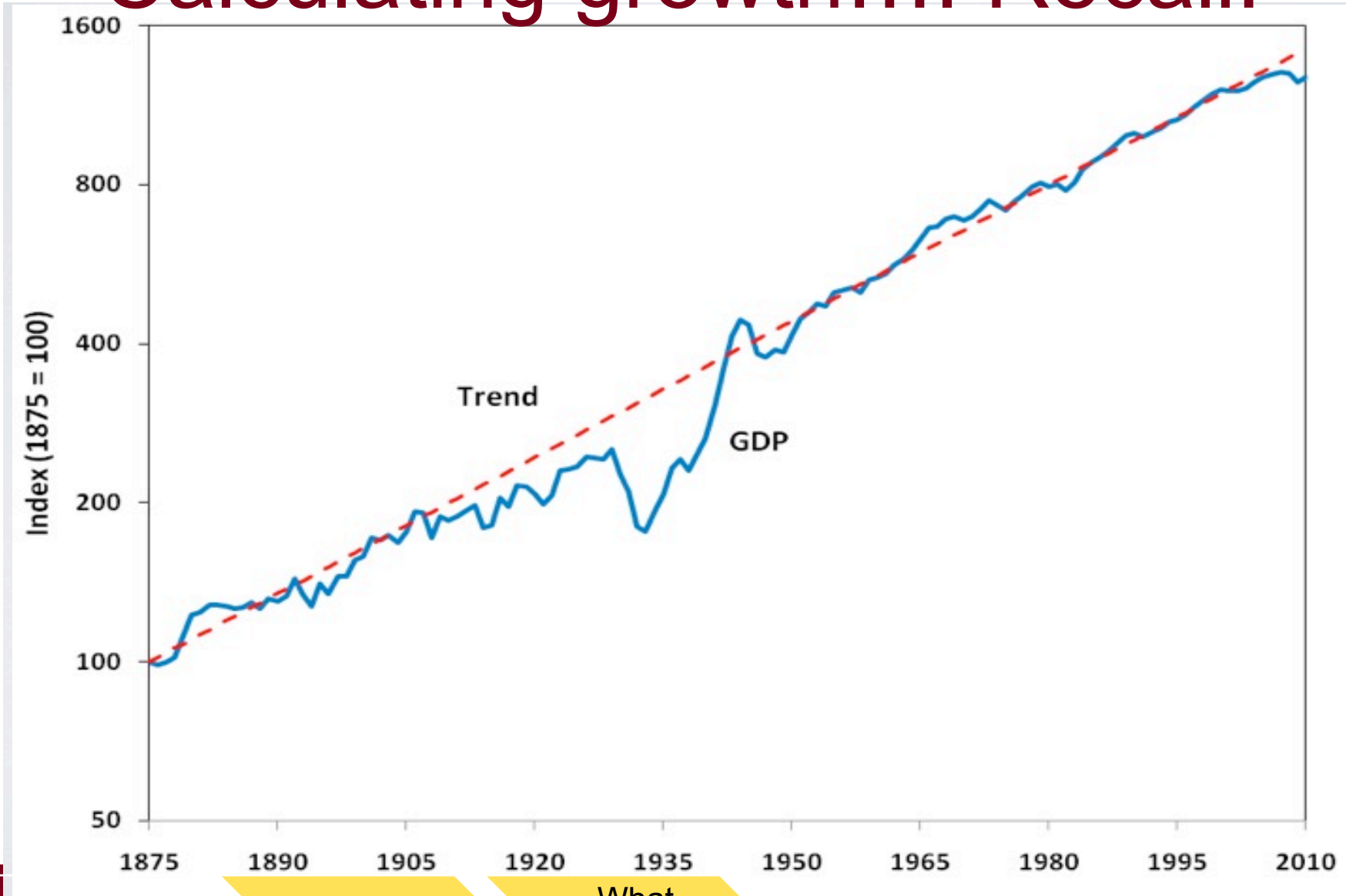Note: Data includes 18 of the 20 original OECD countries, excluding Germany and Turkey.

Calculating growth…. Recall:

What exactly is efficient production? PPF

How do we reconcile LRAS (which is a single number) with how much the economy can actually produce?

We need a way to describe this idea of efficient resource use

Data

The Production Possibilities Frontier

Plan	Robots	T-Shirts
A	0	20
B	1	18
C	3	14
D	4	8
E	5	0

Which factors drive growth?

And how important are they relative to each other?

We know that the PPF can shift

- In practice, what drives country growth?

	Capital	Labour	Technology
South Korea	51%	30%	19%
Taiwan	48%	27%	25%
Singapore	54%	26%	20%
USA	37.5%	22.5%	40%

Productivity growth in East Asian Tigers ('60-'94) versus USA ('50-'05)

- Why the difference?

UNIVERSITY OF MINNESOTA
Driven to Discover℠

Key Ideas and Things To Think About

Note: This is NOT a study guide – i.e. do not limit yourself to these items when studying

Key Ideas

- What economic growth is and how to measure it
- What characterizes Modern Economic Growth
- What was the Great Divergence?
- Issues with measurements

Key Ideas

- Calculating GDP growth
- What drives modern growth
- The production possibilities frontier
- What causes shifts in the PPF
- How important are various factors to growth?

Review

- Economic Growth is defined as growth in real GDP per capita over time

- In the period of modern growth, there have been winners and losers but everyone's wealth has expanded in absolute terms

- Growth is typically the result of production factors, technology, or demand

- Technology is the most significant factor in developed countries, capital in developing

Note: slide based on1102 sp 2012 Matt Shapiro

Things To Think About

- What can we say about economic growth if all we know is NGDP has decreased from $3 trillion to $2.5 trillion

- How do we measure inequality?

  - Inequality in wages

  - Inequality in opportunity

Things to Think About

- Do we actually always produce at the PPF?

- Where is the LR equilibrium on the PPF?

- Do you think 8% RGDP growth is sustainable forever? Why or why not? Give an example.

Things to think about

- Consider Ethiopia. If it wanted to grow, on which factor might it be best to focus (of the three we discussed). The least.