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# An Anatomy of UK Recessions

**George Buckley**, Chief UK economist at Deutsche Bank examines our present predicament in the light of past recessions



Nobel Laureate Paul Samuelson is often accredited with the following amusing, and now infamous, criticism of the economics profession:

**“Economists have predicted nine out of the past five recessions”.<sup>1</sup>**

In reality, however, business economists actually tend to shy away from forecasting recession – until, at least, it has become blindingly obvious that a recession is unstoppable.

Nonetheless, that at least seems to be the situation in the UK right now. Currently stagnant output looks set to give way to outright falls in gross domestic product (GDP), assuming the business surveys and anecdotal evidence prove accurate reflectors of how the credit crisis is impacting the economy.

In this article, we take a look at past recessions in the UK – how long they have been, how much output has fallen – before turning to the tricky question of how sharp the current downturn might prove to be. In addition, it could be that the UK’s trend rate of growth has fallen relative to the strong rates experienced over the past decade, such that when the economy does eventually recover it does so more gradually and to a more sustainable (i.e. lower) rate of growth. However, this may be some time away yet.



1. The original quote seems to be that it is the *stock market*, rather than *economists*, who have the dubious distinction of predicting too many recessions.

## What is a recession?

**F**irst things first: what actually is a recession? This may sound like a basic question to ask, but there are a number of ways such a state of the economy can be defined.

The most popular is that it constitutes two consecutive quarters of contracting real (i.e. adjusted for inflation) GDP. This is what economists refer to as a 'technical recession'. The rationale behind this definition is that one quarter of negative growth could easily just represent an erratic fall, whereas it is more difficult to explain away back-to-back declines in output. Consider the evolution of UK economic growth in 1984, for example – economic output fell during the second quarter, but grew reasonably strongly in all other quarters. This one-off fall was largely due to a sharp drop in mining and energy production, due in part to the miners strike. This certainly should not be classified as recession – and the 'technical' definition ensured that it wasn't.

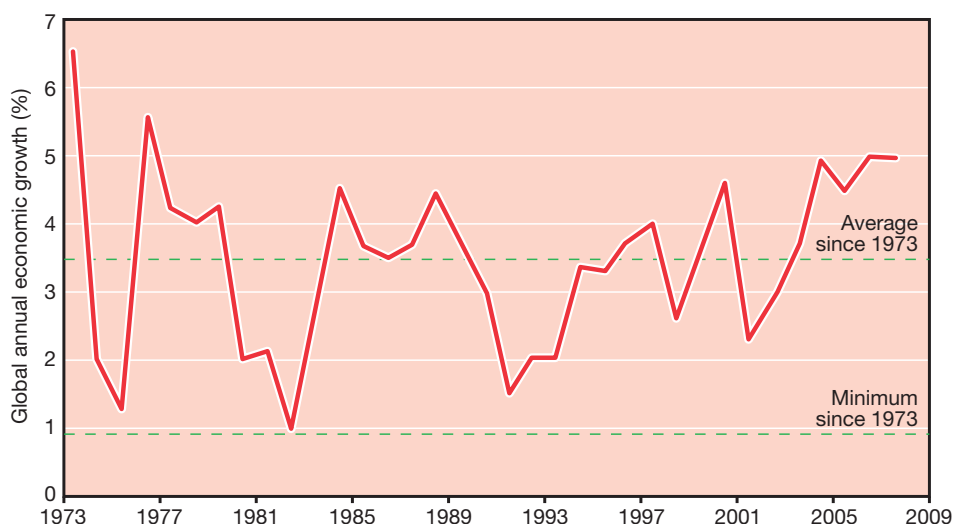
An alternative (but less popular) definition of recession is when GDP is lower than it was a year ago, i.e. the annual rate of growth turns negative. This might be expected to occur less often than a technical recession.

Finally, the 'official' definition used for recession in the US is neither of the above. Rather, the National Bureau of Economic Research (NBER) bases its definition of recession on a number of indicators (not just GDP). A recession is said to occur when there is a, "significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in real GDP, real income, employment, industrial production, and wholesale-retail sales".<sup>2</sup> Consider the US recession identified by the NBER between March and November 2001. During that time we did see output fall during two quarters – but they were not back-to-back (Q1 and Q3 2001). In this case, the NBER classification of recession did not coincide with that of a 'technical recession'.

What the above tells us is that there is no right or wrong answer as to what constitutes a recession. Rather there are various different definitions, which may or may not identify a recession during the same period. A bit of common sense is therefore usually required to establish whether we are in a 'recession-like' environment.

2. For more details see <http://www.nber.org/cycles/recessions.html>

Figure 1: Global output has never declined in any one year



Source: DB Global Markets Research and IMF

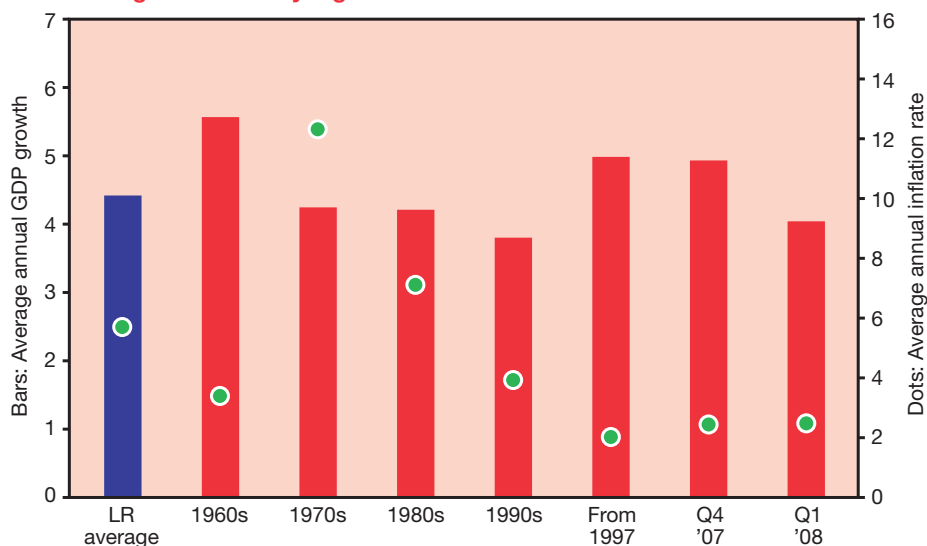
For individual countries, such as the UK or the US, or even for single currency zones such as the euro area, recessions (based on the above definitions) can and do happen from time to time. But looking at aggregate global or even regional GDP, because of the diversity of the economies we are averaging across it is highly unlikely that we would ever see output *actually falling* in any period for such country groups. Figure 1, for example, shows that global growth has never fallen below 1% in any one year. Stronger growth countries essentially cancel out those in recession. As such, a different definition is required for a global recession – you may often hear of economists defining a global recession as one where the annual rate of growth falls below 2% – but the choice of such a level is to a large extent arbitrary.

## It was good while it lasted

Not only have we not seen a technical recession in the UK since 1992, but there has not even been a single quarter in which output has declined over that period. During that time, the average rate of expansion has been over 2.8%, which compares very favourably with that of previous decades. It is similar to the 1960s (see Figure 2), with growth somewhat higher than the long-run average (2.5% yoy over the past half century) and inflation rather lower.

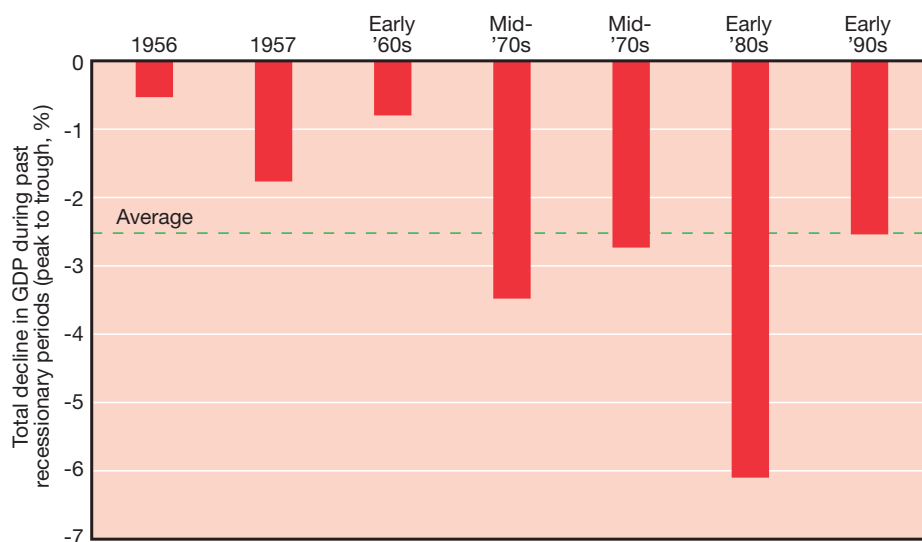
But conditions are changing rapidly. The economy slowed to a standstill in the middle of 2008, with business surveys and anecdotal evidence pointing to contracting output in the second half of the year. After years of excess, a UK recession now seems highly likely.

Figure 2: 60s-style growth/inflation trade-off comes to an end



Source: DB Global Markets Research and ONS

**Figure 3: The scale of previous UK recessions**



Source: DB Global Markets Research and ONS

### An anatomy of past UK recessions

The UK economy has endured seven technical recessions since modern GDP statistics began being published in the mid-1950s. The first five (1956, 1957, 1961, 1973/74 and 1975) were what we might term 'rapid-fire' – each lasted for only two or three quarters (i.e. six to nine months) and occurred within a relatively short period of time of each other. The two recessions that followed (1980/81 and 1990/91) were of longer duration (both over a year long) and did not occur in quick succession (nine years between them, and sixteen years from the last recession to the one that economists are forecasting for this year).

By far the worst recession was that of the early 1980s, during which period economic output fell by more than 6%

from peak to trough. The recessions of the 1950s and 1960s were much milder (output falling around less than 1% in total), the two during the mid-1970s recorded output falls of 2.7% and 3.5% and that of the early 1990s 2.5%.

So what does the 'average' recession look like in the UK, and can this tell us anything about what we might expect this time round? On average, during recessions, UK output has fallen by around 2.5%, as Figure 3 shows. But in order to answer these questions more fully, it is worth considering briefly the various angles from which we can look at GDP. We can calculate activity in an economy essentially in three different ways, all of which should in theory be equivalent to one another.

First, the GDP of an economy is the total final value of *how much is produced*

in that economy. Output comes from various different sectors, whether they be involved in producing physical goods (such as manufacturing, construction or agriculture) or invisible services (such as banking and finance or transport).

A second way we can calculate the size of the economy is by adding up the *total amount of spending*. After all, what has been produced must be either bought, or held in warehouses as inventories to be bought in a subsequent period. Spending takes place by consumers (C), by firms as investment (I), by the government (G), or as exports to abroad (X). We must subtract imports (M) from this calculation because these are goods and services we buy, but do not produce. On this measure:

$$\text{GDP} = C + I + G + X - M$$

(+ inventory changes)

A final way in which we can measure GDP is by adding up *all incomes in the economy* (whether they be earned by individuals or by firms as profits), since all goods and services purchased must be bought with money from somewhere.

So, in summary:

$$\text{GDP (output)} \equiv \text{GDP (spending)} \\ \equiv \text{GDP (income)}$$

A simplistic way to look at what happens in a typical recession, then, is to consider how the various components of GDP behave on average. Of the three methods of calculating GDP discussed above we will restrict our analysis to just two measures – spending and output (for most countries these are the most reliable methods of calculating GDP).

Figure 4 shows that, during recessions, economic growth has contracted by 0.7% per quarter on average, made up of: (i) modest declines in consumption, exports and services output, (ii) sharp declines in investment, imports, industrial production and construction output, and (iii) modest rises in government spending and agriculture output.

The small average declines in consumer spending and services output may look relatively benign, but because of the size of these sectors within the economy (consumption accounts for almost two thirds of GDP by expenditure, while services is worth around three quarters of GDP by output) even small falls have a powerful effect on overall economic growth. Investment and industrial production each make up less than a fifth of GDP, but their relatively sharp swings mean that they too have a significant impact on overall GDP.

*On average, during recessions, UK output has fallen by around 2.5%.*





## What about the impending recession?

The slowdown we have seen in the UK economy thus far has been the result of a combination of factors. Rising costs and prices (especially among price-inelastic goods such as oil and food) have limited the ability of households and firms to spend money on other more discretionary consumption/investment, while the credit crunch has restricted borrowing significantly.

This latter point is important. John Maynard Keynes assumed that household consumption in any period would be determined by how much income one received in that same period of time. However, perhaps a better approximation to the truth is that suggested by Milton Friedman. He argued that how much someone consumes today depends not just on that person's current income, but also on how much they *expect to earn* over their lifetime.

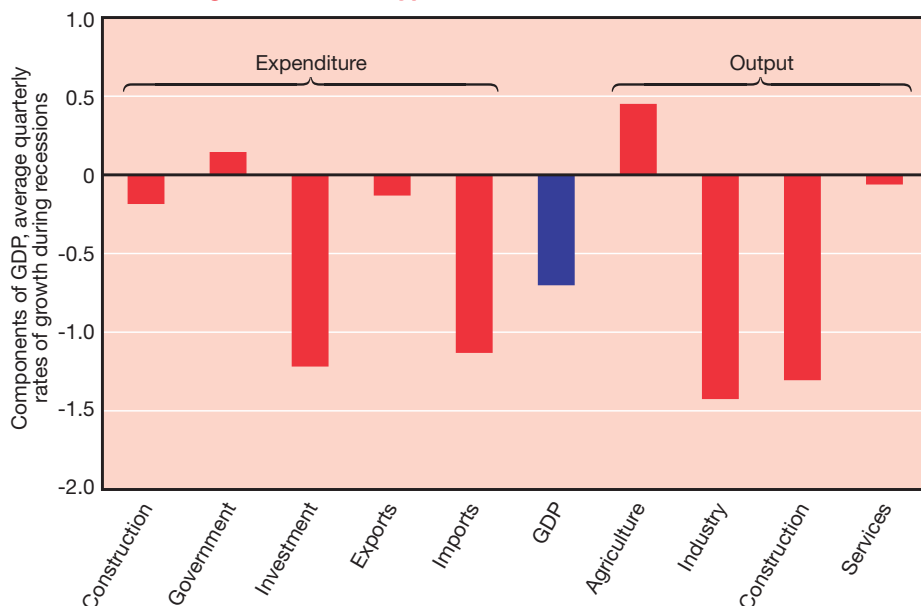
If you are young and earn very little, but expect that your income will rise sharply as you begin your career, you may decide to borrow money *now* in the knowledge that you can pay it back *later* – essentially smoothing the amount you consume over time. This is called the 'permanent income hypothesis' – consumption depends not just on current income, but also on 'permanent' income. This theory only works when credit is freely available, however, which during the current financial crisis is clearly not the case. As a result, it would not be a surprise to see consumer spending growth remain very weak going forward.

As for corporate investment, this will likely suffer as firms decide they have enough capacity to satisfy demand without adding to their capital stock, while slowing growth in the rest of the world should take its toll on exports. The one bit of brighter news is the fall in sterling, which should eventually make UK exports cheaper, going some way to offsetting the negative effect of slowing global growth. However, this is a case of chicken and egg – the reason that sterling has fallen so sharply is because the outlook for the UK economy (which is highly exposed to global developments, financial conditions and the housing market) is especially gloomy. The Organisation for Economic Cooperation and Development (OECD) recently argued that the UK would be the only country within the G7 to experience recession this year.



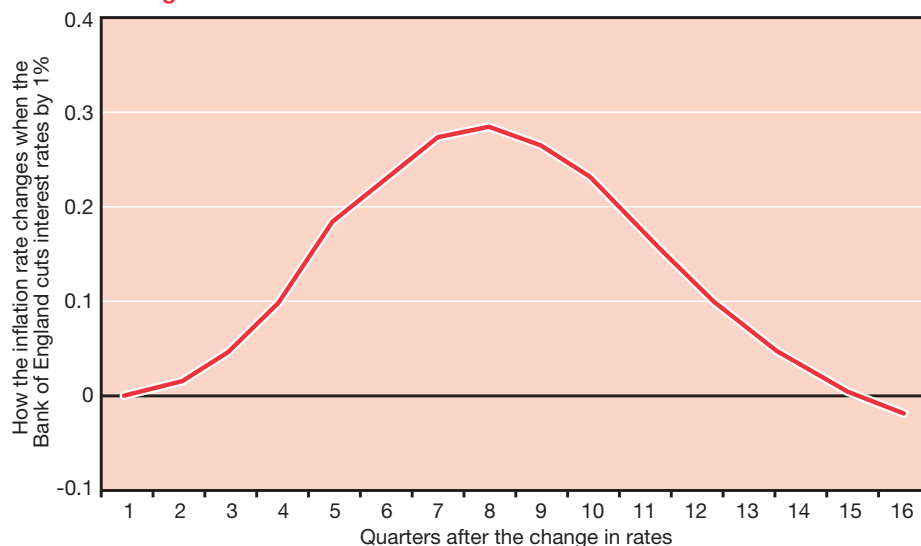
*It would not be a surprise to see consumer spending growth remain very weak.*

**Figure 4: What a 'typical' UK recession looks like**



Source: DB Global Markets Research and ONS

**Figure 5: It takes time for interest rates to affect inflation**



Source: DB Global Markets Research and Bank of England



We have discussed above how the recession will hit spending in the economy, but what about output? It should not come as a surprise where the decline in activity has come from so far, given the origins of the current crisis affecting the UK and global economies. Banking, finance and real estate have suffered notably, while consumer demand for less necessary (or price-elastic) services, such as hotels, is being curtailed. Construction too is contracting as the price of housing and commercial real estate falls. This illustrates nothing more than an upward sloping supply curve – the supply of real estate declines as prices fall.

### The Bank of England's reaction

How bad will the impending recession be? Could output fall as sharply as it did during the recessions of the 1970s, 1980s and 1990s? We think that it might be milder than in the past. Let us compare the current downturn (and the Bank of England's expected response) to what happened in the early 1990s to explain why.

Prior to 1997, the Bank of England was not an independent central bank. Rather, it was the Chancellor who set interest rates (with the help of the Bank's Governor), the decisions being as much based on politics as they were on economics. And in the early 1990s (specifically between 1990 and 1992), the UK was a member of the European Exchange Rate Mechanism (ERM). This meant that the government/Bank of

England had to set interest rates to ensure that sterling remained within a target band against the German Deutschemark.<sup>3</sup>

At the same time the German economy was strengthening in the wake of the reunification in 1991, the UK economy was mired in recession, with a collapsing housing market and sharply rising unemployment. The authorities found it difficult to cut interest rates for fear that sterling would drop out of the bottom of its ERM band (the demand for a currency will depend on the return – i.e. interest rate – you can get relative to that on money invested in other currencies). As a result, back in the early 1990s interest rates were held too high for too long given the weakness in the domestic economy. The exchange rate target for sterling proved too high, and the consequent inability of the Bank of England to react to a slowing economy by cutting rates led to a relatively prolonged recession.

At the end of 1992 sterling was ejected from the ERM, and from the beginning of 1993 the government and the Bank of England began targeting inflation. From 1997 the inflation targeting regime was given even more credibility when the Bank of England was made 'operationally independent'. This means that the Monetary Policy Committee (MPC) at the Bank was given the freedom to set interest rates in order to meet an inflation target set by the government.

Inflation is not independent of economic growth, however. If demand in the economy grows too quickly for supply capacity to keep up, then bottlenecks

occur and inflation tends to rise. Alternatively, if demand weakens sharply – as is the case at the moment – then spare capacity will emerge and inflation will eventually fall. Because of the ongoing slowdown, the Bank of England expects that the high rates of inflation we are currently experiencing will finally give way to fall back below the 2% target in the future.

So, because the Bank of England has an inflation target and inflation responds to slowing growth, the Bank is likely to adjust its policy in response. In other words, the very fact that the UK authorities now target inflation rather than the currency should lead to interest rate cuts, which in turn will limit the intensity of the recession.

It is important for the Bank of England to base its interest rate decisions not on where inflation is *now*, but where it is expected to be in *1-2 years' time*. Figure 5 shows that it takes quite some time before changes in interest rates have an effect on the rate of inflation. The economy is like a supertanker – it takes some time after throttling up that maximum speed is reached.

Because the Bank has a 'symmetric' target (i.e. inflation below 2% is just as bad as inflation above 2%) the MPC may well have to cut interest rates over the next few months to prevent against an undershoot.

### Conclusions

It looks likely that the UK economy will enter recession this year for the first time since the early 1990s. This will generate a rise in unemployment, and eventually help pull inflation back down towards its target after having risen sharply over the past year. The key question that the Bank of England will be asking is this: *Will the current slowdown be sufficient to help bring inflation back to its target?* Their own forecasts suggest that it will be more than enough, pulling inflation *below 2%* in the space of just two years. As a result, the Bank should attempt to offset this weakness by reducing the cost of borrowing, with the aim of kick-starting the economy back into action.

The fact that the UK has an inflation target should therefore be helpful in averting too sharp a slide in output. The big risk is that if high inflation now leads to second round effects – higher wages and inflation expectations – then a more significant fall in GDP may be necessary to meet the inflation target.

3. Which, of course, no longer exists since the adoption of the single currency in the euro area.



# What are the Merits of Taxes as opposed to Regulation as Alternatives to Reducing Market Failure?

**Andrew Threadgould**, Head of Economics and Business Studies at Dulwich College, discusses the advantages and disadvantages of different ways of confronting market failure.

Market failure arises when the free market mechanism fails to provide a good or service at the optimal output and price level. There are various causes of market failure, such as the existence of **externalities** (positive or negative spillover effects related to the production and/or consumption of some goods), **information failure** (inadequate or incorrect information creating undesirable patterns of demand for, and therefore, consumption of, certain goods) or **monopoly power** (also known as imperfect competition). However action to tackle market failure by government is not guaranteed to succeed. Hence we have another type of failure – **government failure**. Thus market failure exists when a free market outcome leads to undesirable equilibrium levels of price and quantity. Government failure exists when the policy response to market failure fails to increase, or even decreases, social welfare.

This article examines two possible responses to market failure: indirect taxes and regulation.

## Indirect taxes

**W**e begin first with considering the fiscal method of addressing market failure.

Indirect taxes can be used to change the equilibrium price and output levels in a market. Figure 1 shows the free market equilibrium price ( $p_m$ ) and quantity ( $q_m$ ) for alcoholic drinks. The imposition of a tax of AB per unit shifts the supply schedule for alcohol inwards to  $S_t$ . The tax represents a new cost to the supplier, and this increase in costs can be passed

on to consumers (to some extent) in the form of a higher price (increase from  $p_m$  to  $p_t$ ). However, this higher price will reduce quantity demanded from  $q_m$  to  $q_t$ .

In cases where market failure arises due to the presence of negative externalities, indirect taxes can be very effective at improving efficiency, adjusting price and output levels to socially-optimal levels. Negative externalities exist where the marginal social cost

Exam Board	AS	Unit	A2	Unit
AQA	✓	1(3.1.4 & 3.1.5)	✓	3 (3.3.5)
Edexcel	✓	1(1.3.7, 1.3.8 & 1.3.9)	✓	3 (3.3.11)
OCR	✓	F581		
WEJC	✓	ECI(C)		
CCEA	✓	1		
Int. Bacc.		Standard (2.4)		





(MSC: that paid by society as a whole) of production and/or consumption is higher than the marginal private cost (MPC: that paid by the supplier). Both MSC and MPC, represented as supply curves, are shown on Figure 2. The vertical distance between the MPC and MSC curves is the negative externality per unit (AB on the diagram), and by setting an indirect tax equal to this level the externality is said to be internalised. The equilibrium price ( $p_s$ ) after the tax represents both the marginal private cost per unit (including the tax) and the

marginal social cost per unit. This price is higher than the free market price ( $p_m$ ) and the quantity of the good bought and sold falls from the free market level ( $q_m$ ) to the socially-desirable level,  $q_s$ .

### Regulation

An alternative to indirect taxation is regulation: the use of laws which ban, restrict or make compulsory the consumption and/or production of certain goods and services. Examples include age restrictions on purchasing cigarettes and alcohol, criminal action

against consumers and suppliers of certain drugs, and minimum school-leaving ages and compulsory car insurance.

Regulation, it could be argued, acts directly to influence the production and consumption of certain goods. However, legislation is not always totally effective and will usually incur considerable enforcement costs, which also have an opportunity cost (the funds could have been used elsewhere). There is also the possibility of government failure: *imperfect information* may lead the

Figure 1: The market for alcoholic drinks

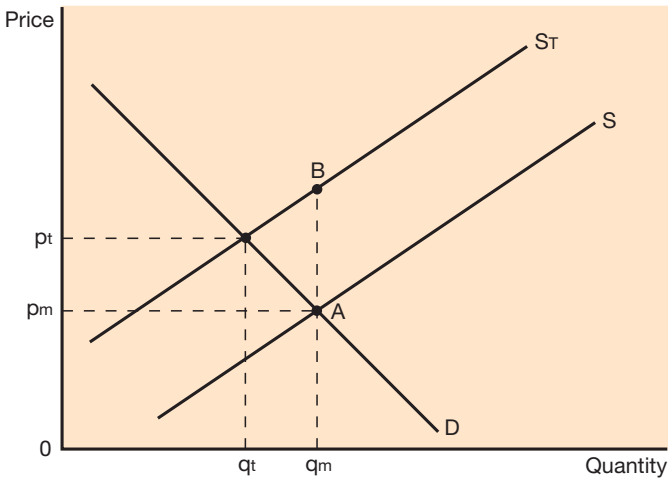


Figure 2: Negative externalities

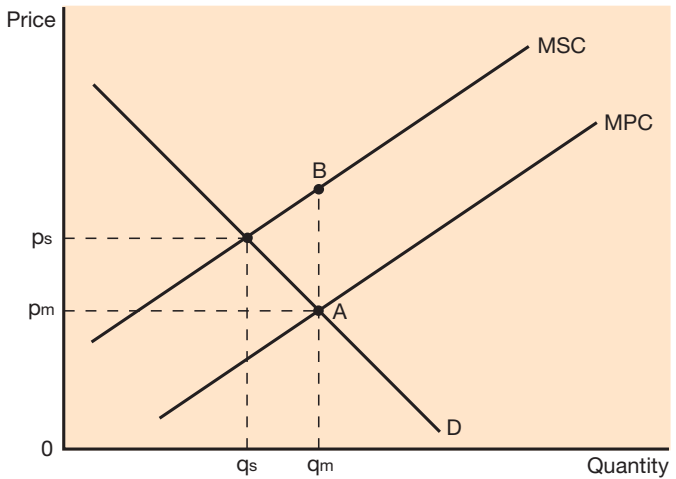
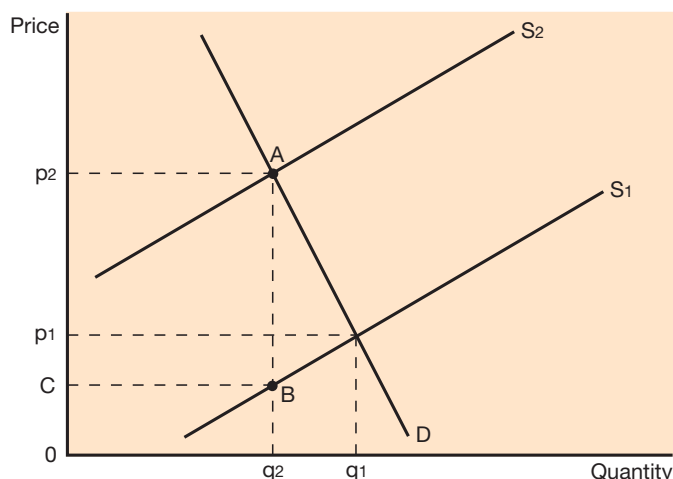




Figure 3: Price inelastic demand



government to under- or over-estimate the extent of certain problems, such as binge drinking, and conflicting objectives may prevent laws being powerful enough to change behaviour enough to produce efficient outcomes. In addition, it is possible that *unintended consequences* may arise. For example if anti-drugs education intending to increase the quality of information to potential users actually makes drug use appear less harmful and more socially acceptable.

In addition, banning a good may drive suppliers and consumers into informal markets where the quality of the good may be compromised. For example, drugs such as cocaine and heroin may be mixed with harmful substances such as bleach to increase suppliers' profits. A ban also drives up the price of the good by adding a cost to supply (perhaps a lengthy jail sentence or the dangers of exposure to gang culture) and if this is reflected in the selling price, addicts may be forced to commit crimes to obtain the money needed to buy the drug.

### Indirect taxes: the relevance of price elasticity of demand

The main advantages of indirect taxes, therefore, are their use of the market mechanism to change the price to a level which reflects the social costs of production and consumption, and the tax revenue generated in the process. An important consideration when taxing a good is the **price elasticity of demand**. This is the responsiveness of quantity demanded to a change in price. As price rises, quantity demanded falls (see Figures 1 and 2 above) but the impact this has on quantity demanded will differ from one good to another.

Figure 3 shows a market for a good

with price inelastic demand. This may be an addictive good such as heroin or tobacco, or a good with few or no close substitutes, such as car use. The imposition of the indirect tax shifts the supply curve from  $S_1$  to  $S_2$ , increasing price from  $p_1$  to  $p_2$ . There is a disproportionately small fall in quantity demanded and supplied, from  $q_1$  to  $q_2$ .

This can be contrasted with Figure 4 where demand is much more price elastic and the tax creates a much greater fall in quantity in proportion to the rise in price.

It could be argued, therefore, that the effectiveness of an indirect tax at reducing the equilibrium output level increases in line with the price elasticity of demand for the good. However, it is also important to consider the importance of indirect taxes in raising revenue. Comparing the tax revenue raised by the indirect tax (shown as the area  $p_2ABC$  on both Figures 3 and 4) shows that where demand is more price inelastic, the higher the revenue created. This is because where demand falls by a small amount, relative to price, the smaller the impact on the level of consumption – and thus the more, post-tax, consumers remain!

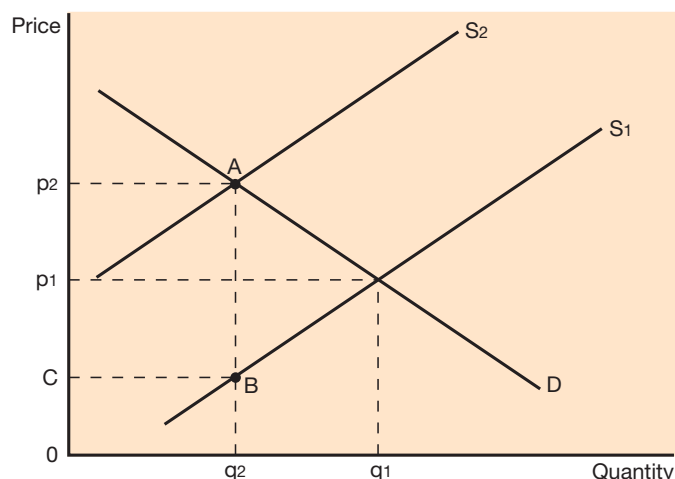
Would regulation reduce quantity demanded more effectively when demand is price inelastic? Goods such as alcohol, tobacco and illegal drugs appear, anecdotally, fairly resilient to attempts to dissuade or outlaw their consumption through legislation.

### Merit goods and public goods

Markets where regulation may be more effective are those where production and consumption are not too high under free market conditions, but rather too low.

**Merit goods and public goods** are often confused by students (some merit

Figure 4: Price elastic demand



goods are public goods, and vice versa) and it is important to distinguish between the two. Merit goods are those which are deemed to be 'good' for society, and which tend to be under-consumed under free market conditions. Examples of merit goods include vaccinations and library services. Public goods are those which have the characteristics of being *non-diminishable* and *non-excludable*. Non-diminishability arises when the use of a good does not reduce the amount available for others, and non-excludability exists where, if one person consumes the good, it is impossible for others to be prevented from doing so. Examples of public goods include street lighting and national defence.

Regulation can be used to increase the production and consumption of both merit goods and public goods, for example through compulsory schooling in the UK until the age of 16, but a far more effective response is direct provision. This is where the government uses its own resources to make the goods available to consumers without the need for free market suppliers. Merit and public goods can therefore be heavily subsidised or even zero-priced at the point of consumption.

Direct provision needs government funds, which means – in the long-run, at least – the use of tax revenue. This may come from direct (taxes on income) or indirect (taxes on spending) sources, and this is an interesting point in terms of the importance of indirect taxes in changing consumer and producer behaviour. Internalising the externality is an important and, if used well, powerful way of moving market outcomes towards socially-desirable levels, but the revenue generated is also a valuable financial resource to subsidise the



*Library services are an example of a merit good.*

supply of those goods associated with the generation of positive externalities. This revenue may be particularly important where market failure arises due to information failure.

### Information failure

Information failure can cause market failure. Economists generally assume that economic agents (consumers, workers, firms and governments) are rational: they take account of all available information to behave in such a way as to maximise utility, pay, profit and social welfare respectively. However, if the information they use is imperfect, it is likely that their decisions will lead to suboptimal outcomes. The impact of information failure may affect consumers, producers and third parties in both the short-run and long-run. For example, in the case of tobacco products, imperfect information may increase direct harm to third parties (e.g. through passive smoking) as well as to the consumers themselves. Regulation can be used to improve the quality of information, for example by restricting access to tobacco products for youngsters, and making health warnings compulsory. It should be noted that in markets such as these, both regulation and indirect taxation can be used

simultaneously to try to reduce demand and restrict supply respectively.

A key problem with using an indirect tax to correct market failure is setting it at the correct level to fully internalise the externality and ensure that the marginal private cost (including the tax) is exactly equal to the marginal social cost. In addition, for goods with very addictive characteristics (and thus where demand is very price inelastic) the imposition of an indirect tax may increase the price dramatically and perhaps create a culture where use of the drug has to be funded through criminal activities. This is one argument against the idea of legalising all drugs and taxing them according to their negative externality.

### The privatised utilities

One area where regulation has been used extensively in the UK is to address imperfect competition, or monopoly power. When many public utilities (gas, water, electricity and telecommunications supply) were privatised in the 1990s, economists feared that these natural monopolies would be able to exploit their market power at the expense of consumer surplus. One possibility was to impose indirect taxes on industries where high monopoly

profits were likely, but given the price inelastic demand for essential goods such as energy, it was feared that firms would pass on the bulk of the tax to consumers, adding government failure to the market failure already present. Regulation was used instead to limit price increases and to ensure that the quality and quantity of supply remains close to socially-optimal levels. Fines and even criminal sentences can be used in extreme cases to prevent price-fixing, insider dealing and reckless corporate mismanagement.

A key problem associated with regulation is **regulatory capture**. When establishing a regulatory body to oversee an industry, it is likely that the best people with the necessary knowledge and experience have previously worked in the sector, and have therefore built up personal contacts and even financial interests (e.g. share ownership) which may affect their ability to regulate with sufficient strictness. Regulatory capture therefore refers to a situation where the regulators have vested interests in the industry and therefore fail to make the socially desirable decisions required to maximise social welfare.

It should also be noted that regulation incurs an opportunity and financial cost to government, and therefore society.

In conclusion, therefore, regulation incurs financial and opportunity costs to government as it requires enforcement. Indirect taxes, on the other hand, operate with the market mechanism to produce socially desirable outcomes which either significantly reduce the quantity demanded and supplied or generate funds which can be used to redress information failure. The key issue is setting the tax at the correct level to counter market failure without causing government failure. One area where regulation is particularly used in the UK is in the control of imperfectly competitive markets. The key concern is regulatory capture and the government failure which may arise when the industry and the bodies used to regulate it have vested interests.

### Questions for discussion

1. Distinguish between market failure and government failure and give one example of each.
2. Identify three current examples of indirect taxes and three current examples of market regulation in the UK.
3. Using a diagram, show the impact on a market where negative externalities are present of setting an indirect tax at too high a level. (Compare the free market, post-tax and socially optimal price and output levels.)
4. Explain two advantages and two disadvantages of banning the production and consumption of a good such as cigarettes.
5. Using a diagram, show how both producer and consumer surplus is affected by changes in price resulting from the imposition of an indirect tax. How does the price elasticity of demand and price elasticity of supply affect these outcomes?
6. Research regulatory bodies such as Ofgem ([www.ofgem.gov.uk](http://www.ofgem.gov.uk)) and Ofcom ([www.ofcom.org.uk](http://www.ofcom.org.uk)). What do these organisations aim to achieve?
7. What are the financial costs of regulatory bodies such as Ofgem and Ofcom? To what extent may their 'success' be judged with respect to these costs?
8. How would you tackle the problem of underage binge drinking in the UK? To what extent could indirect taxes and regulation be extended to create more socially desirable levels of consumption? What other policies may be necessary?

## Summary of key points

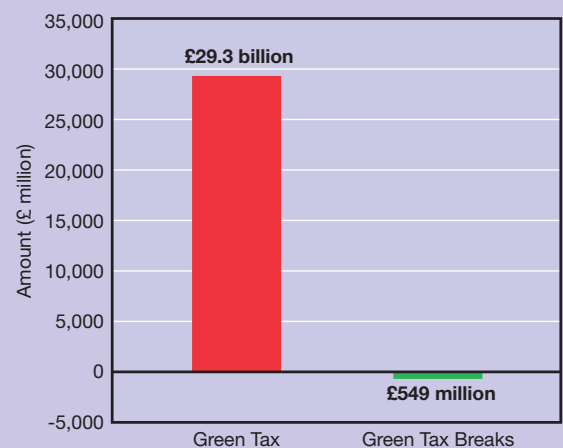
- ▶ Externalities that cause market failure can be addressed by indirect taxes subject to the price elasticity of demand.
- ▶ Imperfect information can cause government failure such that social welfare is not increased.
- ▶ The former public utilities that have been privatised is a sector of the UK economy where regulation has been seen as a solution to the natural monopoly problem but this is not costless.



with Chief Examiner,  
**Robert Nutter**

1. The UK government collects many taxes to support its 'green' credentials. Investigate the view that the green tax revenues are not matched by green tax breaks. Search the Hacker Young web site (green taxes).

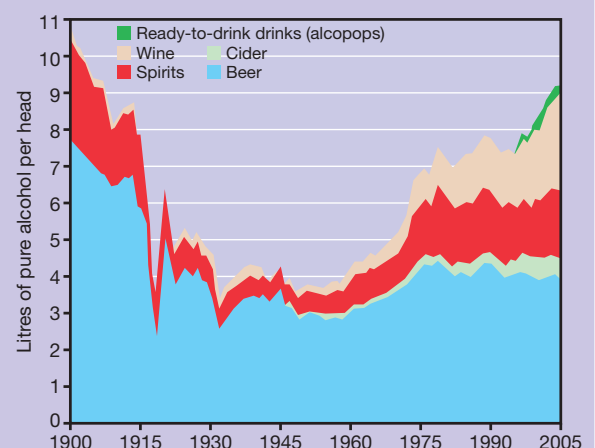
<http://www.uhy-uk.com>



Source: UHY Hacker Young Group

2. Alcohol consumption in the UK has more than doubled since 1950, with the rate of increase particularly noticeable since the early 1990s.

The Scottish Parliament has been considering banning the sale of alcohol to under 21s. Investigate the reasons for this possible change.



'Changing Scotland's Relationship with Alcohol: a discussion paper on our strategic approach'.

[www.scotland.gov.uk](http://www.scotland.gov.uk)

<http://news.bbc.co.uk>

3. Investigate the functions of the Civil Aviation Authority (CAA) in its regulation of the UK's airports. Research the view that the CAA is the victim of regulatory capture by British Airports Authority (BAA) which has significant monopoly power in the provision of airport capacity in South-East England.

[www.caa.co.uk](http://www.caa.co.uk)

[www.baa.com](http://www.baa.com)



# Is the UK Budget Deficit too Large?

**Mark Jewell**, Head of Economics, Radley College, reviews the state of the government's finances as the UK economy ceases to keep growing.

Exam Board	AS	Unit	A2	Unit
AQA			✓	4(3.4.2)
Edexcel			✓	4(4.3.7)
OCR			✓	F585
WEJC	✓	EC2(C)		
CCEA	✓	2		
Int. Bacc.				

Prime Minister Gordon Brown established his political reputation as Chancellor of the Exchequer from 1997 to 2007 for his safe stewardship of the UK economy, presiding over an unprecedented period of continuous non-inflationary growth of real national income. Within days of Labour returning to power he established the current macroeconomic policy framework by making the Bank of England's Monetary Policy Committee (MPC) independent of government and gave it responsibility for determining interest rates (monetary policy). The UK Treasury was left responsible for fiscal policy by adopting the two fiscal rules (see later) to ensure 'prudent' Budgets. However, as economic conditions worsen in 2008, the MPC is struggling to contain UK inflation, driven ever higher by food and oil prices. The UK Government finances are under such pressure that Brown's reputation for fiscal prudence looks an increasingly embarrassing joke. The EU's European Commission is now openly criticising the British Government for its excessive budget deficit (now above the 3% of GDP ceiling imposed on members of the Single European Currency). The only crumb of comfort is that the UK's breaching of this ceiling cannot lead to fines, as it would for Eurozone members!

Many commentators regard the UK Government's budget deficit as dangerously large. But why? We consider this viewpoint after firstly defining some key terms. Then we consider why such a deficit might exist before examining what problems arise from deficits.

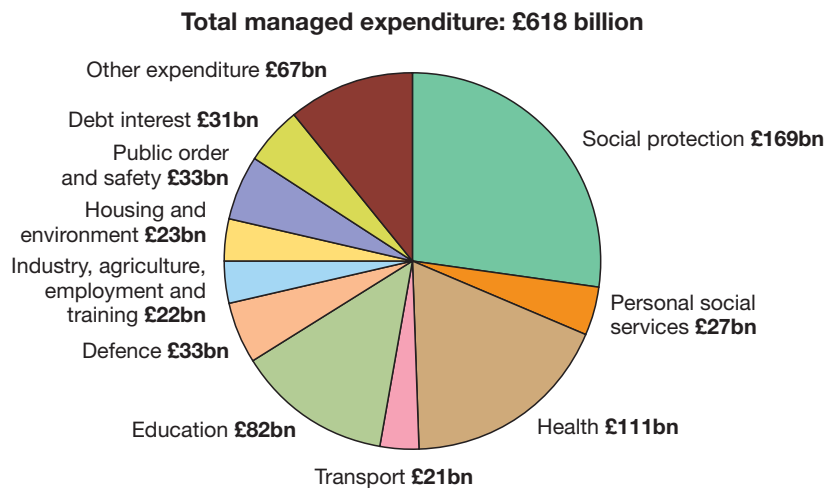
## What is a budget deficit?

**A** budget deficit arises when government spending exceeds government revenue over a period, usually calculated over a financial year. As you can see from Figures 1 and 2, the UK Government is planning to spend £618 billion in the current financial year yet only expects to receive £575 billion, mostly in tax payments (there are some non-tax receipts, for example in 2000/01, exceptionally, the sale of 3G mobile phone licences brought in a huge £22 billion). This means it expects to run a **budget deficit of £43 billion** (3.2% of GDP). This number is the equivalent of £700 for each UK resident, or roughly double that for each UK taxpayer: no trivial sum!

It is clear from Figure 1 that UK Government (through central government departments and local councils) spends money on a large variety of projects. The largest category (27.3%) is welfare benefits ('social protection'), which includes state pensions and job seekers allowance, followed by the National Health Service (18%) and education (13.3%), mainly on state schools funded by local councils. Figure 2 reveals that 93% of that spending is met by receipts, chiefly taxes on personal household incomes and wealth (50.4% of receipts coming from income tax, national insurance and council tax), with 21.9% coming from indirect taxes on consumer spending and 13.2% from business taxation. In crude terms therefore, our current spending on welfare benefits outstrips income tax receipts, our NHS spending outstrips national insurance contributions and our funding for schools easily outweighs the council tax income of the councils who run them.

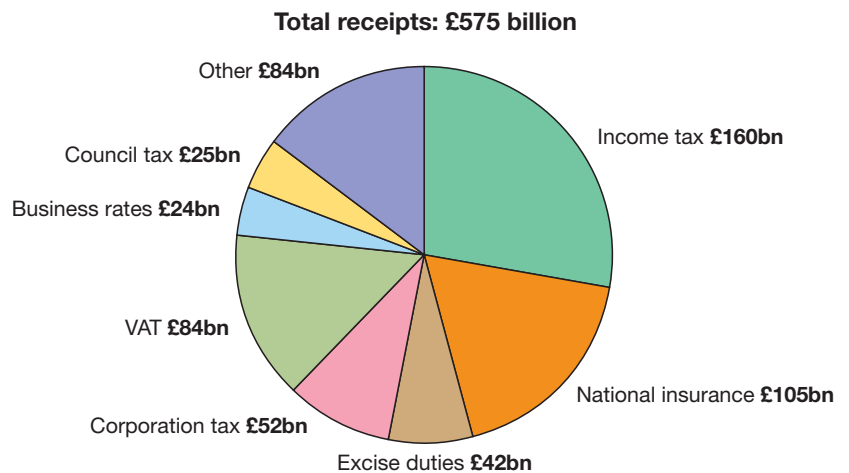
The Government can only continue to spend beyond its means in this way if it can *borrow* the missing funds. However, it is well placed to do this by issuing government bonds. These are effectively bits of paper which commit the Government to repay a sum of money at a future date. They are willingly purchased by investors who wish to save money today for an increased return tomorrow. Since the Government is a secure creditor (after all, unlike a commercial business, it can always raise taxation to ensure receipts are available to repay its debts), it can borrow from the bond markets to finance its deficit at comparatively low rates of interest.

**Figure 1: Where taxpayers money is spent**



Source: HM Treasury, 2008-09 near-cash projections. Figures do not sum to total due to rounding.

**Figure 2: Where taxes come from**



Source: HM Treasury, 2008-09 projections. Other receipts include capital taxes, stamp duties, vehicle excise duties and some other tax and non-tax receipts – for example, interest and dividends. Figures do not sum to total due to rounding.

Figure 3 shows the link between the budget deficit and what is called Public Sector Net Borrowing.

## Why do deficits arise?

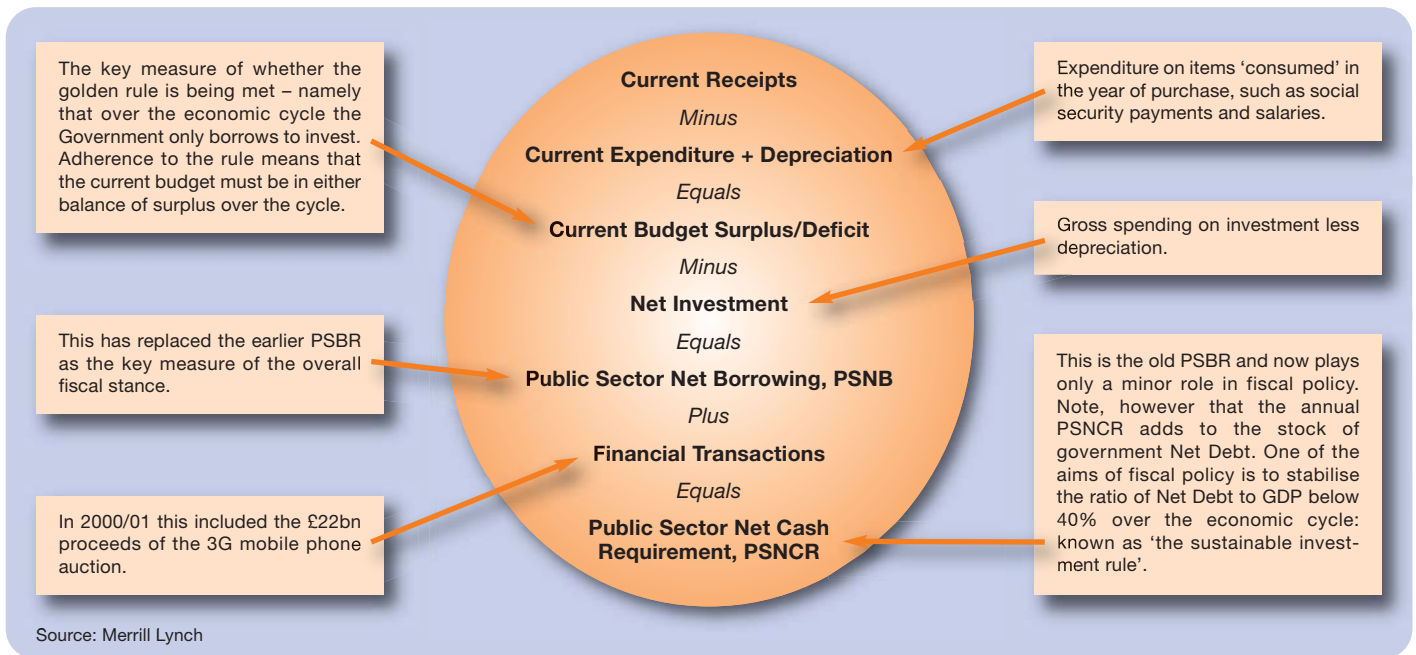
The underlying reason why deficits arise is because government feels it needs to intervene in markets to correct for **market failure**. This makes government spending necessary. If they do a larger amount of this than they can finance through taxation, they will end up borrowing to finance a deficit.

Of course, any new Chancellor faces much political pressure from other Cabinet colleagues to increase their department's budget, or at least not to cut it. Government spending is slow to change. Ultimately, the Government must convince the voting British public that more public spending is worth the extra taxes. The current pattern of public spending (and taxation) suggests that there is still much support for redistributing income from pre-tax wage

levels and providing public services free at the point of use for essential services like health care and education. Equally, there remains strong support for the provision of public goods like national defence, the police and judicial system and the road network. There are robust reasons for government to tax demerit goods (like cigarettes) and those producing negative externalities (like pollution) and to subsidise merit goods (like dental care) and those producing positive externalities (like education and public health). However, it remains fiendishly hard for government to decide *how much* public spending is optimal to correct for these areas of market failure. Indeed, governments worldwide have been criticised in recent years for overspending (and over-taxing) thereby destroying economic welfare, falling victim to **government failure**. Clearly, therefore, there is nothing hallowed about merely balancing the budget if the spending is wasted on useless projects



Figure 3: The key variables



and the taxes to pay for them disincentivise households from working. But if the government spending is well-judged, might it not be better to finance it by ‘light touch’ taxation and borrow the rest?

To appreciate whether to worry about the latest statistics on public finances, it is necessary to understand what factors cause deficits.

The principle factor driving the two large sums which create the deficit is the **economic cycle**, that is the tendency for real GDP to accelerate above its 2.5% trend annual growth rate for a few years (in a ‘boom’) before falling below trend or even falling below 0% (in a ‘bust’ or recession) at a later period over a cycle lasting between 6 and 11 years. As the economy grows faster, households and business earnings accelerate and

they pay more tax, they also spend more leading to a rise in VAT and other indirect tax receipts; at the same time, unemployed workers find jobs and move off benefits to become net taxpayers. Hence government spending falls and tax receipts rise: the public finances automatically move into surplus!

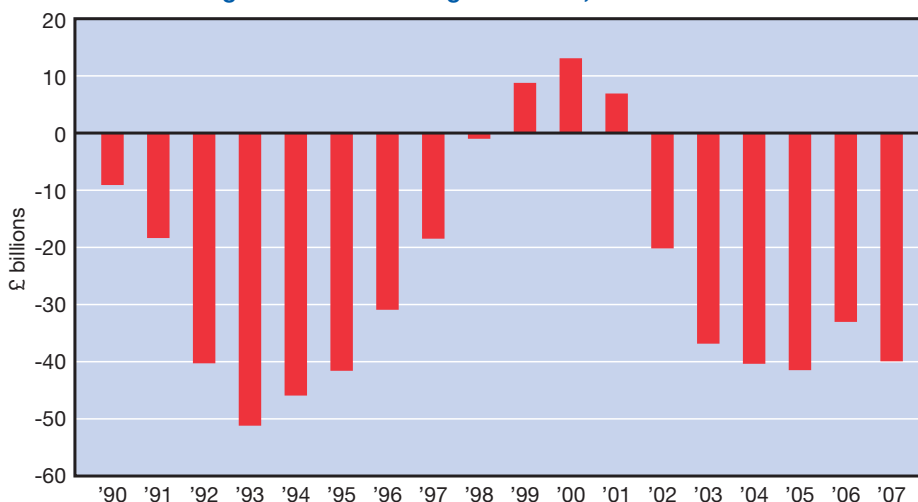
Indeed, the interaction of the economic cycle and public finances builds in stabilisation for the macroeconomy. For example, in recessions those made unemployed are supported by their new benefit earnings and this spending keeps the economy from falling further. The fact that they are no longer taxed so aggressively under our progressive tax system (where the marginal tax rate rises as you earn more) means less of their incomes are withdrawn from the circular flow of income, which kept the lid on

aggregate demand when the economy was booming. These features of the tax and benefit system are called **automatic stabilisers**. So, far from being problematic, deficits can be supportive when the economy enters a downswing. However, the corollary argument holds that budget surpluses are more likely in an upswing and indeed help the economy from overheating as rising incomes are met with greater tax withdrawals.

This feature underpins the first of Gordon’s Brown’s fiscal rules, the Golden Rule. According to this rule, the public finances are expected to fluctuate over the course of the economic cycle but must not go into deficit over the cycle as a whole. This means that Government can allow fiscal policy to stabilise the economy but *must not borrow to fund current expenditure*. It can, however, borrow to fund *capital* projects like schools, hospitals and roads because the interest repayments will be met by those future generations who will still be benefiting from the infrastructure created. Adhering to this rule protects future generations from spendthrift current governments and is widely accepted as a sensible principle for a responsible government.

As we can see from Figure 4, the public finances have swung from surplus in the upswing of 1999-2001 to deficits in the current downswing and the Government was forced to recalculate the length of the economic cycle, taking in the surpluses of 1998-99, in order to claim the Golden Rule was met this time.

Figure 4: The UK budget balance, 1990-2007



Source: Reuters EcoWin



## Other causes of deficit

Since government spends on such a wide range of services, there are many other significant drivers of a budget deficit. Some can be identified as structural. For example, the demographic trends of our ageing population are currently shifting more taxpayers into retirement over time, where they are drawing state pensions and using up much of the NHS's resources. Whilst birth rates have been historically low recently, the pensions bill has been outgrowing any reduction in schools spending leading to more pressure on government finances. There has also been a move to upgrade much of the capital used in public services to take full advantage of improvements in IT, for example in defence, schools and NHS.

In addition, there are exogenous factors, such as war in Iraq and Afghanistan or meeting civilian emergencies like flooding, which require additional public funding from time to time.

Finally, until the Golden Rule was adopted, post-war (pre-Thatcher) UK governments adopted discretionary fiscal policy to help actively stabilise the macroeconomy during the economic cycle. For example, boosting public spending to engineer an increase to aggregate demand via an upward multiplier if recession took hold. However, this approach to 'fine-tuning' the economy has become rather discredited in recent years, with neo-Classical economists arguing that the UK's poor performance of the 1970s reflected ill-founded attempts to drive unemployment below the **NAIRU** (non-accelerating rate of unemployment), which led to accelerating inflation and runaway inflationary expectations and no long term improvement in unemployment. There are still Keynesian economists who argue that there is a case for government to use fiscal deficits to jump start the macroeconomy if it is stuck in a deep recession from which monetary stimulus may be ineffective, although these cases are exceptional.

We can suggest, with hindsight, then that the UK's current budget deficit reflects the current economic downswing alongside a reluctance since 2002 to take the hard choices on tax and spending that would have ensured the Golden Rule was more comfortably met. In particular, the commitment to modernise the NHS and schools at the same time as wanting to please Ministers elsewhere, especially in fight-



*The economic cycle can move from boom to recession.*

ing terror at home and abroad and meeting the upcoming pensions crisis, has created too much fiscal strain.

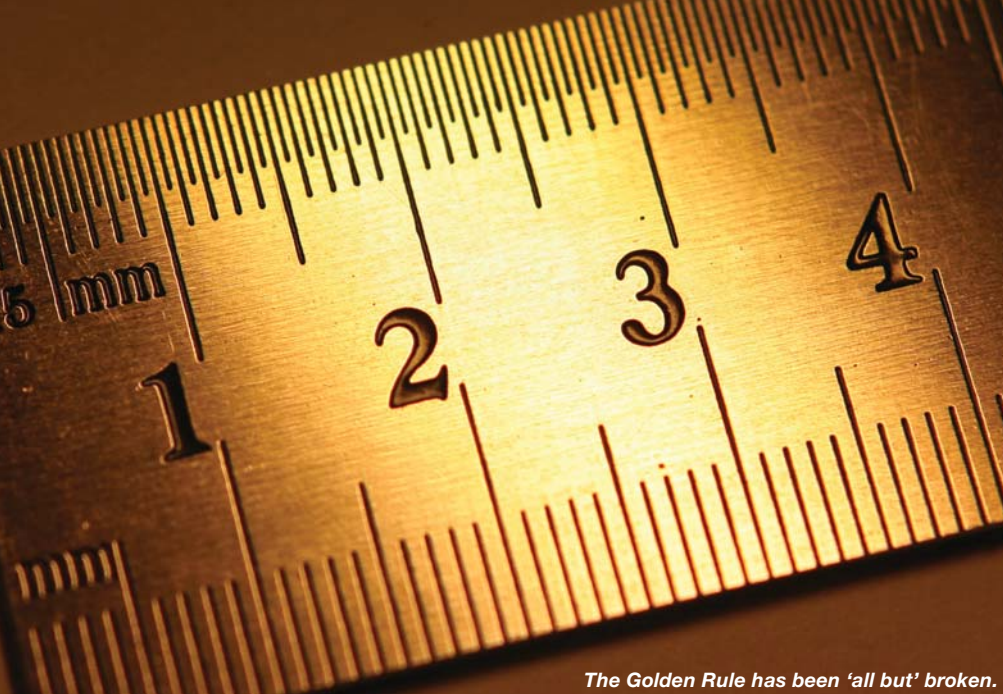
## Do deficits matter?

There are two serious problems which arise whenever the budget goes into deficit, which get worse the higher the deficit. Firstly, the need to sell government bonds puts upward pressure on interest rates because buyers of bonds will not buy enough without the prospect of a better rate of return. In response, banks will raise interest rates to keep their savers, as liquid assets (e.g. cash) becomes scarce in the financial sector. Unfortunately, this rise in interest rates chokes off consumer spending (C) and investment spending by private sector firms (I). Additionally, the rise in interest rates is likely to attract 'hot money' inflows to the economy as international savings are moved to the centres of highest return and this pushes up the exchange rate, which depresses the balance of trade (export earnings, X, minus spending on imports). Thus, the rise in government spending (G) and/or fall in taxation which created the budget deficit in the first place fails to stimulate aggregate demand as much as might have been expected because the other components (C, I, X) are 'crowded-out'

by the rise in G. And there is a strong likelihood that resources are wasted by being diverted from private to public sector use since the profit motive is largely absent from public sector organisations, which sees wasteful private sector firms go bankrupt. However, in today's global market for savings, any one government's borrowing might be met by a wave of lending from around the world without a large rise in the interest rates.

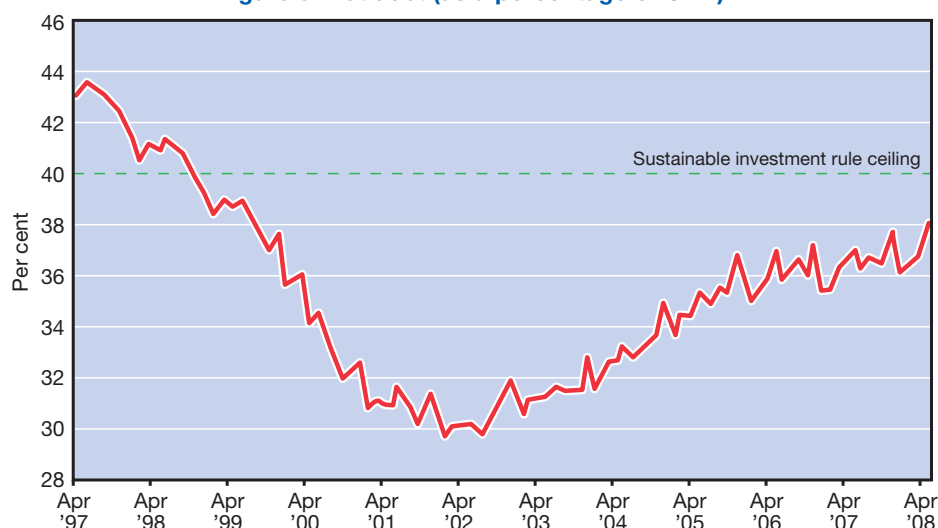
The second concern is that budget deficits cause the national debt to rise, which means that more of government spending needs to be diverted to debt interest payments. This carries a high **opportunity cost**: valuable public services forgone or private consumption forgone (since the money could have funded tax cuts). The national debt is the outstanding debt of the national government at a point in time. Budget deficits cause national debt to rise; budget surpluses cause it to fall. This danger motivated Gordon Brown to instigate the second of his fiscal rules.

The Sustainable Investment Rule limits the government to keep national debt below 40% of GDP. Accordingly, since we are now close to that limit, debt interest as a proportion of UK government spending should never rise much



The Golden Rule has been 'all but' broken.

Figure 5: Net debt (as a percentage of GDP)



Source: ONS

Table 1: The Sustainable Investment Rule

At end	Public sector net debt (£bn)		Public sector net debt as % of GDP	
	Excluding Northern Rock & Bank of England	Including Northern Rock & Bank of England*	Excluding Northern Rock & Bank of England	Including Northern Rock & Bank of England
Mar '98†	352.9	351.9	41.3	41.2
Mar '99	351.6	350.6	39.2	39.0
Mar '00	345.4	344.3	36.4	36.3
Mar '01	312.4	311.0	31.4	31.3
Mar '02	315.5	314.1	30.3	30.2
Mar '03	347.1	345.7	31.5	31.4
Mar '04	382.8	381.3	32.8	32.6
Mar '05	423.6	421.9	34.7	34.6
Mar '06	463.0	461.1	36.0	35.9
Mar '07	499.7	497.7	36.6	36.5
Jun '07	514.6	512.8	37.3	37.1
Sep '07	516.2	514.2	36.9	36.7
Dec '07	535.7	633.5	37.8	44.7
Mar '08	528.5	620.9	36.9	43.3
Jun '08	555.3	640.5	38.3	44.2

Source: ONS \*Northern Rock included from October 2007 †Estimate

above its current level (5.3%). Of some additional concern is the fact that rising debt interest is regressive since it transfers income from the taxpayer to those richer individuals who are the main holders of government bonds.

However, critics of the Sustainable Investment Rule point out that the 40% ceiling is arbitrary and that if the economy needed fiscal stimulus, in recession, the best action would require breaking the rule. By contrast, the Eurozone adopts a more permissive 60% ceiling.

### Conclusion: Is the UK deficit excessive?

Despite Government protestations that the UK public finances are still meeting both Brown's fiscal rules, the Golden Rule has been 'all but' broken. The 2007 Pre-Budget Report and Comprehensive Spending Review claims that the economic cycle lasted from 1997-8 to the final quarter of 2006 and that government receipts would have exceeded spending by £18 billion over this nine year period. However, this is a tiny margin (£2 billion surplus per year) and notably only guarantees the Golden Rule was met by Government having redefined the economic cycle back to include the surplus from 1998. Most commentators were cynical. John Kay has commented:

If you are making claims for the quality of your shooting, such claims are more convincing if the goalposts remain where they were when you kicked the ball than if they are subsequently moved to where the ball went. This is true even if they should have been placed in the new position in the first place. These manoeuvres have been sufficient to discredit the golden rule in the eyes of many commentators.<sup>1</sup>

Similarly, there is trouble with the Sustainable Investment Rule. As Figure 5 makes clear, there has been an inexorable rise in public sector net debt (as a percentage of GDP) since its low point of 29.8% in March 2002 on the back of successive budget deficits since then. It stood at 38.3% in June 2008 (up from 37.8% in June 2007). And whilst it is slowing down as recent Budgets have

1. J. Kay, 'Brown's rules are a flawed basis for policy', *The Financial Times*, 23 July 2008.

tightened, the Government's 2007 forecast is that it will peak in 2010-11 at 38.9%. However, as the threat of recession looms larger and the UK housing market stalls, those forecasts are now being called into question. 2008 has already seen tax revenues collapse for Stamp Duty as house sales have slumped. And VAT receipts are down as households adjust to rapid inflation in basic food (which is zero-rated for VAT.) by cutting down on other luxuries. Some estimates show that for each 1% fall in UK GDP the budget deficit will increase by £10 billion. So the 40% ceiling might be breached if recession strikes.

The other pressure on the Sustainable Investment Rule followed the nationalisation of Northern Rock in late 2007, which added about £100m to UK Government's liabilities. If this is included in national debt, the ratio jumped to 44.7% in December as Table 1 shows. However, the Government argues that this misrepresents their indebtedness since they acquired all Northern Rock's assets at the same time (the Government hopes that once Northern Rock restores its profitability as a going concern, these assets can be sold back to the private sector; if not, the public finances will be in as much trouble as if they had permitted a £100 billion in additional current deficit spending).

The main difficulty for Government is the fact that any threatened recession will widen the deficit further, where there is no room if the rules are to be met. And meeting the rules requires fiscal tightening which will prolong any recession. But breaching their own fiscal rules will lay the Government open to charges of economic untrustworthiness or incompetence. The Government is caught in a cleft stick.

### Where does the Government go from here?

Apart from just hoping for an economic upturn and revision of statistics to relieve pressure on the public finances, there are institutional changes which could improve the policy framework. Many experts now feel that the fiscal rules should operate in a similar way to the framework for monetary policy. Budget setting should be aimed at a *future* fiscal target, not concerned about performance over that part of the economic cycle already over. In this way, Government would not feel so tempted to spend its 'war chest' like Labour did from 2003. And there should certainly be

an independent body (perhaps answerable to Parliament) to check if the rules have been met to avoid the damage done by the Government changing the definition of the economic cycle to ensure it met the Golden Rule. Also, the Sustainable Investment Rule should be considered alongside the value of what Government is buying. There is no value in government racking up net debt worth 39% of GDP (thereby meeting the rule) if the money is wasted. But this is a hugely complex requirement.

### Questions for discussion

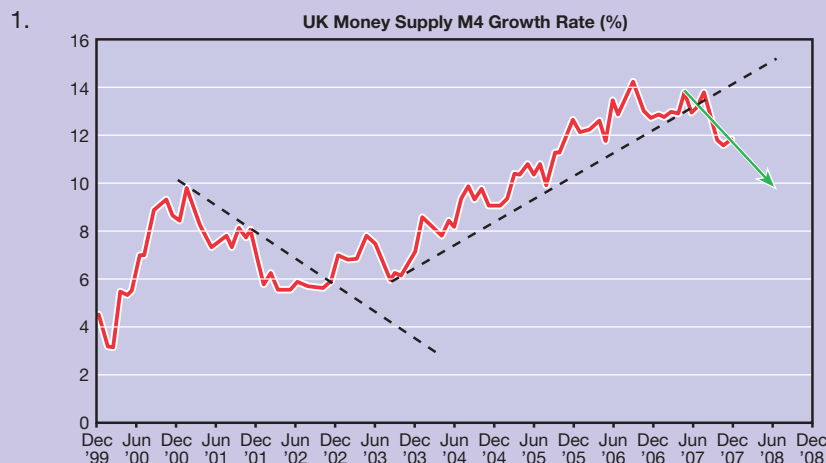
1. What is the difference between a budget deficit and national debt?
2. Which of Gordon Brown's two fiscal rules do you think is most sensible?
3. When is a budget deficit a good thing?
4. If taxation is a disincentive to work but government spending is necessary to solve market failure, why doesn't the Government simply choose to run a permanent budget deficit?

## Summary of key points

- ▶ The UK currently has a planned budget deficit of £43bn.
- ▶ There are several drivers of a large budget deficit, some of which are structural and others exogenous.
- ▶ The present government has struggled to meet the requirement of its Golden Rule to balance its public finances over the length of the economic cycle.
- ▶ The government is also in difficulty meeting a second fiscal rule to keep the level of the national debt below 40% of GDP.



with Chief Examiner,  
**Robert Nutter**



Investigate how a budget deficit can affect the rate of growth of money supply in the economy.

[www.economicshelp.org](http://www.economicshelp.org)

2. Research the functions of the UK's Debt Management Office (DMO).

[www.dmo.gov.uk](http://www.dmo.gov.uk)

3. Investigate the role of Treasury Bills in the operation of the Bank of England's Special Liquidity Scheme which was introduced to make financial markets work more effectively following the recent difficulties in the US housing market.

[www.bankofengland.co.uk](http://www.bankofengland.co.uk)





# The Markets for Coffee and Milk

**Tony Emery**, a Principal Examiner, considers cost data in two related markets.

**M**ost people would have no difficulty in naming several local or nationally known coffee shops but naming a dairy farm would be a different matter. This article compares the position of Starbucks and an average UK dairy farmer.

## Production costs

Industries record their costs in different categories which can sometimes make it difficult for economists to apply their definitions of fixed and variable costs. This is shown when comparing the costs of making a Starbucks's latte to the costs of producing a litre of milk.

## Costs of production and selling prices

### Starbucks latte

Labour	38p
Milk	12p
Coffee	4p
Cup, lid, sugar, napkin, stirrer	8.5p
Rent	27p
Administration	52p
VAT	30p
<b>Total</b>	<b>£1.71.5p</b>
<b>Selling price</b>	<b>£2.00</b>

### Litre of milk

Employee wages	1.36p
Family wages	3.41p
Feed and forage	6.45p
Power and machinery	1.79p
Administration	1.10p
Property	1.15p
Rent, depreciation, interest	3.06p
Other costs	3.76p
<b>Total</b>	<b>22.08p</b>
<b>Selling price</b>	<b>17.40p</b>

Sources: P. Sawyer, 'Starbucks fires first shot in High Street coffee war', *Sunday Telegraph*, 4 November, 2007.  
*The Real Price of Milk*, report by Promar International for First Milk, data for 2006-07, p.5, [www.firstmilk.co.uk](http://www.firstmilk.co.uk).

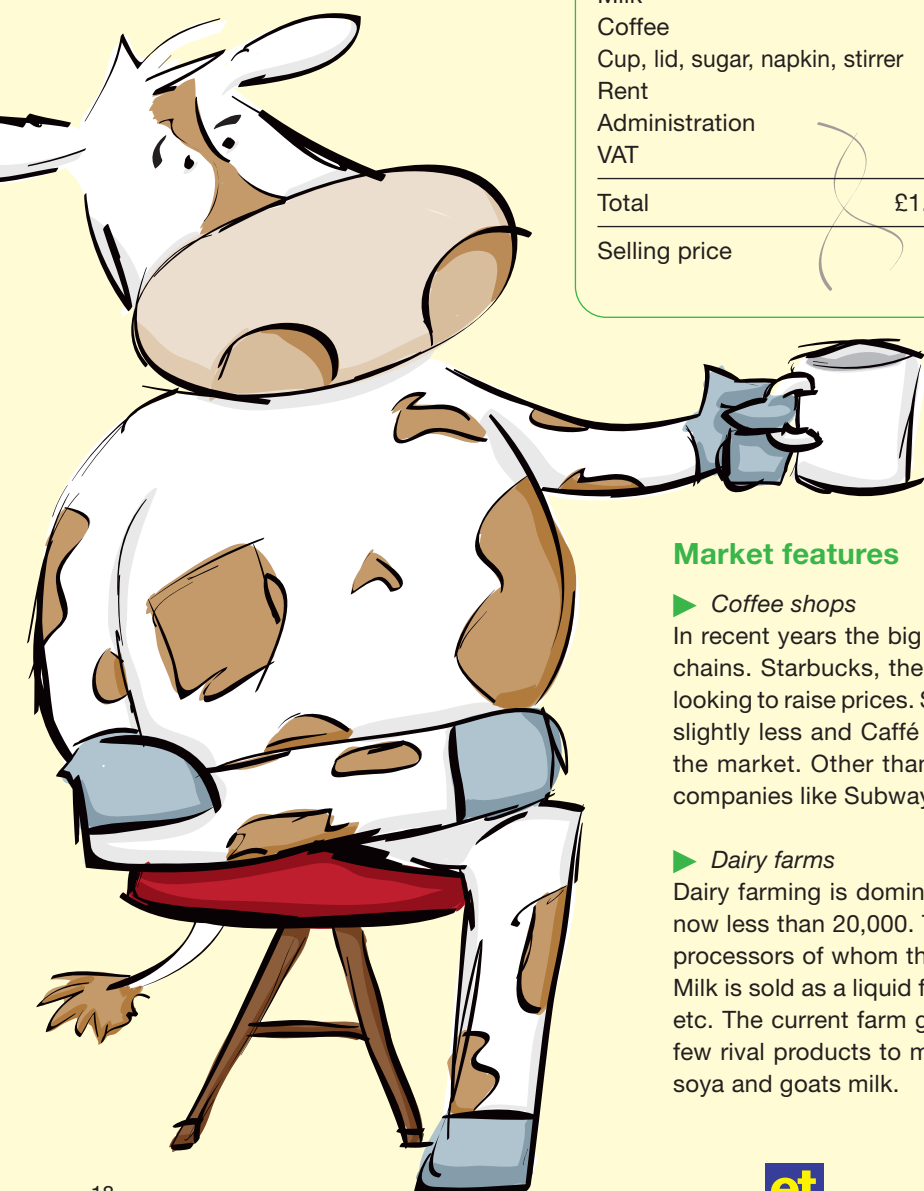
## Market features

### ► Coffee shops

In recent years the big change has been the emergence of branded coffee chains. Starbucks, the market leader, has more than 530 branches and is looking to raise prices. Starbucks has about 24% market share, Costa Coffee slightly less and Caffé Nero about 8%. Independents retain about 38% of the market. Other than specialist coffee shops there is competition from companies like Subway and Prêt à Manger.

### ► Dairy farms

Dairy farming is dominated by small family businesses, of which there are now less than 20,000. They are faced by 130 milk purchasers and 100 milk processors of whom the four largest purchase 51% of UK milk production. Milk is sold as a liquid for drinking or processed into cheese, butter, yoghurt etc. The current farm gate price is below the price paid in 1995. There are few rival products to milk although there is a small but growing market for soya and goats milk.



- (a) Select a different example of fixed and variable costs from each case. Justify your selection. (8 marks)
- (b) Comment upon the relative significance of labour costs for each product. (4 marks)
- (c) Identify the profit position on each product. (4 marks)
- (d) Suggest two measures which might be used to calculate a firm's share of the market in the case of coffee shops. (2 marks)
- (e) Identify the market structures in which coffee shops and dairy farmers operate and discuss how the structures may have affected profit and price levels within the industries. (12 marks)

### Suggested approach to the questions

#### (a) Select a different example of fixed and variable costs from each case. Justify your selection. (8 marks)

Fixed costs include administration in coffee shops and property in dairy farming. This is because items such as insurance and invoicing do not alter with sales, while property (and rent) is an overhead charge whatever the level of output.

For Starbucks variable costs include the cup, lid, sugar, etc. which increases costs every time an extra latte is bought. For a dairy farmer feed and forage must be increased if the milk output is to rise so these are variable costs.

*Be careful with those items which may be variable or fixed and make clear your assumption in allocating them one way or the other. Labour would be a case in point depending upon its payment system. Power and machinery could include both depending what is meant by machinery costs – is it running costs or purchase costs?*

#### (b) Comment upon the relative significance of labour costs for each product. (4 marks)

Labour costs make up a virtually identical proportion of total costs at about 22%. This might be surprising as service industries such as cafés and restaurants are thought to be labour intensive with limits on the possible degree of mechanisation. Farming on the other hand has moved towards more capital-intensive production.

*Have a calculator to hand unless you enjoy mental arithmetic. Do not forget to comment but make sure it is based on an economic aspect.*

#### (c) Identify the profit position on each product. (4 marks)

Starbucks make a profit of 28.5p or 14.25% on each cup of latte sold. The average dairy farmer makes a loss of 4.68p on each litre of milk produced.

*A calculator is useful! Be sure to put the values as well as the conclusion.*

#### (d) Suggest two measures which might be used to calculate a firm's share of the market in the coffee shop market. (2 marks)

The most likely measure is % of total sales, although the number of outlets might be used. Numbers employed or floorspace are possible but much less likely.

*When doing background reading or exercises notice the units in which the data is measured and develop the habit of quoting figures accurately.*

#### (e) Identify the market structures in which coffee shops and dairy farmers operate and discuss how the structures may have affected profit and price levels within the industries. (12 marks)

Coffee shops are in an imperfectly competitive market. There are a large number of suppliers, the product is differentiated and branded, and low barriers to entry. There is the suggestion that Starbucks is able to influence price. The structure is not dissimilar to the retail grocery trade with the emergence of major multiple retail chains at the expense of small independents. So one could identify the market structure as monopolistic competition but there is the issue of market dominance by a small number of the largest firms which suggests oligopoly.

Agriculture is often quoted as the most likely example of perfect competition. In this case there are a large number of suppliers who are unable to influence the price and a normally identical product (excluding the organic sector). This is not a completely clear case, however, as there are barriers to entry and not a large number of buyers at this stage of the process. The buyers also seem able to affect the price.

In the case of Starbucks they are able to earn (supernormal) profits at least in the short run as they have successfully created a brand image which has resulted in consumer loyalty. They can also influence their price (a downward-sloping demand curve) and possibly the prices and profits of other firms in the industry.

With the average dairy farmer there is not the ability to set price as individually they are too small a part of total supply to have an influence. The price that is earned is not sufficient to yield even a normal profit and has been forced down by the bargaining strength of the buyers.

*If there is not an unequivocal answer apply the elements you think are relevant and make clear any reservations you have. Arrange your answer so that you work through each of the four elements of the question.*

### Additional tasks

1. Assess the state of the British dairy industry by referring to the Promar report 'The Real Price of Milk' at [www.firstmilk.co.uk](http://www.firstmilk.co.uk) and the presentation 'The Dairy Industry today' at [www.face-online.org.uk](http://www.face-online.org.uk).
2. Suggest policy options to help the British dairy farmer.
3. Survey the availability of coffee shops in your local high street and compare this to the national picture.
4. Identify what it is that differentiates Starbucks from its competitors.
5. Look up the definition of composite demand and apply it to the case of milk.

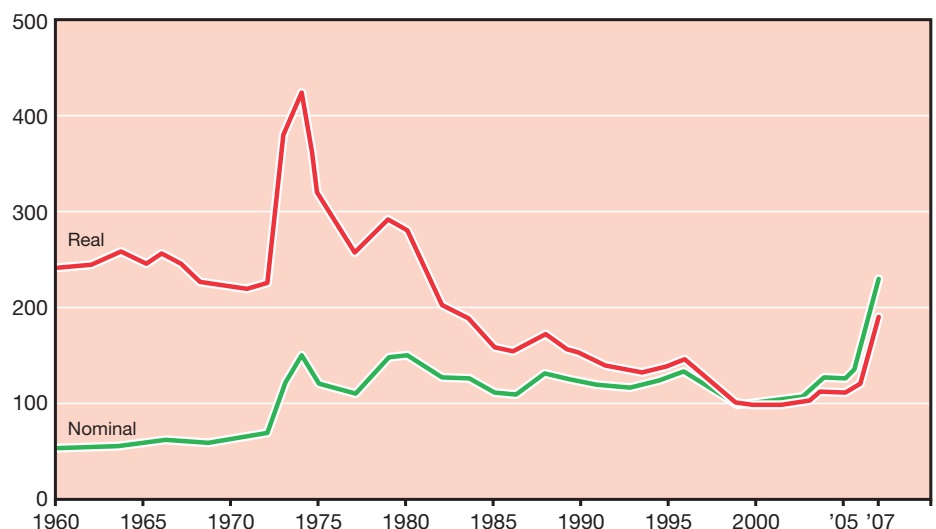
# Buffer Stocks



**Rachel Cole**, teacher at Cheltenham Ladies' College and a Principal Examiner, examines the rationale and problems of price stabilisation schemes.

How times change. Five or six years ago everyone was talking about cheap food. Now the big news is high food prices, and other commodity prices too such as oil and metals. Prices of commodities tend to be very variable, and especially so for agricultural products. Low prices can be just as damaging to various groups as high prices are to others. Volatile prices tend to be damaging to exporting and importing countries, and have implications for growth rates, investment, confidence, currencies as well as the more immediate problems of poverty and cash crises on balance of payments. On average, primary products account for about half of developing countries' export earnings, and many derive the bulk of their export earnings from one or two commodities. There are good economic reasons for intervening to prevent wildly oscillating prices, as predictability and stability is good for both consumer and producer. One method which has often been used, for almost as long as economies have existed, is a buffer stock scheme.

**Figure 1: Food Prices 1960-2007 (Real and Nominal Indices)**



See also M. Jewell, 'What might be the advantages and disadvantages of controlling raw material prices through a buffer stock scheme?', *Economics Today*, Vol. 14, No. 1, September 2006, pp. 7-11.

Source: 'Food prices: cheap no more', *The Economist*, 8 December 2007, p.84. Indices published by the IMF.



## What is a buffer stock scheme?

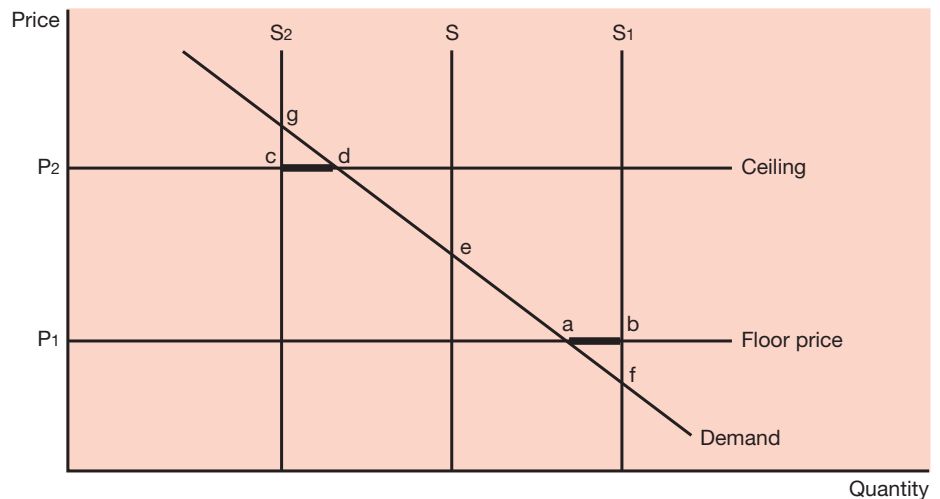
**W**hen a train ‘hits the buffers’, it is cushioned from going off the end of the rails, thus avoiding damage to the train or the passengers. A buffer is a soft landing or a cushioning in some way, and in economics it refers to the softening of price extremes. For some products, usually storable commodities with very low price elasticity of demand and/or supply, prices can be very volatile, and this tends to be harmful to producers and markets as a whole. A buffer stock scheme might be set up to prevent prices from moving too high or too low.

Buffer stocks are usually organised by a group of suppliers or a government. When prices fall below a certain level the scheme organisers buy up any further production of the item. They are buying cheap, and the extra demand means that prices stop falling. When prices rise above a certain level then the scheme operators sell the stocks. They sell at a high price, increasing supply on the market. Increasing supply stops prices rising further. In theory they should be in a ‘win-win’ opportunity; buying cheap and selling dear. In other words the organisers should be able to make money running a buffer stock. The way in which buffer stock schemes is meant to work is shown in Figure 2.

In the market for sugar, assume that the equilibrium price and output in a normal year is at e, where demand meets supply (S). Note we assume world supply is a fixed quantity denoted by a vertical supply curve. Now let's suppose one year there is a bumper crop and prices are set to fall, as supply increases to S<sub>1</sub> and the equilibrium falls to f. The scheme operators have decided that prices should not fall below P<sub>1</sub>, the ‘floor’ intervention price. This may be because prices are below production costs in the long term, or that speculators will just push the prices down further. So now the scheme operators buy up quantity a to b which effectively shifts the demand curve to the right to that it intersects the supply curve at b. This is a new equilibrium point and prices stop falling.

Now in another year when supplies of sugar are poor due to growing conditions there is a new equilibrium at g. This is above the ‘ceiling’ intervention price and can be damaging to purchasers of the commodities, and if it is foodstuff there might be widespread problems if people cannot afford to eat properly. There can be inflationary pressures

Figure 2: How a buffer stock operates



across the economy, and export earnings might falter. So the scheme operators decide to release some of their buffer stocks. The amount is distance c to d on the graph and prices are now at a new equilibrium of P<sub>2</sub> and supply has effectively shifted to the right causing a new equilibrium at d.

## Which markets can use buffer stock schemes?

Buffer stocks come into their own in commodity markets, because prices tend to be very unstable, and more specifically in commodities which can be stored effectively and at relatively low cost. *What are commodities?* Commodities are goods which are fairly uniform, and one producer cannot distinguish the supply from the supply of another. Examples are copper or milk. Because they are standardised they can be traded in bulk. They are mostly the output of the primary sector, agriculture or minerals, but also some partly-manufactured goods which are indistinguishable, such as semi-conductors. There are two main types of commodities, with one very key distinction – mined products such as metals which can be stored or warehoused are referred to as ‘hard’ commodities; but agricultural ones, often less easily and cheaply stored, such as milk, which are known as ‘soft’. Buffer stocks tend to be more effective in markets for hard commodities, because the key idea is that the commodity will be bought up when the prices are low (which stops prices falling further) and stored until prices rise again when they are sold (which stops prices rising further). *The more perishable the commodity the less likely the buffer stock is to work well, in the sense of keeping the price within the intended price range.*

## Why are buffer stock schemes hard to get going?

### ► The need for significant start up capital

The scheme organisers need to buy up the initial stock, warehouse it, and there is the bureaucratic and administration overhead of running the scheme.

### ► Storage costs, especially if refrigeration is required

Some products for which buffer stock schemes have been tried, such as cocoa beans, have had problems with limited storage life.

### ► Cooperation between suppliers

Some may refuse to join the scheme, in which case they can undermine the whole working of it. For example, if the scheme is trying to hold prices high by buying, an outsider can rid itself of any produce at a high price. By bucking the system it may make more money, so careful negotiation is needed to make sure that the major producers join in.

The problems involved in setting up a buffer stock scheme are hardly insurmountable, especially if governments are involved. However, once set up they tend to break down over time, owing to some intrinsic problems with the operation of buffer stock schemes.

## Why do most buffer stock schemes collapse?

### ► When the intervention price is ‘too high’ at the bottom end of the price range

This means that the scheme enters the market too early, has to store too much commodity, and doesn’t actually prevent any hardship of the producers. Why is it

set too high? It is in the interests of suppliers to get the highest price band possible, and if the scheme is set up by suppliers they tend to bias the lower price limit upwards.

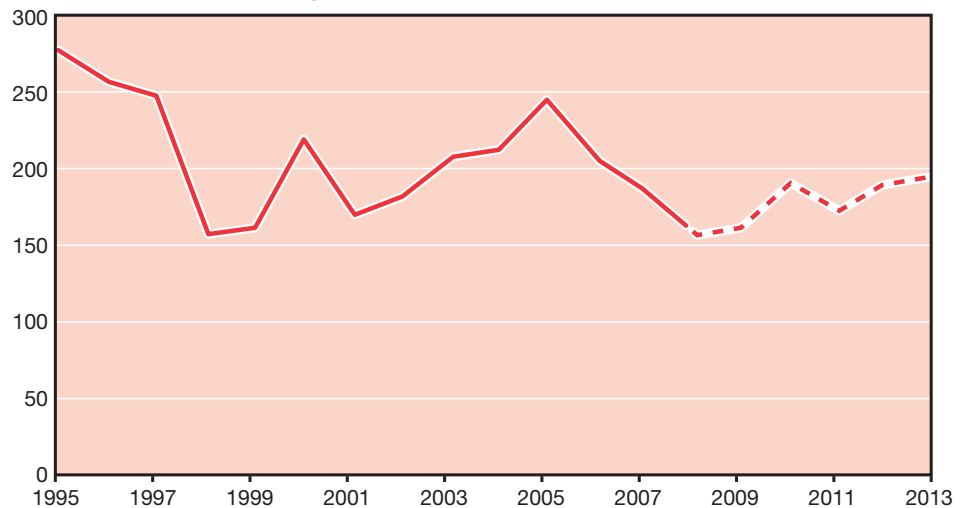
► **When the intervention price is too low at the top end of the price range**

If the scheme has to sell when prices rise but there are inadequate stocks then the scheme will collapse and prices will soar. This is likely to happen if there has been a series of poor harvests or yield of commodities.

► **Inadequate finance to operate a scheme**

If a buffer stock has insufficient funds to purchase a lot of the commodity when supplies are plentiful then it cannot hope to keep market prices above the floor price. Also critical is how price sensitive is the buffer stock's actions in buying supplies. What is the price elasticity of demand? Remember this aspect is easily overlooked when drawing a simple supply and demand diagram in the abstract. In the real world price elasticities, both on the demand side and the supply side, are crucial factors in how market forces work.

**Figure 3: World price of sugar, US\$ with intervention by Indian buffer stock scheme**



Source: Food and Agricultural Organisation of the UN, prices projected from 2008  
<http://www.fao.org/docrep/008/a0334e/a0334e0f.htm#bm15>

► **Adaptive expectations**

If you are a producer and you know that the buffer stock scheme will buy anything you make at a minimum price then you are likely to produce as much as you can. There is an incentive to produce more and more, by using more fertilisers and pesticides and giving your crops a lot of attention. The result is persistent surpluses; the scheme always has to buy and never to sell, so in the end it runs out of money.

► **Game theory**

If you are part of a club that keeps prices high it is going to make you a large profit if you secretly over produce and sell at the high price. Whatever the penalty for being caught as a cheat it's unlikely to be as large as the profits you can make. If everyone does this then production will be bulging out everywhere and prices will collapse further than if perhaps there had been no organisation at all.

*India created a buffer stock scheme to help sugar cane growers.*





### ► Time frame

The longer it takes for a price shock to revert to norm, the less likely it is that price stabilisation schemes will be viable. Stocks will either become too abundant or disappear, depending on the type of shock.

### ► International political pressure

Price fixing is not a concept that fits happily in the World Trade Organisation vocabulary. Although the schemes might prevent small producers from ceasing to exist, there may well be pressure from many sources to operate a 'free market'. Buyers of commodities take a dim view of regulated prices and may try to prevent what they see as a cartel.

## Buffer stocks in action

In 2000-2001 the price of sugar was at a low as shown in Figure 3.

In India the Ministry of Food in 2002 decided to create a buffer stock of two million tonnes of sugar for a period of one year in order to mitigate the hardship of sugarcane growers. For the last three sugar seasons, the industry had been carrying increasingly large stocks. The carryover stocks from the 2001-02 sugar seasons were around 10 million tonnes. The expected production in 2002 was around 17 million tonnes against domestic consumption of around 18 million tonnes. Export demand for sugar was predicted to be around one million tonnes. These forecasts meant that stocks of sugar would remain at around eight million tonnes at the end of 2002.

(This data was found on the Department of Food and Public Distribution, Government of India webpage in July 2002.)

By 2007 the price of sugar was soaring and the same webpage source explains the state of the sugar market six years later.

The government in India announced release of three millions tonnes of sugar buffer stock as from August 2008.

## Evaluation – the value of the buffer stock system

Price fluctuations of commodities can have far-reaching and damaging effects on both sellers and buyers. Left to itself the free market in commodity trading demonstrates significant market failure.

For commodities that can be stored effectively and cost-efficiently the buffer stock system seems to be an ideal solution being self-financing in that the scheme buys at a low price and sells at a high price. However in practice most of the schemes that have been set up hit problems, and these are often caused by incorrect setting of intervention prices, and lack the flexibility to change the intervention prices when there are structural changes in the demand and supply factors. The alternative appears to be a process of talks, international agreements and guidelines, which perhaps for many commodities is the best form of stabilisation possible. The main obstacle to the progress of the talks tends to be the existence of subsidies, trade protection deals and trade blocs. These are problems addressed in articles elsewhere in *Economics Today*, but are beyond our consideration here!

## Questions for discussion

1. Buffer stocks often seem to work for a while and then collapse, leaving a more volatile situation than at the start. Does this mean that they should never be used?
2. Unlike many other attempts to remove market failure, buffer stock schemes are usually organised by producers not governments. Why do you think this is so? Do you think the government should step in when things go wrong, as they usually do?
3. Why are price elasticities of supply and demand relevant to the operation of a buffer stock scheme?
4. Has the sugar buffer stock scheme in India been a success? What further information would you want before making a final judgement on its operation?
5. Do you agree that buffer stocks are a way to protect incomes of the often poor individual producers of commodities faced with the powerful and sometimes exploitative power of large buyers in the rich countries?
6. Can you describe what has happened to world food prices in your own words, using Figure 1? The distinction between real and nominal is clearly very important, as is the use of index numbers. (If you can do this you already have some very worthwhile skills as an economist in your AS course.)
7. Some textbooks just give one intervention price for buffer stocks rather than both the ceiling and floor version as in this article. It makes the diagram easier to understand but the logic for making a profit disappears. Why is this?

## Key terms

- **Buffer stock** – a store of a commodity which is used to keep prices stable. It can be sold as prices start to rise, preventing further price rises. The stock is bought at low prices, which prevents further price falls.
- **Intervention price** – the level at which the operators of the buffer stock scheme agree to enter trading in the market with a floor and ceiling price.
- **Hard commodity** – a product which can be stored, such as oil or coal, and has usually been mined. These commodities are easy to store and therefore a buffer stock system is feasible.
- **Soft commodity** – an agricultural commodity such as cocoa or coffee.
- **Commodity** – something which in supply has very low quality differences. There must be some demand, but the demand does not distinguish between suppliers. Supply is often produced on a large scale.
- **Commodity market** – where buyers and sellers of commodities trade. Because commodities are fairly uniform there does not need to be inspection of the produce, and therefore trade is efficient, large scale and often very sensitive to market changes. Commodity market prices are considered to be a 'leading' or advance indicator of changes that are going to happen in the economy as a whole.
- **Price volatility** – the free market price tends to go up and down sharply, quickly, and over a wide range. Primary products are the most susceptible to price volatility, owing to low levels of price elasticity of demand and supply. Cobweb analysis helps explain price volatility.





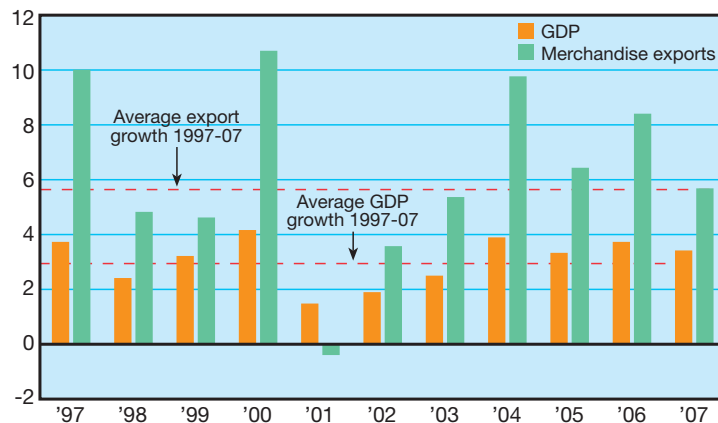
# The International Economy

*In this feature, Nigel Tree looks at recent developments in the world economy, including trade, output and economic development.*

## The World Economy: Trade, Output and the Global Outlook

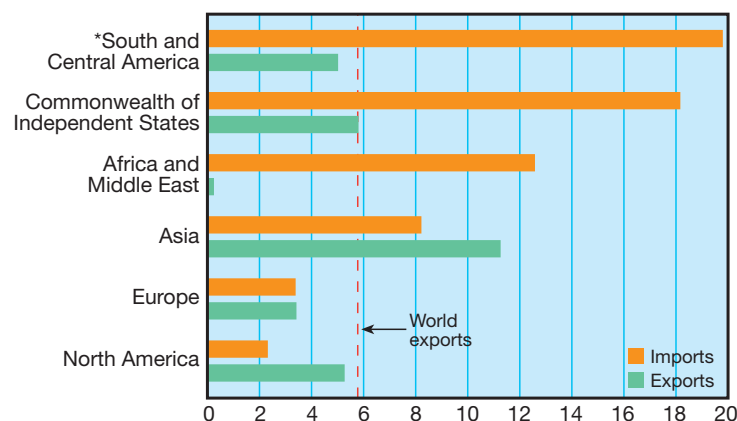
Growth in world output and trade slowed during 2007 according to the World Trade Organisation (WTO). Global economic growth fell from 3.7% in 2006 to 3.4% in 2007. However, this latter figure was close to the average sustained over the past ten years. The trend can be seen in Figure 1.

**Figure 1:** Growth in the volume of world merchandise trade and GDP, 1997-2007, (Annual percentage change)



Source: WTO

**Figure 2:** Real merchandise trade growth by region, 2007, (Annual percentage change)



Source: WTO \*includes the Caribbean

The downturn in growth basically reflected weaker demand in the developed economies, as by contrast growth in the developing world reached 7% – nearly three times the rate of the developed economies. In fact, the contribution of the developing countries to global output growth was over 40% in 2007.

The slowdown in the developed economies was the major reason behind the fall in growth of merchandise trade last year. According to the WTO, real merchandise export growth was estimated at 5.5% in 2007, which was almost three percentage points down on the previous year. However, it was still very close to the average rate of trade growth over the past ten years.

Figure 2 shows the real merchandise trade growth by region in 2007. This shows a large variation in real trade growth between regions, reflecting differences in levels of economic activity and relative prices. For example, the rapid growth in oil and other commodity prices during 2007 improved the terms of trade of countries which were major exporters of these products. This allowed such countries to be able to afford greater levels of imports, and was especially

true of Africa and Middle East countries – where mining products account for more than half their merchandise exports.

Imports into Asia grew by over 10% in both India and China, but were offset by a growth of only 1% in Japan. However, overall exports continued to grow faster than imports. Also, in the US, exports were slightly below the average world growth rate, but were twice as high as import growth. By contrast, Europe's lacklustre growth rate led to sharp falls in the growth rates of both imports and exports.

The current Credit Crisis will obviously take a toll on both growth and trade during 2008. WTO forecasts in October 2008 suggest that developed markets will only grow by 1.1%, whilst developing countries are expected to increase by 5%. Taken together this is likely to increase world output growth by only 2.6% and global trade by 4.5% – both of which will be below trend.

Pascal Lamy, Director-General of the WTO said: "These are uncertain and troubling times for the global economy. To date, the financial market turmoil, significant price surges and the slow-down of developed economies have not led to a disruption of trade. But protectionist pressures are building as policymakers seek answers to the problems that confront us. More than ever we must reinforce our global trading system with rules that are more transparent, predictable and equitable."

### Commodity Price Roller-Coaster

At the beginning of July 2008 the International Monetary Fund (IMF) said that the rise in food and oil prices could "severely weaken" up to 75 developing countries and that some countries were now at a "tipping point". In the first half of 2008 the Reuters-Jefferies CRB commodity index rose 29%. This can be seen in Figure 3.

According to the IMF, the adverse effect of rising prices of imports between January 2007 and April 2008 on the balance of payments of developing countries, would add \$37.1bn, which was equivalent to 2.7% of their GDP. Of particular concern were the soaring prices of staple foodstuffs such as rice which experienced its highest rise in price for 30 years. This led to riots in many parts of the world including Haiti and the Philippines.

But why did food prices and other mineral prices rise so high? There were several reasons for this.

- Urbanisation has led to less land being devoted to agriculture in developing countries.
- The rapid increase in oil prices resulted in basic food production being switched to the production of biofuels.
- Speculators in the futures markets bet on prices rising higher which in turn raised the cost of future supplies.
- Demand for food has increased in India and China as incomes have risen.
- Some countries, concerned at the effect on their population of rising food prices, put a block on exports, which served to reduce the supply on the world market.

But, just as the situation appeared to be reaching critical levels, the global credit crisis started to gather momentum and there was a slump in demand leading to lower prices. In fact, the Reuters-Jefferies CRB index fell by 25.3% in the 3rd quarter of 2008, which was its biggest single fall in 52 years. Oil, for example, fell in price from \$147 to under \$100.

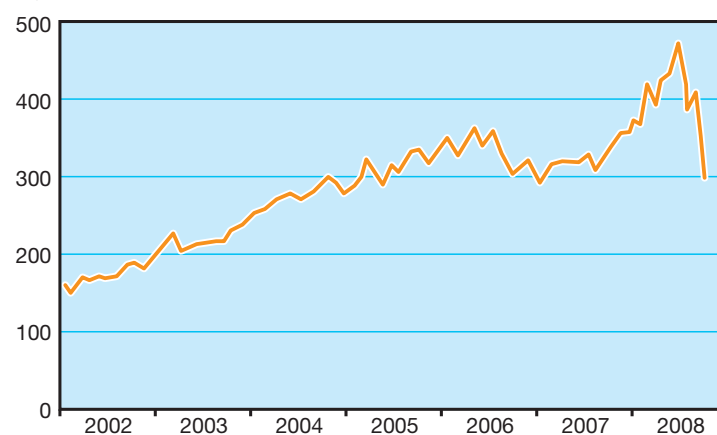
Will this fall continue? It will probably do so during 2008 and into 2009 as the world economy continues to slow. Actually, the fall in price has almost totally been due to falling demand rather than increasing output, and as soon as the global economy recovers there may be increased pressure on primary product prices yet again.

### Foreign Direct Investment

Global Foreign Direct Investment (FDI) flows rose by 30% in 2007 to reach \$1,833 billion, according to UNCTAD, following continued growth in the previous four years. This was despite the effect of the global financial and credit crisis which started to take hold in the latter half of the year. Developed, developing and transition



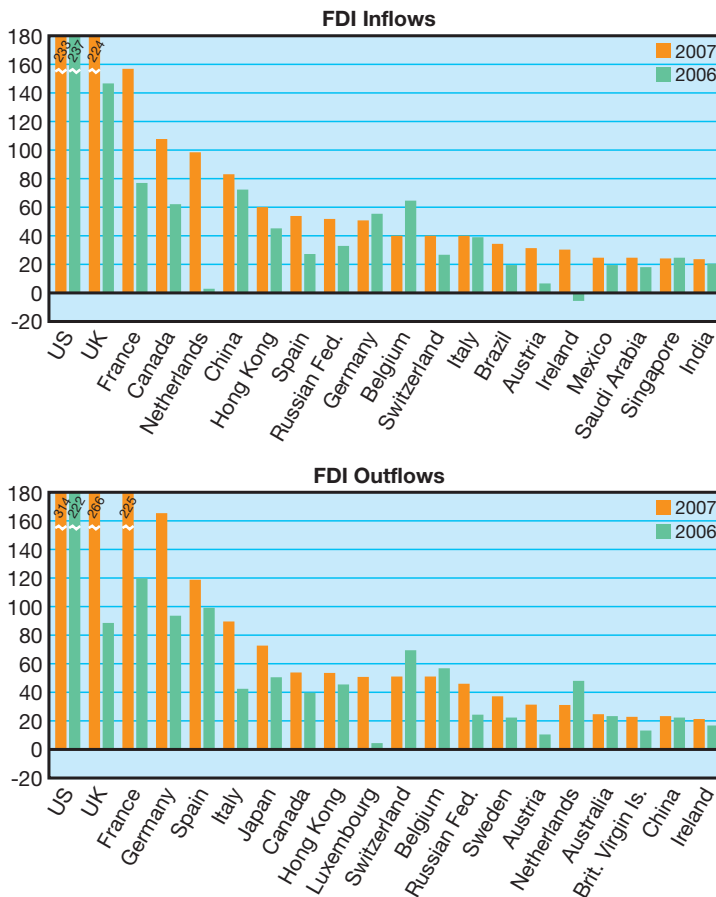
Figure 3: Reuters-Jefferies CRB Commodity Index



Source: Reuters-Jefferies



**Figure 4:** Global FDI flows, top 20 economies, 2006, 2007 (billions of dollars)



Source: UNCTAD

economies all saw continued growth in their inflows.

The record levels of FDI in terms of dollars partly reflected the fact that the dollar had depreciated against other major currencies, but even when measured in local currencies FDI flows were still 27% up in 2007. In terms of inflows, the US remained the largest recipient country followed by UK, France, Canada and the Netherlands as can be seen in Figure 4.

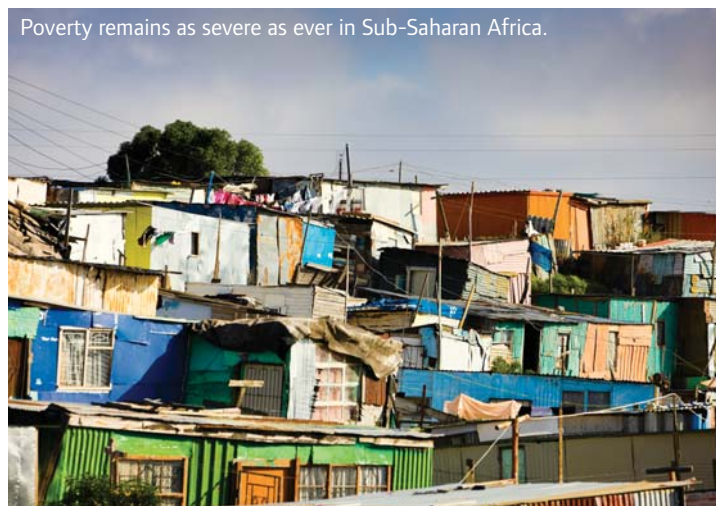
According to UNCTAD, although the developed countries take the vast bulk of FDI inflows, with the EU attracting almost two thirds of the FDI going to developed countries, developing countries received \$500bn which was 21% above the previous year and their highest level ever. Even the least developed countries received \$13bn of FDI which was also their highest ever total.

What was particularly surprising, given the credit crunch, was the way that cross-border Mergers and Acquisitions held up. These totalled \$1,637bn in 2007 which was 21% higher than the previous record level in 2000.

## Trade Liberalisation

In November 2001, the 142 members of the WTO met in Doha and agreed to launch a new trade liberalisation round commencing in January 2002. The World Bank has estimated that if all trade barriers were abolished it would boost global income by nearly £2,000bn, and lift 320m people out of poverty. In fact, since 1948 there have been eight such rounds of tariff reductions which have seen tariffs in the industrialised world cut by more than 80%. Also, during this period, trade has grown faster than international output in all but eight years, showing the importance of trade as an 'engine of growth'.

The basic tension in these negotiations was between the developing countries that wanted developed countries to abandon their agricultural subsidies and the developed countries that were calling upon the developing countries to make big reductions in their tariff barriers.



However, this round of trade talks, now in its seventh year, broke down again in Geneva at the end of July 2008, after nine days of negotiations. The reason for the setback was summarised in a leader in the *Financial Times*, July 31st 2008, which said: "The proximate cause of failure this week was an arcane issue: a stand-off between the US, India and China over rules protecting small farmers from surges in food imports. But that merely underlines the lack of political will to complete this round and how the critical players have failed to confront their own domestic constituencies."



Unfortunately, the developing world does not speak with one voice on these matters. Although many developing countries want freer access for their agricultural products into the west, they also want to sell into the Indian and Chinese markets. However, these latter two countries are concerned about protecting their own farmers, and the US and to some degree the EU, will not agree to make tariff reductions unilaterally. There will probably be no further substantive negotiations until 2009, once the new US President is established in place.



## Overseas Aid and Development

New estimates were published by the World Bank in August 2008, concerning the number of people in poverty in the developing world. Using its new measure of the number of people living on less than \$1.25 per day, it revealed that 1.4bn people in the developing world (one in four) were living below this level in 2005, which was a large improvement on the 1.9bn people (one in two) in 1981. The World Bank noted that their new estimates show that poverty has been more widespread than previously recognised, although there has been real progress towards its alleviation. The revision in numbers was due to the fact that they discovered that the cost of living was higher in the developing world than they had originally thought.

Overall, poverty has been reducing at the rate of about one percentage point a year, from 52% of the developing world's population in 1981 to 26% in 2005. However, this decline has not been uniform across the poorest areas in the world. In fact, in 1981 East Asia was the world's poorest region, but poverty there has fallen from nearly 80% of the population in 1981 to 18% in 2005. This is mainly due to strides in poverty reduction which have taken place in China.

Similarly, poverty in South Asia has fallen from 60% to 40% over the same period. However, in Sub-Saharan Africa the figure has remained at 50% over the whole period. Also, given the increase in population, the absolute number of those living below \$1.25 per day has nearly doubled from 200m in 1981 to 380m in 2005.

The World Bank also published a report in October 2008 which estimates that high fuel and food prices will increase the number of malnourished people around the world in 2008 by 44m to reach a total of 967m. According to the World Bank Group President, Robert B. Zoellick: "While people in the developed world are focused on the financial crisis, many forget that a human crisis is rapidly unfolding in developing countries. It is pushing poor people to the brink of survival. The financial crisis will only make it more difficult for developing countries to protect their most vulnerable people from the impact of rising food and fuel costs."

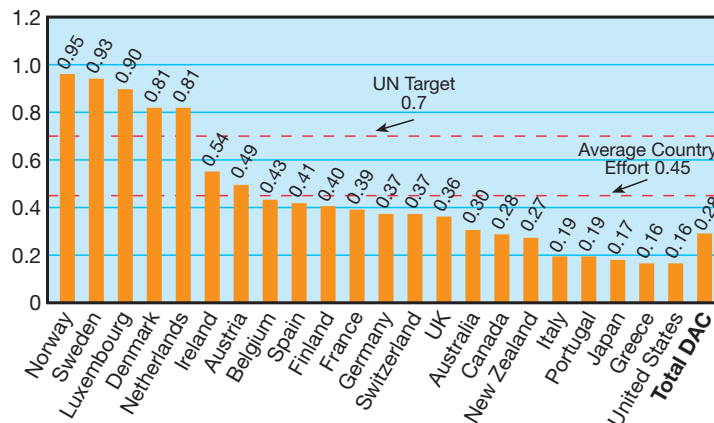
In May 2008 the World Bank launched a \$1.2bn rapid financing facility to help poor countries cope with the food crisis.

In the G8 summit at Gleneagles in 2005, Tony Blair got pledges from the heads of the top eight industrialised nations to spend \$50bn more each year on aid until 2010, with half of this increase going to Sub-Saharan Africa. But, according to the OECD, although most countries are still maintaining their giving targets, they are a long way from fulfilling them. It estimates that an extra \$38bn at current prices will have to be forthcoming to meet the earlier targets.

Overall, aid from the 22 member countries of the OECD Development Assistance Committee, the world's major donors, provided \$103.7bn in aid in 2007. This was a fall of 8.4% in real terms and represented a drop from 0.31% of members' combined gross national income in 2006 to 0.28% in 2007. This can be seen in Figure 5.

The largest donors in 2007, by volume of giving, were the United States, Germany, France, the UK and Japan. But, by contrast, the only countries to exceed the United Nations target of 0.7% of GNI were Denmark, Luxembourg, the Netherlands, Norway and Sweden. Another plus was that bilateral aid to Sub-Saharan Africa, excluding debt relief, increased by 10% in real terms. There is obviously still a long way to go for the richest countries to reach their earlier commitments and this will be made worse as a result of the food price and global financial crises.

**Figure 5:** Net Official Development Assistance, 2007, as a percentage of GNI



Source: OECD

# What Impact will an Increase in Income per Head have on the UK Economy?

**John Troy**, Head of Economics at Charterhouse, discusses how economic growth impacts on various macroeconomic issues.

An increase in income per head effectively means there is growth in the economy. But it is strange to write this article when the tenor of the macro debate is the possibility of a **recession** in the UK (defined as two successive quarters of falling GDP). In a recent BBC television programme the impact of the state of the UK economy on a company called Acme Whistles in Birmingham provided a case study of how the macro scene impinges on the market for whistles.<sup>1</sup> This prompts using this firm as a typical business enterprise affected by movements of income per head. You may find it useful at this point to look up the company's website <http://www.acmewhistles.co.uk/xcart/customer/home.php>.

The UK government has a number of macroeconomic targets which are the subject of considerable time analysing in any AS course in economics. The targets seem, at first sight, uncontroversial. It is surely good for people to have more income than less; more people in jobs; lower rates of inflation and to be paying our own way in the world (balance of payments equilibrium). Furthermore it seems better to have some degree of income equality and the environment should be kept in as good a state as possible. You might notice that the certainty with which these targets are offered as self-evident diminishes as we go through the list.

The purpose of this article is not to question the targets but to see how they are affected by the increased income per head and consider how Acme Whistles might be affected. We consider each of the macroeconomic issues in turn.

1. BBC 10 o'Clock News, 8 July 2008.

The author acknowledges help from Lucy Oliver with this article. Hugh Pym, BBC special correspondent covering economics, interviewed Simon Topham of Acme Whistles, who referred to declining business confidence in a Chambers of Commerce survey. This item in the late evening news was an early mention in 2008 of the R word – recession – and prompted a lot of further news coverage.

Exam Board	AS	Unit	A2	Unit
AQA	✓	2		
Edexcel	✓	2 (2.3.1 & 2.3.6)		
OCR	✓	F582		
WEJC	✓	EC2		
CCEA	✓	2		
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## Economic growth

**T**his is reflected in an increase in real GDP per head. By definition the increase in income per head is more output per person (think of that very early lesson on the circular flow of income). We can now consider the sort of things that will be produced. This will depend upon the **income elasticity of demand** for the goods and services that are produced. Some goods such as gym club memberships would rise as people feel able to afford these goods with their increased income. (Normal goods:  $YED > 0$ .) Some goods and services such as bus travel may fall as people feel they can afford better ways of getting about i.e. an **inferior good**:  $YED < 0$ . You can think of your own example of a **luxury good** where  $YED > 1$ . For this author it would be a meal at an expensive restaurant.

Acme have a number of whistles for sale from hunting horns to Premiership whistles and party gifts. As income per head rises one would expect some products to sell more and possibly others less. Look at the Acme website to see if you can identify the whistles that might be most sensitive to the growth in income per head.

## Unemployment

As output rises one would expect the numbers out of work to fall because as more goods are produced more people are needed to produce them. The extent to which this is true will depend upon a number of things:

### ► The increase in the capacity of the economy

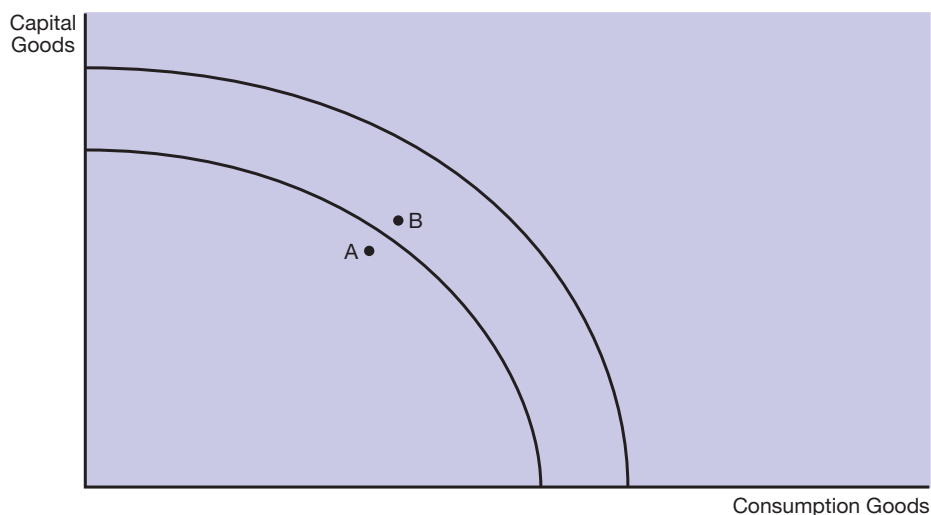
Let us imagine a situation in which 5% more goods are produced but the capacity of the economy through such things as investment in machinery, has increased by 10%. There is now greater spare capacity (hence an output gap) and one would expect unemployment to rise.

This is illustrated in Figure 1 by the increase in output and thus income from A to B. However B is further from its PPF and thus would be associated with a rising level of unemployment. It would be a good exercise to do the same thing using AD/AS analysis.

### ► The type of labour required to produce the goods

The value of what is being produced may rise and there needs to be fewer people producing them thus as we shift from say, producing garments to aero engines.

Figure 1: The production possibility frontier



Consider what will happen to the number of people employed by Acme if the value of whistles produced increases by 30% but:

1. Acme go 'up market' and the price of each whistle sold doubles; or
2. Acme produce 30% more whistles but decide to invest in machines that need fewer workers.

You can see from this that the link between GDP and employment is more complicated than the direct relationship sometimes portrayed.

## The price level

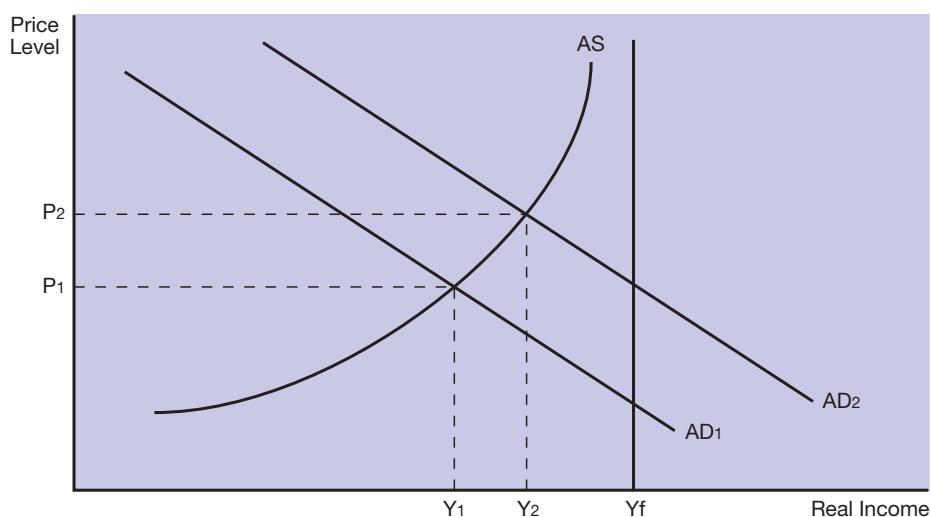
The level of inflation will be affected by an increase in income per head. AD/AS analysis is helpful here to draw conclusions. Let us assume the increase in output has been caused by an increase in demand for UK-produced goods. One example could be the effect of an unfashionable UK football team winning the Champion's League and thus inspiring celebration throughout the land. This can be shown by the shift of

AD to the right. The demand is met by an increase in production. The extent of the shift will depend upon the degree of consumption inspired by this unlikely event and the size of the multiplier that then is at work. If the firms employ more workers who all spend a high proportion of their new income on UK goods this would clearly have a far bigger knock-on effect than if most of this income were saved. Hence AD will shift more. This is shown in an increase in price level and thus inflation from  $P_1$  to  $P_2$  in Figure 2.

The level of price increase will depend upon the spare capacity in the economy. You can see that the closer the economy is to full capacity ( $Y_f$  in Figure 2) the more the increase in demand will lead to an increase in price level. This is, of course why the MPC is so concerned with the amount of spare capacity in the economy.

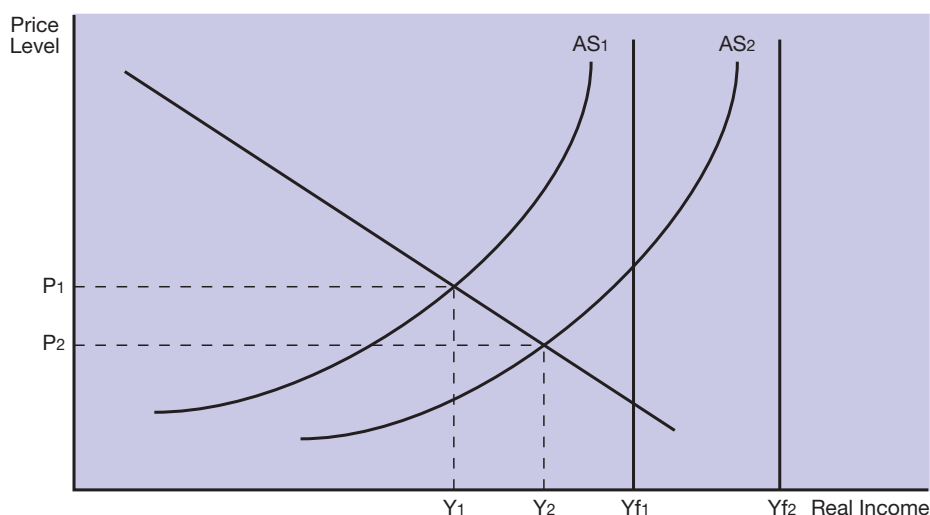
The Acme example works here as the demand for whistles is buoyant and the only way Acme can respond to demand is to take on workers from other firms. To do this they have to pay all their workers

Figure 2: A shift in aggregate demand





**Figure 3: A shift in aggregate supply**



more and thus their costs rise. The effect is inflationary. If they did not have to increase their wages the costs would not rise and there would be no inflation (the elastic part of the supply curve).

However the increase in income might be the result of growing efficiency of the British economy. This will be reflected in a shift in aggregate supply as the capacity of the economy has increased. In Figure 3, one can see this reflected in both the full employment level of output increasing (Yf1 to Yf2) and the AS shifting to the right. As one might expect the effect of increased income is that prices are falling (P1 to P2) as the increase in output has not matched the increase in productivity.

Using the Acme theme the difference is the likely reaction of the manager in charge of pricing if the company manages various cost reduction measures such as employing more efficient machines and streamlining production patterns. Under these circumstances one would

expect prices to fall, or at least, rise less quickly.

### The balance of payments

The impact of a rise in income per head is an issue that often causes difficulty. The balance of trade is the value of goods and services exported less the value of goods and services imported. We will assume that the growth is generated internally by such things as falling interest rates and rising prices of assets such as houses and shares. (You might like to consider the effect of the reverse situation as it will be more useful for any exam in 2009 and beyond.) The standard transmission mechanism is that as people feel richer they spend a higher proportion of their income. They spend this money on more:

- ▶ UK-produced goods (which will have no direct effect on the balance of trade); and
- ▶ Imports (which will push the balance further into deficit).

The UK-produced goods will almost certainly have imported components which would further increase the deficit.

Of course the position will not be so clear if:

- ▶ The growth is caused by a shift in the AS curve (Figure 3) as exports will increase as the price level falls;
  - ▶ The growth in demand is export-led; or
  - ▶ Other countries grow as well.
- Think about these scenarios and consider the likely outcomes.

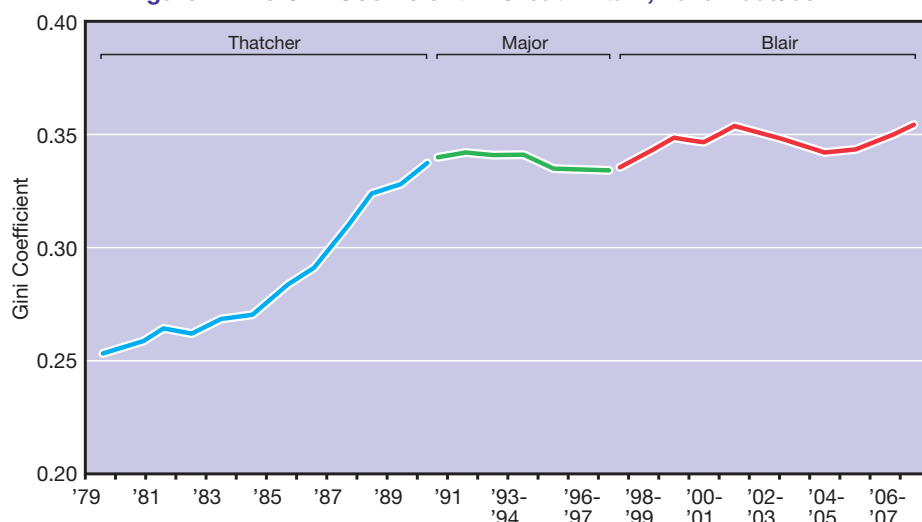
### The distribution of income

The effect of a rise in income per head on distribution of income is not at all clear. The growth in income per head could be merely the result of the higher income members of society seeing their incomes grow but this is not a phenomenon shared by those on low incomes. In this case the distribution of income would become more concentrated in fewer hands. On the other hand it could be the reverse as workers realise their power and are only prepared to increase work for a greater proportion of the value of output. Another imponderable is the role of the government. If the government imposes supply side measures such as the removal of trade union power and alters the balance of taxation from income to indirect taxes one would expect income to be less evenly distributed. The standard measure of inequality is the **Gini coefficient**. The closer it gets to one the more uneven the distribution of income. One can see from Figure 4 that the Gini rose significantly under the Conservative government until the early 1990's. This could have been the result of:

- ▶ The differential impact of economic growth on higher income groups;
- ▶ The supply side policies that took place at the time; or
- ▶ A combination of the two (supply side policies leading to both growth and redistribution of income from the poor to the rich which reinforce each other).

The general view is that during the Blair government rising economic growth has favoured higher income groups but been in part countered by government policy that has aimed to redistribute to poor income groups.

**Figure 4: The Gini Coefficient in Great Britain, 1979-2005/06**



Source: M. Brewer *et al*, *Racing away? Income inequality and the evolution of high incomes*, IFS Briefing Note 76, p.3 <http://www.ifs.org.uk/bns/bn76.pdf>

### The environment

The final thing to consider is the effect upon the environment. There are several

contradictory forces at work here. On the one hand greater output will tend to lead to more pollution. However, this is countered by the components on the rise in GDP. If people buy more gym memberships and fewer goods, it may be that the rise in GDP leads to less pollution. Equally higher income people may buy new cars that are less polluting. On the other hand they may trade up to high petrol consumption vehicles. The same argument would take place on a national scale. Governments are prepared to legislate for a greener world as employment is rising and the electorate feels good. If we hit a recession these proposals which involve making things more expensive tend to be shelved.

Let us go back again to Acme Whistles. There is an obvious connection between producing more and producing more carbon emissions. But when such a firm is profitable and the order books growing the directors may be more likely to consider the effect of producing a whistle on the environment. But if the firm faces harsh economic trading conditions one might expect them to be less concerned about the future of the planet and will concentrate on the short term.

The conclusion of all this is that one cannot reach any definite conclusions. The effects of rising GDP per head on the environment depend on the causes of economic growth and the actions of both producers and the government. Beware of anyone who is dogmatic in this most interesting of discussions.

### Questions for discussion

1. What are the main causes of the rise in income per head?
2. Which of these changes will have the greatest effect upon the standard of living?
3. What could the UK government do to mitigate against the damaging effects of the rise in income per head?
4. Why is the amount of spare capacity relevant in assessing the effect of a change in income per head?

## Summary of key points

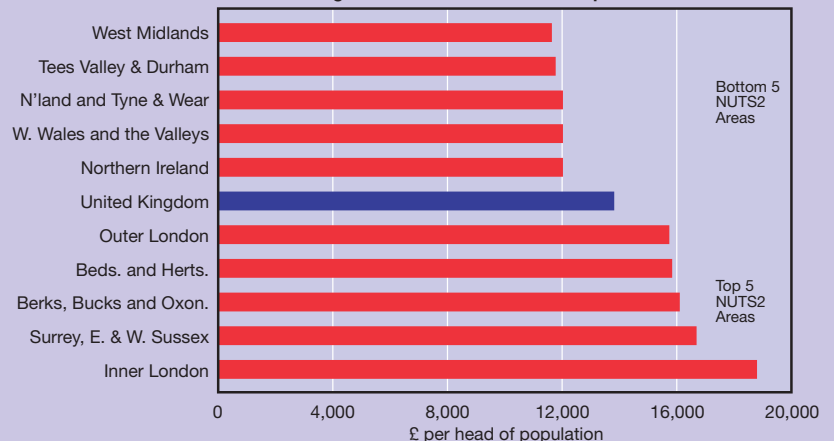
- ▶ In a period of economic growth some goods and services will have a different demand situation than other items of consumer expenditure depending on the income elasticity of demand.
- ▶ Rising incomes may put pressure on the price level depending on the interplay of shifts in aggregate demand and supply.
- ▶ Economic growth may push the balance of payments into (further) deficit.
- ▶ Not all sections of society may see the benefit of rising incomes per head.
- ▶ The impact on the environment of economic growth is not clear-cut.



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1.

Regional Household Income Comparison 2006



Investigate the reasons for the differences in income per head across different regions of the UK.

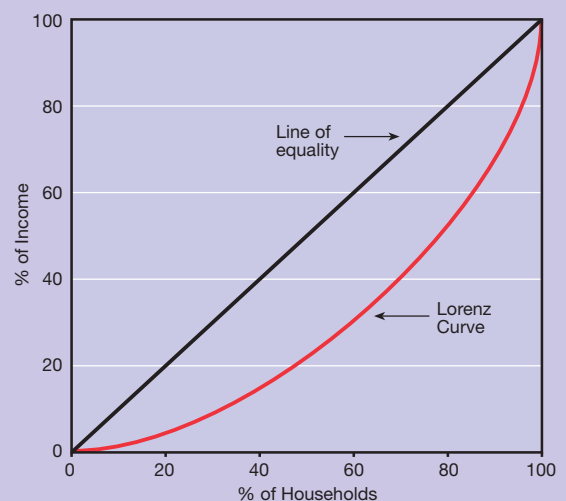
[www.statistics.gov.uk](http://www.statistics.gov.uk)

2. Research the Lorenz Curve and investigate how the Gini coefficient is calculated from it. How does the Gini coefficient in the UK compare to other developed economies?

<http://www.economicsnetwork.ac.uk>

(search Lorenz and Gini).

<http://en.wikipedia.org>



3. Recently the UK has had periods when both employment and unemployment have been rising. Investigate how this can happen.

<http://news.bbc.uk>

[www.employment-studies.co.uk](http://www.employment-studies.co.uk)

[www.oecd.org](http://www.oecd.org)



Exam Board	AS	Unit	A2	Unit
AQA	✓	3 (3.3.5)		
Edexcel			✓	3 (3.3.11)
OCR				
WEJC			✓	EC3(E)
CCEA			✓	3
Int. Bacc.				

**Peter Maunder**, formerly in the  
Department of Economics,  
Loughborough University,  
discusses reaction to a recent  
report on the supply of groceries.

# Has the **Competition Commission** been **Too Soft** about **Competition** in the **UK Grocery Retailing Market?**



**T**he question posed in the title of this article suggests that the report published by the Competition Commission (CC) in April 2008 was one that achieved little given the controversy surrounding the investigation of the grocery market begun by the CC in May 2006. The inquiry was referred by the Office of Fair Trading (OFT) after the latter had made an initial study into the grocery market and invited public consultation. The OFT had received 1,250 submissions, the majority of which came from the website of Friends of the Earth which was a vocal critic of Tesco in particular. Despite receiving these submissions the OFT decided not to refer the grocery market to the CC. However several independent retailers then launched a lawsuit challenging the OFT's decision and they were successful with this legal challenge at the Competition Appeals Tribunal. These small retailers had been highly critical of the OFT when it did not refer Tesco's acquisition of two chains of convenience stores. Thus the eventual referral by the OFT of the whole grocery market to the CC represented a triumph for small independent retailers over one of the two bodies administering competition policy in the UK. Now all they needed was for the CC to report with proposals which small retailers hoped might restrain the growth of the big retail supermarket chains in general and Tesco in particular. However the CC's report was to prove a real disappointment for the small shopkeeper lobby. In its initial report issued in October 2007 the CC claimed it had found no evidence of **predatory pricing** being used by the supermarket chains at the expense of small independent retailers. Then in a further statement early in 2008 it was even more clear that the critics of the supermarket chains were to find no significant support from the CC. When it released its provisional findings in February 2008 one observer commented that the CC had indeed achieved an odd outcome:

The Competition Commission... has managed the not-inconsiderable achievement of pleasing no-one – neither small shop owners, the green lobby, Tesco bashers nor the supermarkets themselves.<sup>1</sup>

This article aims to explain how the CC reported its findings in the light of an earlier one in *Economics Today* last year

that reviewed the document issued early in 2007 containing its then 'Emerging Thinking'.<sup>2</sup> In summary that article explained the context of the CC's investigation:

- ▶ The rising concentration of grocery retailing into the hands of a handful of national multiple chains, e.g., Tesco, J. Sainsbury, Asda and Morrisons. Tesco has nearly one-third share of the UK grocery market and 'the big four' together account for three-quarters of this market.
- ▶ A parallel decline in the number of independently-owned specialist retail shops as 'one-stop' shopping has continued in popularity. The number of small retailers is falling at a rate of 2,000 shops a year.
- ▶ The continued growth of Tesco having achieved the biggest market share in grocery retailing with critics claiming it already exerted too much market power.
- ▶ Concerns express that 'the big four' companies were exerting their market power by driving small firms out of business and abusing their suppliers. For an early accessible source on this aspect see the paperback *Tescopoly*.<sup>3</sup>
- ▶ Particular criticism of Tesco concerning its alleged ability to by-pass the planning process involved in seeking new store sites.

These bullet points indicate two things. Firstly, there is a world of hard facts about how Britons typically do their weekly shopping. Secondly, there is another world of keen debate about whether it is desirable that four retail chains together now account for about three-quarters of the retail grocery market. Does this amount to an unwelcome uniformity about shopping in most of Britain's towns? Is the life of town centres being drained away by the continued growth of out-of-town megastores built by these four retailers? Evidence submitted to the CC illustrated the contentious nature of this second world. The CC received over 700 submissions from retailers, suppliers, consumers, local authorities and trade associations and held 81 hearings throughout the UK to receive vocal expression of these concerns. This barrage of information gave the CC

much to consider in coming to address its findings. So what did the CC conclude having digested this immense variety of views about the state of competition in this market?

## The CC findings

### ▶ Consumers

The CC said that in general consumers are receiving the benefits of a competitive grocery market in terms of choice, value for money, innovation and convenience. In most areas of the UK it judged there is a good choice between retailers and competition is strong. However, in a significant number of local areas some large stores face limited competition. This prompted the CC to suggest a remedy which is discussed below.

### ▶ Retailers

The CC claimed its evidence did not show that independent retailers or the wholesalers that supplied them are in terminal decline. Indeed the whole tenor of the CC final report is that whilst small independent retailers are recognised as being under strong competitive pressure from larger firms, this outcome is not to be regretted.

### ▶ Suppliers

On this third aspect of the grocery market the CC did comment with some concern about the way large retailers deal with their suppliers. The CC felt that, if left unchecked, the interest of consumers could in due course be harmed. Hence the CC had proposals addressing this concern.

## The CC recommendations

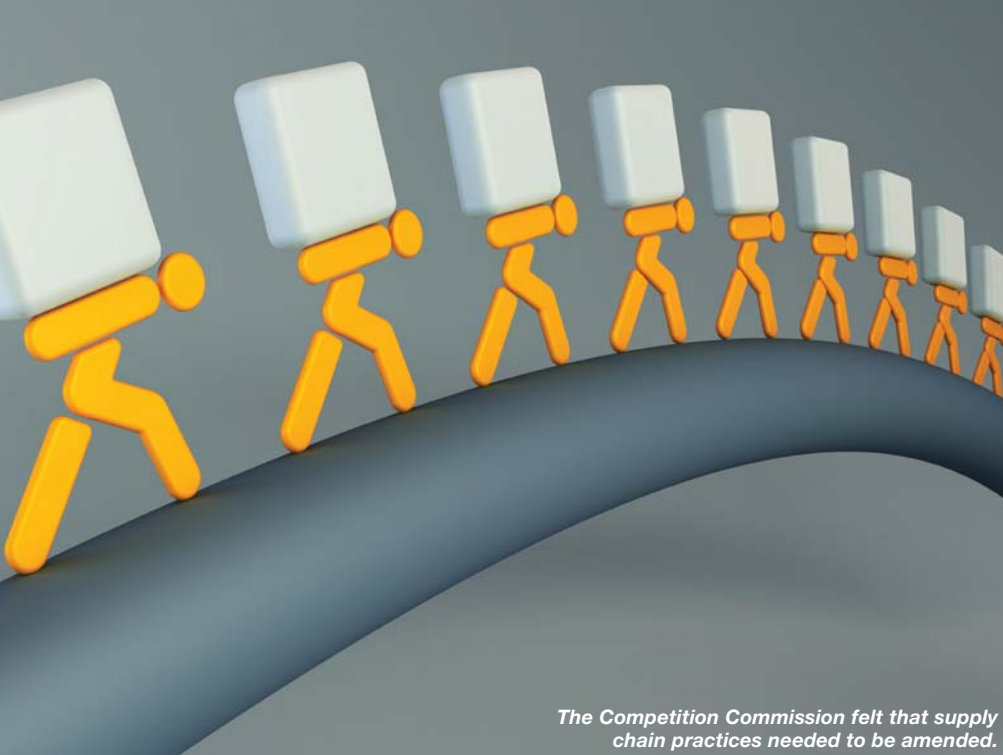
### ▶ Local competition

With reference to the concern about restricted competition in some local areas the CC proposed the introduction of a 'competition test' as part of the planning regime to try to prevent such areas developing like this in the future. The CC recommended that the OFT be now made a statutory consultant to local authorities on all applications for planning permission for development of a grocery store where the net sales area was in excess of 1,000 square metres. The OFT would then provide advice to a

1. J. Warner, 'Grocery findings manage to displease all', *The Independent*, 16 February, 2008, p.57.

2. P. Maunder, 'What are the implications of the Competition Commission's investigation of the supply of groceries by retailers in the UK?', *Economics Today*, Vol. 14, No. 4, March 2007, pp.22-25.

3. A. Simms, *Tescopoly: how one shop came out on top and why it matters*, Constable, 2007.



*The Competition Commission felt that supply chain practices needed to be amended.*

given local authority on whether a particular retailer had passed or failed the new 'competition test'. An application would pass this test if within the area bounded by a 10 minute drive-time of the proposed new site the retailer was a new entrant to that area. Alternatively the test would be met if the total number of retail chains was four or more. A third method of meeting the test would be whilst the total number of competing retail chains was three or fewer the applicant retailer would operate less than 60% of grocery sales in that area. The object of the new test was clear – to make it easier for rival stores to set up in those areas dominated by one single retailer such as Tesco. Predictably the latter did not welcome this proposal!

The CC considered that in addition to this proposed new test it was necessary to take action regarding the way the large grocery retailers prevented land being sold to competitors. The CC stated that within six months of its report these retailers would be required to release the 'restrictive covenants' attached to land in 30 highly-concentrated local markets identified by the CC. Moreover these retailers were to be prohibited from imposing new restrictive covenants in the future. However, the CC did not recommend any divestiture of stores or land holdings by the large retail chains as it believed the measures proposed were sufficient to meet its concerns about competition.

#### ► Supply chain practices

The CC felt that the existing supermarkets' Code of Practice relating to the dealings between retailers and their suppliers needed to be amended. It saw the need for a new Code of Practice to set out how retailers negotiate with their suppliers which would extend to all grocery retailers with turnover of more than £1bn. This would now apply the Code not just to 'the big four' as previously but also Marks and Spencer, Waitrose, Lidl, Aldi, Somerfield, the Coop and Iceland. The Code would prohibit retailers from making retrospective adjustments to the terms previously agreed with their suppliers or for making suppliers liable to losses due to 'shrinkage', the trade term essentially meaning goods lost in store due to 'shoplifting'. Retailers would be required to provide notice of and reasons for the de-listing of suppliers or a significant reduction in purchasing from a given supplier.

There would be a requirement on each retailer to establish an in-house compliance officer responsible for compliance with the new Code. To underpin these remedies relating to retailer-supplier relationships the CC proposed the creation of an Ombudsman to monitor and enforce the requirements of the new Groceries Supply Code of Practice (GSCOP). This person would be pro-active in investigating retailers' records in cases where any supplier made a complaint about a retailer. The CC was so convinced by the need for this new regulator that if the retailers themselves could not agree on such an appointment then that task should fall to

the Department for Business Enterprise and Regulatory Reform (BERR) – the former DTI – which would ensure the Ombudsman had the power to levy fines on retailers for contravening the Code. If neither the industry nor the BERR managed to establish an Ombudsman within a reasonable period of time then the CC saw the relevant functions of this regulator passing to the OFT. It is thus evident the CC offered three avenues towards the creation of this new arbitration system between suppliers and retailers.

#### Reaction to the CC

As indicated earlier the CC's proposals found the small retail lobby very disappointed. It had already learned, during the two year period of the CC's inquiry, that the government had proposed to scrap the so-called 'needs test' applied by local authorities in planning applications. This, at present, allows new retail stores to be built only where there is demonstrable local demand. It will not surprise you that this change of view arose from strong pressure by the multiple retailers! So the CC report now appeared to allow yet more supermarkets to be built and thus that the combined market share of 'the big four' could continue to grow. It is thus predictable that the CC, according to Friends of the Earth, offered nothing to help local shops or promote retail diversity. The Chairman of the Federation of Small Businesses was reported as stating:

**The idea for an ombudsman to oversee the relationship between supermarkets and suppliers is a reasonable one but it does not go far enough. There are many more issues, such as below-cost selling and free parking for out-of-town shopping centres that the Competition Commission has failed to address properly.<sup>4</sup>**

For its part Tesco was critical of the role of the new regulator and the new competition test:

**Tesco considers that introducing a new ombudsman could be bureaucratic and an unnecessary cog in a supply chain which has worked well for consumers.<sup>5</sup>**

4. J. Brown, 'Small shops lose out as regulators back power of the supermarkets', *The Independent*, 16 February 2008, p.4.

5. *Ibid.*

## The OFT re-enters the stage

If the CC disappointed the small retailer lobby then it was ironical that by the time it reported in late April 2008 the OFT had uncovered evidence of collusive behaviour by the large retail chains in fixing the prices of milk, butter and cheese. Thus the body which had earlier shown a disinclination to refer the grocery market to the CC in 2006 was now claiming price-fixing behaviour by retailers in the dairy industry. The OFT claimed in September 2007 the large retailers had fixed prices in 2002 such that UK consumers paid £270m more than they should. The OFT imposed a combined fine on these firms of £116m. But whilst J. Sainsbury and Asda admitted engaging in anti-competitive prices (in exchange for reduced fines) both Wm. Morrison and Tesco decided to contest the charges against them. The OFT in April 2008 agreed to pay damages and undisclosed legal costs to settle a libel action launched by Wm Morrison following an OFT press release in September 2007 accusing it of price-fixing offences it had not committed.

In the week prior to the CC report the OFT accused 11 retail chains, including Tesco, J. Sainsbury and Asda, of having illegally coordinated the prices of several cigarette brands between 2000 and 2003. The retailers were accused of exchanging proposed future retail prices through a third party for much of this time period. In July 2008 Gallaher, one of the two tobacco firms involved in the case, and five retail chains including Asda and Somerfield, agreed to pay £132m to settle the case with the OFT. However six other retailers, including Tesco, Wm Morrison and Safeway, were at the time still contesting the case brought by the OFT.

It is thus apparent that the OFT has been very active in investigating the relationships between the leading retail chains and their suppliers. The final outcome of its inquiries is as yet not decided due to on-going legal cases. As for the Competition Commission's study of the grocery market we also await the government response. But it is readily apparent that the plan for an independent ombudsman to police a tighter Code of Practice of retailer-supplier relationships has met resistance from larger retailers.

6. J. Warner, *op cit*.

## Summary of key points

- ▶ **The Competition Commission reported in April 2008 with proposals to implement a competition test to limit the market share of the leading retailers.**
- ▶ **It required retailers to end the practice of imposing restrictive covenants that prevent land being sold to competitors and saw the need for a new Code of Practice relating to relationships between retailers and food suppliers. The Commission urged the appointment of a new regulator to resolve disputes between these two parties.**
- ▶ **The Commission did not require the large retailers to sell off their land holdings or divest themselves of some stores. This decision represented a major disappointment for small retailers.**

## Questions for discussion

1. One observer commented on the report as follows: "The so-called 'competition test' limiting each supermarket group to one outlet per area is a growth cap in all but name on successful retailers which will only entrench an oligopoly of the established big four... By seeking to limit the power of the big supermarket groups, and more particularly the dominance of Tesco, it also undermines competition between them and is therefore quite unlikely to be in the best interests of the consumer."<sup>6</sup> Discuss this viewpoint.
2. "Small retailers cannot compete with out-of-town megastores so keep going out of business. Thus town centres become ever less attractive places to shop. The Competition Commission's report does nothing to address this situation: indeed it will make it even worse." Discuss this proposition.
3. Should the Competition Commission have:
  - (i) required the leading retail chains to reduce their landholdings?
  - (ii) divested themselves of a specific number (what number?) of stores?
  - (iii) recommended policies to stem the closure of small shops?



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**Robert Nutter**

1. Investigate the roles of and relationship between the Office of Fair Trading (OFT) and the Competition Commission.  
<http://www.oft.gov.uk> <http://www.competition-commission.org.uk>
2. Research the meaning of an oligopsony in a market, and investigate the relationship between the UK's supermarkets and that of their suppliers as a source of an anti-competitive practice.  
<http://en.wikipedia.org/wiki/Oligopsony>  
Also internet search: UK supermarkets oligopsony.
3. In August 2007 the Competition Commission ordered Tesco to stop development on a new retail development in Slough. Research the reasons to this decision and what has happened since. The controversial Slough retail development is only a mile from Tesco's largest store in the country.  
<http://www.telegraph.co.uk/finance/markets/2813799/Tesco-told-to-halt-work-on-new-Slough-store.html>  
[http://www.competition-commission.org.uk/press\\_rel/2007/sep/pdf/56-07.pdf](http://www.competition-commission.org.uk/press_rel/2007/sep/pdf/56-07.pdf)
4. Investigate the views of Friends of the Earth on the growth of Tesco.  
<http://www.foe.co.uk> Use their site search engine.



# Retail Sales in the United Kingdom

According to the old saying, Britain is a nation of shopkeepers and according to the Office of National Statistics, there were 320,733 retail outlets in the United Kingdom in 2006. Over the past five years employment in retailing has grown by 85,087 and the sector employed over 3 million people at the end of March 2008. Retail sales account for one-fifth of the UK economy. Indeed, UK retail sales were £265 billion in 2007, larger than the combined economies of Denmark and Portugal.

However, the summer in 2008 proved to be the beginning of a difficult period for retailers in the United Kingdom. The nation has entered into a far more challenging economic environment, with falling growth rates, rising costs and inflation.

This article examines the level of retail sales in the United Kingdom and suggests some of the economic reasons as to why they might appear to be slowing down.

**Andrew Reeve**, Head of Economics and Business Studies, King's School, Macclesfield, reviews the reasons for the fall in UK retail spending in mid-2008.



## Summer 2008 – a mixed picture

**A**gainst all expectations the May 2008 retail trade figures rose significantly by 3.5%, the fastest increase on record. The fastest growth in sales was on food, despite the inflationary pressures on the price of basic foodstuffs. This increase in sales was at odds to the downbeat trading statements by J. Sainsbury and Woolworths. However, the British Retail Consortium suggested that the increase in sales was due to an improvement in the weather in May which encouraged consumers to spend.

However, the June 2008 retail sales figures were more in line with expectations. The volume of sales fell by 3.9%, the largest decrease on record since the series began in 1986. As part of this decline, sales of food produce fell by 3.6% and sales in non-food stores decreased by 4.5%.

It is clear from looking at Figure 3 that retail sales in May and June 2008 were far more erratic than in any previous months since 2004. Considering the less volatile quarterly figures, February to May rose by 1.6%, however, the decline in June reduced the April to June increase to only 0.6%.

In a comment on the June 2008 figures, Vicky Redwood, an economist at Capital Economics stated that, “June’s data finally showed the official data moving into line with the gloomy anecdotal evidence”. She went on to say that “what’s more, we think that spending growth will weaken considerably further, as house prices keep falling and inflation and unemployment rise further”. Clothing and footwear sales were the biggest losers, with furniture and homewares slipping as well. The like-for-like retail sales fell 0.4% compared with June 2007.<sup>1</sup> These sentiments were echoed by Helen Dickinson, head of retailing at KPMG, who said that “consumers are managing their budgets carefully... this environment is a hugely challenging one for retailers”.<sup>2</sup> The British Retailing Consortium and the accountants KPMG produce a BRC-KPMG Retail Sales Monitor each month. In the report published on the 15th July, Stephen Roberson, Director General of the BRC, said “retailers are doing all they

1. www.bbc.co.uk, 14 July 2008.

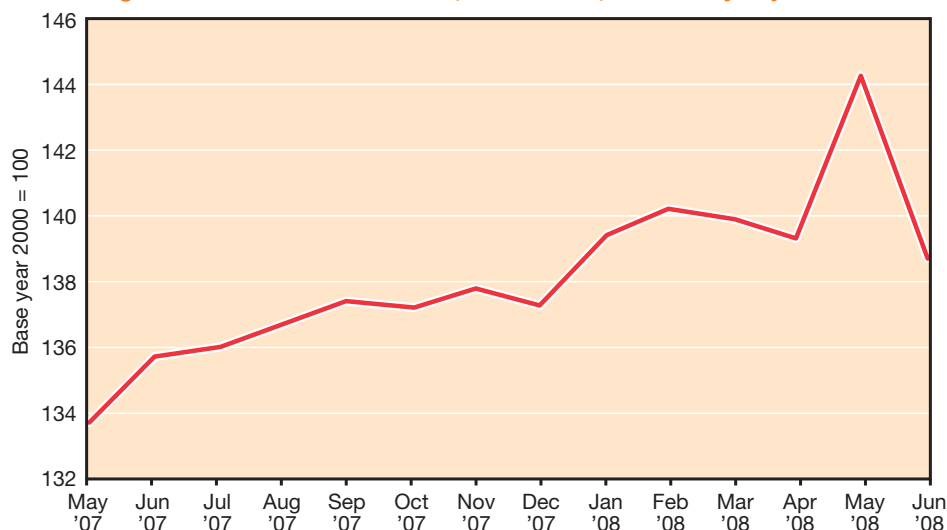
2. *ibid.*

3. BRC-KPMG, *Retail Sales Monitor*, 15 July 2008.

4. ‘John Lewis is a slightly better than average barometer’, Kaupthings. Reported in www.guardian.co.uk, 4 July 2008.

5. Marks and Spencer Group PLC Interim Management Statement, 2 July 2008. www.marksandspencer.com

Figure 1: Volume of retail sales, all retailers, seasonally adjusted



Source: Office for National Statistics, Retail Sales in June 2008, 24 July 2008

can to reassure customers, offering some of the strongest discounts and promotions in decades”.<sup>3</sup>

Another way to consider the retail trading environment is to compare ‘Footfall’. There are several companies, such as Experian Footfall and CustomerCounting.com, which attempt to measure the number of people visiting retailers and shopping centres. Using mathematical models and extensive samples these companies provide businesses with a series of regional and national benchmarks illustrating the change in customer numbers throughout the year.

Figure 4 shows how retail ‘traffic’ changed in June 2008 compared to June 2007. Regional changes are shown as a percentage changes in their own right. This ‘weather’ map is a useful retail confidence indicator. It can be seen that overall, the retail pedestrian count was down by 1.3% on the previous year with a significant fall of 3.0% in the Midlands.

## Some retail case studies

During July and August the number of firms reporting poor retail sales figures

virtually became a daily event. Within the industry, the John Lewis sales figures are seen as being a good indicator of the overall sector.<sup>4</sup> During the first day of the John Lewis summer sale, trading figures were 8.3% down compared to the same week in 2007. The firm reported that the previous seven weeks sales figures had been lower than the previous year and that household and electrical goods were particularly weak.

Marks and Spencer also reported a gloomy outlook with the Chairman, Sir Stuart Rose reporting to the City that like-for-like sales figures dropped 5.3% in the period April-June. This was supported by Experian’s footfall index which stated that visitor numbers fell by 5.8% in June compared to June 2007. Sir Stuart concluded that:

...pressures on consumer spending and increased competitor pricing and promotional activity, coupled with changes in consumer buying patterns, have resulted in a significantly weaker performance.<sup>5</sup>

Table 1: Volume of retail sales, seasonally adjusted

2008	All retailing index level	% change: latest 3 months on previous 3 months			
		All retailing	Pre-dominantly food	Pre-dominantly non-food	Non-store retailing and repair
Jan	139.3	0.8	0.3	0.4	6.9
Feb	140.2	1.0	0.8	0.6	6.1
Mar	139.9	1.7	1.4	1.6	5.3
Apr	139.3	1.2	0.8	1.3	3.0
May	144.4	1.6	0.8	2.2	1.9
Jun	138.7	0.6	-0.2	1.1	0.8

Source: *Ibid.*



Jessops, the camera retailer, reported increased losses after like-for-like sales fell by 5.7% in the 41 weeks to 13th July and significantly dropped by 11% in the final three weeks of the trading period.

Firms in the car industry have also reported poor trading figures. Peugeot reported that although it had maintained its global objective of 5% growth, its sales in Western Europe have fallen by 3.5% with UK sales falling by 7.9% mainly due to the weak price of sterling against the euro.<sup>6</sup> On a domestic level, Lookers, the car dealership business, reported a drop in trading levels with analysts commenting that the level of new registrations in May had dropped by 3.5%.<sup>7</sup>

In the DIY sector, Home Retail Group, which owns Homebase stated that its sales were 12% lower in the three months to May 2008 compared to its 2007 figures. Likewise, Kingfisher PLC which owns B&Q stated that its sales figures were down by 8% over the same period.

One particularly good indicator of the poor sales figures within the overall sector is the announcement by the broadcaster ITV that its profit levels had fallen by 28% in the first half of 2008. Although part of this was due to accounting write-offs, part of the problem was also due to the falling revenues from advertising as retailers begin to cut back on their marketing budgets.

However, the more pessimistic economic environment has been a positive factor for some businesses sales. TNS WorldPanel, the market research firm, highlighted that the two discount supermarkets Aldi and Lidl had seen a rise in their sales by 21% and

23% in the 12 weeks to June 15th.<sup>8</sup> We can relate the rise in their sales to the concept of income elasticity of demand. Aldi and Lidl can be viewed as budget or inferior brands which will display negative income elasticity. In other words, as incomes fall in a more challenging economic climate con-

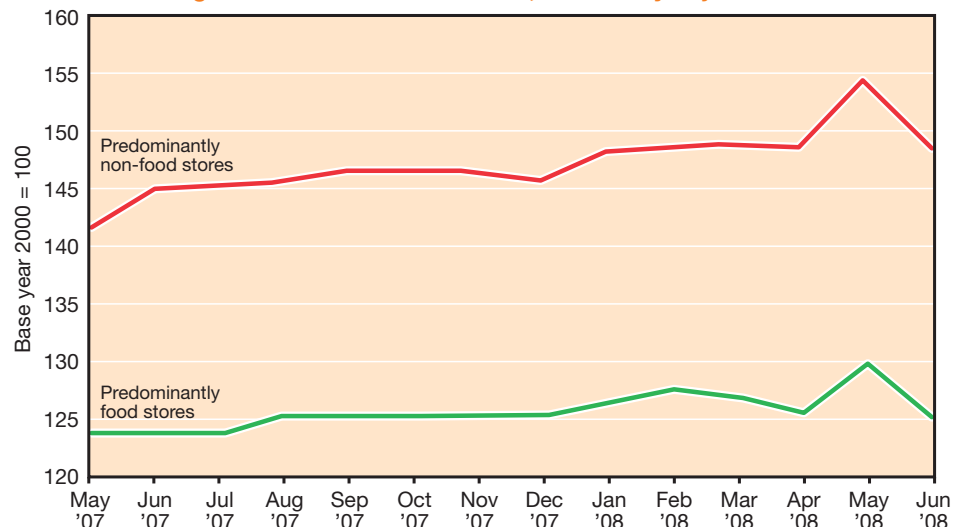
sumers will become more price conscious and begin to switch their spending patterns away from supermarkets such as Sainsbury, Tesco and Asda towards the budget brands. This also explains why Marks and Spencer has seen such a fall in the sales within its food division.

## Factors causing a fall in retail sales

There are many different factors causing a fall in retail sales. In this article we focus on three of them; rising household costs, falling levels of economic growth and the decline in real house prices.

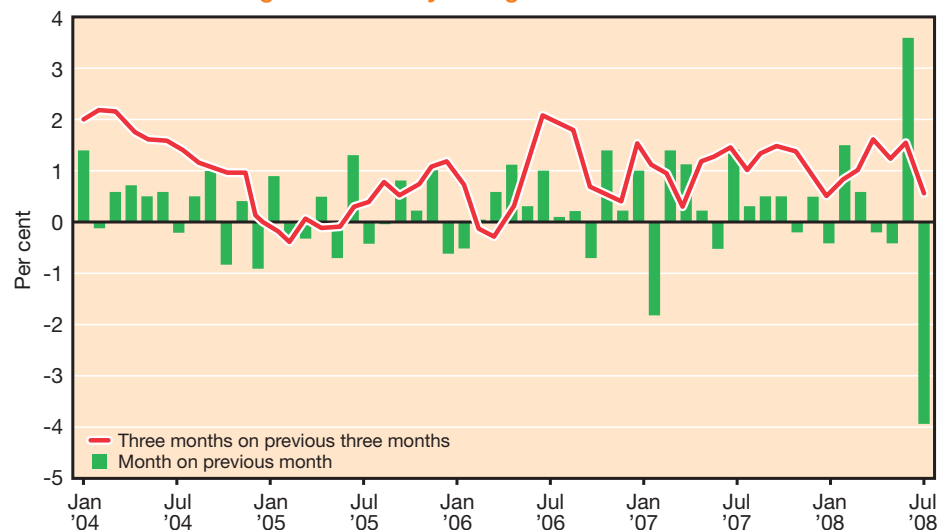
Over the past year households have experienced a general rise in the price of many household goods. On 11 August 2008 BBC TV News reported that the cost of food had risen by 10.2% over the past year, electricity had risen by 11%, gas by 10.6% and water bills by 6.5%. These rising costs in commodities have resulted in a CPI inflation rate of 4.4% in

Figure 2: Volume of retail sales, seasonally adjusted



Source: Ibid.

Figure 3: Monthly changes in retail sales



Source: Retail Sales Growth %. [www.statistics.gov.uk](http://www.statistics.gov.uk) 24 July 2008

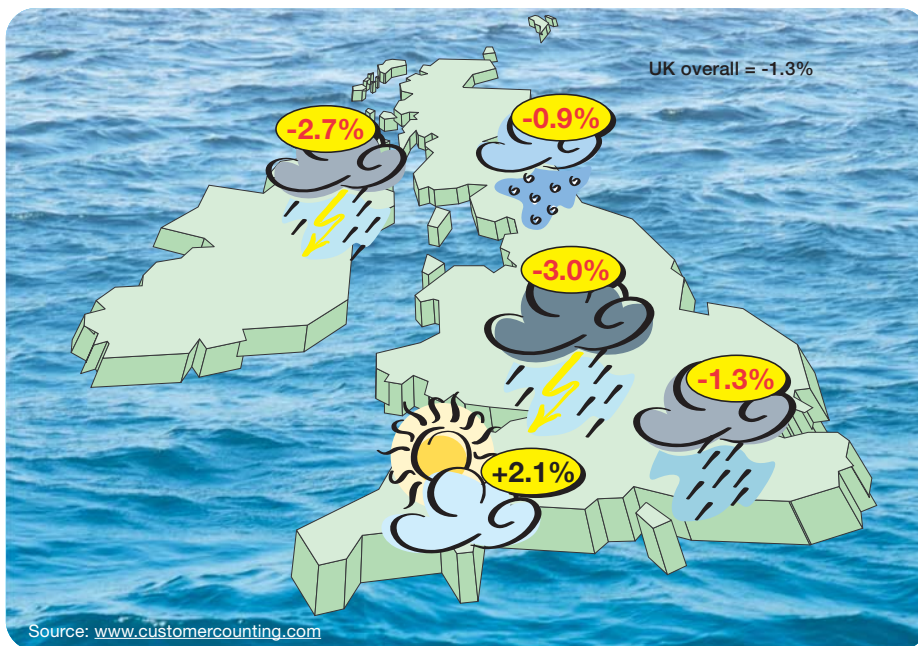
6. [www.bbc.co.uk](http://www.bbc.co.uk), 8 July 2008.

7. Alistair Gray, [www.ft.com](http://www.ft.com), 2 July 2008.

8. [www.bbc.co.uk](http://www.bbc.co.uk), 2 July 2008.



**Figure 4: Retail footfall count, year-on-year change, June 2008 v June 2007**



July 2008, more than double the government's target rate.

Ernst & Young's annual discretionary income study has recently reported that UK households are 15% worse off than five years ago. The average family had around 20% of its gross income left over, compared with 28% in 2003 as fixed monthly household costs have risen by nearly 45% since 2003/04. The average household has seen petrol costs rise by 29% in the past 12 months and average energy bills have more than doubled since 2003/04. The director of retail at Ernst & Young, Jason Gordon stated "Many UK consumer segments are clearly feeling the pinch as big rises in household costs are far outstripping relatively modest wage inflation".<sup>9</sup>

It is clear therefore as to why these rising costs are partially leading to a slowdown in retail sales in the high street.

Another factor is the prospect of a potential recession hitting the United Kingdom. In a downbeat report by the British Chamber of Commerce in July 2008, it was reported that unemployment will rise by 2 million by the end of 2009.<sup>10</sup> However, this is pure speculation. What is for sure is that the UK economy grew by only 0.2% in the second quarter of 2008 as the credit crunch took its toll on the housing market and consumer spending. This poor growth rate was the lowest for three years and was driven by a 0.7% fall in

construction output. Although construction comprises only 6% of the economy, the service sector, which constitutes 74% of GDP, also slowed, growing by 2.1%, the lowest growth rate since 1992. This potential threat of recession is enough to make consumers think twice about spending on large items and also replacing non-essential items so frequently.<sup>11</sup>

Another potential factor in the slowdown in the level of retail sales is the slowdown in the housing market. There is a link between the buoyancy of the housing market and consumer spending, as consumers will use the equity in their property to secure finance for spending. Over the past few months the credit crunch has made it difficult for potential buyers to purchase a mortgage and this has led to a slowdown in the

property market. Savills PLC, the largest property consultant in the UK, saw its sales fall significantly in the first half of 2008 due to a 45% fall in sales of properties in London.

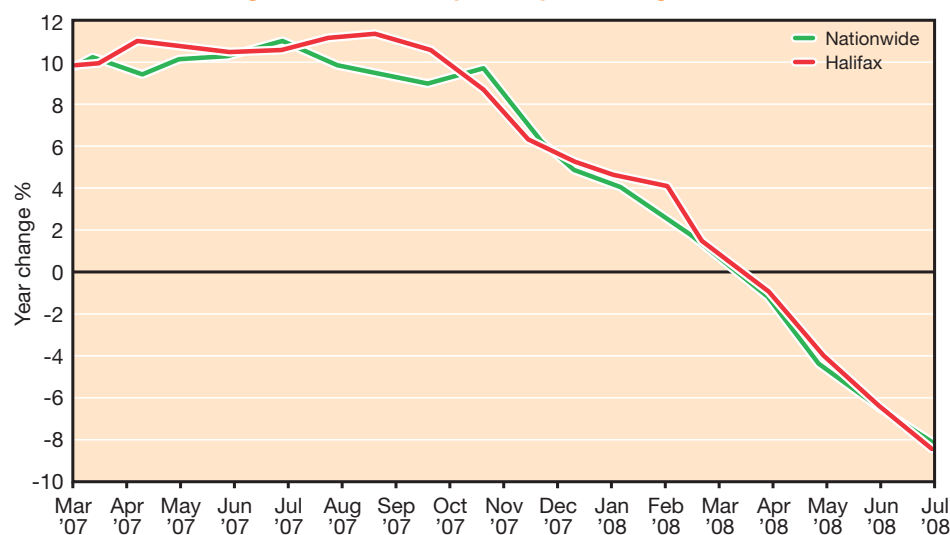
With mortgage approvals already down by 69% in the 12 months to July 2008, HBOS (Halifax Bank of Scotland) reported in June that house prices will fall by 9% during the course of 2008, although some commentators believe that a fall of 20% is not out of the question.

Many house builders have begun to cut their workforce in recent months, such as Bovis Homes and Redrow, both of which will have staff numbers of around 40% compared to January 2008 levels. According to the Centre for Economics and Business Research, the UK real-estate industry will probably shed around 15,000 jobs by the end of 2008 due to the slump in the housing market.<sup>12</sup>

### Interesting times

It is true that we are living through economically interesting and challenging times. The Bank of England faces a difficult decision as to whether to raise interest rates to help to curb inflation or to reduce them or at least keep them stable in order to boost the GDP growth rates of the economy and to help kick start the housing market. If a recession does occur then one can expect the sales of 'normal' retail products and services to fall sharply as household incomes fall back. The normal solution to falling demand is for retailers to slash prices and hold more sales. However, with rising prices this is becoming considerably more difficult to achieve.

**Figure 5: UK house prices, year change, %**



9. [www.guardian.co.uk](http://www.guardian.co.uk), Kathryn Hopkins, 4 July 2008.  
 10. Reported in [www.telegraph.co.uk](http://www.telegraph.co.uk), 8 July 2008, Nick Allen.  
 11. [www.bbc.co.uk](http://www.bbc.co.uk), 4 August 2008.  
 12. Article by Simon Packard. [www.Bloomberg.com](http://www.Bloomberg.com), 8 July 2008.

# What can Economists Learn from the Beijing Olympics?



**Stephen Romer** reviews what China gained by hosting the Olympic Games.



**F**lat out in his favourite chair in front of the television one evening in August 2008, our cat, Chairman Miaow, made it pretty clear he did not think much of the Olympic Games this time round. Half-way through the Opening Ceremony, unimpressed by the squandering of \$151 million on a glorified fireworks display, the Chairman stood up ceremoniously, scratched irritably and yawned ostentatiously. He proceeded to fall into a deep slumber, sustained for most of the following fortnight.

Now, it is well-known that those of a feline persuasion tend, typically, to be almost infinitely more intelligent and better informed than the average bi-ped with whom they condescend to share lodgings. Thus, in seeking insight on such a major topic as Beijing 2008, it seemed important to record as many Olympic-related mewed musings as possible.

Regarding the 29th Games of the Modern Olympiad held in China in 2008, here, in summary, are the Thoughts of Chairman Miaow:

**“One World, One Dream. One absolutely staggering waste of money”.**

Indeed, the monetary requirements for putting on the Olympic Games are vast. For the Chinese government, an expensive opening ceremony was merely the tip of the iceberg of expenditure: the total cost of hosting the Games amounted to an astonishing £20 billion. And that is a sum which does not cover security costs involving, among other things, expenditure on the deployment of about 110,000 security personnel.

In fact, one could go as far as to argue that, properly costed, the total outlay on the Beijing Olympics was *double* the stated £20 billion. If this seems something of an exaggeration, you may be overlooking the point that in a full cost accounting, one might seek to include the true value of the Games-related productivity of workers – including unpaid child labour – in China’s notorious ‘sweatshops’, not to mention the unpriced services of some 70,000



Chinese citizens prevailed upon to 'volunteer' to work at the Olympic sites.

Moreover, in preparation for the 17 days of sporting events in August 2008, the ruling Chinese Communist Party dragooned more than a million low wage migrant workers to the construction sites of 20 stadiums and other venues which had to be built or renovated in time for the cry of "let the Games begin" at 8.08pm on 08-08-08.

'Eight' is traditionally a lucky number for the Chinese, but less fortunate than you might have assumed in the eighth month of 2008 were farmers in some of the remote provinces of China. In order to facilitate the staging of the Olympics, millions of gallons of water had to be diverted from these regions to Beijing. Consequently, harvests failed. Here we have an example of the kind of opportunity costs overlooked in the official costings.

### Only green on the surface

The Olympics created an insatiable thirst for water at a time when ongoing pressure on scarce Chinese water resources had been reinforced by the impact of drought. It is fairly safe to conclude that the Beijing Games was not an event 'sustainable' in environmental terms. Take the rowing centre for example: it required the creation of a water course of 150 acres built on a dry river bed surrounded by desert-like parched land.

For the organisers, it was important that Beijing's appearance would seem 'green' to the hundreds of thousands of foreign visitors, not to mention the hundreds of millions of television viewers. Thus, the city was extensively planted with flowers and trees; fountains, parks and grass verges were built; ornamental lakes were created. Of course, all of this window-dressing necessitated the further diversion of millions of gallons of water from the regions.

The costs imposed were significant. Reportedly, 300 million cubic metres of water was redirected from Hebei Province, a rice growing area where resources were already squeezed as a result of recent rainfall at 50% below the region's customary average.

Not only did this raise environmental questions, the diversion of water was also interesting in the context of equity when one considered that water was being reallocated from China's poor regions (Shaanxi and Hebei Provinces)

to the money-is-no-object Olympic fantasy world of Beijing in August 2008.

It's a similar story when we consider the knock-on effect of the Games in the Chinese energy sector. In China in 2008, there is a continuous energy crisis caused by the approximate doubling of demand for electricity in four years. 80% of electricity generation is based on coal, but the government has fixed the price of both coal and of electricity itself. These administered prices are below the notional market equilibrium level – hence, the shortage. A black market in coal (appropriately) has emerged: mines have sought ways to sell to the wealthiest manufacturers at a price in excess of the official rate.

Against this background, one of the significant costs of the Olympics turned out to be the exacerbation of the energy shortage. The frequency of power cuts increased in non-Olympic regions following the diversion of scarce coal stocks from provincial power stations to plants in the Beijing area.

During the Olympics, the avoidance of a Beijing brown-out (a power cut, not a coup at the expense of the British Prime Minister) was crucial: imagine the lights going out just as the Opening Ceremony got under way. But the diversion of coal consequently meant power cuts and closures of industrial plants (with lay-off of thousands of workers) in Shandong and Guangdong Provinces.

These external disbenefits of the Chinese Olympics meant significant costs for third parties. Likewise, the diseconomies imposed on hundreds of thousands of residents forcibly removed from Beijing and elsewhere. Their houses were bulldozed and their neighbourhoods obliterated so that the

Birds Nest Stadium and the other Olympic venues could be built.

### Hu Are You?

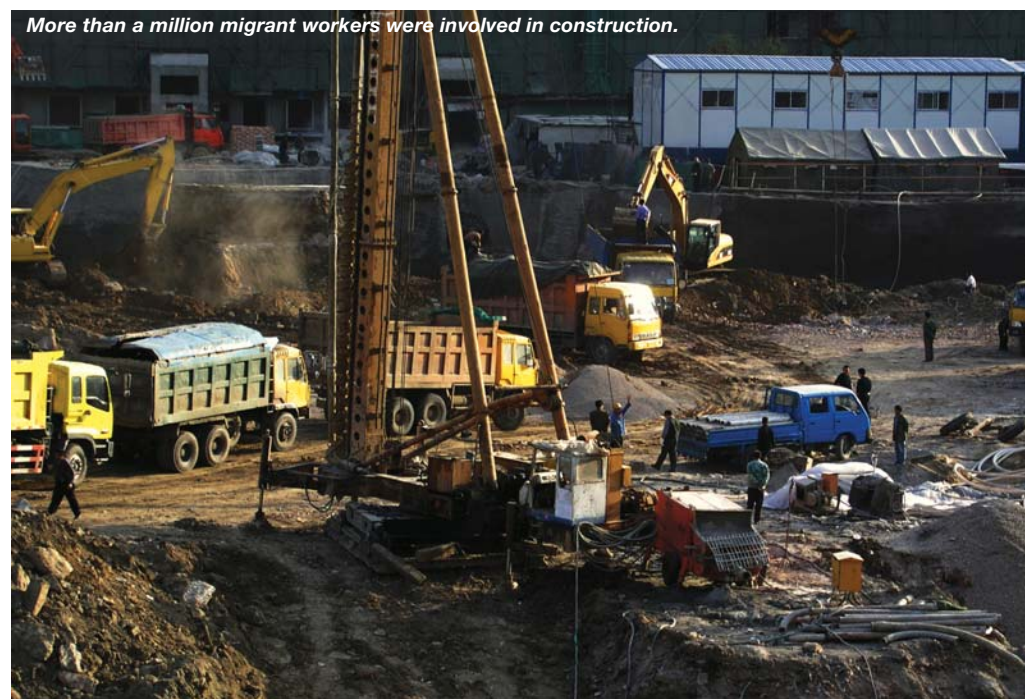
Why were the Chinese prepared to spend such a vast amount (£20 billion? £40 billion? No one knows the true cost) on hosting the Olympic Games? What was the point of allocating significant resources to a mere sporting event? What did the government hope to get for its money? And did it get it?

The answer to these questions would seem to be that the Games was intended by the Chinese government as a kind of coming-out ceremony on the global stage for the world's fastest-growing economy. Historically, China has largely been closed off from the rest of the world, but here was China putting itself on show for the first time.

Although, China's GDP is small (\$3.2 trillion in 2007) relative to that of the US (\$13.8 trillion) and its average standard of living low (per capita GDP \$5,300 v \$45,000 in the US), it is now the fourth largest economy globally.

It is safe to assume that China is going to dominate the global economy increasingly over the next few decades, becoming *the* economic superpower of the 21st Century. Estimates vary, but China may well have become the world's largest economy (overtaking the US) by about 2030.

But China is an authoritarian society, governed by the Chinese Communist Party. There have been economic reforms in China, but no programme promising democracy, openness, freedom of the press or human rights. Would hosting the 2008 Olympic Games present China with an opportunity to introduce political reform, to move



*More than a million migrant workers were involved in construction.*





towards the global mainstream and to bring itself inside the global 'family of nations'?

China has not so far been fully integrated into international relations. It has not been issued with a membership card to a global society dominated by the Western democracies in Europe and North America. Indeed, prior to 2008, the prevailing image of contemporary China was the atrocity of Tiananmen Square in 1989 when a pro-democracy demonstration was brutally suppressed while the rest of the world watched with horrified disbelief.

In recent years, it is the memory of these events, and images of the appalling Chinese record on human rights more generally, that come to mind when attention in the West has turned to China. We have seen the suppression by the Chinese military of protest against the Chinese occupation of Tibet. We have heard stories of political prisoners detained without trial, the persecution of dissidents and camps for re-education-through-hard-labour.

There is also the question of Darfur, a humanitarian crisis which has created millions of refugees and several hundred thousand deaths. It is a crisis in which the Chinese role was put in the spotlight by Steven Spielberg. Early in 2008, the director of *Jaws* and *ET* (by the way, that's *The Extra Terrestrial*, not *Economics Today*) resigned his post as artistic director of the Beijing Opening Ceremony, complaining about the Chinese government's support for the Sudanese regime and its opposition to the attempt to bring a genocide

prosecution against the President of Sudan in the International Criminal Court.

China's critics in Hollywood and elsewhere complain that China has put trade relations above human rights. They cite the fact that China is the buyer of most of Sudan's oil output, and the major supplier of Sudanese arms imports. And it is a similar story on Zimbabwe: China, supplier of armaments, has vetoed a UN attempt to impose sanctions on the Mugabe regime.

### How Much is that Doggie in the Window?

When China won the rights to stage the 2008 Olympics, its bid offered a promise of progress on standards of human rights, censorship and environmental protection. But it is the latter point which is particularly interesting to economists because when we look at China in the past two decades we are looking at an economy with the world's fastest economic growth... *and* the world's greatest environmental pollution.

Throughout this 20 year period annual GDP growth has averaged an astonishing 9.5%. But here is what we have observed about the growth of the Chinese economy: economic growth in China means pollution. Growth in China means unsustainable environmental consequences.

According to the World Bank, about 750,000 Chinese die annually from pollution-related causes. And things have been getting worse. In the last few years, the Chinese have been building coal-fired power stations at the rate of

about 50 a year. China burns about two billion tonnes of coal annually, one third of all coal used worldwide.

Beijing is a city which has become notorious for its dense smog. Prior to August 2008, Beijing was widely regarded as the most polluted city on the face of the earth. The air quality was extremely poor, heavily polluted by carbon monoxide, sulphur dioxide and nitrogen dioxide.

For the sake of appearances (and to prevent athletes from expiring half way round the track), a pre-Olympics emergency air clean-up operation had to be introduced. And it was an operation effectively costing billions of dollars. To bring about an instant reduction in noxious emissions in the Beijing area, quarries, construction projects unrelated to the Olympics, and hundreds of factories were closed down for the duration. The Beijing Iron and Steel Company, a vast foundry said to be responsible for about 10% of the Beijing smog, was partially closed, half of its 130,000 labour force laid off for several months.

Industrialisation in China has seen the rapid growth of cities: as industry grows, workers are reallocated from the rural sector into manufacturing. Beijing's population approaches 18 million. But more people means more cars, and thus more pollution. There are about 3.3 million cars in Beijing, a number which is thought to have been increasing at the rate of about 150,000 *per week*. To help create the promised clean Olympic air (or 'blue sky days') half of all cars (odd registration numbers one day,

even the next) were banned from the streets of Beijing.

The government had promised a 63% cut in emissions for the Olympics. But critics continued to worry about dust particles. And there was an amusing side to it when members of the US swimming team were pictured putting on CO<sub>2</sub> filtration masks as they disembarked at Beijing Airport.

To make matters worse from a Chinese PR point of view, word got around in the West that restaurants in Beijing do not specialise in the sweet and sour pork or spring rolls familiar from the Chinese takeaway. On the contrary, it is dog-based dishes that take pride of place on the menu.

Against this general background of very bad publicity, the value to the Chinese government of hosting a successful Olympics would be immense. It would mean two and a half weeks of positive images of China – images which would saturate the global media, televised in virtually every country in the world. This would surely help to create a newly-improved impression of China, sweeping away the old dark notions of Tiananmen Square, Tibet, censorship and the abuse of elementary standards of basic human rights.

In the future, when the thoughts of Europeans, Americans and others turned to China, lovely new images would spring to mind. In place of the carnage of 1989, there would be fond memories of an Olympic Games in which 205 nations had met in harmony – 302 happy events in 28 sports; 10,708 players pleasantly participating in Peking.

And as the whole world watched, at the very crest of this wave of happiness would be the Chinese themselves, winning a targeted minimum of 40 gold medals, rising above the US in the medals table for the first time in Olympic history.

### Heil Myself

Traditionally, the Olympic movement has emphasised the purity of its ideals. It is a tradition based on the amateur athlete and – you may laugh – the idea that what matters is the taking part, not the winning. More generally, the staging of the Olympics will improve the sum total of international goodwill, says tradition.

In reality, of course, the Olympic Games is invariably highly politicised. Notoriously, for instance, Hitler's Olympics in 1936 was intended as a propaganda exercise promoting Nazi

ideology and the so-called superiority of the Master Race. Later, during the Cold War, the Games in Moscow in 1980 and Los Angeles in 1984 were boycotted respectively by the US and the Soviet Union for purely political reasons. The Chinese themselves boycotted the Melbourne Olympics in 1956 following Australian recognition of the nationalist government in Formosa.

But is staging the Olympics cost effective politically? Do nations achieve their political objectives by (mis)using the Games? Did the Americans and the Soviets gain anything from the boycotts? Probably not. And in Berlin in 1936, the Fuhrer raged when the top sprinter turned out to be a black man, Jesse Owens, the winner of four gold medals.

It remains open to question how much return politically the Chinese government has gained from its Olympic investment in 2008. Criticism of China's policies as regards Tibet, Sudan, human rights and so on will not have evaporated simply because Beijing hosted a well-run Olympics in which China picked up lots of medals.

However, the Beijing Olympics certainly did gain the desired saturation coverage in the global media, coverage which might conceivably help to change general perceptions about China. A contributory factor to the positive nature of Olympic reporting around the world was the momentousness of the event purely in sporting terms.

In Beijing, two of the greatest Olympians in history were at the very peak of their powers, the swimmer Michael Phelps, winner of eight gold medals, and the Jamaican sprinter, Usain Bolt (the 'bolt' of lightning), winning the 100 and 200 metres in world record times in each event.

A further positive outcome from the

Chinese point of view was the success of China's own athletes, winning a total of 100 medals ('the great haul of China'). An important part of the prestige the Chinese were 'buying' in staging the Games was the chance it would give them to sit at the top of the Olympic medals table for the first time, relegating the US to second place.

In the event, China won 51 gold medals, the US 36. The Chinese won at least one medal in each of a remarkable 26 disciplines, and became the first country to collect 50 golds since the Soviet Union in 1988 in Seoul.

### Questions for discussion

1. What are the costs of staging the Olympic Games, including both explicit and implicit costs?
2. The official total cost of Beijing 2008 was twice the reported cost of Athens 2004. How do you account for this rapid inflation in hosting the Olympics?
3. Discuss the opportunity costs of staging the Olympic Games in China.
4. "Experience indicates that no matter how much a country spends on staging the Olympics, it will not be enough to purchase the fulfilment of its political objective." True or false?
5. "Sponsors of the Olympic Games should not be responsible for standing up to the Chinese government over Tibet because otherwise they would have to talk to every government around the world about every conflict, according to the chief executive of Adidas."

*(The Financial Times, 19 June 2008)*

Discuss.

6. What do you think will be the main constraints on Chinese economic growth over the next ten years?

### Summary of key points

- ▶ Officially, the Chinese spent £20 billion hosting the Olympic Games in 2008 but a comprehensive costing implies that £20 billion is actually a significant underestimate.
- ▶ Building the required facilities for the Olympics in Beijing diverted resources from other regions.
- ▶ Staging the Olympics in Beijing led to knock-on effects in agriculture and energy sectors elsewhere in China.
- ▶ When it sought to host the Olympics the Chinese government pledged to meet standards on human rights and the environment and faces criticism for failing to honour those pledges.
- ▶ The Olympic Games is always a highly politicised event.



**Peter Cramp** of Nottingham High School, comments on the causes of low pay and the gender pay gap.



# Wage Differentials



**W**ages are the reward to the factor of production known as labour (the other factors of production being land, capital and enterprise). Put another way, the wage is the price of labour and is a payment made to workers in return for sacrificing their leisure time.

According to the 2007 Annual Survey of Hours and Earnings (ASHE) published by the Office for National Statistics, median weekly pay for full time employees in the UK grew by 2.9% in the year to April 2007, to reach £457. This statistic camouflages the big differentials in wages that exist, for example between different occupations and between different groups of people in the economy. There is a gender pay-gap between male and females for example, while some ethnic groups earn less on average than other groups. There are also differentials by region, by age and between the able-bodied and those with disabilities.

### Analysing wage determination

In order to understand why such wage differentials exist, it is necessary to look at how wages are determined. This is easily done using a simple demand and supply framework.

Labour is a derived demand: firms demand workers not for their own sake, but because of the revenue that they generate for the firm. When there is an increase in the revenue generated by workers (for example because their productivity has increased or there has been an increase in the price of the product made by the workers) labour demand tends to increase. A2 students should be aware that the demand for labour reflects the **marginal revenue**

**productivity (MRP)** of workers.

Labour supply comes from those who are in work or actively seeking it and therefore are willing to sacrifice leisure time in order to work at currently prevailing wage rates.

Economic theory suggests that workers seek to maximise their income and will therefore supply their labour to the occupation where they are best paid. This is not always the case, however. Non-monetary factors also affect labour supply decisions. The supply of teachers, for example, is boosted by the vocational satisfaction derived from the job. Supply of labour to some occupations may be reduced by unpleasant or dangerous working conditions.

The level of equilibrium wages tends to be high where demand for labour is high and supply of labour is low and inelastic. By contrast, where there is low demand for labour combined with plentiful, elastic supply the result is low wages. This is illustrated in Figure 1. The

causes of low pay are explored in a little more detail in Box 1.

### Differentials by gender

It is important to be able to apply the analysis in the previous section to explain wage differentials. For example, the gender pay gap is substantial, but narrowing over time, as shown in Figure 2.

Possible explanations include:

- Career breaks for females for reasons such as maternity. Career breaks deny females experience and therefore limit their revenue productivity leading to low demand for their labour. Women often take career breaks at just the age when their male counterparts are making most progress on the career ladder. However, research has shown that even childless females receive lower pay than males. Career breaks are unlikely to explain the gender pay gap fully.

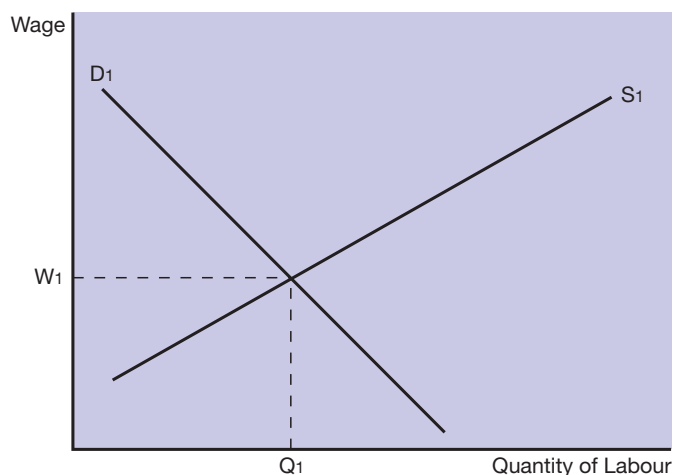
### Sample data on wage differentials

(all figures are for median gross weekly earnings of full-time employees as at April 2007)

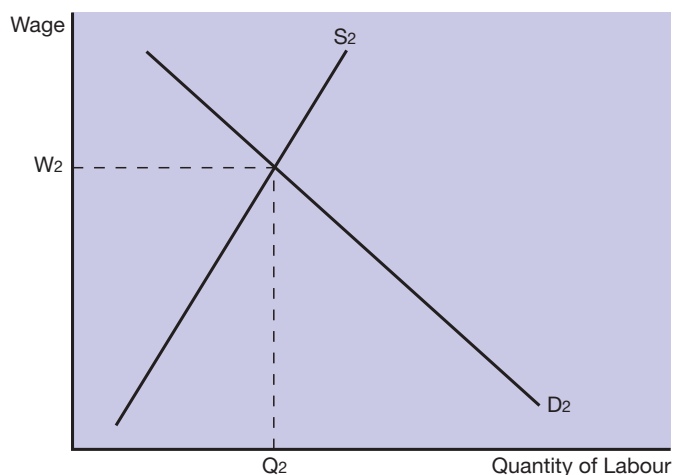
Differential by	Data
Occupation	£672 for 'managers and senior officials' but only £277 for those in 'sales and customer service occupations'.
Gender	The gap between median pay for men and women was 12.6%.
Region	Median full-time gross weekly earnings were £581 in London and only £402 in Northern Ireland.
Age	£575 for men aged 40-49. This is substantially more than twice that for men 18-21.

Source: ONS, *Patterns of Pay: Results of the Annual Survey of Hours and Earnings, 1997-2007*. Available to download at [www.statistics.gov.uk](http://www.statistics.gov.uk)

Figure 1: Supply and demand in different labour markets



(a) Low wages reflect low labour demand and plentiful, elastic labour supply.



(b) High wages reflect high labour demand with restricted, inelastic labour supply.

### Box 1: Causes of low pay

(Note that reversing the factors below would give the causes of high wages)

Cause	Analysis
Low labour demand	This occurs where workers generate only limited revenue for their employers. This is often the case where workers have limited skills, few qualifications or lack experience.
Monopsonist employers	A monopsony employer is a sole buyer of a particular type of labour and may use his power to suppress wages.
Plentiful labour supply	This tends to be the case with unskilled workers.
Elastic labour supply	Again, this tends to be the case with unskilled workers. Elastic labour supply magnifies the effect of low labour demand on wages.
Weak trade unions	Trade unions attempt to restrict the supply of labour in order to raise wages for their members (in the extreme, unions may act as monopoly suppliers of labour). Where trade unions are weak, or do not exist, workers are more vulnerable to low pay.
Vocational satisfaction or pleasant working conditions	Vocational satisfaction and pleasant working conditions are non-monetary rewards which increase the supply of labour.
Discrimination	Low pay may be caused by discrimination in the labour market, for example against women, some minority ethnic groups and disabled workers.

- ▶ The revenue productivity of females is reduced by a historical lack of educational opportunities. Many of those working today were educated at a time when it was unfashionable for females to pursue further and higher education, for example.

Females work disproportionately in areas where:

- ▶ The work is part-time. Part-time work tends to pay a lower hourly rate than full-time work.
- ▶ Trade unions are weak.
- ▶ The state has significant monopsony power and may be able to drive wages down.
- ▶ Vocational satisfaction increases labour supply.

The fact that the gender pay gap has shown some evidence of narrowing can be explained in a number of ways. One is the growing educational attainment of females, who now outperform males at every stage of the education system. Another is the fact that social change

means that women are likely to take fewer and shorter career breaks than in the past. It is also true that a greater proportion of female workers are now members of trade unions than male workers.

It would be useful for you to use economic analysis to try to explain some of the other pay gaps mentioned earlier in the article.

### Low pay

An article addressing wage differentials must pay particular attention to those left behind in the pay stakes, namely those on low pay. Some economists believe that low pay is unfair and can be considered a market failure, justifying government intervention. In the UK, the main form of this intervention is the National Minimum Wage (NMW).

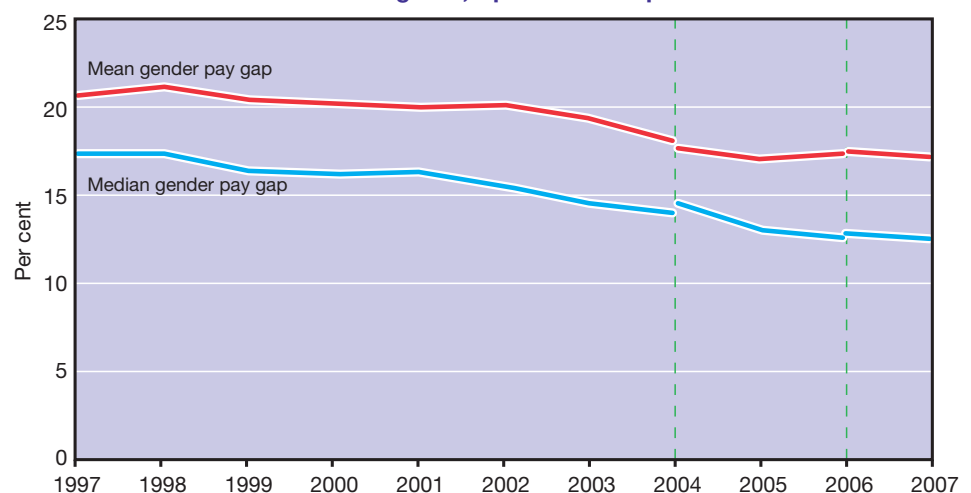
In April 2007, there were 565,000 workers over the age of 22 who were paid exactly the minimum wage (which was then £5.35 per hour; it was raised to £5.73 an hour in October 2008). Further, the Annual Survey of Hours and Earnings shows that there were 292,000 employees in jobs paying less than the minimum wage. It must be noted that there can be legitimate reasons for this. Some categories of workers, such as apprentices, may be exempt from national minimum wage legislation, for example.

Beyond these figures, there may be substantial numbers of workers in the informal economy who are paid very low wages by UK standards. Such activity is not recorded and therefore figures are not available. Some workers on very low wages may not be as badly off as they first appear because they are not registered as working and supplement their income by claiming benefits.

### Conclusion

Wage differentials and low pay are important aspects of 'The Hidden Economy'. As the UK faces difficult economic circumstances going into 2009, the plight of those on low pay (and the unemployed, on 'no pay') may come increasingly to the forefront of economic discussion.

**Figure 2: Pay gap between women's and men's hourly earnings in the United Kingdom, April 1997 to April 2007**



Source: ONS, *Patterns of Pay: Results of the Annual Survey of Hours and Earnings, 1997-2007*. Available to download at [www.statistics.gov.uk](http://www.statistics.gov.uk) Broken lines represent discontinuities in 2004 and 2006 ASHE results.

# Multiple Choice

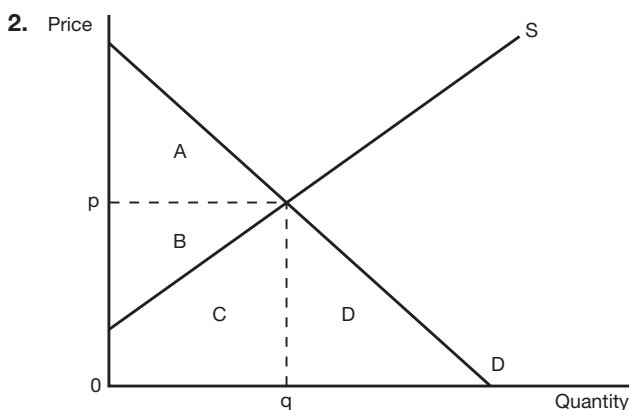
## QUESTION & ANSWER

In this regular feature Chief Examiner **Robert Nutter** of Watford Girls' Grammar School, looks at AS and A2 questions which in this volume will aim to reflect the order that schools and colleges cover topics from the specifications. There are three AS (1-3) and three A2 (4-6) questions per edition plus explained answers.

## Questions

1. Which one of the following products or services could be said to be in perfectly elastic supply in the short run?

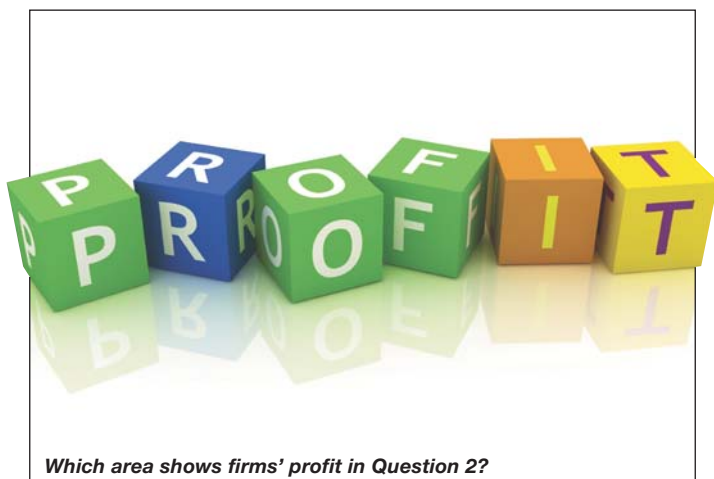
A. Seats at Wembley Stadium.  
B. Paintings by Picasso.  
C. Production of high value luxury shoes.  
D. Music downloads from Apple's iTunes.



The above diagram shows a competitive market in equilibrium at price  $p$  and quantity  $q$ . Which area corresponds most closely to the profit of the firms in the market?

3. Which one of the following is most likely to shift the aggregate demand curve to the right? (ceteris paribus)

A. An equal rise in government spending and income tax revenue.  
B. A rise in consumer spending on imports.  
C. A fall in income tax allowances.  
D. A rise in the foreign exchange rate.



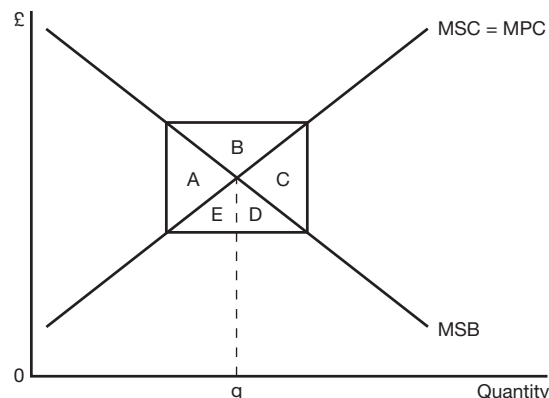
4. Suppose two countries A and B with a given set of inputs can produce tractors and computers. If they devote half of their inputs to the production of each good then their output is as follows.

	Tractors	Computers
Country A	500	800
Country B	400	300

Now suppose each country specialises in the production of the good in which it has a comparative advantage and they decide to trade, what will happen to the total production of each good?

A. -100 of tractors and +100 of computers.  
B. +100 of tractors and -500 of computers.  
C. -100 of tractors and +500 of computers.  
D. +100 of tractors and +100 of computers.  
E. +1000 of tractors and +500 of computers.

5. The diagram below shows the marginal social benefit (MSB) and the marginal social cost (MSC) in a particular market.



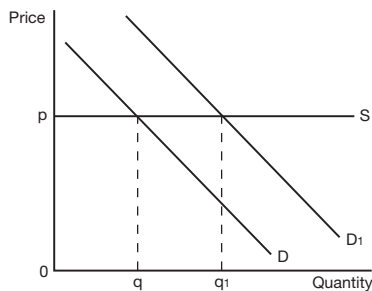
Which area represents the welfare loss from a positive consumption externality and give an example of such an externality?

6. If there is an increase in government spending in the economy the multiplier effect on aggregate demand will be reduced as a result of

A. a rise in the marginal propensity to consume.  
B. a rise in the money supply.  
C. a similar equal decrease in taxation.  
D. the imposition of import controls.  
E. the crowding-out effect.



1. Perfectly elastic supply means that a producer can supply at a constant cost per unit and has no capacity limits on production. Thus at a given price a producer can supply an infinite quantity. When people wish to buy a given song from Apple's iTunes music download facility Apple are able to supply an infinite quantity to buyers as the marginal cost of supply is constant. The diagram for perfectly elastic supply (which has a value of infinity) is shown here illustrating that a rise in demand will not increase costs of production and thus the price to consumers remains constant. The answer is thus D.



2. Producer surplus is defined as the difference between what firms actually receive when selling a product and the amount they would be willing to accept for a unit of the good. As the price of a product rises firms are willing to supply more partly because higher prices mean higher profits and also as output increases so does marginal cost and thus higher prices are needed to incentivise firms to supply. At the equilibrium price (p) the area B represents the producer surplus which is measured as the area between the supply curve and the horizontal line drawn at the equilibrium market price. As the market supply curve in a competitive industry represents marginal costs the area under the supply curve (C) represents total variable costs. Hence as areas B + C equal total revenue area B represents the profit in the industry *but* only after total fixed costs have been subtracted. The answer is B.

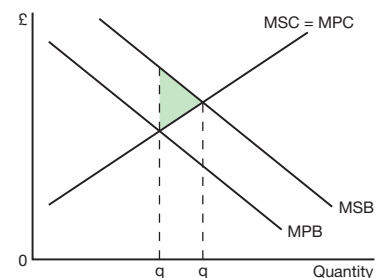
3. When there has been a shift to the right of the aggregate demand curve this means that there has been an increase in aggregate demand ( $C + I + G + X - M$ ). If there has been a rise in spending on imports (M) this represents a withdrawal from the circular flow and a fall in aggregate demand. A fall in income tax allowances will mean that more income will be subject to tax thus decreasing disposable income and consumption (C). A rise in the exchange rate will make exports more expensive and imports cheaper thus exports (X) will fall and imports (M) will rise decreasing aggregate demand. If the government increases its spending and tax revenue by equal amounts there will be an increase in aggregate demand because the positive multiplier effect of a rise in government spending is greater than the negative multiplier effect of a rise in taxation. This is called the *balanced budget multiplier*. The answer is thus A.

4. Country A has a comparative advantage in the production of computers as they can be produced at a lower opportunity cost in relation to tractors than they can be in Country B. Similarly tractors can be produced in Country B

at a lower opportunity cost than in Country A. Thus if the each country specialises in the product in which it has a comparative advantage gains from trade are possible as an exchange rate can be set which is between the two countries' opportunity cost ratios. If A specialises only in computers then total production will rise from 1100 units to 1600 units and B specialising in tractors will mean total production falling from 900 to 800. The answer is thus C.

5. If the free market level of output was above q the value society places on the product (the MSB) is less than what society has to forego in resource costs as a result of producing that output (the MSC). From a welfare point of view the product is under-priced and over-produced and output should fall to q. Negative production externalities such as pollution from coal-fired power stations are an example. Firms that use significant quantities of electricity from these sources could be taxed and the UK's climate change levy is an example. A tax on polluters should in theory bring output down to q, the socially efficient level of output ( $MSC = MSB$ ).

If the level of output was below q (where  $MSC = MSB$  is the socially efficient level of output) society values the product (MSB) more than what society has to forego in resource costs as a result of producing that output (MSC). The product is under-produced and society would benefit from an increase in output to q. For example there are significant positive consumption externalities from vaccinations against infectious diseases and if they were provided by the free market they would be over-priced and under-consumed from a welfare point of view. To correct market failure vaccinations should be subsidised to raise the number receiving them to q. The answer is thus A.



6. The multiplier effect arises when for an example an injection arising from increased government spending of say £500m leads to a resultant rise in national income of £2,500m. This gives a multiplier of 5 and is derived from the marginal propensity to consume. If there is an increase in government spending in the economy this will increase the demand for money in the economy as households and firms buy more goods and services. If there is a rise in demand for money but no change in the supply of money then interest rates would be pushed upwards. This increase in interest rates will reduce borrowing for consumption and investment, partly offsetting the multiplier effect of the initial increase in government spending. This is called the *crowding-out effect* and the answer is thus E.

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## ECONOMICS TODAY

### House prices fall at the fastest rate for 25 years

**UK House Prices: Historical Data**  
All Houses, All Buyers (Seasonally Adjusted)

	Index 1983 = 100	Standardised Average Price £	Monthly Change %	Annual Change %	Price/Earnings Ratio
Sep 2007	642.6	198,533	-0.5	10.7	5.77
Oct	637.6	197,000	-0.8	8.9	5.73
Nov	629.5	194,500	-1.3	6.3	5.63
Dec	638.1	197,163	1.4	5.2	5.69
Jan 2008	638.4	197,243	0.0	4.5	5.66
Feb	635.9	196,465	-0.4	4.2	5.60
Mar	620.1	191,590	-2.5	1.1	5.46
Apr	610.7	188,704	-1.5	-0.9	5.41
May	595.5	183,984	-2.5	-3.8	5.25
Jun	583.9	180,417	-1.9	-6.1	5.13
July	574.2	177,421	-1.7	-8.8	5.02
Aug	564.1	174,293	-1.8	-10.9	-
Sep	557.0	172,108	-1.3	-12.4	-

Source: HBOS

According to the Halifax house price index published by HBOS, house prices fell at an annual rate of 12.4% in the year to September 2008. This was the fastest annual decline for 25 years. This meant that the price of an average house fell from £198,533 to £172,108 over the 12 month period. However, the decline in prices for the month was 1.3% which was the smallest drop in the last seven months and may imply that the pace of price falls has started to slow down.

The Table above also shows that the house price to earnings ratio has fallen from its peak level in July 2007 of 5.84 to 5.02 in July 2008, which is the latest period for which figures are available. This latter figure is the

lowest for four and a half years and is expected to fall further towards the long-term average of 4.0.

According to Martin Ellis, Chief Economist of the Halifax: "The ongoing pressures on householders' income, combined with the reduction in the availability of mortgage finance, mean that market conditions will remain challenging." In fact, the number of mortgage approvals granted in August 2008 was 32,000 which was 70% lower than a year earlier.

However, the reduction of the rate of interest by half a percentage point to 4.5% on 8th October 2008, should help mortgage borrowers and provide a much-needed support to the housing market.



# Prize Competition

for AS Students



## Reducing Market Failure

Read the article 'What are the merits of taxes as opposed to regulation as alternatives to reducing market failure?' on pages 7 to 11 and then answer the questions. The numbers in brackets tell you how many letters there are in each word of the answer. All you have to do is send your 10 answers to us by 14th February 2009. The first one out of the hat will win £25 in music tokens.

1. What are positive or negative spillover effects related to the production and/or consumption of some goods called? (13)
2. What is it called when the policy response to market failure fails to increase or even decreases, social welfare? (10,7)
3. What name is given to the use of laws which ban, restrict or make compulsory the consumption and/or production of certain goods and services? (10)
4. This may lead the government to under- or over-estimate the extent of certain problems? (9,11)
5. The responsiveness of quantity demanded to a change in price. (5,10,2,6)
6. These are deemed to be good for society and tend to be under-consumed under free market conditions. (5,5)
7. Public goods are those which have the characteristics of being non-diminishable and what else? (3-10)
8. If the government suffers from the answer to Question 4, it is likely that their decisions will lead to these. (10,8)
9. When many public utilities were privatised in the 1990s, economists feared that these natural monopolies would exploit their market power at the expense of this. (8,7)
10. What is it called where regulators have vested interests in the industry and fail to make socially desirable decisions as a result? (10,7)

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# Prize Competition

for A2 Students



## Budget Deficits

Read the article 'Is the UK budget deficit too large?' on pages 12 to 17 and then answer the questions. The numbers in brackets tell you how many letters there are in each word of the answer. All you have to do is send your 10 answers to us by 14th February 2009. The first one out of the hat will win £25 in music tokens.

1. What is the name given to the largest category of Total Managed Expenditure spent by the UK government? (6,10)
2. Current Budget surplus or deficit minus net investment gives this. (6,6,3,9)
3. The underlying reason why deficits arise is because government feels it needs to intervene in markets to correct for this. (6,7)
4. What is it called when governments overspend and over tax thereby destroying economic welfare? (10,7)
5. This is the name given to the tendency for real GDP to accelerate above trend for a few years and then fall below trend at a later period. (8,5)
6. What is it called when "public finances are expected to fluctuate over the course of the economic cycle but must not go into deficit over the cycle as a whole?" (3,6,4)
7. Before UK governments adopted the answer to Question 6 what did they use to help actively stabilise the macroeconomy? (13,6,6)
8. Any rise in interest rates is likely to attract inflows of this into the economy? (3,5)
9. As a result of a rise in government spending resources can be wasted by being diverted from the private to the public sector, because public sector organisations do not have this. (3,6,6)
10. What is the policy called whereby the government aims to keep national debt below 40% of GDP? (3,11,10,4)

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