Chapter 3 Topics

• Regularities in GDP fluctuations.
• Comovement
• Behavior of Key Macroeconomic Variables.
Regularities in GDP Fluctuations

- Business Cycles are fluctuations about trend in real GDP.
- The turning points in the deviations of real GDP from trend are peaks and troughs.
- Persistent positive deviations from trend are booms and persistent negative deviations from trend are recessions.
Figure 3.1
Idealized Business Cycles

[Diagram showing a line graph with axes labeled Real GDP on the vertical axis and Time on the horizontal axis. The graph includes a line representing the trend, labeled Peak, Amplitude, and Trough.]

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Deviations From Trend in Real GDP are Irregular

- The fluctuations in GDP about trend are quite choppy.
- There is no regularity in the amplitude of fluctuations in real GDP about trend.
- There is no regularity in the frequency of fluctuations in real GDP about trend.
Figure 3.2
Percentage Deviations from Trend in Real GDP
Figure 3.3
Time Series Plots of $x$ and $y$
Figure 3.4
Correlations Between Variables $y$ and $x$
Correlation with Real GDP

- If the deviations from trend in a macroeconomic variable are positively (negatively) correlated with the deviations from trend in real GDP, then that variable is *procyclical* (*countercyclical*).
- If a macroeconomic variable is neither procyclical nor countercyclical, it is *acyclical*.
Figure 3.5
Imports and GDP
Figure 3.6
Scatter Plot of Imports and GDP
Figure 3.7
Leading and Lagging Variables

(a) \( x \) is a leading variable

(b) \( y \) is a lagging variable
Figure 3.8
Percentage Deviations in Real GDP and Housing Starts
Figure 3.9
Percentage Deviations from Trend in Real Consumption and Real GDP
Figure 3.10
Percentage Deviations from Trend in Real Investment and Real GDP
Figure 3.14
Percentage Deviations from Trend in Employment and Real GDP
Figure 3.15
Jobless Recoveries
Figure 3.16
Percentage Deviations from Trend in Average Labor Productivity and Real GDP
Table 3.1
Correlation Coefficients and Variability of Percentage Deviations from Trend

<table>
<thead>
<tr>
<th>Description</th>
<th>Correlation Coefficient</th>
<th>Standard Deviation (% of S.D. of GDP)</th>
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<tr>
<td>Consumption</td>
<td>0.78</td>
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<td>Investment</td>
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<td>Employment</td>
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<td>Average Labor Productivity</td>
<td>0.80</td>
<td>62.4</td>
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Table 3.2  Summary of Business Cycle Facts

<table>
<thead>
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<th></th>
<th>Cyclicality</th>
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<th>Variation Relative to GDP</th>
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<tbody>
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<td>?</td>
</tr>
<tr>
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