# 6 The measurement of macroeconomic performance — answers

Test yourself

Test yourself 6.1

You can conclude that for the economy in question, there was an inverse relationship between the unemployment rate and the inflation rate. The unemployment rate fell between 2013 and 2015, while the inflation rate increased. This is consistent with the short-run Phillips curve shown below.
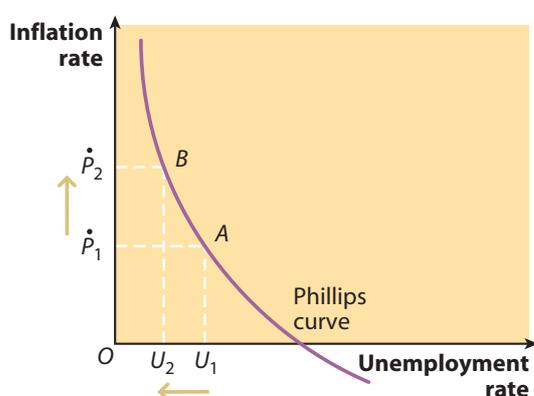
According to the diagram, when the unemployment rate falls from U_1 to U_2, the inflation rate increases from $\dot{P}_1$ to $\dot{P}_2$.

Test yourself 6.2

1 A first significant point of comparison is that while labour productivity (output per worker) grew in the USA throughout the period from mid-2007 to mid-2012, it fell in all the other countries between 2007 and mid-2009. In the USA, the index of labour productivity increased from the base year index of 100 in mid-2007, whereas it fell from 100 to approximately 95 in the case of Italy, the worst-performing country in this period.

   A second significant point of comparison is that, of the non-US countries, Japan experienced the largest increase in labour productivity, measured in index points, between mid-2009 and mid-2012. Japan's labour productivity increased from about 95 index points to nearly 102 index points over this period — an increase of approximately 7 index points. By contrast, in Canada, the next-best performing country, the increase was limited to approximately 2.5 index points, albeit from a higher index number (compared to Japan) of nearly 98 index points in mid-2009.

2 The following data, extracted from the ONS publication, *Statistical Bulletin: Labour Productivity, Q4 2014*, shows what happened to UK labour productivity between 2011 and 2014. (We included 2011 data because 2011 was the base year for the data series.) At the time we downloaded these data from the ONS website, data for 2015 had not been published. However, you can access the most up-to-date figures by Googling 'ONS labour productivity data'.

	Output per worker	Output per hour
2011	100.0	100.0
2012	99.6	98.9
2013	100.0	98.6
2014	100.5	98.7

Test yourself 6.3

(a) In 1985, Euro Area labour productivity (GDP per capita) was measured as approximately 85 index points. This increased to approximately 122 index points in 2011, an increase of approximately 37 index points.

(b) In 2007, Japan's labour productivity (GDP per capita) was measured as approximately 115 index points. This fell to approximately 108 index points in 2009, a fall of approximately 7 index points

Test yourself 6.4

(a) In the USA, labour productivity increased by about 10 index points from an index number of 90 in 1985 to an index number of 100 in 1991 (the base year for all the data series in the chart). This was a percentage increase in labour productivity of approximately 11.11%.

In Japan, labour productivity increased by about 22 index points from an index number of 78 in 1985 to an index number of 100 in 1991. This was a percentage increase in labour productivity of approximately 28.21%.

(b) In the USA, labour productivity increased by about 15 index points from an index number of about 122 in 1999 to an index number of about 137 in 2007. This was a percentage increase in labour productivity of approximately 12.30%.

In the Euro Area, labour productivity increased by about 10 index points from an index number of about 115 in 1999 to an index number of about 125 in 2007. This was a percentage increase in labour productivity of approximately 8.70%.

Test yourself 6.5

The data in the question tell us that the 'average family' spent £489 a week in 2012. Since all spending by households is consumer spending, we can interpret £489 as spending on consumer goods and services. Spending on housing, fuel and power, at £68, was approximately 14.00% of total spending by an average household on consumer goods and services. Spending on education was approximately 1.31% of this measure of total spending.

The reason why family spending on education was so low is because most 'average families' send their children to state schools where education is free, though of course taxpayers pick up the bill. In 2011, about 6.5% of British children were educated privately, though this proportion has been rising.

Case studies

Case study 6.1

1 UK national output is measured by value added in the UK. When goods such as cheese are imported, only a small part of the price at which they are sold represents value added in the UK. By contrast, the value added in the production of British cheeses is created solely in the UK — unless, of course, the milk which is the raw material for cheese happens to be imported.
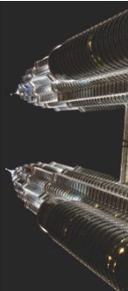
2 At the time of writing this answer, ONS data were only available for the four quarters of 2014. On 27 January 2015, BBC News reported that the UK economy grew by 2.6% in 2014, up from 1.7% in 2013. However, the growth figures are regularly revised by the ONS, so later publications of the estimates of economic growth may differ by the time you read this answer.

Case study 6.2

1 The article 'Economists who make the recession call' starts off by stating that an arcane body called the National Bureau of Economic Research is in charge of deciding when the USA is officially in recession. The article states that the NBER's definition is quite nebulous, taking into account a range of underlying economic indicators that are calculated monthly, and downplaying GDP because it is so often subject to revision and is only calculated quarterly. According to the NBER, 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'.

2 Because of ONS data revisions, the official version of when the recent recession began and ended in the UK has been subject to some change. The latest data available at the beginning of Q3 in 2015 indicates that the recession began in Q2 2008 and ended at the end of Q2 2009. There were thus five quarters of negative economic growth (−0.2% in Q2 2008, −1.7% in Q3 2008, −2.2% in Q4 2008, −1.8% in Q1 2009, and −0.3% in Q2 2009).

In 2012, there were fears that a 'double-dip' recession was taking place, and that very weak recovery from the second 'dip' might indeed augur a 'triple dip'. In the outcome, when the ONS revised the GDP figures in June 2013, the 'double dip' disappeared from the official statistics, though the 2008 recession was said to have been deeper than originally thought. At the time of writing this answer in June 2015, relatively strong recovery has occurred for at least a year and real GDP has risen above the pre-recession level achieved early in 2008. However, the growth rate has begun to slow down and future sustained economic growth may not be achieved. Much will depend on what happens in the rest of the world.

Case study 6.3

1 The case study mentions builders' skips, cranes on the skyline, scaffolding and unsolicited letters from estate agents as possible indicators of the state of consumer confidence, though a crane index might be a better indicator of business confidence. Other indicators could be: changes in house prices, the number of people making advance bookings for summer or ski holidays, new car sales, sales of champagne, and the opening or closing of charity shops in high streets.

2 The people asking the questions may be low paid and untrained. Sometimes they cheat and answer themselves the questions they have allegedly asked people. The questions may be designed to solicit either favourable or unfavourable replies. And even when properly questioned, people may give answers they think the questioner wishes to receive. In shopping streets, busy people brush past and avoid eye contact with people carrying clipboards, while lonely people may answer questions because they want company. And because the answers given to questions are often hypothetical and will not affect people's lives, they may be skewed in the direction of optimism or pessimism.

Case study 6.4

1 A price index is a measure of the proportionate, or percentage, changes in a set of prices over time. Each good, or set of goods, in the 'shopping basket' used in the construction of a price index has to be 'weighted'. The weights indicate judgements on the relative importance of each good in total consumer spending. If no weights are used, or if a wrong set of weights is chosen, the price index will fail to provide accurate measures of how average prices are

changing. For example, if chocolate were to be given the same weight as food in general, the final price index would be highly inaccurate (except perhaps for chocoholics!)

2   The CPI and the RPI attempt to measure changes in the average prices paid for goods and services by 'typical' households, for example two adults with two children with a household income in the middle of the income pyramid. Since the spending patterns of such families may differ significantly from those of a student household in a university town, or a pensioner living on her own, the price index will provide an inaccurate measure of changes in the average prices of goods bought by such households.

Case study 6.5

1   There are millions, if not billions, of different goods and services on sale in the UK economy. It would be extremely costly and time consuming to measure the prices of all these goods and services every month.

2   Automatic car washes are relatively capital intensive, requiring expensive capital equipment, but using little labour. Unfortunately, they are not very good at washing all the shapes and sizes of car that are now on the market. They are also prone to damaging cars by ripping off wing mirrors and aerials, and there used to be many horror stories of motorists forgetting to close car windows before passing through an automatic car wash. Additionally, automatic car washes take up more land space than the sites used for hand car washing, and they waste a lot of water, which the owners have to pay for because the supply of water is metered.

Hand car washing is in a way a form of 'craft' industry, labour intensive but providing a quality service. The insides as well as the outsides of cars can be cleaned. Perhaps most important of all, hand car washing is often undertaken by immigrant labour from central and eastern Europe, whose relatively low wages keep down the prices charged for the service. Hand car washing is more price competitive and quality competitive than use of the automatic washing service. The small businesses that provide hand car washing services have sprung up on numerous spare sites in most towns and cities, whereas automatic car washing machines have generally been abandoned, with their sites converted to alternative uses. However, the significant growth of labour-intensive car-washing businesses in the UK is one of the causes of low UK labour productivity and the so-called 'productivity puzzle'.

Questions

1   The diagram below illustrates the difference between short-term economic growth and long-term economic growth.
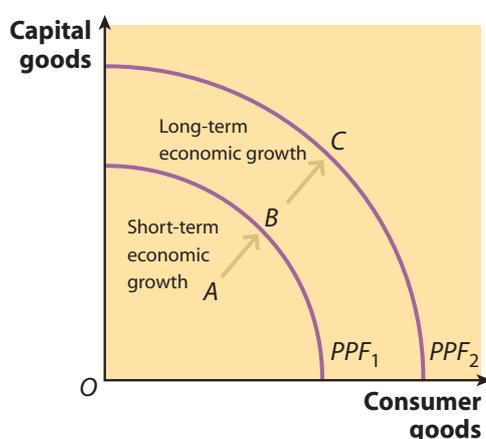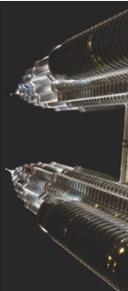
Economic growth is usually measured by the percentage annual change in real gross national income (GNI) or real gross domestic product (GDP). However, the measurement of economic growth must not be confused with the definition of economic growth. Economic growth can be defined as an increase in the potential level of real output that the economy can produce. Strictly, this is long-run economic growth, which is not the same as short-run economic growth or economic recovery

In the diagram, *short-run growth* is shown by the movement from point *A* inside the economy's production possibility frontier (PPF_1 in the diagram) to point *B* on the frontier. *Long-run growth* is depicted by the shift from point *B* (on PPF_1) to point *C* (on PPF_2). Short-run growth or economic recovery makes use of spare capacity and takes up slack in the economy, whereas long-run growth increases total productive capacity.

2 A policy objective is a target or goal which governments or policy makers wish to 'hit' or achieve. By contrast, a policy instrument is a tool, or set of tools, which they use to try and achieve the objective. For example, a change in interest rates (a monetary policy instrument) is often used to try to achieve the policy objective of controlling inflation. A second example is the use of tax cuts (a fiscal policy instrument) to try to achieve the objective of reducing unemployment.

3 As is explained in Chapter 6, page 147, there is a conflict between internal policy objectives of full employment and growth and the external objective of achieving a satisfactory balance of payments (or possibly supporting a particular exchange rate). This conflict is illustrated below.

full employment and economic growth ←— policy conflict and trade-off —→ satisfactory balance of payments or exchange rate
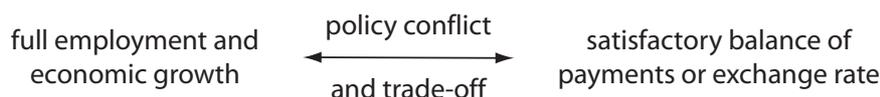
A government might try to deal with the conflict by trading off between the two policy objectives. If unemployment is deemed to be too high, the government may decide to use expansionary monetary policy and/or fiscal policy to increase aggregate demand with the aim of reducing cyclical unemployment. However, such a policy 'sucks' imports into the economy, with the result that the balance of payments on current account deteriorates. Policy may then be thrown into reverse by reducing aggregate demand so as to improve the current account. By contrast, supply-side economists often argue that the most appropriate way to deal with the policy conflict is to implement pro-free market supply-side policies which in the long run (they believe) reduce unemployment and improve the current account by making the country's exports more quality competitive in international markets.

A second conflict in policy objectives, and the associated policy conflict, is shown below:

current living standards ←— policy conflict and trade-off —→ future living standards
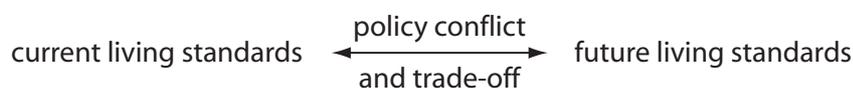
To increase current living standards, a government might encourage people to spend their income on consumption and to save less. However, this may reduce investment, since the supply of savings to finance the purchase of capital goods is likely to dry up. This might slow down the rate of long-term economic growth and the rate at which future living standards may grow.

As a general rule, UK governments have addressed this policy conflict by choosing an acceptable combination of consumption and saving that will help to maintain current living standards while promoting sufficient economic growth to enable future living standards to increase. Arguably, however, recent UK governments have promoted 'consumption-led growth' rather than the 'investment-led growth' and 'export-led growth' which many
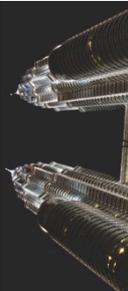
economists deem to be necessary for a sustained increase in future living standards. Investment and export-led growth would inevitably require a cut in current living standards in order to free resources for the production of capital goods and exports.

4   Inflation is a continuing and persistent increase in the average price level and a continuing and persistent fall in the value of money. Strictly, deflation is simply the opposite of inflation, namely a continuing and persistent *decrease* in the average price level and a continuing and persistent *increase* in the value of money. By contrast, disinflation is a continuing fall in the rate of (positive) inflation.

The Consumer Prices Index (CPI) fell by 0.1% in the year to April 2015, compared to no change (0.0%) in the year to March 2015. This was the first time the CPI had fallen over the year since official records began in 1996 and the first time since 1960 based on comparable historic estimates. However, there was a brief deflationary 'spike' in 2009, according to the RPI (but not the CPI).

5   There are four main items in the current account of the balance of payments: the balance of trade in goods, the balance of trade in services, the balance of primary income (mostly investment income) and the balance of secondary income. When added together, if the currency flows into the country from these items exceed the currency outflows, there is a current account surplus. Conversely, if the money outflows exceed the inflows, there is a current account deficit. (Simplifying, if we treat trade as the only item in the current account, there is a current account surplus when $X > M$, and a current account deficit when $X < M$.)

For many years, the UK current account has been in deficit. According to the *Statistical Bulletin: Balance of Payments, Quarter 4 and Annual 2014*, released by the ONS on 31 March 2015, in 2014 the UK's current account deficit was £97.9 billion, up from a deficit of £76.7 billion in 2013. The deficit in 2014 equated to 5.5% of GDP at current market prices. This was the largest annual deficit as a percentage of GDP at current market prices since annual records began in 1948.

6   A price index is a single number that attempts to capture average price changes over a period of time. For any particular year, the index value is measured with respect to a base of 100. The index measures the overall cost of a fixed basket of goods and services bought by a typical consumer, relative to the price of the same basket in the base year. The 'shopping basket' is compiled by choosing a large and varied sample of products in selected locations in the country. The goods and services for which prices are recorded are called 'representative items'.

The components of the shopping basket and index are 'weighted' to ensure that they reflect the importance of the various items in the average shopping basket, and the amounts spent in different regions of the country and in different types of shop. They are changed each year to reflect changes in shopping patterns, which partly reflect the introduction of new goods and services and 'older' goods and services falling out of fashion.

In March 2014, the following changes were made to the items in the national 'shopping basket' used in the construction of the CPI, and changes have been made in every year since then.

Additions:

New item	Reason for inclusion
1 Canvas fashion shoes/trainers	Introduced to cover textile shoes as vast majority of shoes currently priced are made from leather or synthetic materials
2 Manual car wash	Replaces automatic drive-through car wash to widen the coverage to both automatic and hand car wash facilities

	New item	Reason for inclusion
3	DVD rental/video on demand subscription services	Replaces DVD rental internet subscription. Introduced to capture the growing video on demand market
4	Fashion necklace	Spending on costume jewellery justifies a second item and class is under-covered overall
5	Flavoured milk	This item has been added to reflect the 'grab and go' sector of the milk market and to help balance milk against other items in the 'milk, cheese and eggs' class
6	Fresh fruit snacking pot	This is an under-covered class and the item has been added to specifically represent prepared fresh fruit
7	Honey	Introduced to improve coverage of sugar, jam, syrups, chocolate and confectionery which has been identified as an under-represented area of the basket
8	Interchangeable lens digital camera	Introduced to represent a significant and growing market. Also improves coverage in an under-represented area of the basket
9	Men's clothing hire	Spending on clothing hire justifies its inclusion and an item mentioned in the CPI class title is now covered explicitly
10	Mixer drink	Mixer drinks have a different usage to the other soft drinks currently priced so widen the coverage of an under-covered class
11	Plant food	This item has been introduced to represent the market for gardening chemicals
12	Tufted carpet, minimum 80% wool	Replaces tufted carpet which has been split into two items to create a basic and premium tufted carpet
13	Tufted carpet, 100% manmade fibres	Replaces tufted carpet which has been split into two items to create a basic and premium tufted carpet
14	Wild bird seed	This item will reflect smaller animal food and complement the cat and dog food items in the basket

Deletions:

	Deleted item	Reason for deletion
1	After-school club charges	Over-covered area of the basket
2	Automatic drive-through car wash	Replaced by manual car wash
3	DVD recorder	Due to recording alternatives, the availability of and expenditure on this item have fallen
4	DVD rental internet subscription	Replaced by DVD rental/video on demand subscription services
5	Gardener's fees	Over-covered area of the basket
6	Hardwood flooring	Due to falling expenditure: this item was introduced just before we hit recession in 2008
7	Take-away coffee	Over-covered area of the basket and coffee is still represented by the take-away latte item
8	Tufted carpet	Replaced by tufted carpet, 100% manmade fibres and tufted carpet, minimum 80% wool
9	Wallpaper paste	Over-covered area of the basket and this item is still represented by ready-mixed filler