
- Introduction to Business Cycles
- What causes recessions?
- Labor markets
- Unemployment

What is the Business Cycle?

- The business cycle describes medium term fluctuations in the level of economic activity (GDP) around a long term trend

- The business cycle can only be understood starting from a measure of the long-term trend of the economy (Session 4).

- The business cycle is an aggregate phenomenon. Most sectors, most variable are well described by the business cycle.
How do we measure potential output?

1. Using statistical analysis and measuring the trend of real GDP.

2. Using a model that combines factors of production (labor, capital) and productivity to measure the potential of the economy if all factors are employed.

In both cases, actual output is seen as fluctuating around potential output (not just below). The difference between the two is what we call the output gap.
Output Gap

% Difference between GDP and Potential (Trend) GDP
100*(Actual – Potential)/Potential

Germany
Japan
United Kingdom
United States

Measurement and Definitions

Expansion
Peak
Recession
Trough
Historical Record: The US Business Cycles

Average duration of expansions:
- 29 months
- 50 months

Average duration of recessions:
- 21 months
- 11 months
**Historical Record: The US Business Cycles**

US GDP Growth

**Historical Record: The Euro Business Cycles**

Euro Area GDP Growth
Historical Record: The Korean Business Cycles

Korea GDP Growth


The “Great Recession”: 2008-2009

World GDP Growth

Expansions always end because of an unexpected event (good luck forecasting them!) or because of accumulation of imbalances (or a combination of both).

In the post-war period recessions have been relatively short and mild – from 6 to 16 months (in advanced economies).

Their length and frequency has been going down over time (“The Great Moderation”).
How long can imbalances persist?

“How do we know when irrational exuberance has unduly escalated asset values?”

Alan Greenspan (Chairman US Federal Reserve)
December 6, 1996
How long can imbalances persist?

Dow Jones Index

Source: Robert Shiller

How long can imbalances persist?

US Stock Market Price-Earnings Ratio

Source: Robert Shiller
How long can imbalances persist?

House Prices (US) adjusted for Inflation

Index 1890=100

Year

1880 1900 1920 1940 1960 1980 2000 2020

Source: Robert Shiller

The difficulty of predicting how long imbalances can persist

November 17th 2009, CNBC:

“While not being comfortable with the current gold trade, Dennis Gartman, founder of The Gartman Letter, told CNBC Monday that the price of the precious metal will “continue to go up until it stops …It is a gold bubble,” Gartman told CNBC. He called the trade on gold “mind boggling,” but also said he is currently long — or betting gold will go higher.”
Summary of Business Cycles

- Business cycles are characterized by co-movements of a large number of macroeconomic series.
- On the basis of these movements we determine the state of the cycle – recessions, expansions, and the turning points.
- The nature of the business cycle has changed over time – in the 1980-2007 period recessions were shorter and milder and expansions are longer than fifty years ago.
- A possible candidate to explain business cycles is exogenous shocks. These shocks are transmitted throughout the economy by various propagation mechanisms.
- An alternative view is that we build imbalances over time until a correction is needed.

Characterizing Labor Markets

- The utilization of labor resources can be summarized with the following variables:
  - Participation rate: It measures how active the working-age population is. Some times discouraged unemployed will not appear in the statistics on unemployment but will show up as out of the labor force.
  - Unemployment rate (=100-Employment rate). It measures the % of active workers who do not have a job.
  - Number of hours worked. A measure of the intensity of effort for those who have a job (also reflects the part-time/full-time choices).

Population: 64.9m

- Not working age 35%
- Working age (15-64): 42.1m
- Labor force: 29.9m
- Employed 90.8%
- Unemployed 9.2%

Assignments

Working-Age Population as % of Total

- South Africa: 65
- Singapore: 67
- New Zealand: 67
- Mexico: 68
- Lebanon: 68
- Japan: 68
- India: 69
- Greece: 69
- France: 72
- Egypt: 72
- China: 74
- Canada: 74
- Bulgaria: 74
- Brazil: 74
- Australia: 74

2010
Assignment

Labor Force Participation

<table>
<thead>
<tr>
<th>Country</th>
<th>2008</th>
<th>2008 (India for 2004)</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Africa</td>
<td>52</td>
<td>23.8</td>
</tr>
<tr>
<td>Singapore</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td>New Zealand</td>
<td>68</td>
<td></td>
</tr>
<tr>
<td>Mexico</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>Lebanon</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>57</td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>Greece</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>Egypt</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td>Bulgaria</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>66</td>
<td></td>
</tr>
</tbody>
</table>

Assignment

Unemployment

<table>
<thead>
<tr>
<th>Country</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Africa</td>
<td>5.9</td>
</tr>
<tr>
<td>Singapore</td>
<td>6.1</td>
</tr>
<tr>
<td>New Zealand</td>
<td>5.2</td>
</tr>
<tr>
<td>Mexico</td>
<td>5.0</td>
</tr>
<tr>
<td>Lebanon</td>
<td>5.0</td>
</tr>
<tr>
<td>Japan</td>
<td>4.4</td>
</tr>
<tr>
<td>India</td>
<td>4.3</td>
</tr>
<tr>
<td>Greece</td>
<td>5.0</td>
</tr>
<tr>
<td>France</td>
<td>8.3</td>
</tr>
<tr>
<td>Egypt</td>
<td>8.3</td>
</tr>
<tr>
<td>China</td>
<td>8.3</td>
</tr>
<tr>
<td>Canada</td>
<td>8.3</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>8.3</td>
</tr>
<tr>
<td>Brazil</td>
<td>8.3</td>
</tr>
<tr>
<td>Australia</td>
<td>8.3</td>
</tr>
</tbody>
</table>
Differences in Labor Markets

A detailed analysis of labor force participation rates in Europe reveals very different patterns. Some European countries display lower participation rates especially for older and younger workers.

<table>
<thead>
<tr>
<th>Labor Force Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
</tr>
<tr>
<td>USA</td>
</tr>
<tr>
<td>EU15</td>
</tr>
</tbody>
</table>

Employment to Population (2010)

Age 55-64
Employment (to Population) Rate

Differences in Labor Markets: Europe versus the US

Average Number of Hours per Year

Macroeconomics in the Global Economy
Antonio Fatás
The destruction of employment in the US during the current crisis has been much larger than in previous. As a result Europe has caught up with the US along some labor market dimensions.

Differences in Labor Markets


<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>70.9</td>
<td>76.4</td>
<td>65.5</td>
</tr>
<tr>
<td>Japan</td>
<td>70.7</td>
<td>81.6</td>
<td>59.7</td>
</tr>
<tr>
<td>France</td>
<td>64.6</td>
<td>69.2</td>
<td>60.1</td>
</tr>
<tr>
<td>Poland</td>
<td>59.2</td>
<td>66.3</td>
<td>52.4</td>
</tr>
<tr>
<td>Mexico</td>
<td>59.9</td>
<td>80.7</td>
<td>41.4</td>
</tr>
<tr>
<td>Korea</td>
<td>63.8</td>
<td>74.4</td>
<td>53.2</td>
</tr>
<tr>
<td>Sweden</td>
<td>75.7</td>
<td>78.1</td>
<td>73.2</td>
</tr>
<tr>
<td>Turkey</td>
<td>44.9</td>
<td>66.6</td>
<td>23.3</td>
</tr>
</tbody>
</table>

There are large differences in the level of activity in labor markets across countries. Emerging markets tend to have lower employment to population ratios, more so for female workers.
Unemployment

- Unemployment is the most common definition of the slack in the labor market. It is measured as the number of unemployed divided by the labor force. From a conceptual point of view, it is useful to distinguish between:

  - **Cyclical unemployment**: Unemployment that responds to changes in the business cycle. Unemployment increases during recessions and decreases during booms.

  - **Natural Rate of Unemployment (structural unemployment)**: This is the unemployment that originates in the fact that “full employment” is impossible. There are always workers in a transition from one job to another. This unemployment is related to the structure and functioning of the labor market, the search process.

What is the Natural Rate of Unemployment?

- There are flows out of employment
  - Sectoral or geographical shifts
    - Changes in the composition of demand
    - Technological changes
  - Bad matches between companies and workers

- It takes time to find a job once unemployed because of
  - Search – **Frictional** unemployment
  - Rigidities (for example, wage rigidities, minimum wages, taxes on labor) – **Structural** unemployment
A comparison between Europe, Japan and the US illustrates how different labor market institutions can lead to differences in performance: Since early 80’s, the EU has suffered from high rates of unemployment. Some of it has been labelled as structural.
Summary of Labor Markets

- In the absence of rigidities, **real wage** and **employment** in the economy is determined by labor supply factors and labor demand.

- **Labor demand** is determined by the real wage, productivity, and the availability of capital.

- The supply of labor is affected by the real wage, demographics, participation rate, wealth, taxes, and the expected future wage.

- The natural rate of **unemployment** characterizes the long-run equilibrium rate of unemployment and is affected by the job search process and structural rigidities.

- Cyclical unemployment is the result of business cycles.

Appendix: Does Technological Progress Lead to Unemployment?

There is no reason why technological progress should lead to unemployment (in fact the evidence shows the opposite correlation). This is only true under the (false) assumption that the number of jobs is limited or that there is a limit to how fast GDP can grow. Both of these variables (number of jobs and GDP growth) are endogenous!

(*) Productivity is measured as labor productivity of the business sector. All data are averages over the years indicated in the labels. J stands for Japan, US for the United States and EU for European Union.
Appendix: Great Moderation

- After inflation was brought down in the early 80s, we entered a period of stability in both inflation and growth rates known as “The Great Moderation”.

- The Great Moderation was the result of improved policies and an element of luck (absence of major economic shocks).

Appendix: The Great Moderation, US
Appendix: The Great Moderation, France

Appendix: The Great Moderation, New Zealand