

Economic Growth and Productivity

News

Unemployment Redux

Nations Have Experienced a Substantial Rise in Living Standards Over the Last 150 Years.

Labor Productivity Accounts for a Great Deal of the Observed Increase in Living Standards.

There Are Several Factors that Contribute to Growth in Labor Productivity.

Economic Growth Entails Costs As Well As Benefits.

What Have We Learned?

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News

The New York Times

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November 6, 2009

Worker Productivity Surges; Jobless Filings Fall

By THE ASSOCIATED PRESS

WASHINGTON (AP) — Productivity surged in the third quarter at the fastest pace in six years while labor costs continued to drop, a combination that is likely to bolster companies' profits but continue to saddle workers with stagnant incomes.

The productivity news came as a second report said that the number of newly laid-off workers filing claims for unemployment benefits fell to the lowest level in 10 months.

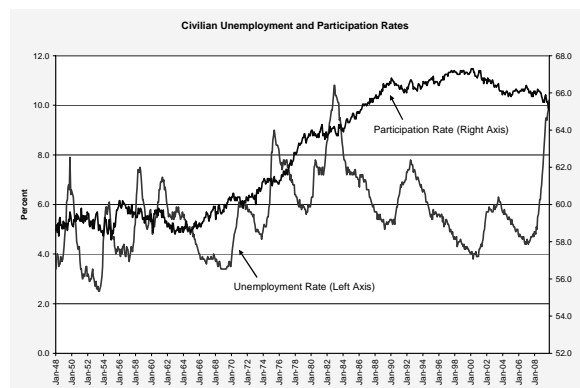
In the first report, the Labor Department says productivity, the amount of output per hour of work, was rising at an annual rate of 9.5 percent in the third quarter, much better than the 6.4 percent gain economists had expected. Unit labor costs fell at a 5.2 percent rate.

Measuring Unemployment

$$\text{Unemployment rate} = \frac{\text{unemployed}}{\text{labor force}}$$

$$\text{Participation rate} = \frac{\text{labor force}}{\text{population 16 and over}}$$

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Use Your Clickers to Answer
The Following
Graded Question.

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A rising unemployment rate may
understate the impact of a recession
on the economy because ...

- A. The unemployment rate does not typically rise in a recession.
- B. Inflation typically increases during a recession.
- C. Some workers may leave the labor force and not be reflected in the unemployment rate.
- D. The unemployment rate does not include unemployment among female workers.

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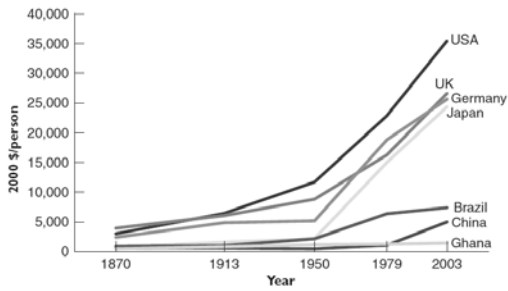
Economic Growth and Productivity

Real GDP per Person In Selected
Countries, 1870-2003 (in 2000 U.S. Dollars)

Country	1870	1913	1950	1979	2003	Annual % change 1870-2003	Annual % change 1950-2003
Australia	5,512	7,236	9,369	17,670	28,312	1.2	2.1
Canada	2,328	5,509	8,906	19,882	29,201	1.9	2.3
France	2,291	4,484	6,164	18,138	26,176	1.8	2.8
Germany	1,152	2,218	4,785	17,222	25,271	2.3	3.2
Italy	2,852	4,018	5,128	16,912	25,458	1.7	3.1
Japan	931	1,763	2,141	16,329	26,636	2.6	4.9
United Kingdom	3,892	5,976	8,709	16,557	26,852	1.5	2.1
United States	2,887	6,852	12,110	22,835	35,488	1.9	2.0

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Real GDP per Person, 1870-2003 (in 2000 US Dollars)

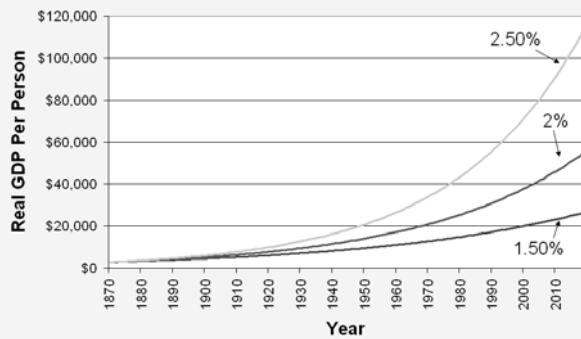


Growth is a Compounding Process

The growth path of real GDP in industrialized nations is exponential.

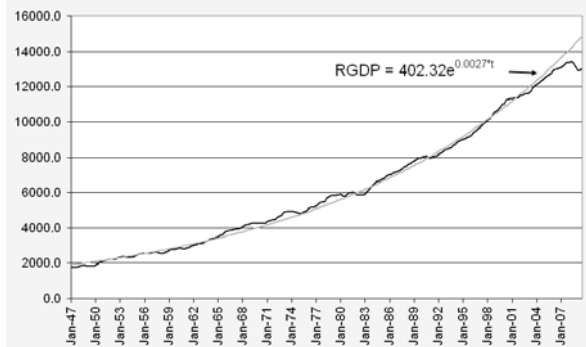
Small differences in exponential growth rates make for big eventual differences in real GDP.

Small Changes in Growth Rates Matter A Great Deal



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US Real GDP Grows Exponentially

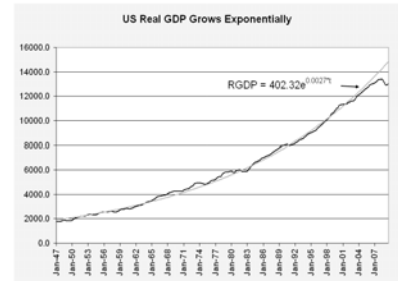


Use Your Clicker To Answer The Following Graded Question.

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The average annual growth rate of US real GDP between 1947 and 2009 is about _____ per cent. In the past year the growth rate of real GDP has been _____ than average.

- A. 1, less
- B. 1/4, less
- C. 1, greater
- D. 1/4, greater



What Determines the Growth Rate?

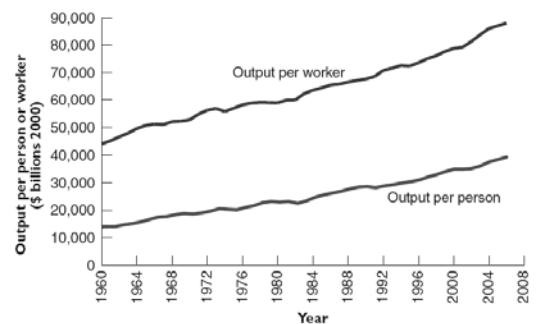
Let $Y = \text{Real GDP}$
 $N = \text{Number of Workers}$
 $P = \text{Population}$

$$\frac{Y}{POP} = \frac{Y}{N} \times \frac{N}{POP}$$

Output per capita depends on labor productivity and the fraction of the population that works.

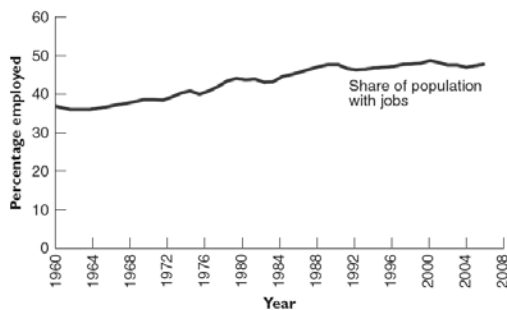
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Growth in Labor Productivity Accounts for Most Growth in Output Per Capita.



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Increases in the Participation Rate Account for Some Growth in Output per Capita.



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Increases in Labor Productivity Can Be Accounted for by...

- Increases in the quality and quantity of physical capital that workers use.
- Increases in human capital that help workers work smarter.
- Using more land and other natural resources in the production process.
- Advances in technology and inventions.

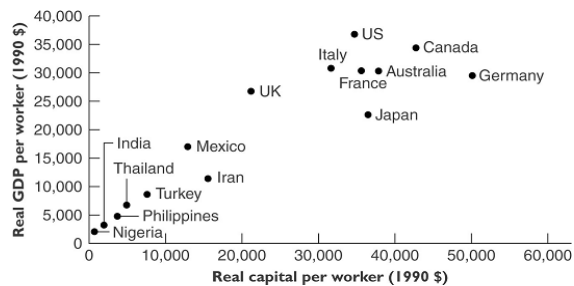
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Increases in Labor Productivity also are Promoted by ...

- Increases in the quality of entrepreneurship and management and
- A Political and Legal Environment compatible with growth.

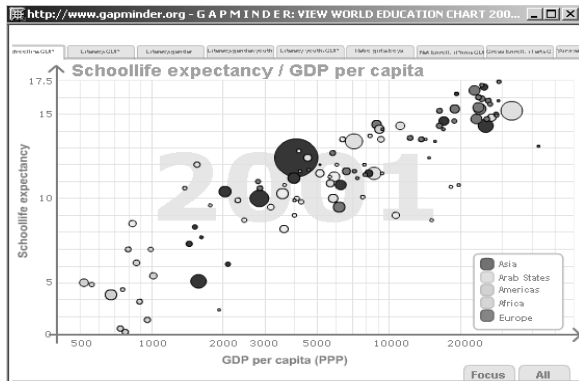
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There are Large National Differences In Capital Available to Workers



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There Are Large National Differences In Education



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Graded Questions.

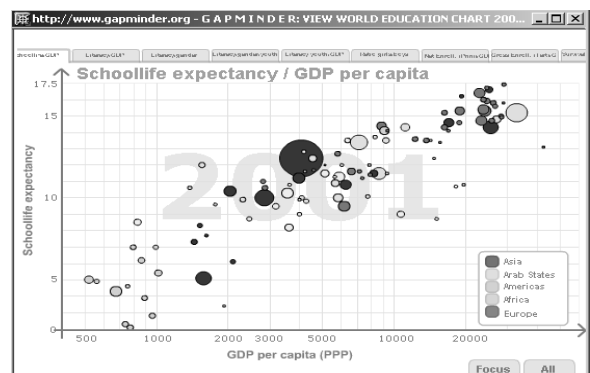
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In accounting for growth in US
output per capita...

- A. Growth in labor productivity is more important.
- B. Growth in the fraction of the population is more important.
- C. Neither labor productivity nor changes in the willingness to work are important.
- D. Growth in labor productivity and in the fraction of the population that works are equally important.

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There Are Important National Differences In Education



Which conclusion is supported by the Education Graph?

- A. There is a positive relationship between education and output in the West but not in Asia.
- B. More education seems to detract from productivity by delaying the arrival of young persons to the job market.
- C. There is no relationship between education and output per capita.
- D. There is a positive relationship between education and output in the nations of the world.

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Improvements in Entrepreneurship Can Boost Labor Productivity

Entrepreneurship is the willingness to undertake new ventures and start new businesses.

Entrepreneurship is the “search for surplus creating activities.

Whether an economy promotes or frustrates entrepreneurship depends on...

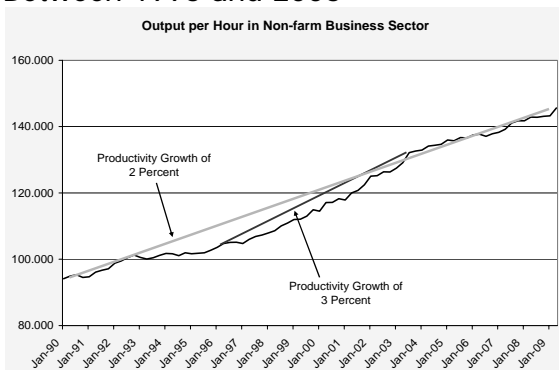
- Tax rates and tax policies

- Regulation of business activities

- Social Customs favoring or disfavoring entrepreneurship.

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Productivity Grew at A Very Rapid Rate Between 1996 and 2006



What accounted for the Rapid Rise in Productivity in 1996-2006?

In that 10 year period, labor productivity grew at a rate of 2.9 percent per year.

Productivity growth was been strongest in industries that use information and communication technologies.

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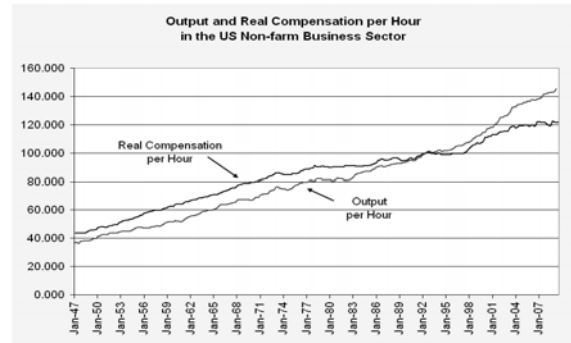
Recent Productivity Concerns

Productivity growth appears to be returning to more normal rates.

Not all workers are participating in the benefits of productivity growth.

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Real Wages Have Grown Along with Productivity



Economic Growth Has Costs

Creating physical and human capital uses resources that could be used to produce consumer goods.

The growth process may entail externalities.

Some believe that rising income inequality is a cost of growth.

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Inequality and Growth Question

In 1989, the poorest one fifth of US families earned \$16,003 or less and the richest one fifth of families earned \$59,551 or more. The shape of the US income distribution is about the same today.

If you were a poor person, what sort of nation would you prefer?

Option 1: A nation where real GDP per capita grew at the rate of 2.0 percent per year and the income distribution was the same as described above.

Option 2: A nation where real GDP per capita grew at a rate of 1.0 percent per year and the income distribution was more equal (say the first quintile earned 60 percent of what the fifth quintile earned).

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Activities that Produce Growth,
Should Be Undertaken
Only if the
Benefits Outweigh the Costs.

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Policies that Promote Growth

Policies to Increase Human Capital

Head Start

Free and High Quality Public Education

College Loan and Grant Programs

Policies that Promote Saving and Investment

Interest Retirement Accounts

Reducing tax rates on dividends and capital gains

Public Investment

Policies that Support Research and Development

National Science Foundation Grants

Patent and Copyright Laws

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What Have We Learned?

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Economic Growth and Productivity

Nations Have Experienced a Substantial Rise in
Living Standards Over the Last 150 Years.

Labor Productivity Plays a Crucial Role in the
Growth Process.

There Are Several Factors that Contribute to
Growth in Labor Productivity.

Economic Growth Entails Costs As Well As
Benefits.

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