



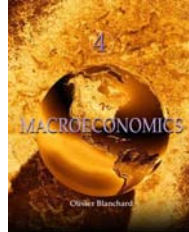
Business Conditions Analysis

ECON 736

Professor Yamin Ahmad

Lecture 2:

- Business Cycle Facts



In This Lecture...

Business Cycle Facts

- Co-movements of variables with output gap
- Cyclical behavior
 - Procyclical
 - Countercyclical
 - Acyclical

Note: These lecture notes are incomplete without having attended lectures



The Business Cycle

What is a **Business Cycle**?

- The business cycle is the periodic but irregular up-and-down movement in production and jobs.

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The Business Cycle

- The NBER defines the phases and turning points of the business cycle as follows:
 - A **recession** is a significant decline in activity spread across the economy, lasting more than a few months, visible in industrial production, employment, real income, and wholesale-retail trade.
 - A recession begins just after the economy reaches a **peak** of activity and ends as the economy reaches its **trough**. Between trough and peak, the economy is in an **expansion**.

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Economic Growth and Fluctuations

Every business cycle has two phases:

1. A recession
2. An expansion

and two turning points:

1. A peak
2. A trough

- A **recession** is a period during which real GDP decreases for at least two successive quarters.
- An **expansion** is a period during which real GDP increases.

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Economic Growth and Fluctuations

- Economic Growth in the United States

➢ Figure 1 shows real GDP in the United States from 1962 to 2002.

- The figure highlights:

- Fluctuations of real GDP
- Smoother growth of potential GDP



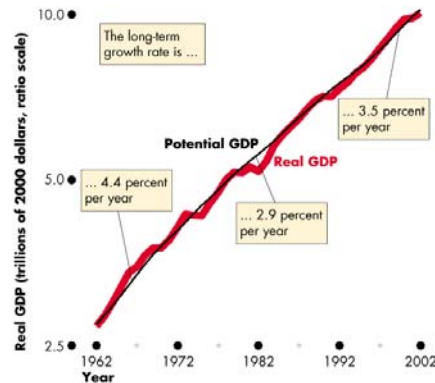
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Economic Growth and Fluctuations

- **Potential GDP** is the value of real GDP when all the economy's labour, capital, land, and entrepreneurial ability are fully employed.

- During the 1970s and early 1980s, real GDP growth slowed—a **productivity growth slowdown**.

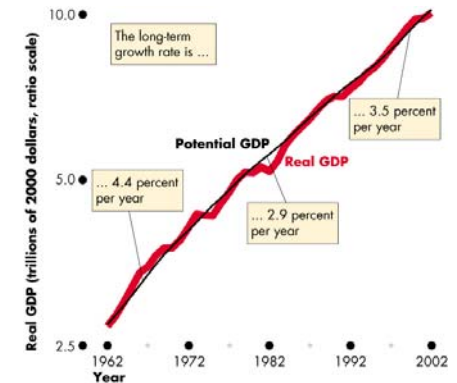


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Economic Growth and Fluctuations

- Real GDP fluctuates around potential GDP in a **business cycle**—a periodic but irregular up-and-down movement in production.

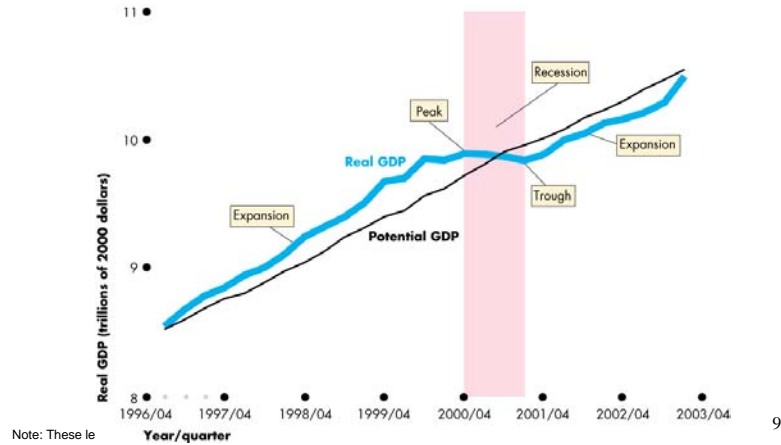


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Economic Growth and Fluctuations

- This figure shows the most recent U.S. cycle.

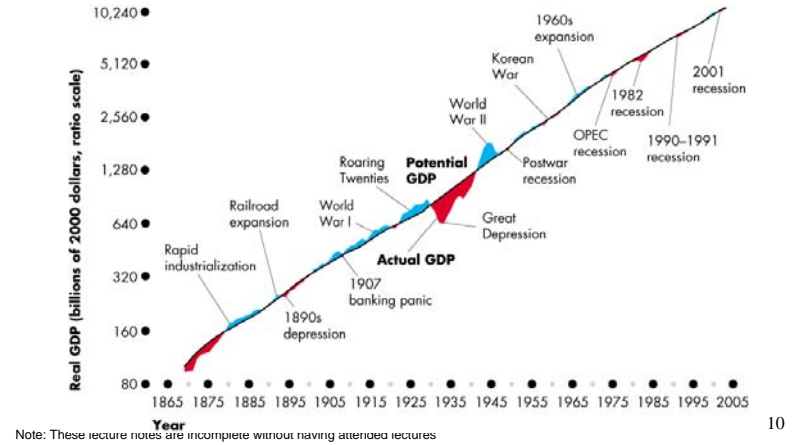


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Economic Growth and Fluctuations

- This figure shows the long-term growth trend and cycles



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Some Facts about the Business Cycle

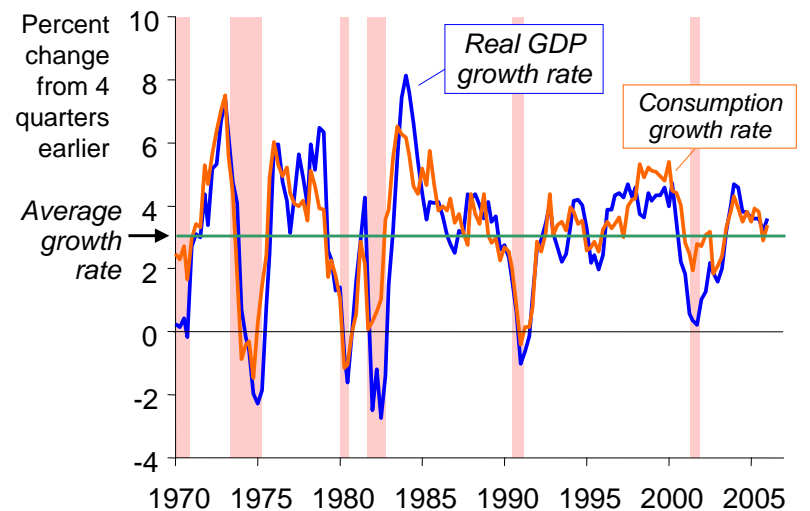
- GDP growth averages 3–3.5 percent per year over the long run with large fluctuations in the short run.
- Consumption and investment fluctuate with GDP, but consumption tends to be less volatile and investment more volatile than GDP.
 - Correlation of consumption and the output gap: 0.998
 - Correlation of investment and the output gap: 0.989
- Unemployment rises during recessions and falls during expansions.
 - Correlation of unemployment and GDP is approx -0.67
- Okun's Law:** the negative relationship between GDP and unemployment.

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Growth rates of Real GDP, Consumption

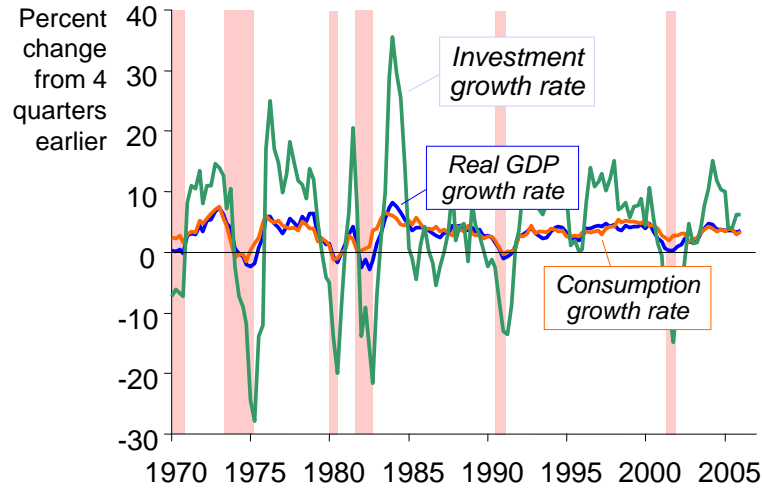


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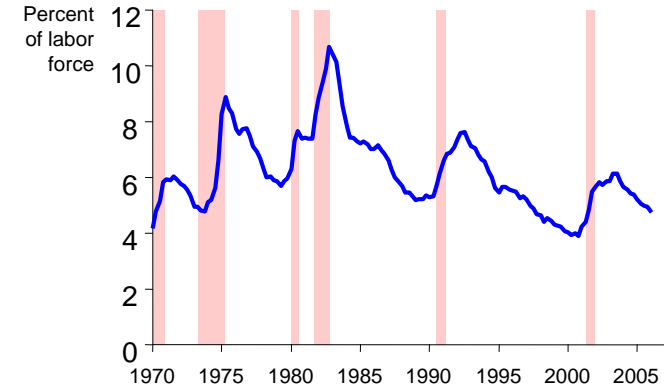
Growth rates of Real GDP, Consumption, Investment



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Unemployment



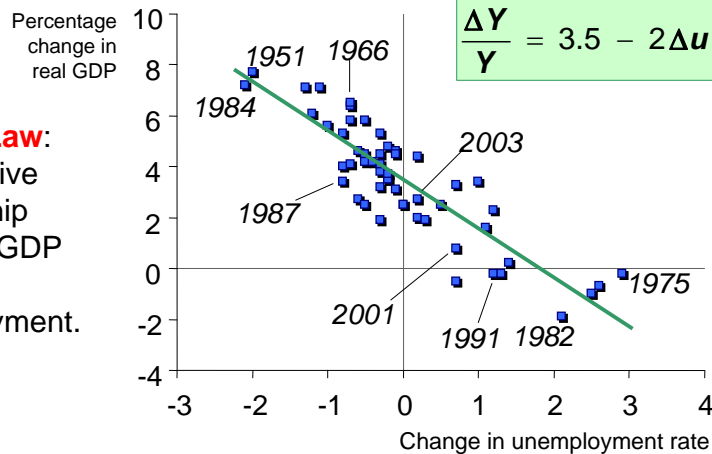
- Unemployment rises in recessions and falls in expansions
- Unemployment rate is a lagging indicator

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Okun's Law

- **Okun's Law:** the negative relationship between GDP and unemployment.

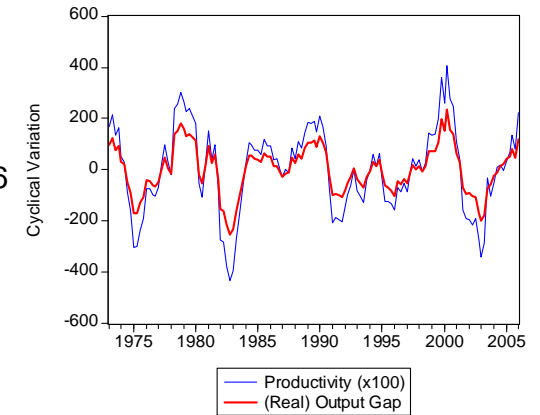


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Output Gap and Productivity

- The correlation between productivity and real GDP is approximately 0.9996
- This indicates that productivity is highly procyclical



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Business Cycle Facts (Quantities)

1. Output movements persist (but not periodic)
2. Industries move together
3. Consumption, Investment and Imports are procyclical
 - they move with the business cycle and this is highlighted by positive correlations
4. Unemployment is countercyclical, but productivity is procyclical

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Business Cycle Facts (Prices)

5. Prices/Inflation is procyclical.
6. Real wages are acyclical or mildly procyclical.
7. Short term interest rates are procyclical.
8. Money and velocity are procyclical.

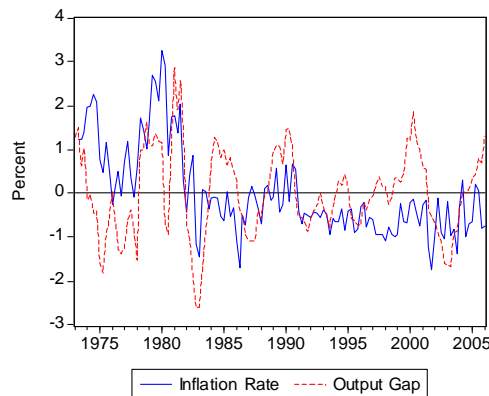
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Output Gap and Inflation

- The correlation between the CPI and GDP is 0.979.
- The correlation between inflation and GDP is approximately 0.301.
- This indicates that prices are highly procyclical, whilst inflation is mildly procyclical



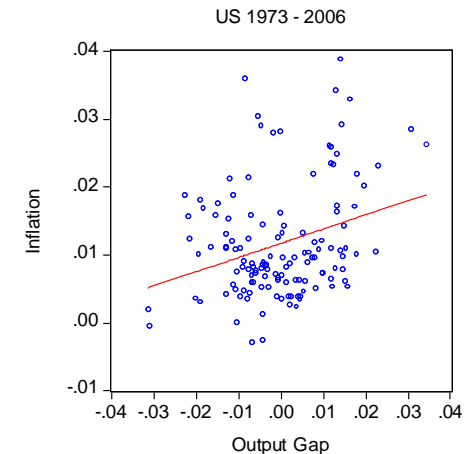
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Inflation v. Output Gap

- This scatter plot highlights the positive relationship observed between inflation and the output gap.
- The bigger output is (above potential), the greater the amount of inflation!



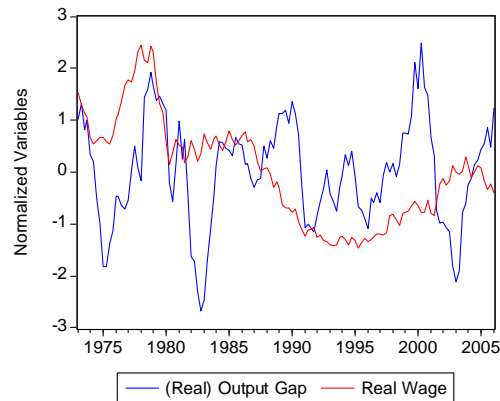
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Output Gap and Real Wage

- The correlation between real wages and real GDP is approximately 0.124
- This indicates that real wages are acyclical (– i.e. that they are independent of the business cycle) or at best, very mildly procyclical.

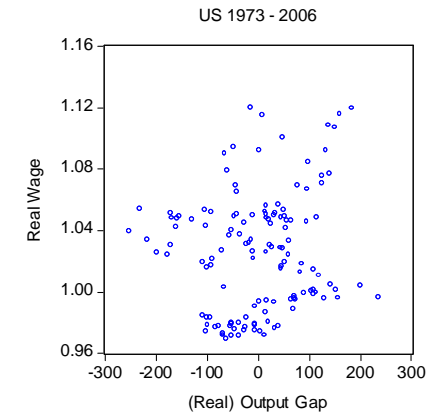


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Real Wage v. Output Gap

- This scatter plot highlights the lack of a relationship between real wages and the output gap.
- It is not possible to figure out which direction the line of best fit should go!

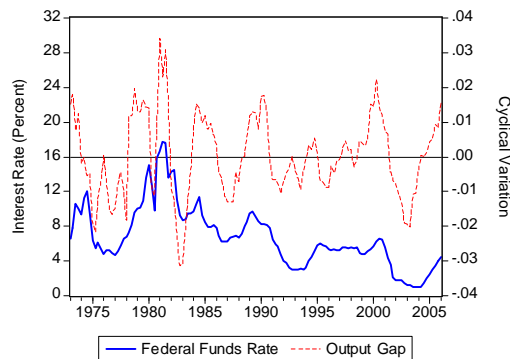


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Output Gap and Short Interest Rate

- The correlation between short term interest rates and GDP is approximately 0.401
- This indicates that nominal interest rates are procyclical

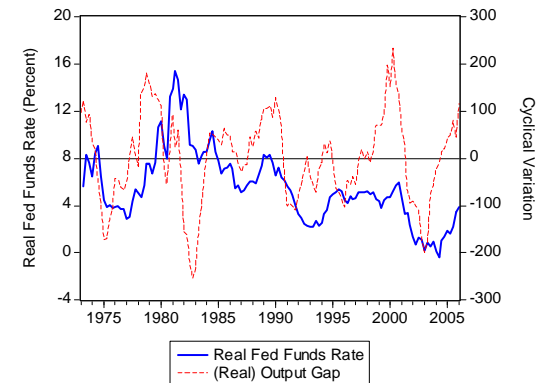


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Output Gap and Real Short Interest Rate

- The correlation between short term interest rates and Real GDP is approximately 0.384
- This indicates that real interest rates are (mildly) procyclical



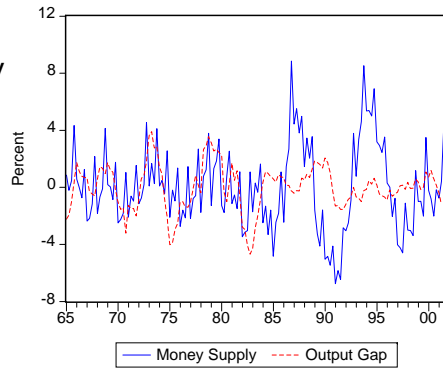
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Output Gap and Money Supply

US 1965-2001

- The correlation between money supply and GDP is approximately 0.967
- This indicates that the money supply is highly procyclical



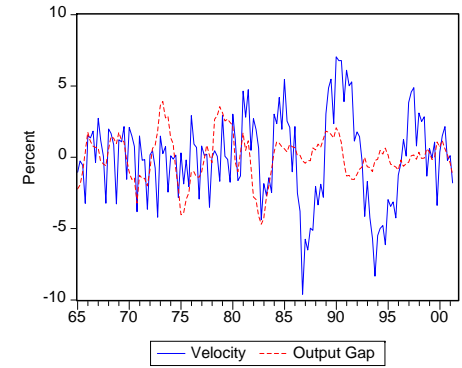
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Output Gap and Velocity

US 1965-2001

- The correlation between velocity and GDP is approximately 0.826
- This indicates that velocity is highly procyclical



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