Inflation Report

August 2006





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In order to maintain price stability, the Government has set the Bank's Monetary Policy Committee (MPC) a target for the annual inflation rate of the Consumer Prices Index of 2%. Subject to that, the MPC is also required to support the Government's objective of maintaining high and stable growth and employment.

The *Inflation Report* is produced quarterly by Bank staff under the guidance of the members of the Monetary Policy Committee. It serves two purposes. First, its preparation provides a comprehensive and forward-looking framework for discussion among MPC members as an aid to our decision making. Second, its publication allows us to share our thinking and explain the reasons for our decisions to those whom they affect.

Although not every member will agree with every assumption on which our projections are based, the fan charts represent the MPC's best collective judgement about the most likely paths for inflation and output, and the uncertainties surrounding those central projections.

This *Report* has been prepared and published by the Bank of England in accordance with section 18 of the Bank of England Act 1998.

The Monetary Policy Committee:

Mervyn King, Governor Rachel Lomax, Deputy Governor responsible for monetary policy John Gieve, Deputy Governor responsible for financial stability Kate Barker Charles Bean David Blanchflower Paul Tucker

The Overview of this *Inflation Report* is available on the Bank's website at www.bankofengland.co.uk/publications/inflationreport/infrep.htm. The entire *Report* is available in PDF at www.bankofengland.co.uk/publications/inflationreport/2006.htm. PowerPoint[™] versions of the charts in this *Report* and the data underlying most of the charts are provided at www.bankofengland.co.uk/publications/inflationreport/2006.htm.

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Overview

In the United Kingdom, output growth quickened to above its long-run average. Equity prices fell and sterling appreciated. Household spending appears to have revived and business investment picked up. The pace of global expansion remained robust. In the Committee's central projection, under the assumption that official interest rates follow a path implied by market yields, GDP growth remains close to its average rate over the past decade.

Although unemployment edged up, the overall margin of spare capacity in the economy appears small. Oil prices increased again, but pay growth was steady. CPI inflation rose to 2.5% in June. In the central projection, inflation moves a little higher in the near term and then eases back towards the 2% target as the contributions of energy and import prices diminish. The risks to growth and inflation are broadly balanced.

Asset prices

Global equity prices fell sharply during May and June, apparently reflecting market participants' heightened uncertainty regarding the economic outlook. However, that merely returned most major indices to levels seen in early 2006, leaving them well above their earlier troughs. The impact on demand prospects is likely to be correspondingly modest.

Sterling appreciated substantially during the first half of May. That movement coincided with a general depreciation of the dollar against most currencies, possibly reflecting increased concerns about the sustainability of the US current account deficit. The starting value for the sterling effective exchange rate in this *Report* is some $2^1/_2$ % higher than in the May *Report*.

Domestic demand

According to the latest *Blue Book*, the period of weak consumption growth in 2004–05 lasted somewhat longer than previously thought. Quarterly growth rates since the trough have been volatile, but recent strong retail sales data suggest that the underlying trend is firm. Though effective personal tax rates and domestic energy prices are likely to edge higher, a recovery in labour income growth should support further steady growth in household spending.

Real government consumption was estimated to have been broadly flat in the first quarter, weaker than the growth rates of recent years. The public sector is expected to make a significant but declining contribution to demand growth over the forecast period.

Following subdued growth in 2005 H2, business investment picked up in the first quarter. Investment intentions indicators point to a continuation of that revival in the near term. Buoyant corporate cash flow, falling relative capital goods prices and a low cost of finance should help to maintain momentum.

The growth rates of broad money and credit have risen sharply over the past two years. The implications for future inflationary pressure of the recent acceleration in broad money depend on the extent to which these additional balances are eventually used to finance the purchases of either goods and services or financial and other assets. Much of the recent accumulation of money balances has been by non-bank financial companies, a somewhat heterogeneous group, which complicates the assessment of the likely contribution to future demand pressures.

External demand and net trade

The world economy continued to expand briskly, with some signs that a more balanced pattern of growth may be in prospect. In the euro area — the United Kingdom's main trading partner — GDP growth picked up in Q1 and a range of business surveys point to a further quickening in the second quarter. After an unusually strong start to the year in the United States, the pace of expansion eased in the second quarter on the back of slowing domestic demand. The recovery in Japan was maintained and the Bank of Japan raised its official interest rate above zero. Growth in the rest of Asia remained rapid. The Committee expects strong growth in world trade to be sustained over the forecast period, albeit at a slightly less rapid rate than of late.

Net trade subtracted from UK GDP growth in the first quarter, with a sharp rise in import growth. However, recorded import and export growth is affected by VAT fraud, obscuring the underlying picture. Business surveys and reports from the Bank's regional Agents point to strong export demand. Despite the recent appreciation of sterling, net trade is expected to provide a modest boost to UK GDP growth over the forecast period.



Chart 1 Current GDP projection based on market interest rate expectations



The fan chart depicts the probability of various outcomes for GDP growth in the future. If economic circumstances identical to today's were to prevail on 100 occasions, the MPC's best collective judgement is that GDP growth over the subsequent three years would lie within the darkest central band on only 10 of those occasions. The fan chart is constructed so that outturns of GDP growth are also expected to lie within teach pair of the lighter green areas on 10 occasions. Consequently, GDP growth is expected to lie somewhere within the entire fan chart on 90 out of 100 occasions. The bands widen as the time horizon is extended, indicating the increasing uncertainty about outcomes. See the box on pages 48–49 of the May 2002 *Inflation Report* for a fuller description of the fan chart and what it represents. The dashed line is drawn at the two-year point.

The outlook for GDP growth

GDP was provisionally estimated by the ONS to have increased by 0.8% in Q2. Manufacturing and services both recorded firm growth, though there was a sharp fall in the output of the energy sector which seems likely to prove erratic. Moreover, the *Blue Book* contained upward revisions to the ONS's estimates of GDP in the past. Business surveys point to further solid growth in the third quarter.

Under the assumption that official interest rates follow a path implied by market yields, the MPC's central projection is for output to continue to grow at a rate close to its average over the past decade. Steady growth in consumer spending, a moderate recovery in investment and a small boost from net trade offset slower growth in public expenditure. Chart 1 shows the outlook for four-quarter GDP growth. The profile is slightly stronger than in the May *Report*.

Costs and prices

Business surveys and reports from the Bank's regional Agents suggest that capacity utilisation within businesses is around normal. Annual employment growth picked up a little and surveys of employment intentions point to a further strengthening in the near term. But the unemployment rate nevertheless continued to edge up, reflecting unusually rapid labour force growth. On balance, and in the light of the upward revisions made by the ONS to the profile of GDP in the recent past, the Committee judges that the current margin of spare capacity in the economy as a whole is somewhat less than previously thought.

Spot oil prices reached a new record level, partly reflecting concerns about instability in the Middle East. The futures curve suggests that market participants expect oil prices to remain elevated for the next few years. Non-oil commodity prices also increased.

There continues to be little sign yet that higher energy prices have generated a durable increase in inflation expectations or greater pay pressures. Settlements have edged down over the past year and overall pay growth has remained broadly steady. Though that may reflect the loosening in the labour market, some contacts of the Bank's regional Agents have also indicated that their response to higher non-wage costs has been to grant smaller pay increases.

The prices of imported goods and services continued to rise, in contrast to much of the past decade when they were flat or

Chart 2 Current CPI inflation projection based on market interest rate expectations



The fan chart depicts the probability of various outcomes for CPI inflation in the future. If economic circumstances identical to today's were to prevail on 100 occasions, the MPC's best collective judgement is that inflation over the subsequent three years would lie within the darkest central band on only 10 of those occasions. The fan chart is constructed so that outturns of inflation are also expected to lie within each pair of the lighter red areas on 10 occasions. Consequently, inflation is expected to lie somewhere within the entire fan chart on 90 out of 100 occasions. The bands widen as the time horizon is extended, indicating the increasing uncertainty about outcomes. See the box on pages 48-49 of the May 2002 *Inflation Report* for a fuller description of the fan chart and what it represents. The dashed line is drawn at the two-year point.

falling. That is a consequence of the recent strength of world demand, in part operating through higher energy and other commodity prices. In the Committee's central projection, both energy and import price inflation are expected to moderate.

CPI inflation has risen sharply since the May *Report*, reaching 2.5% in June. That partly reflected the pass-through of previously announced increases in domestic energy prices into household bills. Higher university tuition fees and the continuing pass-through of higher energy prices are likely to push inflation further above the 2% target for a while.

The outlook for inflation

Chart 2 shows the Committee's assessment of the outlook for CPI inflation, assuming that official interest rates move in line with market yields. After the initial near-term rise, the central projection is for inflation to ease back towards the target. With energy and import price inflation moderating, and against a background of robust demand growth and limited spare capacity, some recovery in profit margins and pay growth is expected. The inflation profile is somewhat higher than in the May *Report*, particularly in the near term.

As usual, there are substantial risks surrounding the central projections. These include, in particular: the prospects for world growth; the strength and duration of the recovery in consumer spending; the outlook for energy and import prices and their interaction with domestic pricing pressures; and the margin of spare resources within firms and in the labour market. The risks to growth and inflation are broadly balanced, though there is greater than usual uncertainty over the outlook for inflation, particularly in the near term.

The policy decision

At its August meeting, the Committee noted that, under the assumption that official interest rates rose in line with market yields, the central projection was for output growth to remain close to its recent historical average and for inflation to move a little higher before easing gradually back towards the target. Given that outlook, with inflation likely to remain above the target for some while, the Committee judged that an increase of 0.25 percentage points in the official Bank rate to 4.75% was necessary to bring CPI inflation back to the target in the medium term.

1 Money and asset prices

The MPC increased the official Bank rate by 0.25 percentage points to 4.75% on 3 August. Financial market turbulence in May and June saw equity prices fall around the world, possibly reflecting a reassessment of risk. However, long-term interest rates remained relatively stable, following substantial increases earlier in the year. Market participants expected monetary policy to tighten further in most major economies. There were also significant exchange rate movements, with sterling appreciating. Consumer credit growth continued to slow, but the growth of mortgage borrowing and broad money remained strong.

Chart 1.1 Cumulative changes in international equity prices since 4 January 2006^(a)

- FTSE All-Share
- S&P 500 Euro Stoxx



Sources: Bloomberg and Thomson Financial Datastream.

(a) In local currency terms.(b) Morgan Stanley Capital International (MSCI) index

1.1 Asset prices

Equity prices

In the United Kingdom, the FTSE All-Share index averaged 2953 in the fifteen working days to 2 August, 4.5% lower than the starting point for the May *Report*. This unwound strong gains earlier in the year, but the All-Share index was still around 85% above its trough in March 2003. Equity prices in other economies experienced similar movements, although the falls in Japanese and emerging market equity prices were more pronounced (Chart 1.1). The widespread declines suggest a common cause.

Equity prices should reflect the value that investors place today on the flow of dividend payments expected in the future. So the decline in equities might reflect expectations of weaker global growth (and dividend) prospects by market participants. But forecasts of medium-term earnings growth from I/B/E/S and GDP growth projections from Consensus Economics do not indicate any significant decline in growth expectations in recent months.

Some market commentators have suggested that the recent market turbulence reflected concerns about global inflationary pressures (see the box on page 33). That is likely to have led to expectations of tighter monetary policy, and therefore higher interest rates, which if they persisted would reduce the value today of future dividend flows from equities. However, shorter-term market interest rates increased steadily in the first half of the year, whereas the decline in equities was abrupt.

Rising interest rates might also have put downward pressure on equities through their impact on liquidity. In recent years, low interest rates in many countries may

Chart 1.2 International broad money^(a)



Sources: Bank of England, Bank of Japan, Board of Governors of the Federal Reserve System and ECB.

(a) The monetary aggregates used are: M4 for the United Kingdom; M2 for the United States; M3 for the euro area; and M2 + CDs for Japan.

Chart 1.3 Market implied volatility of the FTSE 100 over the next three months^(a)



(a) Three-month implied volatility derived from option prices





Sources: Bank of England and Bloomberg.

(a) Ten-year instantaneous forward rates.

have left households and companies holding excess money balances, putting upward pressure on both asset prices and inflation.⁽¹⁾ As the prices of assets adjust more quickly than those of goods and services, this could have pushed up asset prices more rapidly than inflation in the short term. That process may have started to unwind more recently with the tightening of monetary policy around the world. Liquidity growth has eased in the United States and Japan in recent months, although it has remained strong in the United Kingdom and the euro area (Chart 1.2).

Uncertainty about growth and inflation may also have made equities less attractive to investors. Risk-averse investors typically demand higher returns from assets which offer an uncertain future return, such as equities. And this equity risk premium could have risen if perceptions of risk had increased. That is consistent with a number of asset price developments during May and June. The falls were largest for riskier assets, such as emerging market equities and commodities. Spreads on lower-quality corporate bonds widened a little. And evidence from option prices suggests that expected volatility in equity markets picked up (Chart 1.3).

Overall, the turbulence in equity prices in May and June could have been driven by a number of factors. In particular, a reassessment of risk may have led to a correction of earlier gains. There have been similar corrections over the past three years. As discussed in Section 2, if the adjustment proves to be temporary, the effect on activity may be rather limited.

Long-term interest rates

Unlike equity prices, international long-term interest rates have been relatively stable since the May *Report*, and well above their levels at the start of the year (Chart 1.4). Long-term rates might have been influenced by various factors during the adjustment in equity prices. Inflation concerns could have placed upwards pressure on nominal rates if those concerns were expected to persist. But a perceived rise in risk might have pushed down on long-term rates, if it raised demand for less risky government bonds relative to riskier assets, such as equities. It could be that these two effects broadly offset one another.

Short-term interest rates

The MPC increased the official Bank rate paid on commercial bank reserves by 0.25 percentage points to 4.75% on 3 August. That was the first change for a year. A summary of the reasons for the MPC's recent policy decisions is provided in the box on page 12 and in Section 5.4. On 18 May, the Bank introduced a new framework for implementing the MPC's interest rate decisions in the sterling money markets, with the aim of

(1) See the box on page 5 of the February 2006 Inflation Report.





Sources: Bank of England and Bloomberg.

(a) Forward rates are interest rates expected to prevail in a future period. They are derived from instruments that settle on the London interbank offered rate (Libor). That includes market rates on short sterling futures, swaps, interbank loans and forward-rate agreements. The forward curves shown in the chart are fifteen-day averages of one-day forward rates. The curves have been adjusted for credit risk.

Chart 1.6 Overseas official and forward interest rates(a)



Sources: Bank of England and Bloomberg.

(a) These are one-month forward rates. The US, euro-area and Japanese curves have been derived from instruments that settle on dollar Libor, Euribor and yen Libor respectively. These curves have not been adjusted for credit risk.

(b) Official rate refers to the Bank of Japan's target for the uncollateralised overnight call rate.

Chart 1.7 Cumulative changes in effective exchange rate indices since 2 January 2006



reducing volatility in very short-term market interest rates while making it easier for banks to manage their day-to-day cash flows.⁽¹⁾

Short-term forward rates provide a guide to market expectations about the future path of monetary policy. These have risen a little since May and, in the run-up to the MPC's decision in August, suggested that market participants expected the official Bank rate to rise to 5.0% over the next two years (Chart 1.5). In contrast, a Reuters survey indicated that UK economists thought rate increases were less likely, with an average forecast of 4.6% for the end of this year and next.

As noted above, there has been substantial monetary policy tightening elsewhere in the world in recent months. And more is expected in many countries in the future (Chart 1.6). In the United States, the FOMC raised its official interest rate by 0.25 percentage points to 5.25% at its June meeting. That brought the overall tightening since mid-2004 to 4.25 percentage points. In the euro area, the ECB increased its official rate by 0.25 percentage points in June to 2.75%. In the run-up to the MPC's meeting on 2-3 August, the ECB's official rate had risen by 0.75 percentage points since late 2005 and market participants expected further tightening. The Japanese official interest rate was increased from zero to 0.25%, the first change since 2001. That followed the ending of quantitative easing in March, since when excess balances held by banks at the Bank of Japan have fallen sharply. Market participants expect Japanese official interest rates to rise steadily over the next two years.

Exchange rates

In the fifteen working days to 2 August, the sterling effective exchange rate (ERI) averaged 101.2, up 2.3% on the starting point for the May *Report*. Much of the rise took place during the fifteen-day window in the run-up to the MPC's May decision. The ERI has been fairly stable since mid-May.

The appreciation of sterling in May coincided with a general depreciation of the dollar against most currencies. Although the dollar subsequently recovered a little, by early August it was still more than 5% lower than at the start of the year (Chart 1.7). The depreciation so far this year may have reflected a number of factors, including the concerns about global current account imbalances highlighted in the G7 statement in April. The implications for sterling of a wider adjustment of trade imbalances would depend on a number of factors, such as what triggered the adjustment and how it affected the pattern of demand across different countries. Depending on the circumstances, sterling could either appreciate or depreciate in effective terms.

⁽¹⁾ For more details, see The Framework for the Bank of England's Operations in the Sterling Money Markets, May 2006, available at www.bankofengland.co.uk/markets/ publications/redbook0506.pdf.

Monetary policy since the May Report

The MPC's central projection in the May *Inflation Report*, under the assumption that official interest rates followed a path implied by market yields, was for output to continue rising steadily at a rate close to its historical average. CPI inflation was projected to rise in the near term, reflecting higher energy and import costs, and then fall back to around the 2% target.

At the time of the Committee's meeting on 7–8 June, the most significant news had related to developments in financial markets. Equity price indices had fallen in most advanced countries, including the United Kingdom. The sterling effective exchange rate index had appreciated over the month, leaving it almost 2% above the starting point for the projections in the May *Inflation Report*. If the recent appreciation of sterling and falls in equity prices were sustained, then the consequent impact on import prices and wealth would tend to reduce inflationary pressures. However, if households and firms had already assumed that some of the asset price increases over the past year were unlikely to be sustained, the recent price corrections might not lead them to change their spending plans significantly.

Aside from changes in financial markets, developments in the world economy and the news about UK demand and output appeared to have been broadly consistent with the May projection. But there were a number of risks to the inflation outlook. Growth in the euro area and Asia could turn out to be stronger than expected, or the amount of spare capacity in the UK economy might be less than in the Committee's central projection. Alternatively, the slowdown in the United States might prove to be more pronounced than expected, domestically generated inflation pressures could remain weak, and the recent increase in the labour force suggested that wage developments might remain benign.

Given that recent developments had been broadly in line with the May *Report*, and that there were significant risks in both

directions, seven Committee members voted to keep the official Bank rate unchanged at 4.5%. For one member, the balance of risks to inflation was sufficiently to the upside to warrant an immediate increase in rates of 25 basis points.

Asset prices had stabilised by the time of the MPC meeting on 5–6 July. But it was too early to know whether the recent falls in equity prices would prove to be a limited correction or whether there would be a more marked change.

Developments in the world economy appeared to have been consistent with some rebalancing in the composition of world demand, and the revisions to UK data in the *Blue Book* had not been particularly large by past standards. The overall prospects for output in the near term did not look materially different from that expected at the time of the May *Report*. Similarly, the rise in CPI inflation had been broadly as expected.

The risks to the outlook for inflation were broadly the same as those identified by the Committee the previous month. Growth in the euro area and Asia might well turn out stronger than expected, as might global inflationary pressures. But asset prices might fall further in coming months, and there remained a risk that the erosion of spare capacity in the UK economy would be slower than envisaged.

Different Committee members attached different weights to those arguments. But given that recent developments had seemed broadly in line with the May *Inflation Report*, and that there were significant risks in both directions, the Committee voted unanimously to maintain the official Bank rate at 4.5%.

At its meeting on 2–3 August, the Committee voted to raise the official Bank rate paid on commercial bank reserves by 0.25 percentage points to 4.75%.

The housing market

Indicators of housing market activity have been robust. Survey measures have generally picked up. And the number of mortgage approvals rebounded in May and June following a dip in April. But the evidence on house prices has been more mixed. Some survey measures of house price inflation increased in Q2, but the Halifax and Nationwide indices suggest that inflation eased (Table 1.A). Increases in market interest rates may be dampening demand, although the impact on the rates paid by mortgage borrowers has been limited so far.

Table 1.A Indicators of house price inflation(a)

	Average since 2000	2005 Q3	Q4	2006 Q1	Q2	July	
HBF current balance ^(b)	25	-17	-4	8	20	n.a.	
RICS current balance ^(c)	16	-24	2	12	21	n.a.	
RICS expectations balance ^(c)	14	-1	17	24	32	n.a.	
Lenders' indices ^(d)	1.0	0.6	0.6	0.8	0.2	0.5	

Sources: Bank of England, Halifax, Home Builders Federation (HBF), Nationwide and Royal Institution of Chartered Surveyors (RICS).

All series are net percentage balances except the lenders' indices. Averages of monthly data where relevant Compared with previous month. These data have been seasonally adjusted by Bank staff.

Change during the past three months or expected over the next three months. Average of monthly percentage changes in the Halifax and Nationwide house price indices.

Chart 1.8 UK broad money



(a) Other financial corporations

1.2 Money, credit and balance sheets

Monetary aggregates

A narrow measure of the amount of money in the economy is the quantity of notes and coin in circulation. Notes and coin are predominantly held by households and retailers, so movements often reflect developments in retail spending. Since the May Report, growth in notes and coin has remained well above its trough at the turn of the year, reaching 5.4% in the year to July. That is consistent with strengthening consumption growth.

M4, a broader measure of money that adds in bank and building society deposits held by households and companies, has risen much more sharply over the past two years. In June, annual growth was at its highest rate since 1990. The pickup in growth was accounted for by non-bank financial firms known as OFCs (other financial corporations) (Chart 1.8). The OFC sector includes many different types of institution. Some provide services similar to banks, by acting both as a borrower and a lender to different banks. So the substantial pickup in their deposits should not have significant consequences for inflationary pressure. However, changes in holdings of monetary assets by other institutions within the OFC sector, such as pension funds and insurance companies, could presage higher inflationary pressure in the medium term. If those institutions have built up deposits in anticipation of purchasing financial or real assets, that would put upward pressure on asset prices, increasing household wealth and potentially pushing up nominal spending.

Households

Households hold some $\pm 3^{1}/_{2}$ trillion in financial assets, equivalent to over four times their annual income. Around 40% of those assets are held in domestic and foreign equities. So, other things being equal, a 5% fall in equity prices would reduce the value of households' financial assets by around 2%. The implications of recent equity price falls for spending are discussed in Section 2.

On the liabilities side of households' balance sheets, growth in consumer credit has continued to slow. Net flows of new borrowing fell by around $1^{1}/_{2}$ % of households' disposable income in the year to 2006 Q1, and declined further in Q2. That could indicate that households found it more difficult or expensive to obtain such credit. Anecdotal evidence suggests that lenders tightened their criteria for lending during this period. That may reflect, in part, the sharp increases in personal insolvencies in recent years.⁽¹⁾

⁽¹⁾ See the box on pages 8–9 of the May Report for a discussion of recent developments in insolvencies

The impact of pension fund deficits on company behaviour

Companies' pension fund contributions have risen significantly in recent years. In part, that relates to the funding of pension deficits that have accumulated in the past. The falls in equity prices during the early part of the decade, coupled with lower real interest rates and increased life expectancy, meant that many defined-benefit pension schemes were subsequently underfunded.⁽¹⁾ New legislation has reinforced the need to address those deficits. In particular: assets and liabilities must be valued at market interest rates and other market prices and any deficits must be recognised in full on company balance sheets; trustees must show how they plan to eliminate deficits, normally within ten years; and from the 2006/07 financial year, levies to pay for the new Pension Protection Fund are to be based on the risk of individual company schemes.⁽²⁾

To the extent that pension fund deficits reflect liabilities that have accumulated over the past, there might not be a big impact on company behaviour. While funding a pension deficit is a financial cost for firms, it does not affect the cost of producing an additional unit of output. That implies a minimal impact on the pricing and investment decisions of companies seeking to maximise profits, other than where access to further credit is limited.

At the same time, the cost to companies of the pension benefits that employees are currently accruing does affect the cost of producing an additional unit of output. So these costs should affect economic decisions such as pricing, investment and employment.

Evidence from the Bank's regional Agents

The complex nature of these issues makes it difficult to assess the impact of pension deficits on economic behaviour using official data alone. So during May and June 2006, the Bank's regional Agents carried out a survey about their contacts' pension funds. The survey covered around 210 companies with a total turnover of over £270 billion.

The majority of companies contacted for the survey reported pension deficits of up to 10% of annual turnover (Chart A), although a number faced higher funding shortfalls. Companies with smaller turnover tended to be more grouped at either ends of the distribution — that is, they were more likely to have either a large deficit or no funding shortfall at all.

The survey also asked whether deficits had materially affected the companies' business decisions. Over the past twelve months, the most common response to a deficit had been to





(a) Individual responses have been weighted by turnover.

Chart B Impact of pension deficits on respondents' past and future business decisions



(a) Individual responses have been weighted by turnover.

restructure the company's pension scheme (Chart B). Some companies had closed defined-benefit schemes to new entrants or reduced the rate of benefit accrual. A number had also altered the funding of their pension scheme, for example by using cash to reduce shortfalls on a one-off basis or by changing contribution rates. In the case of large companies, several had borrowed funds in order to close the deficit and remove regulatory concerns. Pay settlements had been restricted where market conditions allowed, and there had been some shift towards non-pensionable forms of remuneration, such as bonuses. A number of companies noted that deficits had affected mergers and acquisitions activity, and many cited the significant amount of management time that had been taken up with pensions issues. But the overall impact of pension deficits on employment, selling prices and capital expenditure was reported to have been minimal.

Over the next twelve months, companies expected further changes to the structure and funding of their pension schemes. And the effect on wages was expected to be rather larger than over the past twelve months (Chart B). But the future impact on employment, pricing and investment was still expected to be small.

One feature of the survey was that the impact on smaller companies' investment plans was reported to have been more pronounced than for other companies (Chart C). That is consistent with these smaller firms being more credit-constrained than larger companies.

Other survey evidence

The CBI and the Engineering Employers Federation (EEF)⁽³⁾ also recently conducted surveys about pension provision and its impact on business decisions. In the CBI survey, 40% of respondents with defined-benefit schemes reported that pension deficits had either significantly (32%) or severely (8%) affected investment in 2005. In the EEF survey, many respondents reported that they had made a 'modest' reduction in investment as a result of pension deficits, but no companies had significantly changed their plans.

Conclusion

Overall, pension deficits appear to have had a relatively limited impact on the employment, pricing and investment decisions of most firms. But there is greater evidence that wages have been affected. And, in general, the economic behaviour of small firms seems to have been influenced the most.



(a) The sum of mortgage equity withdrawal and consumer credit.
(b) The 2006 Q2 outturn for consumer credit is not shown because household income data have not yet been published for that period.

$\label{eq:chart C} \begin{array}{l} \mbox{Impact of pension deficits on investment by} \\ \mbox{respondents}^{(a)} \end{array}$





(a) 'Small' refers to companies with an annual turnover of up to £50 million; 'medium' to companies with annual turnover of between £50 million and £500 million; and 'large' to companies with annual turnover in excess of £500 million. Individual responses have been weighted by turnover within the small/medium/large categories.

- (1) Defined-benefit pension schemes, where employees typically receive a proportion of their final salary throughout retirement, have declined in number in recent years. According to the Government Actuary's Department and the Pensions Commission, 3.7 million workers were covered by defined-benefit schemes in 2005, compared with 5.2 million a decade earlier.
- (2) The box on pages 8–9 of the Spring 2006 Quarterly Bulletin discusses the valuation of pension schemes, and the box on page 10 of the same Bulletin provides more information about regulatory changes.

(3) This work is an internal unpublished EEF document: we are grateful for the EEF's permission to use and cite the survey.

Another possible explanation is that households' demand for consumer credit fell, either because their overall borrowing needs declined or because other forms of credit became more attractive. Secured borrowing has picked up over the past year, and estimates of mortgage equity withdrawal rose by more than the decline in consumer credit (Chart 1.9). That could indicate some substitution between different forms of borrowing. However, the individuals reducing their consumer credit may be different from those people who are increasing their secured borrowing.

Companies

Corporate finances remain healthy. Private non-financial corporations have run financial surpluses in each quarter for the past four years. In 2006 Q1, the financial balance — which captures retained profits after allowing for taxes, dividends, and other costs such as pension contributions and investment spending — increased to 1.7% of GDP. A decline in profits and a pickup in investment spending were more than offset by weaker dividend payments.

Companies may be retaining surpluses against future uncertainties such as pension liabilities. However, current



pension contributions have already risen significantly, more than doubling over the past four years. And total social contributions on behalf of employees — which also include National Insurance and other contributions — now account for 9.7% of nominal GDP, the highest level since the official quarterly series began in 1955 (Chart 1.10). The box on pages 14–15 explores the implications of higher pension contributions for company behaviour.

(a) Includes National Insurance, pension and other social contributions by employers.
 (b) Excludes imputed pension contributions by government. The official series starts in 1987.

2 Demand

Household consumption growth slowed sharply in the first quarter of 2006, but appears to have recovered since. Business investment rose strongly in Q1, and surveys suggest some further recovery is likely. While the US economy showed some signs of slowing, growth picked up in the euro area and surveys indicate rising foreign orders for UK exports.



(a) GDP at market prices. 2006 O1 data were unavailable at the time of the May Report

Table 2.A Expenditure components of demand(a)

Percentage changes on a quarter earlier

	Averages ^(b)		2005	2005		
	2004	2005	Q2	Q3	Q4	Q1
Household consumption ^(c)	0.8	0.3	0.2	0.3	0.8	0.4
Government consumption	0.5	0.6	1.0	0.7	0.2	0.1
Investment	0.9	1.3	-0.9	3.3	1.2	1.4
of which, business investment	0.2	0.7	2.1	0.6	0.1	1.7
Final domestic demand	0.8	0.5	0.3	0.7	0.8	0.5
Change in inventories ^{(d)(e)}	0.0	-0.1	-0.3	0.2	-0.1	0.1
Alignment adjustment ^(e)	0.0	-0.2	-0.1	0.0	-0.3	0.5
Domestic demand	0.8	0.3	-0.1	0.9	0.4	1.0
Exports ^(f)	1.4	2.2	5.4	0.4	3.1	5.3
Imports ^(f)	1.8	1.5	2.6	2.3	1.9	5.7
Net trade ^(e)	-0.1	0.1	0.6	-0.6	0.3	-0.3
Real GDP at market prices	0.6	0.5	0.5	0.4	0.7	0.7

Chained-volume measures

Averages of quarterly growth

- Includes non-profit institutions serving households. Excludes the alignment adjustment.

Excludes the augment adjustment. Percentage point contributions to quarterly growth of real GDP. Headline figures. Note that these data are affected by missing trader intra-community (MTIC) fraud (see the box on pages 22-23)

One of the main ways in which monetary policy influences inflation is by affecting movements in aggregate nominal demand. Official estimates suggest that nominal GDP rose by 4.8% in the year to 2006 Q1, with the data showing a recovery from the slowdown recorded in 2005. The latest estimates of annual growth have also been revised up relative to the data that were published ahead of the May Report (Chart 2.1).

Real GDP increased by 0.7% in the first guarter of 2006, an unchanged rate from 2005 Q4. Real GDP was provisionally estimated to have grown by 0.8% in Q2 (Section 3), above its post-war average rate.

Each year, the ONS provides new estimates of GDP and its components as part of the Blue Book process. The latest set of revisions, published in June, is discussed in the box on page 18.

Domestic demand 2.1

Household consumption

Following revisions in the *Blue Book*, the latest estimates show a greater slowdown in household spending during 2004, and a more subdued recovery in 2005, than at the time of the May Report.

Consumption growth was volatile around the turn of this year. It rose to 0.8% in 2005 Q4, but then fell back to 0.4% in 2006 Q1 — lower than expected at the time of the May Report (Table 2.A). Much of this volatility reflected movements in spending on goods.

Official data are not yet available for household consumption in 2006 Q2, but other indicators suggest that the Q1 weakness was temporary. Retail sales volumes increased by 2.1% in Q2. And the CBI Distributive Trades Survey picked up further (Chart 2.2). A number of retail surveys, along with evidence from the Bank's regional Agents, suggest that the World Cup and the unusually hot weather may have affected the timing and pattern of retail spending in the second quarter.

Revisions to the National Accounts

The National Accounts published on 30 June included revisions to GDP and its components. Those revisions reflected the 2006 *Blue Book* process — an annual updating of GDP data by the ONS to incorporate new information and any methodological changes.⁽¹⁾ This box outlines the main revisions to demand.

The recent profile of GDP growth has been revised up slightly. Latest estimates of annual economic growth show that the economy grew more strongly in 2003 and 2004 than estimated at the time of the May *Report*. The latest data also imply that the slowdown in 2004–05 was slightly sharper than previously reported, but that the recovery since then was correspondingly stronger (Chart A).



⁽a) Chained-volume measure of GDP at market prices. 2006 Q2 data were not available at the time of the May Report.

There were also revisions to GDP back to 1948. The net impact was to raise the estimate of the 2006 Q1 level of real GDP at market prices by 0.7%. The corresponding figure for GDP at basic prices was 0.9%.

There were larger revisions to estimates of the individual components of GDP. Household consumption growth is now estimated to have been stronger in 2003, but to have slowed more sharply during the course of 2004 and into 2005 (Chart B). In line with this weaker profile for household spending, growth in real post-tax labour income (Chart 2.3 on page 19) was also weaker in 2004 and 2005 than previously estimated.

The level of whole-economy investment in 2005 Q4 was revised up by 3.6%. That partly reflected a 7% increase in the estimate for the level of investment in private sector dwellings. Growth in business investment was also revised up, on average, back to 1997 (Chart 2.6 on page 20). Nonetheless, as discussed on pages 20–21, estimated growth rates of business investment in 2003–04 still look subdued relative to the cyclical recovery seen over that period. Inventory levels were also revised, such that the estimated whole-economy stock-output ratio has a less pronounced uptrend in recent years.





(a) Chained-volume measure, excluding non-profit institutions serving households.
 (b) 2006 Q1 data were not available at the time of the May *Report*.

There were upward revisions to the estimated growth of exports and, to a lesser extent, imports. The pickup in export growth can largely be attributed to higher estimates of exports of services. As a result of these revisions, net trade is now estimated to have been less of a drag on real GDP growth in recent years.

See Quarterly National Accounts, 1st quarter 2006 and United Kingdom National Accounts — The Blue Book: 2006, Office for National Statistics.







(a) General government benefits minus employees' National Insurance contributions

(b) Wages and salaries plus mixed income.
 (c) Taxes include income and Council Tax.

(d) Consumption expenditure deflator (including non-profit institutions serving households).

Chart 2.4 Contributions to change in household taxes^(a) since 2000 Q1



(a) Includes National Insurance contributions(b) Includes Council Tax.

(c) Cumulative change in total taxes and National Insurance contributions as a percentage of labour income (wages and salaries plus mixed income) and government benefits. Overall, the pattern of spending around the turn of the year, although erratic, is consistent with a recovery in consumption from the slowdown seen during 2004 and into 2005. The recent profile of spending can largely be explained by developments in household income and wealth.

Household income

Real post-tax labour income declined slightly in 2006 Q1 (Chart 2.3). Growth has averaged only 0.3% per quarter in the past two years, reflecting modest growth in wages and a rise in the tax take. Higher prices of energy-intensive items such as petrol, gas and electricity have also squeezed real incomes somewhat, reducing the resources available to spend on other more discretionary goods and services. But, as Section 4 explains, higher energy price inflation has coincided with a period of lower inflation in the prices of other consumer goods and services in recent years, partially offsetting this impact on current real income and consumption.

The rise in energy prices and tax payments could also have affected people's expectations of the income that they will have available for spending in the future (sometimes called permanent income). As energy prices have risen, there has been a corresponding increase in energy companies' profits and in tax revenues on energy products paid to the government. These could imply lower tax payments and higher dividend receipts in the future. But households may have been uncertain about this and revised down expectations about their future disposable income.

The tax take from households has risen over the past few years (Chart 2.4). To the extent that households did not expect that increase in the effective tax rate, that may also have led to a decrease in their perceived permanent income. Government projections imply that the percentage of national income paid in taxation will continue to rise modestly in the next few years.

Income expectations might also have been affected by a rapid increase in employers' pension (and other social) contributions. In an accounting sense, that has been responsible for much of the recent increase in the household saving ratio (Chart 2.5). Rising pension contributions have largely reflected the funding of previous defined-benefit (DB) pension deficits and the increased ongoing costs of those entitlements. Households might only associate the rise in employer contributions with higher pension income if they had been concerned about possible default on the provision of those DB pensions. Moreover, it is possible that increases in pension contributions have helped to suppress wage inflation in the recent past (see Section 4 and the box on pages 14–15) and that the rise in employers' pension costs has lowered expectations of future labour income.



(a) Calculated as residual.





(a) Chained-volume measures.

There are, therefore, a number of reasons why households' perceived permanent income might have fallen slightly in the past couple of years. A reduction in expected permanent income should result in weaker growth in consumption until households have adjusted to a lower spending path. That is consistent with the subdued pace of consumer spending growth during 2004 and 2005 and some evidence of a gradual recovery more recently. Looking forward, the MPC expects households' real income growth to be supported by steady increases in employment.

Household wealth and asset prices

Equity prices rose by almost 40% in the two years prior to the May *Report*, but have fallen slightly since then (Section 1). Movements in share prices of the kind seen in May are likely to have only a limited impact on consumer spending. First, households may ignore volatile movements in share prices, and look through rapid changes in case they are reversed. Second, only around one quarter of households' equity wealth is held directly, with the remaining part in mutual funds or life assurance and pension funds. Changes in the value of those indirect holdings may not be as easily observed or monitored by households. Moreover, some of those pension fund holdings are DB schemes, and movements in equity prices may not have a significant impact on the pension income that households expect from them.

Housing market activity slowed in the second half of 2004 and into early 2005. It has since recovered and house prices have edged up slightly since the May *Report* (Section 1). That profile may partly explain the recent path of consumption since housing market developments can affect spending directly. But there are reasons to believe that the relationship between house prices and consumption has weakened in recent years.⁽¹⁾

Looking ahead, the MPC judges that consumer spending will grow steadily over the forecast period, at a rate a little below the historical average.

Investment and inventories

The latest estimates indicate that whole-economy investment increased by 1.4% in 2006 Q1. Within this, business investment rose by 1.7%, following subdued growth in the second half of 2005. The Q1 rise was driven by the industrial sector, with the sharpest quarterly increase in investment in the 'other production' sector (largely energy companies) since the quarterly series began in 1987.

The *Blue Book* revised up slightly the profile of business investment for recent years (Chart 2.6). However, the latest estimates continue to show weakness in 2003–04, whereas

Chart 2.5 Contributions to the household saving ratio

b) Net equity in pension funds (contributions minus receipts) as a percentage of household total resources.

⁽c) Defined as gross disposable income plus contributions to private pension funds less receipts from those funds.

See Benito, A, Thompson, J, Waldron, M and Wood, R (2006), 'House prices and consumer spending', Bank of England Quarterly Bulletin, Summer, pages 142–54.



⁽b) Net rate of return (operating surplus as a percentage of capital employed) for non-continental shelf UK private non-financial companies.

Table 2.B Sur	vey indicators	of future	investment ^(a)
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	Average since 1989	2005 Average	2006 Q1	Q2	
Investment intentions ^(b)					
BCC service sector	14	8	15	16	
BCC manufacturing ^(c)	10	9	15	16	
CBI manufacturing	-8	-16	-9	-10	
Confidence in profitability ^(d)					
BCC service sector	34	31	33	34	
BCC manufacturing ^(c)	29	30	21	40	

Sources: BCC and CBI.

(a) Percentage balances of respondents. Data have not been seasonally adjusted

(b) Investment in plant and machinery

(c) Includes agriculture and construction(d) Over the next twelve months.

Table 2.C GDP in the major economies^(a)

Percentage changes on a quarter earlier

		Averages		2005			2006	
		2004	2005	Q2	Q3	Q4	Q1	Q2
Euro area		0.4	0.4	0.4	0.6	0.3	0.6	n.a.
of which: Germany		0.1	0.4	0.4	0.6	0.0	0.4	n.a.
	France	0.5	0.3	0.0	0.6	0.3	0.5	n.a.
	Italy	0.1	0.1	0.6	0.3	0.0	0.6	n.a.
United States		0.8	0.8	0.8	1.0	0.4	1.4	0.6
Japan		0.1	1.0	1.3	0.3	1.1	0.8	n.a.

Sources: Eurostat, Japanese Cabinet Office and US Bureau of Economic Analysis.

(a) Chained-volume measures.

other indicators pointed to stronger business investment over this period: the cyclical upswing in output; the financial health of the corporate sector; the continued fall in the relative price of capital goods; and evidence from surveys. Business investment data are subject to much uncertainty, and there could well be further revisions to the profile in the future.

Looking ahead, conditions seem supportive of further increases in business investment. The net rate of return on capital has increased from the levels seen earlier this decade (Chart 2.7). Corporate finances appear healthy (Section 1). And few contacts of the Bank's regional Agents expect concerns over the funding of pension deficits to constrain their capital spending over the coming twelve months (see the box on pages 14–15). Recent surveys of investment intentions are also consistent with further firm growth in the near term (Table 2.B).

In addition to investing in capital, companies also invest in inventories. In 2006 Q1, stockbuilding was estimated to have contributed 0.6 percentage points to GDP growth. However, almost all of this reflected the ONS alignment adjustment, which ensures that the reported path of total expenditure closely follows that of the output data. The adjustment is applied to stockbuilding since stocks are hard to measure precisely. The alignment adjustment in Q1 could yet be allocated to other components of expenditure as more information becomes available.

Government consumption

Nominal government consumption is estimated to have increased by 1.3% in the first quarter of 2006, slightly weaker than the average quarterly growth rate recorded in 2005.

2.2 External demand and net trade

Global growth has remained robust. But there have been tentative signs of some rebalancing in the pattern of growth, with some slowdown in the United States and a firming in the euro area — the United Kingdom's largest export market — and Japan (Table 2.C).

The euro area

Euro-area GDP grew by 0.6% in 2006 Q1, broadly as expected at the time of the May *Report*. Within this, household consumption also increased by 0.6% (Chart 2.8), a stronger pace than the average of recent quarters.

A sustained recovery in household spending is likely to be underpinned by a further strengthening in labour market conditions. Euro-area employment rose by 0.3% in both Q1 and the previous quarter, the strongest consecutive increases since 2001. Survey evidence suggests that there could be a sharper increase in the second quarter (Chart 2.9). That should support spending in the coming months.

MTIC fraud

In July 2003, the ONS began to adjust for previously unrecorded transactions in its estimates of goods imports.⁽¹⁾ These adjustments (backdated to 1999) take account of a particular form of VAT evasion, known as missing trader intra-community (MTIC) fraud. This box explores developments in the fraud estimates, which have risen sharply, and assesses ongoing uncertainties that continue to affect the official data.

Estimating MTIC fraud

The ONS currently makes adjustments for one type of MTIC fraud, known as carousel fraud. Since the completion of the EU single market in 1993, it has been possible to import goods VAT-free from one member state to another. Fraudsters import goods VAT-free from the EU and then sell them on within the United Kingdom at a price including VAT. Those VAT proceeds are not declared to HM Revenue and Customs (HMRC) by the fraudulent trader, who then goes missing. The goods are sold on inclusive of VAT through other UK 'buffer' companies — which may be controlled by the perpetrators — before eventually being exported. The exporter will reclaim the VAT paid, crystallising the loss for HMRC. The goods may then be re-imported back to the United Kingdom, and the carousel continues.

Statistics on exports and imports of goods within EU member states are measured using VAT returns. Carousel fraud therefore makes it difficult to ensure accurate measurement of trade flows. The raw data on imports from the EU exclude activity in fraudulent goods since the fraudulent trader does not submit any VAT details. The raw data on exports, however, include the fraudulent goods since the eventual exporting company needs to account for the transaction with HMRC in order to avoid any VAT liability.

Under the National Accounts methodology, the headline trade data should include carousel fraud in both exports and imports. Accordingly, the ONS estimates the size of the fraudulent activity and adds it to the raw import data. The estimates are calculated using information uncovered by HMRC criminal investigations, and Supply and Use tables are used to validate and inform the relevant adjustments. This method is only applied to transactions involving mobile phones and computer components as these are judged to form the bulk of carousel fraud. However, given the fraudulent nature of the activity, such estimates are inevitably subject to great uncertainty.

Recent developments

The size of the fraud estimates has been increasing rapidly. In 2006 Q1, the quarterly adjustment to imported goods volumes was £6.5 billion. That was the highest estimate since adjustments were first made in 1999. The fraud estimates represented over 8% of total goods imports in 2006 Q1 (Chart A), equivalent to over 2% of quarterly GDP. In 2005–06, VAT revenues accrued by the Exchequer rose by only 2% on the previous year. This partly reflected revenue losses from MTIC fraud.⁽²⁾





The bulk of carousel fraud involves the importing and exporting of the same products, with no value added. So estimates of trade flows excluding this fraud are a better measure of underlying, or 'economic', trade. Volumes of goods imports increased by 17% in the year to 2006 Q1 but, excluding fraud, the growth rate of economic imports is more muted at less than 9% (Chart B). Headline export volumes have risen by more than 20% over the same time period, but only by 9% if the impact of fraud is removed from the numbers (Chart C).





Chart C Exported goods volumes



Uncertainty around recent trade data

Carousel fraud, if accurately measured, should not affect estimates of net trade, since the same goods are both imported and then exported. Until recently, however, fraud did affect official estimates of net trade volumes. The ONS previously applied different deflators to the estimated values of fraudulent imports and exports. Since these deflators did not move identically, this resulted in different estimates of the volume of fraudulent exports and the volume of fraudulent imports (in 2006 Q1, the estimates of imported fraud volumes were 0.5% of GDP higher than those of export volumes). This approach has now been changed, such that the proportion of export values deemed to be fraudulent is deflated using the import deflators of the relevant goods. The back data have been correspondingly revised. This ensures that both the values and volumes of estimated fraudulent exports and imports are identical.

Despite this methodological improvement, MTIC fraud could still be affecting net trade estimates. It is impossible to know the exact scale of carousel fraud. And differences between the true scale of fraud and official estimates will cause inaccuracies in the net trade data. For example, if the adjustments were too small, then the upward adjustment to the raw import data would be insufficient to offset the fraudulent activity implicit within the raw export data.

There exist a number of other uncertainties around official trade estimates that are connected to MTIC fraud. First, the ONS only makes an adjustment for mobile phones and computer components. It is possible that other products are also affected. Second, there is no adjustment made for acquisition fraud, which is similar to carousel fraud but involves goods sold by the fraudster for consumption in the domestic economy. It is more difficult to adjust for acquisition fraud although HMRC believes that it is conducted on a far smaller scale. Third, there has been a shift in the destinations of fraudulent exports. The ONS has estimated the level of

fraudulent exports to both EU and non-EU countries (Table 1). But these regional estimates are also uncertain and so caution is needed when interpreting the pattern of UK trade with EU and non-EU countries.

Recent trade estimates are therefore particularly uncertain. The ONS is aware of these issues and has undertaken research that supports the size of the current adjustments.⁽³⁾ Moreover, the impact on GDP estimates is likely to be limited, as the ONS is able to measure GDP by examining output and income indicators as well.

Table 1 Estimated value of fraudulent exports

£ billions^(a)

	2004	2005	2005 Q2	Q3	Q4	2006 Q1
EU Non-EU	1.9 0.7	5.1 6.0	0.9 1.4	1.5 2.0	2.2 2.0	5.1 1.4
Total	2.7	11.0	2.3	3.4	4.3	6.5

(a) The ONS publishes the level of exports and imports excluding MTIC fraud. However, these are only given to the nearest £100 million. As such, there will be some minor rounding errors in the above data.

Looking ahead, the Government has taken steps to curtail MTIC fraud, including trying to prevent fraudulent companies from becoming VAT-registered and refusing to pay VAT to companies aware of the fraud. Permission has also been sought from the European Commission to change the accounting system for certain goods (including mobile phones and computer chips) to a 'reverse charge' system. Under this system, responsibility for accounting for VAT switches from the seller of goods to the purchaser. If successful, these measures could reduce MTIC fraud and consequently reduce the uncertainty implicit in the current trade data.

See pages 18–19 of the August 2003 Report for an initial discussion of the revisions to these imports, and pages 14–15 of the November 2003 Report for the impact of revisions on the measured current account deficit.

 ⁽²⁾ See page 264 of HM Treasury (2006), *Financial Statement and Budget Report*, HMSO.
 (3) See Ruffles, D and Williams, T (2005), 'Report on further research into the impact of

⁽³⁾ See Ruffles, D and Williams, I (2005), Report on Turtner research into the impact of Missing Trader Fraud on UK Trade Statistics, Balance of Payments and National Accounts', ONS, February. This article is available at: www.statistics.gov.uk/articles/nojournal/Further_Missing_Trader_Fraud_Research.pdf.





(a) Chained-volume measure, includes non-profit institutions serving households





Sources: Eurostat and Reuters.

(a) Average of the purchasing managers' monthly indices for manufacturing and services, weighted by the relevant size of euro-area employment in industry and services in 2005





Source: US Bureau of Economic Analysis.

(a) Chained-volume measures.(b) Three months on three months a year earlier.

The near-term prospects for growth in the euro area appear positive. Several indicators — such as reports from purchasing managers, the European Commission's indicator of industrial confidence and Germany's *Ifo Business Climate* survey — point to a further pickup in growth in the second quarter. The MPC expects euro-area GDP to expand steadily over the forecast period.

The United States

US GDP is estimated to have grown by 0.6% in 2006 Q2, a more subdued pace than the 0.9% quarterly average of the preceding two years. Final domestic demand increased by only 0.4%. This slower growth was in large part attributable to weakness in investment, both residential and by businesses. The Bureau of Economic Analysis also revised GDP back to the beginning of 2003, with the recorded level in 2006 Q1 now 0.8% lower.

The sharp rise in gasoline prices between March and May is likely to have weighed on household consumption growth. And the subdued pace of disposable income growth (Chart 2.10), together with the recent softening in the housing market, points to less rapid growth of consumer spending in the near term than over recent years. The outlook for business investment may be more positive. Non-financial corporate profits rose sharply in the year to 2006 Q1. That should support investment in the near term.

Asia

Real GDP rose by 0.8% in Japan in 2006 Q1, the fifth consecutive quarter of economic expansion. The Tankan survey of business conditions suggests that growth will remain robust for the rest of the year. In non-Japan Asia, economic activity remained buoyant. Chinese GDP rose by 11.3% in the year to 2006 Q2.

Net trade

In 2005, net trade is estimated to have made a broadly neutral contribution to economic growth. But, in 2006 Q1, net trade subtracted 0.3 percentage points from growth. The headline trade data suggest very strong growth in imports and exports in the recent past, but these estimates continue to be distorted by missing trader intra-community (MTIC) fraud (see the box on pages 22–23).

Survey evidence is consistent with reasonably strong growth in exports. According to the CIPS/RBS manufacturing survey, goods export orders grew at the fastest rate for two years in 2006 Q2. The *CBI Industrial Trends Survey* reported a modest increase in expected export orders. And contacts of the Bank's regional Agents also point to a more positive outlook for exports. Notwithstanding the appreciation of sterling discussed in Section 1, the improvement in growth in the euro area — the United Kingdom's largest market — should continue to support exports and net trade in the near term.

3 Output and supply

Output growth is estimated to have been above its historical average in 2006 Q2. Business surveys point to continued firm growth in the near term. Capacity pressures within businesses edged up. But there was little sign of tighter conditions in the labour market. Although annual employment growth picked up, unemployment continued to rise, reflecting unusually rapid growth in the labour force.





(a) The components do not sum precisely to the total because of rounding errors.

3.1 Output

Whole-economy output was provisionally estimated to have risen by 0.8% in 2006 Q2 — above its historical average. As discussed in the box on page 18, revisions to the data suggest that the recovery in output growth in the preceding six months was stronger than previously estimated. Growth was also revised up in most quarters in 2003 and 2004.

Services

The service sector produces about three quarters of total UK output. Growth in service sector activity is estimated to have picked up in 2006 Q2 to above its average since 2000 (Chart 3.1). That pickup was broadly based. The recovery in services since early 2005 appears to be well established. Over the past year, quarterly growth has been close to its recent average. Business surveys have also indicated strengthening activity and, looking ahead, point to continued strong growth in the near term.

Manufacturing and other production industries

Output of the production industries is estimated to have fallen by 0.1% in 2006 Q2. That contraction entirely reflected developments in energy extraction and utilities. Output in those sectors fell by around 3% on the quarter. Those declines are likely to have been erratic, in part related to factors such as closures of oil rigs for maintenance.

Manufacturing output is estimated to have picked up during the first two quarters of 2006, with quarterly growth averaging 0.7%. That recovery is corroborated by survey information. The surveys also point to firm growth in the near term.

3.2 Supply

Labour supply

Adult population growth is estimated to have increased since the mid-1990s (Table 3.A). In large part, that reflects higher

Table 3.A Decomposition of the annual change in the UK adult population^(a)

	Averages				
	1990–94	1995–99	2000–04	2005	2006
Population	67	158	292	403	385
Workforce	-123	122	205	266	446
Employed	-252	320	271	267	223
Unemployed	129	-198	-67	-1	223
Inactive	190	36	88	137	-61
Memo:					
Participation rate ^(b)	63.4	62.5	63.0	63.1	63.5
Employment rate ^(c)	57.7	58.0	59.8	60.1	60.1

Source: ONS Labour Force Survey

(a) Thousands. The data indicate the changes in population, workforce and inactive in the year to the Spring quarter (March to May).

b) The workforce as a percentage of the adult population (Spring quarter observations)
 (c) Employment as a percentage of the adult population (Spring quarter observations).

Chart 3.2 Decomposition of the cumulative change in the participation rate since 1998(a)



(a) Three-month moving average measure

(b) This category includes individuals at or above the state retirement age. This is currently 65 for men and 60 for women.

(ii) By gender



estimates of net inward migration to the United Kingdom. As discussed in the August 2005 Inflation Report, the enlargement of the European Union in 2004 has led to further increases in net inward migration.⁽¹⁾ Since then, nationals from the Accession countries have been free to work in the United Kingdom.

But population movements on their own are not a good guide to labour supply. That is because many individuals are not active in the labour market. Table 3.A decomposes the annual change in the adult population into changes in the size of the active workforce (in other words those who are in work or looking for work) and the number of people who are inactive. During the past year, the workforce increased by 446,000, one of the highest annual increases in 20 years. The substantial expansion of the workforce meant that the participation rate - the percentage of the adult population who are economically active — also rose. That pickup reflected higher numbers of individuals looking for work. The proportion of the adult population in employment remained constant.

Charts 3.2 (i) and (ii) show that the increase in participation since mid-2004 can largely be accounted for by rising numbers of older and female workers. Those trends are well established and reflect a number of factors. Increased longevity and better health, combined with greater concerns about pension adequacy, may have prompted older individuals to work for longer or re-enter the labour market. Female participation is likely to have been boosted by changes in household structure and higher levels of education among women.⁽²⁾ Changes in employment practices such as more flexible working hours may also have encouraged further participation among both groups.

But other factors are also likely to have been at work more recently. Between 2000 and mid-2004, falling participation of workers aged 25–49 tended to drag the aggregate rate down. Since then, participation among that group has risen. And the contribution from males to overall participation has also increased a little recently. It is possible that labour market initiatives such as the Child Tax Credit have encouraged higher participation, by making work more financially rewarding. And the Government has put in place initiatives, such as the Pathways to Work programme, to reduce the number of claimants on incapacity benefit. In line with this, the number of individuals who cite long-term sickness as the reason for inactivity has fallen by 100,000 since mid-2004 — about 0.2% of the adult population.

According to the Labour Force Survey, annual growth in employment picked up in 2006, following a slowdown in the

⁽¹⁾ See the box on pages 22-23 of the August 2005 Inflation Report.

⁽²⁾ See Gutiérrez-Domènech, M and Bell, B (2004), 'Female labour force participation in the United Kingdom: evolving characteristics or changing behaviour?', Bank of England Working Paper no. 221

Chart 3.3 Employment



(a) Includes those on government-supported training and employment programmes as well as unpaid family workers.





(a) ONS private sector output divided by private sector employment. The employment data have been calculated by subtracting ONS public sector employment from total LFS employment. The estimate for 2006 Q2 is constructed using information in the preliminary GDP release and the assumption that private sector employment in 2006 Q2 grew at the same rate as total employment in the three months to May.



(a) See Oulton, N and Srinivasan, S (2003), 'Capital stocks, capital services, and depreciation: an integrated framework', Bank of England Working Paper no. 192, for a discussion of how these data are constructed. second half of 2005. That was supported by a turnaround in the demand for employees (Chart 3.3). Surveys of businesses' hiring intentions are consistent with continued firm growth in the near term. Those developments suggest that the earlier soft patch in labour demand may have passed.

Productivity and capital

Annual growth in private sector labour productivity picked up in 2006 Q1, and is estimated to have risen further in Q2 (Chart 3.4). The recent pattern of private sector productivity growth — slowing in late 2004 and subsequently rebounding since late 2005 — is similar to that of output. That suggests that cyclical factors, such as employers hoarding labour during the period of softer economic growth, are likely to explain most of the recent productivity profile. Consistent with that explanation, the pattern of productivity growth has been similar across different sectors of the economy.

The amount of capital at the disposal of workers also affects labour productivity. In judging productive potential, a useful measure of capital is one that weights together assets by estimates of their contribution to output, a 'capital services' measure.⁽¹⁾ As discussed in the May *Report*, Bank estimates of growth in capital services have been below average since the middle of 2003. Those estimates were revised up a little following the *Blue Book* revisions to investment (Chart 3.5). But the overall profile remains much as before.

3.3 Balance between output and potential supply

Capacity utilisation within firms

In the short run, companies typically respond to an increase in demand by increasing the intensity with which they use their existing capital and labour — often referred to as capacity utilisation. That can signal an imbalance between the demand for output and the resources available to produce it and so may foreshadow increased inflationary pressures.

As discussed in previous *Reports*, assessments of capacity utilisation within businesses are subject to considerable uncertainty.⁽²⁾ So the MPC regularly reviews a range of relevant indicators. One approach is to ask companies directly about their spare capacity. The main trade/employer organisations and the Bank's regional Agents conduct such surveys. The surveys generally suggest that capacity pressures eased through much of 2005. More recently, they have picked up consistent with the recovery in demand growth (Chart 3.6).

One drawback of the surveys is that they do not always clearly identify whether the economy is currently operating above or

See Oulton, N (2001), 'Measuring capital services in the United Kingdom', Bank of England Quarterly Bulletin, Autumn, pages 295–309.

⁽²⁾ See the box on pages 24–25 of the February 2005 Inflation Report for a discussion of estimating capacity utilisation.



Sources: Bank of England and BCC.

- (a) The underlying survey data measure the net percentage balance of firms who are working at full capacity.
- (b) The manufacturing and services components have been aggregated using their share in output as weights. The series have been subtracted by their respective means and divided by their standard deviations to normalise for volatility.
- (c) The scores currently refer to likely capacity constraints faced by companies over the next six months. Before January 2005, these scores were based on companies' current situation. See Ellis, C and Pike, T (2005), 'Introducing the Agents' scores', Bank of England Quarterly Bulletin, Winter, pages 424–30 for more details.

Chart 3.7 Unemployment rate



Chart 3.8 Employment and output in the distribution sector^(a)



⁽a) Also includes hotels and catering.(b) Based on Workforce jobs data which have been adjusted to be on a calendar quarter basis.

below 'normal' levels of capacity utilisation. The current level can be compared against an historical average, though this can be sensitive to the choice of time period. On this basis, both the Agents' and BCC surveys are close to their average since 1998 (when the Agents' series began). That suggests that the margin of spare capacity within businesses is likely to be limited.

Labour market tightness

The balance between supply and demand in the labour market — or the degree of labour market tightness — will also affect inflationary pressure. The unemployment rate is one commonly used measure of labour market tightness. Unemployment has risen over the past year (Chart 3.7). In the three months to May, the LFS unemployment rate stood at 5.4%, the highest since mid-2000.

The ratio of vacancies to unemployment represents a slightly better summary statistic of labour market tightness, as it compares the unsatisfied demand for labour with the available supply of workers. Measures of vacancies eased back in 2005 and have yet to recover. Combined with the rise in unemployment, this implies that the ratio has fallen. So that also suggests an easing of wage pressures in the labour market.

Weaker labour demand is likely to have contributed to some of the past rise in unemployment and fall in vacancies. Labour demand probably eased following the cyclical slowdown in domestic demand in the second half of 2004 and the first half of 2005. The slowdown was particularly pronounced in consumer spending and it is notable that employment growth slowed in the distribution sector (Chart 3.8). However, as discussed in Section 4, it is also possible that some companies reduced their demand for labour in response to mounting cost pressures.

The increase in unemployment has also been associated with higher labour supply. As outlined in Section 3.2, over the past year the workforce has expanded briskly while inactivity has fallen. That should have increased the pool of labour available to businesses and hence reduced wage pressure.

Finally, it is possible to examine labour market tightness directly by asking businesses whether they find it hard to recruit and retain staff. Surveys from trade and employer organisations present a mixed picture of recent developments (Table 3.B). The KPMG/REC survey suggested that there were fewer agency staff available for work in 2006 Q2 than in the previous quarter. That was in contrast to the CBI survey which suggested that staff shortages in manufacturing were less acute in 2006 Q2. And results were mixed in the BCC survey.

However, most indicators imply that recruitment difficulties and staff shortages are at or below their averages over the past

Table 3.B Survey evidence on recruitment difficulties and labour shortages

		2005		2005 2006			
	Averages ^(a)	Q2	Q3	Q4	Q1	Q2	July
Availability of agency staff ^(b)							
KPMG/REC: Permanent	48.2	46.0	48.0	45.1	45.6	45.1	41.2
KPMG/REC: Temporary	49.1	49.1	50.6	48.8	51.5	48.7	49.3
Recruitment difficulties ^(c)							
BCC: Manufacturing ^(d)	64	44	44	46	39	43	n.a.
BCC: Services	62	63	58	61	62	60	n.a.
Factors likely to limit output	(e)						
CBI: Skilled labour	12	11	16	10	15	11	n.a.
CBI: Other labour	3	3	4	2	2	2	n.a.

Sources: BCC, CBI and KPMG/REC.

(a) Averages are from 1996 apart from the KPMG/REC survey, which is from October 1997.
(b) Indices for which 50 represents no change. A balance above 50 indicates rising labour availability.
(c) Percentages of firms reporting difficulties.
(d) Includes agriculture and construction.
(e) Manufacturing sector. Weighted percentages of respondents.

decade. And in their most recent reports to the MPC, the Bank's regional Agents have noted that most companies are able to find workers with little difficulty. Taking the survey and official data together, the MPC judges that there is little sign yet of tighter conditions in the labour market, despite the recovery in demand growth.

4 Costs and prices

Oil prices touched record highs. Wholesale gas prices were slightly higher than their level three months ago, and are expected to rise sharply again later in the year. Import price inflation picked up, reflecting rises in commodity prices and strong global growth. Inflation expectations across a range of measures rose in early 2006, though most household survey measures subsequently fell back a little. CPI inflation rose to 2.5% in June and is likely to be boosted later in the year by higher domestic energy prices and increases in university tuition fees.



Chart 4.1 Spot and futures prices of Brent crude oil^(a)

(a) Monthly averages of daily data. Futures prices, and spot data for August, are averages during the fifteen working days to 2 August. The equivalent data for the May *Report* are averages during the fifteen working days to 3 May

Chart 4.2 UK wholesale gas prices(a)



Sources: Bloomberg, IntercontinentalExchange (www.theice.com) and Reuters

4.1 Global costs and prices

Energy prices

Energy prices have been volatile since the May Report. The price of Brent crude oil for immediate delivery initially fell, but subsequently picked up and stood at \$77 per barrel on 2 August. That rise primarily reflected geopolitical tensions in the Middle East. In the fifteen working days to 2 August, the price of Brent crude oil averaged \$74 per barrel (Chart 4.1), around 3% higher than at the time of the May Report. The futures curve shifted up by a little more than the spot price over the same period.

UK wholesale gas prices have also been volatile since the May *Report.* Seasonal factors and the progressive reintroduction of storage capacity at Rough, the United Kingdom's main gas storage facility, are likely to have influenced gas prices. Overall, gas prices in the fifteen working days to 2 August were slightly higher than their level three months ago (Chart 4.2).

As highlighted in the May *Report*, there are a number of planned changes to gas supply in the United Kingdom, which should help to alleviate some of the pressure on prices. But there remains uncertainty over the exact timing of any changes in capacity and hence the impact on gas prices over the next year or two.⁽¹⁾ Futures prices in early August suggested that gas prices will rise sharply again this winter, but that seasonal highs will be lower in 2007-08 and 2008-09 (Chart 4.2).

Wholesale electricity prices in the United Kingdom roughly tripled in mid-July. The temporary rise reflected the unusually hot weather — the mean temperature in July was the highest since records began in 1659, according to the Met Office

⁽a) Futures prices, and spot price data for August, are averages during the fifteen working days to 2 August. The equivalent data for the May *Report* are averages during the fifteen working days to 3 May. The spot price data, and the futures prices to early 2007, are monthly averages of daily data. Thereafter, futures prices have been interpolated from quarterly data (b) One-day forward price of UK natural gas

⁽¹⁾ See DTI (2006), Joint Energy Security of Supply Working Group (JESS) Sixth Report, available at: www.dti.gov.uk/energy/energy-reliability/security-supply/jess/index.html.



(a) The Economist all-items index.

(b) An SDR is an IMF unit of account that comprises a basket of major currencies.





Sources: Bank of England, ONS and US Bureau of Economic Analysis .

(a) For comparability, the price of private sector output has been proxied by nominal GDP excluding government consumption and government investment, divided by its real equivalent. For the United Kingdom, the import price deflator excludes the impact of missing trader intra-community (MTIC) fraud. See the box on pages 22–23 in Section 2 for a discussion of MTIC fraud.

Chart 4.5 Import prices including and excluding energy and metals^(a)



 (a) Excludes the impact of missing trader intra-community fraud.
 (b) Excludes crude oil, petroleum products, gas, coal, electricity, metalliferous ores and metal scrap, iron and steel, non-ferrous metals and other manufactures of metal. historical (Central England) series. This raised demand for electricity at a time when a number of the United Kingdom's power stations were undergoing maintenance work.

The impact of these movements in energy prices on CPI inflation is discussed in Section 4.3.

Non-oil commodity prices

Non-oil commodity prices have also been volatile since the May *Report. The Economist* all-items index (measured in dollar terms) fell during much of June, probably reflecting the factors behind the declines in a number of asset prices (Section 1). But the index picked up again in July, to almost double its level at the end of 2001. In Special Drawing Right (SDR) terms — an IMF unit of account comprising a basket of major currencies — the increase has also been substantial (Chart 4.3).

A number of factors lie behind this upward trend. The synchronised upturn in global growth, together with the emergence of China and other developing economies as major users of commodities, have been key influences. Some of the rise in commodity prices may also reflect speculative flows into commodities by investors. But non-oil commodities represent only a modest part of UK manufacturers' costs, so the direct effects on CPI inflation are likely to be relatively small.

Import prices

Aggregate UK import prices have been broadly flat or falling for much of the past decade. Relative to the price of domestically produced goods and services, that downward trend has been even more pronounced — the relative price of imports has fallen by over 25% since 1990 (Chart 4.4). This trend is also apparent elsewhere in the developed world.

But there has been some turnaround in the path of UK import prices since early 2004 (Chart 4.5). In the two years to 2006 Q1, the price of imported goods — including not only finished goods, but also raw materials and commodities like oil — rose by almost 10%. The price of imported services rose by around 7% over the same period. And in the year to 2006 Q1, overall import price inflation reached its highest rate for several years.

Some of the rise in import prices can be explained by the increase in commodity prices. Chart 4.5 strips out the direct effects of energy and metals from the price of imported goods and services. The rise in that measure has been less stark, though the rate of inflation has still picked up. But it is not possible to be precise about the overall impact of higher commodity prices, as the prices of other imported goods that are produced using commodities will also have been affected.

It is also possible that factors that previously pushed down on import prices during the past decade have started to reverse.



(a) Data are annual averages and in current prices. Excludes the impact of missing trade intra-community fraud from total imports. Rest of the world is calculated as a residual. Prior to 1998, data for the EU25 are calculated by adding together imports from the EU15

and the individual ten countries

Chart 4.7 Twelve-month ahead measures of households' inflation expectations



Sources: Bank of England, Citigroup, GfK NOP and YouGov

(a) Net balance expecting prices to increase. The question asks: 'In comparison with the past (b) The survey takes place in February, May, August and November each year. The median responses are shown in the chart, calculated by assuming that responses are evenly distributed within bands. The observations for intervening months have been interpolated. The question asks: 'How much would you expect prices in the shops generally to change over the next twelve months?". In February, the survey is conducted in two waves. For the February 2006 survey, the first wave was conducted in February and the second in March. The question asks: 'How do you expect consumer prices of goods and services will develop in the next twelve months?'. The series is monthly and started in November 2005.

(c)

One explanation for the past falls in import prices is the increasing integration of developing economies into the global economy, reflecting trade liberalisation and other factors. This has boosted global growth and increased competition, driving down the margin that can be charged over costs. A slowing of that process could potentially explain some of the pickup in export price inflation from developing economies since early 2004. But much of this is likely to reflect higher commodity prices and strong global growth.

Even if the prices of exports from developing economies continue to rise, the impact on average UK import prices is likely to be moderated by the ongoing shift in the composition of UK imports away from developed economies and towards lower-cost producers like China (Chart 4.6). The recent appreciation of sterling should also bear down on import price inflation. Overall, import price inflation is expected to ease back in the coming quarters.

4.2 Inflation expectations and cost pressures

Inflation expectations

Recent Reports have highlighted how changes in inflation expectations can influence the price and wage-setting decisions of companies, and hence CPI inflation. Inflation expectations rose a little across a range of financial market measures during the first half of 2006, both in the United Kingdom and elsewhere (see the box on page 33).

Households' inflation expectations over the next twelve months also rose in early 2006, according to both the Bank/GfK NOP and the YouGov surveys conducted for Citigroup (Chart 4.7). The rise in households' inflation expectations may have reflected announcements of increases in domestic gas and electricity prices.

The latest monthly surveys conducted by YouGov for Citigroup suggested that households' inflation expectations fell back over the summer. On this measure, households' expectations of inflation over the next twelve months fell to 2.1% in July (Chart 4.7). In the July GfK NOP survey, the net balance of households expecting prices to increase over the next twelve months remained elevated, however.

These surveys were all conducted before the latest round of announced domestic energy price rises. But, as yet, there is little evidence that short-lived increases in inflation expectations have had much influence on labour costs. These, and other, company costs are discussed in the next section.

Companies' cost pressures

A number of factors have pushed up companies' costs over the past couple of years. As highlighted in Section 4.1, energy prices and other commodity prices have risen sharply. Partly as a result, UK companies have had to pay more for the

Chart 4.6 Cumulative shift in the share of

Global inflation

Consumer price inflation has picked up recently in many countries. That has led to concerns by some commentators that global inflationary pressures are building and that monetary policies might need to be tighter than previously expected. This box assesses the evidence for such concerns, and whether higher global inflation is likely to persist.

Chart A CPI inflation



Sources: Bureau of Labor Statistics, Eurostat, ONS and Statistics Bureau of Japan

Much of the concern has stemmed from the United States, where annual CPI inflation rose to 4.3% in June, compared with 2.5% a year earlier. But inflation in other countries has also increased (Chart A). The widespread rise in inflation most probably indicates a common cause.

At least some of the increase in global inflation reflects sharp increases in the prices of oil and other commodities. That should have pushed up on the prices of goods and services that are produced using these inputs. But as discussed on pages 35–36, more expensive commodities could also have reduced demand for other items, and put downward pressure on their prices. If commodity prices stop rising, inflation might be expected to ease for energy-intensive items, and pick up for other goods and services.

Strong demand in China, and other emerging economies, can explain much of the increase in commodity prices. If rapid growth in those countries leads to capacity constraints, that may push up on their export prices as well. That would reduce the downward pressure that lower-cost imports from those countries have been having on inflation in the major industrialised nations.

Other factors may limit the persistence of the rise in CPI inflation in the major industrialised economies. For example, increasing global competition may still be making it difficult for companies to raise prices. But if households and

companies expect higher inflation to persist, that might affect wage demands and pricing decisions.

Market expectations of future inflation can be inferred from the interest rates prevailing on nominal and inflation-linked bonds. There has been some increase in medium-term expectations since the start of the year (Chart B), though by much less than inflation. Market expectations in the United States rose sharply in May, alongside the wider financial market turbulence, but have since fallen back. Economists' expectations have been relatively stable. Beyond 2006, the mean projections for inflation by Consensus Economics have been little changed in most countries.



⁽a) Implied instantaneous five-year forward inflation rates. UK and US rates are based on the difference between yields on nominal and inflation-linked bonds. Euro-area rates are based on inflation swaps. The instruments used are linked to RPI for the United Kingdom, CPI for the United States and HICP for the euro area, so the levels of the series are not directly comparable.

Survey measures of households' inflation expectations rose earlier in the year, most notably in the United States. The University of Michigan survey showed expectations for inflation over the next twelve months rising to 4.0% in May, from 3.0% at the start of the year. Longer-term expectations rose over the same period. Increases were also seen in UK survey measures, albeit slightly earlier (see page 32). Most of these measures have since fallen back.

Overall, the recent rise in global consumer price inflation does not appear to have been accompanied by a durable shift in medium-term inflation expectations. That may reflect the credibility of monetary policy around the world, with recent movements seen as transitory. However, expectations will continue to be monitored closely. If they were to rise more sharply, that could presage greater inflationary pressures in the future.

Table 4.A Manufacturing sector costs and prices

	2004	2004 2005		2006			
		H1	H2	Q1	Q2	July	
Input prices							
ONS ^(a)	3.9	10.1	13.3	14.4	13.2	n.a.	
CIPS/RBS ^(b)	66.4	60.1	58.4	63.7	66.3	70.2	
Output prices							
ONS ^(a)	2.5	3.0	3.0	3.0	3.3	n.a.	
CIPS/RBS ^(b)	54.8	51.9	51.1	54.3	53.4	56.2	

Sources: CIPS/RBS and ONS.

(a) Percentage changes on a year earlier. Output prices exclude excise duties.
 (b) Averages of monthly survey readings. A reading above/below 50 implies rising/falling prices

Chart 4.8 Agents' survey:^(a) what has happened to profit margins over the past twelve months?



(a) Based on 251 responses to a survey of companies by the Bank of England's regional Agents in May 2006, weighted by respondents' turnover.





(a) Based on the respondents who stated that their profit margins had fallen, weighted by their turnover. products that they import. And, as highlighted in Sections 1 and 2, employers' pension contributions have also increased substantially.

Some of these higher costs show up in the input prices faced by manufacturing and service sector companies. In the United Kingdom, manufacturing sector input prices rose by 13.2% in the year to 2006 Q2 (Table 4.A). And, in the service sector, there is also some evidence that costs picked up in early 2006. The CIPS/RBS survey suggested that input costs in the manufacturing sector rose further in July.

Companies may respond to these rises in costs in a number of ways. They could choose to absorb them and so accept lower profits. They may try to offset them by pushing down on other costs. Or they may try to raise their prices, passing on the cost increases to their customers.

The Bank's regional Agents conducted a survey in May on companies' profit margins. The majority of respondents stated that they had experienced a decline in their profit margins over the past twelve months (Chart 4.8). Companies were also asked how they would respond to the margin squeeze. Most manufacturing companies indicated that they had little alternative but to accept the lower profit margins. But, in other sectors, businesses said that they expected to raise efficiency, lower employment or push down on wage growth. Few businesses said that they expected to be able to raise prices (Chart 4.9).

These findings are broadly consistent with the official data. Although rates of output price inflation in both the manufacturing and service sectors have increased over the past year or so (Table 4.A and Chart 4.10), the pickup has been relatively modest compared with the rises in costs. But more recently, some contacts of the Bank's regional Agents have reported that the strengthening of demand growth has made it a little easier to pass cost increases through to prices.

The official data on earnings also support the findings of the Agents' survey. Settlements have edged down. And in the three months to May, the average earnings index (AEI) measure of private sector regular pay was 4.0% higher than a year earlier, below the rates of increase seen at the end of 2004 and early 2005. The ONS's experimental average weekly earnings (AWE) measure pointed to a similar pace of regular pay growth over that period (Chart 4.11). Including bonuses, annual pay growth was 4.3% in the three months to May on the AEI measure, although the AWE measure pointed to more rapid growth.

Overall, it appears that companies have responded to the increase in their non-wage costs by limiting increases in other costs, such as the wages and salaries that they pay their employees. As a result, whole-economy unit wage costs have

Chart 4.10 Service sector output prices



Sources: CIPS/RBS and ONS.

(a) Non seasonally adjusted, net sector measure of the ONS Corporate Services Price Index.
 (b) A reading above/below 50 implies rising/falling prices. The chart shows quarterly averages of monthly data. 2006 Q3 data are for July only.

Chart 4.11 Private sector earnings(a)

- AEI excluding bonus payments
- - AEI including bonus payments
- Experimental AWE excluding bonus payments^(b)
- Experimental AWE including bonus payments^(b)
 Percentage changes on a year earlie



⁽a) Measures are three-month averages and exclude arrears(b) Non seasonally adjusted.

Chart 4.12 Whole-economy unit costs



remained subdued — although there has been a more rapid rise in unit labour costs, a broader measure that includes other labour costs faced by companies such as pension contributions (Chart 4.12).

The moderate pace of earnings growth also reflects a number of other factors. Unemployment has risen, as a result of both the slowdown in demand growth in the second half of 2004 and early 2005 and the enlarged pool of available workers (Section 3). There have been increased inward flows of migrant workers from the A8 Accession countries, many of whom are relatively low paid. According to the 2006 Q1 *Accession Monitoring Report*, almost 80% of workers from the A8 Accession countries registered under the Worker Registration Scheme were paid between £4.50 and £5.99 per hour.⁽¹⁾ In addition, the increased participation of older workers may have helped to restrain wage pressure.

4.3 Consumer prices

Annual CPI inflation has picked up since the May *Report*, from 1.8% in March to 2.5% in June. The rise since March largely reflected the effects of higher domestic gas and electricity prices, though higher food and petrol prices also played a role. In 2006 Q2 as a whole, CPI inflation was 2.3%, in line with the MPC's central projection in the May *Report*.

CPI inflation has been reasonably stable, relative to the substantial rises in energy and import prices of recent years. In an accounting sense, this is because inflation rates of other goods and services — so-called domestically generated non-energy price inflation (DGI) — have been falling. There is no single measure of DGI. In particular, energy and imports are inputs to many domestically produced goods as well as being consumed in their own right, so stripping out their impact on inflation involves making assumptions about the scale and pace of pass-through to these prices. But, under a range of plausible assumptions, DGI does appear to have fallen over the past few years (Chart 4.13).

It is possible that part of the weakness in DGI is a direct consequence of the strength in import and energy prices. Higher prices of energy and imports reduce the income available for spending on other items, putting downwards pressure on the prices of those goods and services. And companies facing rising costs of energy and imported inputs have been putting downwards pressure on other costs, for example, wage growth (Section 4.2). Companies producing goods that make less intensive use of energy or imported inputs will also benefit from this wage moderation, which in turn may help to reduce DGI.

For more information on the Worker Registration Scheme and the A8 countries, see the box on pages 22–23 of the August 2005 *Report*.

Chart 4.13 CPI and illustrative measures of domestically generated prices



 (a) Petrol, utilities, and non-fuel import price inflation (excluding missing trader intra-community fraud and weighted by the share of imports in consumption) have been subtracted from headline consumer price inflation. Prior to 1997, petrol and utilities prices are based on RPI data. The range reflects different assumed speeds of pass-through of import prices to consumer prices, varying between immediate and a more gradual pass-through over twelve quarters.
 (b) Quarterly averages.

Chart 4.14 Estimated contributions to CPI inflation between 1993 and 2006^(a)



- (a) Percentage point contributions to four-quarter CPI inflation in the first quarter of each year. Axes cross at series means.
- (b) Energy-intensive items are defined as petrol and utilities. The import price contribution is estimated by applying the share of imports in consumption to the import price deflator excluding fuel and missing trader intra-community fraud. Pass-through of import prices to consumer prices is assumed to be complete after eight quarters.

Consistent with this hypothesis, there is tentative evidence that, since the introduction of inflation targeting, DGI has tended to move in the opposite direction to changes in import and energy prices (Chart 4.14). Inflation targeting may have helped to reinforce that inverse relationship by anchoring overall inflation expectations around the target. But the relationship is by no means perfect, consistent with the fact that DGI is also influenced by many other factors, including demand conditions, competitive pressures and developments in the labour market. Low rates of DGI in recent years may therefore also have reflected a more intense level of competition from overseas and domestic producers, and the possibility that firms and employees in domestic sectors had become used to setting prices and wages for their own industries in an environment that had generated low CPI inflation.

The short-term outlook for consumer price inflation

Looking ahead, CPI inflation is likely to be somewhat volatile. A number of influences are expected to push up inflation in the latter part of 2006. Since the May *Report*, oil prices have risen further. And a few energy companies have announced further increases in domestic gas and electricity prices since the May *Report*.

In addition, increases in university tuition fees could push up CPI inflation later in the year. The 2004 Higher Education Act included a provision for universities to raise the tuition fees charged to undergraduate students starting in September 2006. Students already at university are exempt from any rise in tuition fees. Over the course of the next three years or so, students paying the higher fees will replace those paying lower fees. That may push up CPI inflation, beginning in October 2006, though by exactly how much is presently uncertain.

5 Prospects for inflation

The MPC's central projection, assuming that official interest rates follow a path implied by market yields, is for GDP growth to remain close to its average rate over the past decade. The profile is slightly above that in the May *Report*. CPI inflation is expected to rise further above the 2% target in the first year of the central projection, but then to ease back towards the target. The near-term pickup in inflation is somewhat more marked than in May. The main risks to the MPC's central projection are the prospects for world activity and hence the United Kingdom's net trade position; the strength and duration of the recovery in consumer spending; the outlook for energy and import prices and their interaction with domestic pricing pressures; and the margin of spare resources within firms and in the labour market. Overall, the risks to growth and inflation are broadly balanced, but there is greater than usual uncertainty over the outlook for CPI inflation, particularly in the near term.

5.1 The outlook for demand

The outlook for inflation is influenced by the prospects for both the level and the composition of demand. The MPC's central projection implies a modest rebalancing in the composition of demand, with investment and net trade both contributing a little more to overall growth than they have in the past few years.

Consumption

Consumption growth was subdued in the first guarter of the year, but retail sales growth has since picked up sharply. A small part of this may have reflected timing effects related to the football World Cup and the unusually hot weather. But the underlying rate of consumption growth does appear to have recovered after a weak period earlier this year and last. The outlook for the determinants of consumer spending is uncertain. Households' real post-tax labour income faces a continuing squeeze from higher energy prices and effective tax rates, and the fall in equity prices on the quarter will have put modest downwards pressure on households' financial wealth. But, looking forward, the central projection is for households' real income growth to be supported by steady growth in employment and an improvement in the terms of trade. Overall, therefore, the MPC expects consumption to grow steadily over the forecast period, at a little below its long-term average rate.

There are risks on both sides of this central case. On the upside, it is possible that there may be more near-term momentum in spending growth. And on the downside, growth

in real labour income may be lower than expected if energy prices rise further, or if conditions in the labour market are softer than in the central case.

Business investment

Business investment growth picked up in the first quarter of 2006, according to the official data. And past rates of investment growth were revised up a little in the *Blue Book*. Investment data are volatile and prone to substantial revision, so it is possible that the recent pickup will turn out to be short-lived or subsequently revised away. But other indicators of the investment climate, including strengthening corporate liquidity, the buoyant rate of return on capital, the falling relative price of capital goods and the limited margin of spare capacity, also point to a reasonably positive near-term outlook, as do most surveys of businesses' investment intentions. In the MPC's central projection, business investment is expected to grow a little faster than GDP over the forecast period.

Government spending

In forming its projections, the Committee has assumed that nominal government spending will increase broadly in line with the plans outlined in the Chancellor's most recent Budget. Those plans imply that nominal government spending will grow at a firm, but gradually declining, pace over the forecast period.

External demand and UK net trade

Business surveys suggest that the near-term outlook for export growth is robust, although the influence of fraudulent trading activity on the official data makes estimates of underlying growth in net trade more than usually uncertain. World growth has remained strong, with signs of rebalancing away from the United States and towards the euro area. The euro area is the United Kingdom's largest export market, so a shift in its favour should raise the growth in demand for UK goods and services even if overall global growth remained unchanged. In the central projection, the MPC expects this rebalancing in world activity to continue over the early part of the forecast period. Overall, global growth is expected to remain strong, but to slow a little over the forecast period.

In the MPC's judgement, the outlook for euro-area growth remains much as it was in May. Consumption growth picked up as expected in the first quarter, supported by a continued gradual improvement in labour market conditions. And business surveys and other indicators suggest a positive near-term outlook for growth as a whole. The MPC's central projection implies that growth in the euro area will be firm during the rest of this year before slowing a little. In the United States, growth slowed in the second quarter after a strong start to the year. In light of this and other softer indicators, the MPC has revised down its projection for



05

Chart 5.1 Current GDP projection based on market

interest rate expectations

2002

03

04

The fan chart depicts the probability of various outcomes for GDP growth in the future. If economic circumstances identical to today's were to prevail on 100 occasions, the MPC's best collective iglogement is that GDP growth over the subsequent three years would lie within the darkest central band on only 10 of those occasions. The fan chart is constructed so that outturns of GDP growth are also expected to lie within teach pair of the lighter green areas on 10 occasions. Consequently, GDP growth is expected to lie somewhere within the entire fan chart on 90 out of 100 occasions. The bands widen as the time horizon is extended, indicating the increasing uncertainty about outcomes. See the box on pages 48–49 of the May 2002 *Inflation Report* for a fuller description of the fan chart and what it represents. The dashed line is drawn at the two-year point.

06

07

08 09





(a) These figures are derived from the same distribution as Chart 5.1. They represent the probabilities that the MPC assigns to GDP growth lying within a particular range at a specified time in the future. near-term US GDP growth slightly relative to May. But the profile for US growth over the forecast period as a whole remains reasonably robust. Vigorous growth in Asia is expected to continue to support the global expansion.

The MPC has maintained its assumption that the United Kingdom's share of global trade will continue to fall through the forecast period. The recent appreciation of sterling is likely to push down on the growth rate of exports relative to that in the May *Report*. But the strong outlook for world trade means that underlying export growth is expected to remain robust over the medium term.

The ratio of imports to domestic demand has been rising for many years, reflecting the increasing openness of the UK economy. In recent months, however, this ratio has risen unusually sharply, even after allowing for the impact of fraud on the headline numbers. The MPC's central projection assumes that the ratio of imports to domestic demand continues to rise over the forecast period. But part of the recent exceptional strength was probably erratic, and is assumed to unwind over the forecast period. Bringing exports and imports together, the MPC's central projection is for net trade to make a small positive contribution to GDP growth over most of the forecast period.

It is possible that the slowdown in the United States may become more pronounced than in this central case. And, as discussed in previous *Reports*, there may be a broader correction of global imbalances. But there remains considerable uncertainty about the speed and nature of this adjustment, and its impact on the United Kingdom.

The GDP projection

The Committee's projection for four-quarter GDP growth in the United Kingdom, assuming that official interest rates follow a path implied by market yields, is shown in Chart 5.1. The interest rate and other financial market assumptions underpinning that projection are described in the box on page 40.

Over the forecast period as a whole, GDP growth is projected to remain close to its average rate over the past decade. Annual growth picks up a little at the start of the projection, reflecting a pickup in the contribution from net trade, a modest recovery in business investment and steady growth in consumer spending. From the second year of the projection, the growth profile edges down, in part reflecting slower growth in government spending. The GDP projection is a little higher than in May, particularly at the start of the forecast period, consistent with the stronger near-term outlook for output growth from business surveys.

Overall the risks to GDP growth, relative to the central case, are judged to be broadly balanced, though there are wider

Financial market assumptions

The projections for GDP growth and CPI inflation described in Charts 5.1 and 5.3 are conditioned on a path for official interest rates implied by market yields (Table 1). That path provides a convenient benchmark assumption on which to condition the MPC's projections.⁽¹⁾

 Table 1
 Expectations of the official Bank rate implied by market yields^(a)

Ρ	e	· (e	nt	

rei cen	-														
	2006		2007				2008			2009					
	Q3	Q4	Q1	Q2	Q3	Q4	•	Q1	Q2	Q3	Q4	-	Q1	Q2	Q3
August	4.5	4.6	4.8	4.8	4.9	4.9		4.9	5.0	5.0	5.0		4.9	4.9	4.9
May	4.5	4.6	4.6	4.7	4.8	4.8		4.9	4.9	4.9	4.9		4.8	4.8	

(a) The data are fifteen-day averages of one-day forward rates to 2 August 2006 and 3 May 2006 respectively. They have been derived from instruments that settle on the London interbank offered rate. That includes the market rates on futures, swaps, interbank loans and forward rate agreements, adjusted for credit risk. The MPC may change the way it estimates these expectations from time to time, as shifting market conditions can alter the relative advantages of using different methods.

On average, in the fifteen days leading up to the MPC's decision, the market yield curve implied that financial market participants expected the official Bank rate to increase to 5% during the first two years of the forecast. That is slightly higher than the profile expected in May. Chart A uses information from option prices to provide an approximate indication of market participants' uncertainty, ahead of the MPC's decision on 3 August, about the future path of official interest rates. The chart suggests that market participants believed that a wide variety of outturns was possible.

The starting point for the sterling exchange rate index (ERI) in the MPC's projections for GDP growth and CPI inflation is 101.2, the average for the fifteen working days to 2 August. That was 2.3% above the starting point for the May forecast. Under the MPC's usual convention,⁽²⁾ the exchange rate is assumed to depreciate to 100.1 by 2008 Q3, and is higher throughout the forecast period than assumed in May.

Chart A Market beliefs about future interest rates



The mean of the fan chart is the market rate profile for the fifteen-day average ending 2 August, consistent with the measure of interest rates shown in Table 1. The distribution is derived using the prices of options on three-month Libor futures contracts traded on EuronexLiffe. It is constructed by averaging the daily distributions around a common mean for each of the fifteen days. The average is calculated for each probability band at each quarter. The fan chart depicts the probability of outcomes for interest rates in the future. It has a similar interpretation to the fan charts in the Overview and in this section of the *Report*. The chart is only indicative of market expectations of future policy rates as it is based on Libor instruments, and is estimated on the assumption that investors are risk-neutral.

The starting point for UK equity prices in the MPC's projections was 2953 — the average of the FTSE All-Share index for the fifteen working days to 2 August. That was 4.5% below the starting point for the May forecast. Equity prices are expected to rise broadly in line with nominal GDP over the forecast period.

(1) See the box 'The interest rate assumptions in the projections', on pages 42–43 of the August 2004 *Inflation Report*.

(2) See the box 'The exchange rate in forecasting and policy analysis', on page 48 of the November 1999 Inflation Report.

uncertainties about the outlook for world activity, in particular the possibility of a sharper slowdown in the United States. The probabilities of various outcomes for GDP growth under the market interest rate assumption are set out in Chart 5.2. But there is a range of views among MPC members.

5.2 The outlook for CPI inflation

The balance between demand and supply

In judging the outlook for inflation, the MPC must take a view on the balance between the demand for private sector output and the resources available to supply it. Within businesses, that balance is reflected in the intensity with which existing staff and capital are used — or capacity utilisation. Outside businesses, that balance is reflected in the tightness of conditions in the markets for business inputs, and in particular the labour market.

The margin of spare capacity within businesses is judged to be limited, consistent with measures of capacity utilisation from business surveys and the Bank's regional Agents, which are around longer-term averages. Capacity utilisation is thought to be rather higher than estimated in May, reflecting the upward revisions to demand growth in the *Blue Book*.

By contrast, there is little sign yet of tighter conditions in the labour market. The unemployment rate has continued to creep up. Wage settlements have edged down and regular pay growth has remained broadly steady, with few reports of serious recruitment difficulties. Some of this has reflected the lagged effect of last year's slowdown in demand growth, and attempts by businesses to press down on pay growth when other costs such as energy have been rising rapidly. But it seems increasingly likely that subdued earnings growth has also reflected faster-than-expected growth in the labour supply, as labour market reforms and inward migration have boosted the pool of people available for work and the amount of labour that they are willing to provide.

A margin of slack in the labour market is projected to continue in the MPC's central projection, acting as a restraining influence on wage growth, and pushing down on the MPC's inflation projection over the forecast period. But the depressing effect on prices is weaker than it was in May, reflecting the reduction in the estimated margin of spare capacity within firms.

Assessments of the margin of spare resources are subject to considerable uncertainty, so there are risks on both sides of this central case. There may be more spare resources, for instance if labour market conditions turn out to be looser, moderating upwards pressure on wage inflation over the projection. Or there may be fewer spare resources, for instance if businesses have even less spare capacity than is assumed in the central case.

Recent price developments

CPI inflation has picked up quite sharply in the past three months, rising from 1.8% in March to 2.5% in June. Much of this increase was accounted for by rises in domestic energy prices that were anticipated at the time of the May *Report*. But unexpected increases in other components, including food prices, also played a role in the most recent pickup.

In recent years, the relative stability of CPI inflation has masked sharp movements in subcomponents of the index. In particular, the prices of imported and energy-intensive consumer goods and services have risen substantially, but other domestic price increases have, on average, been somewhat below the 2% target for CPI inflation. Large variations in relative price changes across sectors are to be expected, since producers face widely different trends in costs, technology, competition and demand. If monetary policy is set to keep overall CPI inflation on track to meet the target,

and producers and consumers adjust their production and expenditure decisions in anticipation of this, sharp movements in relative prices need not threaten the achievement of the inflation target in the medium term. But this is not an automatic process, and well-anchored inflation expectations cannot be taken for granted. In judging how to set policy, therefore, the MPC must assess the degree to which inflation expectations are indeed anchored to the target; and the speed with which recent trends in energy, import and domestic prices are likely to unwind.

Inflation expectations

There is no sign yet that the pickup in energy prices and CPI inflation has caused a durable increase in the inflation expectations of households or businesses. As Section 4 explains, survey measures of inflation expectations picked up earlier in the year around the time of a number of announcements of utility price rises. Expectations appear to have fallen back since then. But some of these surveys were completed before the latest round of inflation data and energy price announcements, so a renewed pickup remains a possibility.

Energy prices

Higher prices of energy-intensive consumer goods and services are expected to push up on CPI inflation in the early part of the central projection, and by a little more than in May, as further announced rises in utility prices take effect and the impact of higher oil and gas prices feeds through. Further out, energy prices are projected to remain high and relatively stable, consistent with the path of the Brent crude oil price futures curve. The contribution of energy prices to CPI inflation therefore falls back in the later part of the forecast period. But movements in energy prices have been volatile and unpredictable, so there is great uncertainty around this central case, posing risks in both directions for the MPC's inflation projection.

Import prices

The outlook for import prices reflects a number of offsetting influences. Over the long term, trade with lower-cost emerging economies is likely to continue to put downwards pressure on the prices of imported intermediate and finished goods, both directly and through greater competition at home and abroad. At the same time, the growth of those economies has also contributed to upwards pressure on energy and other imported commodity prices. And it has underpinned an extended period of strong global growth which has supported the prices of outputs (such as some types of services) where emerging markets do not have a comparative advantage. Although these developments should affect relative prices, rather than underlying inflationary pressures, the size and speed of their impact on headline inflation rates is uncertain, complicating the task of monetary policy makers in both developed and developing countries.

Import price inflation has been higher than CPI inflation for some time, reflecting the strength of global demand, in part operating through higher commodity prices. Import price inflation is projected to moderate over the forecast period as energy price effects unwind, global growth slows and low-cost imports from industrialising nations continue to exert downwards pressure. Relative to May, the lagged effects of the higher level of sterling pushes down on import price inflation in the early part of the central projection.

There is a risk that import price inflation may be rather stronger than in the central projection, for example if energy prices have a more persistent effect on overseas producers' costs or if greater capacity constraints begin to emerge in China and other low-cost exporting countries.

Other domestic prices

In response to rising energy and import prices, companies have squeezed profit margins and have borne down on other costs such as wages. Inflation in energy and import prices is expected to moderate over the forecast period, relieving that downward pressure. Against a background of robust demand growth and with limited spare capacity, the MPC's central projection assumes that there is some recovery in profit margins and pay growth.

The rise in domestic price pressures is expected to be more pronounced than in the May projection. That reflects the MPC's judgement that companies have less spare capacity than previously thought.

The outlook for CPI inflation

The Committee's projection for CPI inflation, assuming that official interest rates follow a path implied by market yields, is shown in Chart 5.3. Because the chart shows quarterly





Charts 5.3 and 5.4 The fan charts depict the probability of various outcomes for CPI inflation in the future. If economic circumstances identical to today's were to prevail on 100 occasions, the MPC's best collective judgement is that inflation over the subsequent three years would lie within the darkest central band on only 10 of those occasions. The fan charts are constructed so that outturns of inflation are also expected to lie within each pair of the lighter red areas on 10 occasions. Consequently, inflation is expected to lie somewhere within the entire fan charts on 90 out of 100 occasions. The bands widen as the time horizon is extended, indicating the increasing uncertainty about outcomes. See the box on pages 48–49 of the May 2002 *Inflation Report* for a fuller description of the fan chart and what it represents. The dashed lines are drawn at the respective two-year points.

Chart 5.3 Current CPI inflation projection based on market interest rate expectations







(a) These figures are derived from the same distribution as Chart 5.3. They represent the probabilities that the MPC assigns to CPI inflation lying within a particular range at a specified time in the future.

Chart 5.6 Current projected probabilities of CPI inflation outturns in 2008 Q3 (central 90% of the distribution)^(a)



average rates of annual CPI inflation, the fan chart begins at 2.3%, the inflation rate in 2006 Q2; but the projection takes full account of the pickup in inflation to 2.5% in June. Higher domestic energy prices and university tuition fees raise the central projection for CPI inflation further above the 2% target over the next few months. In the later part of the projection, as energy and import price inflation moderates, consumer price inflation moves only gradually back towards the target as profit margins and pay growth recover.

The pickup in inflation is somewhat more marked than in the May *Report*, largely reflecting further announcements of price rises by energy utility companies, the pickup in oil prices, and the prospective increase in tuition fees. Further ahead, the projection remains above that in May, reflecting the smaller estimated margin of spare resources.

There are a number of risks around the central projection, but the MPC's best collective judgement is that these are broadly balanced. On the upside, import prices may rise by more than in the central case. Uncertainties about the margin of spare resources could pose either an upside risk (if capacity constraints within firms prove more severe) or a downside risk (if there is greater slack in the labour market). In the Committee's judgement, there is an unusual degree of uncertainty over the prospects for energy and import prices, the speed of pass-through to household bills, and the way in which these prices interact with domestic pricing decisions. This uncertainty is particularly marked in the early part of the forecast period, as significant changes to individual prices work their way through ahead of next year's pay settlements. To reflect this, the bands of the inflation





Charts 5.6 and 5.7

- (a) Chart 5.6 represents a cross-section of the CPI inflation fan chart in 2008 Q3 for the market interest rate projection. The coloured bands have a similar interpretation to those on the fan charts. Like the fan charts, they portray the central 90% of the probability distribution. If economic circumstances identical to today's were to prevail on 100 occasions, the MPC's best collective judgement is that inflation in 2008 Q3 would lie somewhere within the range covered by the histogram on 90 occasions. Inflation would lie outside the range covered by the histogram on 10 out of 100 occasions. Chart 5.7 shows the corresponding cross-section of the May *Inflation Report* fan chart.
- (b) Average probability within each band. The figures on the y-axis indicate the probability of inflation being within ±0.05 percentage points of any given inflation rate, specified to one decimal place. For example, the probability of inflation being 2.0% (between 1.95% and 2.05%) in the current projection is around 6%.

Chart 5.8 Current GDP projection based on constant nominal interest rates at 4.75%



Chart 5.9 Current CPI inflation projection based on constant nominal interest rates at 4.75%



fan chart have been widened somewhat, particularly in the near term.

The probabilities of various outcomes for CPI inflation are set out in Chart 5.5. The overall balance of risks to the inflation outlook at the two-year point is shown in Chart 5.6. Chart 5.7 shows the corresponding balance in May.

5.3 Projection based on constant interest rates

Charts 5.8 and 5.9 show the MPC's projections for GDP growth and CPI inflation conditioned on a constant interest rate of 4.75%. These are two-year rather than three-year projections.⁽¹⁾ The profiles for growth and inflation are both higher than those based on market rates, reflecting the upward slope in the market yield curve over the next two years.

5.4 The policy decision

At its August meeting, the Committee noted that, under the assumption that official interest rates rose in line with market yields, the central projection was for output growth to remain close to its recent historical average and for inflation to move a little higher before easing gradually back towards the target. Given that outlook, with inflation likely to remain above the target for some while, the Committee judged that an increase of 0.25 percentage points in the official Bank rate to 4.75% was necessary to bring CPI inflation back to the target in the medium term.

⁴⁵

⁽¹⁾ The box on pages 42–43 of the August 2004 Inflation Report explains why the projections based on constant interest rates are only shown up to two years ahead.

The MPC's forecasting record

This box assesses how well the MPC's past projections have served as a guide to outturns for GDP growth and inflation. It is the latest in a series published each August in the *Inflation Report*. A more detailed examination of the Committee's forecasting record was published in a *Quarterly Bulletin* article last autumn.⁽¹⁾

There is inevitable uncertainty around the economic outlook. So the MPC publishes its projections for growth and inflation as probability distributions — so-called 'fan charts' — rather than as single point forecasts. These fans depict the MPC's subjective judgement of the probability of future outturns falling within particular ranges (see the footnote to Chart 5.1).

One simple test of the MPC's forecasting record is to examine how accurately the fans described the actual dispersion of outturns. But the available sample is small. At the two-year horizon, it consists of 26 forecasts for GDP growth (four more than last year); 24 for RPIX inflation (two more); and only 2 for CPI inflation (two more).

Charts A and B show how outturns have compared with the fan chart probability bands published between February 1998 and May 2006. Each dot represents a quarterly outturn and its vertical position indicates which percentile of the fan chart it fell in at a given forecast horizon. Where dots are close to the 50th percentile line, the outturn was close to the MPC's central projection. Where dots are above 95 or below 5, the outturn was a long way from the central projection and likely to have fallen outside of the 90% probability band covered by the fan chart. If the MPC's fan charts had accurately depicted the true probabilities, and the samples were sufficiently large, then we would expect the dots to be evenly scattered across all probability percentiles at all horizons.

Broadly speaking, outturns for GDP growth and inflation appear reasonably evenly scattered across probability bands at most forecast horizons — a similar picture to that reported in the August 2005 *Report*. But visual inspection of Charts A and B suggests two exceptions.

First, for near-term projections of GDP, there is some clustering of dots beyond the 90% distribution covered by the fans. As discussed in the corresponding box a year ago, this can be explained by revisions to GDP data. The GDP fan charts at early horizons had not adequately reflected the possibility of past data being revised. In August 2005, the MPC amended the GDP fan chart to take account of this risk. Since then, outturns have not tended to cluster a long way from the central projection.⁽²⁾

Second, outturns for GDP growth and inflation appear less dispersed at long horizons than implied by the width of the fan

chart. One reason might be that the fan charts reflect the probabilities of many risks occurring. Over the short period covered by the sample, some of the more extreme risks may not have materialised. But that does not mean that the potential for these risks to occur should not have been incorporated in the fan chart.

Overall, the evidence above suggests that the fan charts have given a reasonable guide to prospects for the economy. More formal tests have led to similar conclusions.⁽¹⁾ But, as in previous years, the sample is probably too small to draw firm conclusions about the MPC's forecasting record.

Chart A GDP outturns relative to fan chart probability distributions^(a)



⁽a) Outturns that lie below the 5th percentile or above the 95th percentile are shown by the dots on the 0 and 100 lines. Where this applies to more than one outturn, the dots are larger and the accompanying numbers indicate the number of outturns concerned.

Chart B Inflation outturns relative to fan chart probability distributions^(a)



(a) See footnote to Chart A. Based on RPIX projections until November 2003 and CPI projections thereafter.

 Elder, R, Kapetanios, G, Taylor, T and Yates, T (2005), 'Assessing the MPC's fan charts', Bank of England Quarterly Bulletin, Autumn, pages 326–48.

(2) GDP outturns have all fallen between the 30th and 70th percentiles of the fan charts published over the past year. But, following recent *Blue Book* revisions, there has been an increase in the number of outturns that lie outside the 90% probability band covered by fan charts published prior to August 2005. Around a third of CPI outturns have fallen between the 30th and 70th percentiles of the fan charts published over the past year; none lie outside the 90% probability bands.

Other forecasters' expectations

Every three months, the Bank asks a sample of external forecasters for their latest projections (Table 1). In July, the projections for growth, inflation and the Bank rate were broadly unchanged on three months earlier, although the average expectation for the sterling ERI was higher.

Table 1	Average of	other forecasters	central	projections(a	i)
Tuble I	/ Weruge Of	other forecusters	centiut	projections	· ·

	2008 Q3	2009 Q3	
CPI inflation ^(b)	1.9	1.9	
GDP growth ^(c)	2.5	2.5	
Bank rate (per cent)	4.6	4.6	
Sterling ERI ^(d)	97.7	97.5	
(New index: January 2005 = 100)			

Source: Projections of outside forecasters as of 21 July 2006.

(a) For 2008 Q3, there were 22 forecasts for CPI inflation and GDP growth, 21 forecasts for the Bank rate, and 18 for the sterling ERI. For 2009 Q3, there were 21 forecasts for CPI inflation and GDP growth, 20 forecasts for the Bank rate, and 18 for the sterling ERI. (b) Twelve-month rate.

 (d) Where necessary, responses were adjusted to take account of the difference between the old and new ERI measures, based on the comparative outturns for 2006 Q1.

The central expectation of most forecasters was for CPI inflation to remain close to target (Chart A). But, on average, the forecasters thought it a little more likely that inflation would be below rather than above target over the next few years (Table 2).

Chart A Distribution of CPI inflation central projections for 2008 Q3



Source: Twelve-month CPI inflation projections of 22 outside forecasters as of 21 July 2006.

GDP growth was expected to remain steady over the next few years. The average central projection was for four-guarter GDP growth to remain close to 2.5% (Table 1), although there was thought to be a greater chance of growth below 2.0% than over 3.0% (Table 2).

Table 2 Other forecasters' probability distributions for CPI inflation and GDP growth^(a)

CPI inflation

Probability, per cent ^(b)	Range:								
	Less	1.0%	1.5%	2.0%	2.5%	More			
	than	to	to	to	to	than			
	1.0%	1.5%	2.0%	2.5%	3.0%	3.0%			
2008 Q3	7	14	33	29	12	5			
2009 Q3	8	15	33	27	11	6			

GDP growth

Probability, per cent ^(b)	Range:						
	Less	1%	2%	More			
	than	to	to	than			
	1%	2%	3%	3%			
2008 Q3	8	27	44	22			
2009 Q3	9	26	44	22			

Source: Projections of outside forecasters as of 21 July 2006.

(a) For 2008 Q3, 22 forecasters provided the Bank with their assessment of the likelihood of twelve-month CPI inflation and four-quarter output growth falling in the ranges shown above. For 2009 Q3, the corresponding figure was 21. The table shows the average probabilities across respondents: for example, on average forecasters assigned a probability of 54% to CPI inflation turning out to be 2.0% or less in 2008 Q3.
 (b) Figures may not sum to 100 due to rounding.

In addition, the vast majority of respondents expected the Bank rate to remain between 4.5% and 5% over the next three years. And they expected the sterling ERI to fall gently, on average, following its recent appreciation. More than three quarters of respondents anticipated a lower path than assumed by the MPC under its usual convention (Chart B).





Source: Projections of 18 outside forecasters as of 21 July 2006

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## Text of Bank of England press notice of 8 June 2006 Bank of England maintains interest rates at 4.5%

The Bank of England's Monetary Policy Committee today voted to maintain the official Bank rate paid on commercial bank reserves at 4.5%.

The minutes of the meeting will be published at 9.30 am on Wednesday 21 June.

## Text of Bank of England press notice of 6 July 2006 Bank of England maintains interest rates at 4.5%

The Bank of England's Monetary Policy Committee today voted to maintain the official Bank rate paid on commercial bank reserves at 4.5%.

The minutes of the meeting will be published at 9.30 am on Wednesday 19 July.

# Text of Bank of England press notice of 3 August 2006 Bank of England raises Bank rate by 0.25 percentage points to 4.75%

The Bank of England's Monetary Policy Committee today voted to raise the official Bank rate paid on commercial bank reserves by 0.25 percentage points to 4.75%.

The pace of economic activity has quickened in the past few months. Household spending appears to have recovered from its post-Christmas dip. Business investment growth and investment intentions have also picked up. In the United Kingdom's main export markets growth has remained robust. As a result, over the past few quarters GDP growth has been at, or a little above, its long-run average and business surveys point to continued firm growth. The margin of spare capacity in the economy appears small.

CPI inflation picked up to 2.5% in June, and is expected to remain above the 2.0% target for some while. Higher energy prices have led to greater inflationary pressures, notwithstanding muted earnings growth and a squeeze on profit margins. Although the path of energy prices is extremely uncertain, energy price inflation is expected to moderate in the medium term. But some recovery in profit margins and pay growth is likely to mean that consumer price inflation will move only gradually back to the target.

Against the background of firm growth, limited spare capacity, rapid growth of broad money and credit, and with inflation likely to remain above the target for some while, the Committee judged that an increase of 0.25 percentage points in the official Bank rate to 4.75% was necessary to bring CPI inflation back to the target in the medium term.

The Committee's latest inflation and output projections will appear in the *Inflation Report* to be published on Wednesday 9 August.

The minutes of the meeting will be published at 9.30 am on Wednesday 16 August.

# Glossary and other information

### Glossary of selected data and instruments

AEI – average earnings index.

AWE – average weekly earnings.

CPI - consumer prices index.

**CPI inflation** – inflation measured by the consumer prices index.

CSPI – corporate services price index.

ERI – exchange rate index.

**Euribor** – euro interbank offered rate.

**Euro-area M3** – a measure of the euro-area money stock that includes currency, deposits with a maturity of up to two years, deposits redeemable at a notice period of up to three months, repurchase agreements and shares in money market funds.

GDP – gross domestic product.

HICP – harmonised index of consumer prices.

Japanese M2 + CDs – a measure of the Japanese money stock that includes currency, demand deposits, time deposits, deferred savings, instalment savings, non-resident yen deposits, foreign currency deposits and certificates of deposits. LFS – Labour Force Survey.

Libor – London interbank offered rate.

M4 – UK non-bank, non-building society private sector's holdings of sterling notes and coin, and their sterling deposits (including certificates of deposit, holdings of commercial paper and other short-term instruments and claims arising from repos) held at UK banks and building societies.

RPI - retail prices index.

**RPI inflation** – inflation measured by the retail prices index. **RPIX** – RPI excluding mortgage interest payments.

**RPIX inflation** – inflation measured by the RPI excluding mortgage interest payments.

US M2 – a measure of the US money stock that includes currency, travellers' cheques, demand deposits, savings deposits, small-denomination time deposits and shares in retail money market mutual funds.

### Abbreviations

A8 Accession countries – the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia. BCC – British Chambers of Commerce.

- CBI Confederation of British Industry.
- CDs certificates of deposit.
- CIPS Chartered Institute of Purchasing and Supply.
- DB defined-benefit.
- DGI domestically generated non-energy price inflation.
- **DTI** Department of Trade and Industry.
- ECB European Central Bank.

EEF – Engineering Employers Federation.

EU – European Union.

**EU15** – Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom.

**EU25** – EU15 plus Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia.

FDI – foreign direct investments.

FOMC – Federal Open Market Committee.

FTSE – Financial Times Stock Exchange.

**G7** – Canada, France, Germany, Italy, Japan, the United Kingdom and the United States.

**GfK** – Gesellschaft für Konsumforschung, Great Britain Ltd. **HBF** – Home Builders Federation.

HM Treasury – Her Majesty's Treasury.

HMRC – Her Majesty's Revenue and Customs.

I/B/E/S – International Brokers' Estimate System.

- Ifo Institute for Economic Research.
- IMF International Monetary Fund.
- MPC Monetary Policy Committee.
- MSCI Morgan Stanley Capital International index.
- MTIC missing trader intra-community.
- OFCs other financial corporations.
- **ONS** Office for National Statistics.
- **PNFCs** private non-financial corporations.
- RBS Royal Bank of Scotland.
- **REC** Recruitment and Employment Confederation.
- RICS Royal Institution of Chartered Surveyors.
- S&P Standard and Poor's.
- SDR Special Drawing Right.
- VAT value added tax.

### Symbols and conventions

Except where otherwise stated, the source of the data used in charts and tables is the Bank of England or the Office for National Statistics (ONS) and all data, apart from financial markets data, are seasonally adjusted.

n.a. = not available.

Because of rounding, the sum of the separate items may sometimes differ from the total shown.

On the horizontal axes of graphs, larger ticks denote the first observation within the relevant period, eg data for the first quarter of the year.

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