Chapter 39: The business cycle (2.1)

Recession is when your neighbour loses his job. Depression is when you lose yours. And recovery is when Jimmy Carter loses his. (Ronald Reagan during 1980 presidential campaign)

- **Short term fluctuations and long term trend – phases of the cycle**
  - Explain, using a business cycle diagram, that economies typically tend to go through a cyclical pattern characterized by the phases of the business cycle.
  - Explain the long-term growth trend in the business cycle diagram.
  - Distinguish between a decrease in GDP and a decrease in GDP growth.

There should be no difficulties for you in finding your way through figure 3.3.12. The long run trend (potential real GDP) is upward sloping and in keeping with empirical evidence which suggests a long run trend of around 1.5 to 3.5% yearly growth. (Yet note that the cycles are highly stylised.) The cycle is discernible as reoccurring expansions and contractions. Economic activity – measured by real GDP – at its lowest point is called a 'trough', followed by 'recovery', 'boom' and 'peak'. When economic activity slows and then falls over a period of time, one speaks of 'recession'. When the bottom of the cycle is reached once more a cycle has been completed – which is also measured as the time periods from peak to peak.

**Figure: 3.3.12 Business cycle**
The cycle in figure 3.3.12 also shows the difference between potential and actual output in the output gaps. The output gap is defined as actual real GDP minus potential GDP, and one therefore speaks of negative output gaps when de facto real GDP is lower than potential and positive output gaps when real GDP is higher than long run potential. Over the cycle, the components of aggregate demand and variables within the main macro objectives will be affected in many ways. Here is a general outline:

**Trough:** This phase is marked by overall low economic activity (compared with earlier periods) and increased unemployment, as firms lower output and workers are made redundant (= laid off). Lower incomes will decrease consumption expenditure in the economy and there will be low (-er) inflationary pressure. In general, the period is one of low consumption, low investment and also low imports which will be affected by the fall in both consumption and investment. Lower government tax revenues coupled with high transfer payments (unemployment and social benefits for example) often lead to budget deficits for governments (see also Chapter 57 and “automatic stabilisers).

**Recovery:** When the economy picks up, i.e. output increases due to demand and/or supply variables, GDP increases, unemployment falls and consumption, investment and imports rise. The period is commonly associated with an increase in inflation and rising interest rates.

**Boom/peak:** When growth rates increase over shorter time periods, the economy can ‘overheat’. Firms are nearing capacity, labour markets are tight (i.e. labour is becoming scarce due to output levels beyond the full employment level) and wage levels are increasing and so feeding inflation. Consumption, investment and imports are increasing – as are tax revenues. There are often speculative bubbles during this phase, as high inflation induces increased demand and subsequent speculation for items considered to be good value-retainers; land, property and shares are examples herein.

**Recession:** When, for any number of reasons, economic activity abates (= grows less) to the point where real GDP actually falls, one speaks of recession. Firms will lower investment and output while seeking to rid themselves of labour no longer needed. Households will be affected by rising unemployment and
decrease consumption and thereby also imports. Government tax revenues fall and transfer payments rise. Inflation rates decrease as do interest rates. (In fact there might be deflation; falling prices.)

<table>
<thead>
<tr>
<th>Definitions: Inflation, Deflation, and Recession</th>
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<tr>
<td>• <strong>Inflation</strong> is defined as a sustained general increase in the average price level and measured by the change in CPI.</td>
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<tr>
<td>• <strong>Deflation</strong> is a sustained general decrease in the average price level.</td>
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<tr>
<td>• <strong>Recession</strong> is when an economy experiences two consecutive quarters (six months) of falling real GDP. (This can in fact not be seen in figure 3.3.12 since there is no actual time line showing the months.)</td>
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It is worthy of noting that the long term trend is by no means “set in stone” – in other words, it too can change. The US economy showed a long term growth rate of 2.44% between 1928 and 1972, slowing to 1.93% from 1972 to 2007.¹

**Decrease in growth and decrease in growth rate**

One common mistake seen in many an exam paper is when students fail to clearly distinguish between decreasing growth (e.g. negative growth) and a decrease in the rate of growth. In figure 3.3.12, the period just before the “peak” is characterised by a slower rate of growth – the slope of the business cycle curve falls. (Rory; check my “math-speak” here.) The period from t₁ to t₂ shows a slower rate of growth while t₂ to t₃ shows a decrease in growth. During the period 2006 to 2007, the US growth rate (in GDP terms) fell from 2.7% to 1.9% - a fall in the rate of growth. During the economic crisis of 2008 and 2009, US growth went from 0% in 2008 to a low of -3.5% in 2009 – e.g. the US economy contracted by 3.5% during 2009.²

**(Type 4 Smaller heading) Causes of cyclical variations seen in the business cycle**

Perhaps the main question in business cycle economics is what causes the changes in economic activity. The simple answer is that there is no single dominant theory able to explain the fluctuations fully. A rather unsatisfactory answer is that when aggregate demand or aggregate supply change, then GDP is affected and so too is the business cycle. A far more complex – and imprecise – answer deals with the array of underlying variables which in turn influence the components of aggregate demand and the influences on aggregate supply. We will cover some of the main cyclical variables in using the AS-AD model in Chapters 41 and 42.

A question I invariably get at this stage shows not only insight but an intuitive feel for economic relationships; how do we know what the potential real GDP trend line looks like over longer periods of time? The answer is that it is impossible to set a precise value for the long run trend of output in the economy. A trend over time can be calculated by adapting a trend line which removes cyclical variations to a series of GDP values over time. Without beating you over the head with mathematical computations – that is best left to your maths teacher – the method basically takes real GDP values and plots them over a given time period. Then a line of best fit is adapted to give the long run trend line.³ One of the main goals in business cycle research is identifying key turning points, i.e. the troughs and peaks, over the longer term, in order to adjust monetary and fiscal policies correctly. This has met with limited success so far and

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¹ “Why one economist predicts slow growth”; Business Week, 30th September 2010
² [www.data.worldbank.org/indicator](http://www.data.worldbank.org/indicator)
³ In fact, the trend will often be exponential since the ‘interest upon interest’ effect exists. The trend line is therefore in most cases a log value against the Y-axis. Pester your math teacher for details. Don’t give him/her my email address.
economics is still far better at predicting where we’ve been (on the business cycle) than where we are – or indeed, where we are heading.
Perhaps the most closely watched of all indicators of economic activity are those that seem to precede changes in real output, since such variables would have strong predictive value. Key indicators (all pro-cyclical) are inventory levels (as firms build up stocks in anticipation of increased demand), stock market index, new car sales, consumer confidence (survey-based), initial claims for unemployment benefits, price of raw materials and new orders levels to firms. These are often weighted, indexed and used to construct a composite index of leading indicators which is closely followed by firms and policy makers alike. (Note the element of ‘nonsense correlation’ (see Section 1, page ??) herein. Increased sales of new cars do not cause GDP to increase, but serve instead as an indicator of far more complex undercurrents in the economy, say ‘warm fuzzy feelings’ in households causing people to have confidence in the economy and subsequently go for the ‘big ticket items’ such as new cars.)

A key element in studying the cyclical variations in economic activity is finding variables that show correlation with the business cycle. To this aim, a number of indicators have been noticed to “shadow” changes in real GDP. For example, unemployment falls during a recovery (called counter-cyclical variables) while consumption increases during the same period (pro-cyclical). Three main groups of indicators have been identified showing to coincide, lag and precede changes in real output.

A coincident variable is broadly in line – in terms of a time line – with the business cycle. Industrial production, investment, consumption and imports are all examples of pro-cyclical coincident indicators.

Inflation and interest rates are pro-cyclical and lagging, as are housing prices and number of bankruptcies. Unemployment is counter-cyclical and rather markedly lagging, since employers do not want to lay-off workers and delay this as long as possible. Thus unemployment levels can lag output changes by as long as 12 to 18 months.

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The importance of studying the business cycle

Studying business cycles has great importance for the improvement of economic policy. Extreme fluctuations are very damaging to the economy for several reasons:

- First and foremost, swings in the economy lead to great unpredictability for firms and households, making it difficult for firms to plan both input and output and adding insecurity to households.

- Cyclical variations can also create excessive swings in business activity and heighten social costs, primarily by inducing firms to increase investment during upturns, which builds in redundant capacity during downturns, which increases unemployment.

- Governments are also affected by any and all unplanned changes in tax revenues and social spending needs, and since both are built-in to the government budget a volatile business cycle adds an unneeded degree of uncertainty in setting a budget for the coming fiscal year.

Many economists would therefore agree that the most desirable macro state in the long run is a steady increase in real GDP with minimal fluctuations – but there is wide disagreement as to both the causes and solutions of business cycle fluctuations. As the next section will show, there is a great divide between proponents of Keynesian and neo-classical theory on the subject of economic policies aimed at evening-out the business cycle while enhancing growth in the long run.

POP QUIZ 3.3.5 BUSINESS CYCLES

1. How would the main macro objectives be affected over different phases of the business cycle?

2. Depict all four stages of the business cycle using the AD/AS model.

3. Explain why an output gap can be inflationary.

4. Here’s a tricky one. Assume that the labour demand for nurses is not directly linked to changes in economic activity. Why might nurses still receive higher wages in an economic boom period?

5. Say that firms in an economy have increased investment a great deal during an ‘overheated’ period and that the economy suddenly moves into recession. How might this increase in capital worsen unemployment and also delay a movement back to full employment when the economy starts to recover?

(Rory, scrapped question 6.)

6. Why is understanding the business cycle so important for economic policy makers?
Summary and revision (need a cool pic here….maybe a pic of someone doing push-ups!)

1. The **business cycle** roughly follows the phases of trough, recovery, boom, peak, recession.

2. **Recession** is defined as falling real GDP over two consecutive quarters.

3. The **long run trend** is basically calculated as the long term average growth rate.

4. A **decrease in growth** (measured by a change in real GDP) means that national income has decreased during a period of time, usually over the course of a year.

5. A **decrease in the rate of growth** (change in real GDP) means that national income is still increasing but at a slower rate over a period of time, usually one year.

6. Economists have identified several **indicators of economic activity** that are correlated to the business cycle.
   a. **Coincident indicators**; changes that are broadly in line with the business cycle (industrial production and consumption for example)
   b. **Lagging indicators**; changes in economic activity occurring with a time lag such as interest rates and unemployment
   c. **Leading indicators**; changes in the economy which occur before cyclical swings – new car sales, consumer confidence and raw material prices are commonly watched indicators

7. **Studying the business cycle** is important for several reasons. It can help governments plan policies of taxation and government spending and the **lack of predictability** has negative effects on household consumption and investment expenditure by firms.