UK Economic Outlook

November 2007

Special features:
- Which UK industry sectors are most vulnerable to an economic downturn?
- Outlook for the UK housing market

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Contacts and services

UK Economic Outlook is produced three times a year by macroeconomists at PricewaterhouseCoopers (PwC). For more information about the technical content of this report please contact: John Hawksworth (john.c.hawksworth@uk.pwc.com).

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	David Armstrong	02890 415716
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	Mark Graham	0131 260 4054
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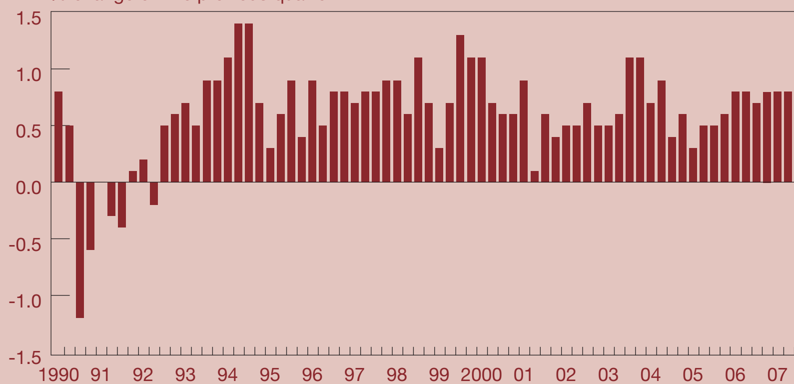
Customer-focused public services	Duncan Lampard	020 7213 3390
Regional and local economic development, inward investment	Ray Mills	0191 269 4284
Telecommunications	Graeme Clark	020 7213 2866
	Alastair MacPherson	020 7213 4463
	Rolf Meakin	020 7213 1707

I – Summary

Highlights

- UK GDP growth is projected in our main scenario to slow from around 3% in 2007 to only around 2% in 2008.
- Consumer spending growth is expected to slow from around 3% in 2007 to around 2% in 2008, as consumers remain relatively cautious due to the rise in interest rates since August 2006 and high household debt levels.
- Public spending growth is also set to be relatively subdued at around 2% in real terms in 2008, as confirmed recently by the Chancellor.
- Business investment growth strengthened significantly in 2006, but is expected to moderate in the face of uncertainties relating to the global credit crunch.
- Risks around growth in our main scenario are significant and have become weighted to the downside following the credit crunch.
- In our main scenario, CPI inflation should remain around its 2% target level in 2008, but there are still considerable uncertainties around this relating to the path of global commodity prices.
- Interest rates are assumed to remain on hold in the short term, but then fall back somewhat next year as growth slows. As with growth and inflation, uncertainties around future interest rates appear relatively large at present.
- The first special article in this issue reviews the health of the corporate sector and concludes that, if an economic downturn is coming, UK plc is at least starting from a relatively strong financial position. However, more cyclical sectors like software and technology, media, construction and non-food retailing could still be exposed to any such downturn, as could the financial institutions directly affected by the credit crunch.

Figure 1.1 – Quarterly GDP growth



Source: ONS

- A second special article presents updated modelling results for house price prospects, concluding that there is a 1 in 5 chance of a fall in average UK house prices in cash terms between 2007 and 2010 and a 1 in 3 chance of a fall in real (inflation-adjusted) house prices over this period. This represents a material downside risk for the economy more generally.

Recent developments

UK economic growth remained somewhat above trend during the first three quarters of 2007, continuing the pattern seen during 2006 (see Figure 1.1). Year-on-year GDP growth has been relatively stable at just over 3%. Business investment appears to have been somewhat less strong than in 2006, although these preliminary estimates may be revised up later. Consumer spending growth has held up well during the first nine months of 2007.

The services sector has remained the key engine of growth, although banking and some other parts of the financial services sector have been hit more recently by the effects of the credit crunch. Manufacturing has shown some signs of a revival since early 2007, albeit from a low base.

The US economy has slowed in response to a marked weakening of the housing market and Euroland economic growth has also eased back recently, but the Asian economies have been much stronger. Oil prices have remained relatively high and volatile, and food prices have also been rising. Overall, global growth is expected to be somewhat slower in 2007-8 than in 2006 but still reasonably robust, led again by China and India. But risks have become biased more to the downside following the credit crunch.

UK inflation rose well above its 2% target rate to 3.1% in March 2007, but has since fallen back below target as earlier domestic energy price rises have begun to be reversed. The Bank of England's Monetary Policy Committee (MPC) raised interest rates to 5.75% in July but has since kept rates on hold as it waits to see how the credit crunch will play out. However, the October MPC minutes indicate that the debate has now shifted to whether and when rates should be cut. Wage increases remain moderate, but there are still some upward pressures on inflation from global commodity prices.

Future prospects

Our main scenario sees UK economic growth slowing from around 3% in 2007 to around 2% in 2008 as the effects of past interest rate rises, reduced credit availability, tighter fiscal policy and the US slowdown feed through. As shown in Table 1.1, this is similar to the latest average independent forecast, but at the bottom end of the Treasury's forecast range. The

differences between these various estimates, however, are relatively small compared to the normal margin of error for such forecasts, as indicated by the alternative GDP growth scenarios shown in Figure 1.2. At present, risks to our main scenario for growth appear somewhat biased to the downside, however, in contrast to the broadly balanced risk outlook that we saw earlier in the year.

Consumer spending growth is expected to moderate from around 3% in 2007 to around 2% in 2008 in our main scenario. This reflects the dampening effect on household discretionary spending power of higher interest rates and high household debt levels. If the housing market slows sharply over the next year, which is possible as discussed further below, this would tend to reduce consumer spending growth further through confidence, collateral and wealth effects. But there could also be some upside potential here if the housing market remains stronger than expected, driven by continued supply shortages.

Business investment[1] should continue to grow relatively strongly in our main scenario, although this will be offset by a planned slowdown in public sector investment. Net exports are projected to make a broadly neutral contribution to GDP growth in 2008 in our main scenario, although the risks to global growth and thus to UK exports are weighted to the downside at present in the light of the possibility of a hard landing in the US.

Growth in the UK manufacturing sector is expected to continue to lag behind the services sector in 2007-08. Business and financial services, which had been leading the upturn, are expected to see growth moderate somewhat over the next year due to the knock-on effects of the credit crunch. But other private sector services should generally remain relatively strong.

Our main scenario for UK GDP growth would be consistent with inflation (CPI) remaining around its 2% target rate in 2008. In this case, official short-term interest rates are assumed to remain on hold in the short term but then fall back gradually during 2008 as growth moderates.

Table 1.1 – Summary of UK economic prospects

Indicator (% change on previous year)	HM Treasury forecasts (October 2007)		Independent forecasts (October 2007)		PwC Main scenario (November 2007)	
	2007	2008	2007	2008	2007	2008
GDP	3	2 to 2.5	2.9	2.0	3	2
Consumer spending	3	1.75 to 2.25	2.8	1.8	3	2
Investment	5.75	3.25 to 3.75	5.3	2.5	5.25	2.5
Manufacturing output	1	1.5 to 2	0.9	0.8	1	1
CPI (Q4)	2	2	2.0	2.0	2	2

Source: HM Treasury, Survey of Independent Forecasts (average values), PwC scenarios rounded to the nearest quarter of a percent. Investment refers to total fixed investment.

Figure 1.2 – Alternative GDP growth scenarios

Source: ONS, PricewaterhouseCoopers

This interest rate scenario is in line with current market expectations, but is far from certain. In alternative scenarios, as discussed further in Section II.3 below, official UK interest rates could be anywhere from around 4% to around 6.5% by the end of 2008, depending on how growth and inflation develop over this period.

Which industry sectors might be most vulnerable to an economic downturn?

A key uncertainty facing the UK economy at present is how far the effects of the recent credit crunch will spill over from banks and other financial institutions to the rest of the economy. In Section III below we have explored one aspect of this by looking at how strong the finances of the rest of the UK corporate sector are at present.

The results from this are reasonably reassuring. The UK corporate sector as a whole is in much better financial health now than it was five years ago. Profitability is significantly higher, gearing is markedly lower, and interest cover ratios have risen from an average of 2.4 in 2002 to 9.3 in 2007 (see Table 1.2).

Similar conclusions apply at a sectoral level. Only 4 of the 34 sectors considered have seen their interest cover ratios decline since 2002 and only one of these (automotive) had an interest cover of less than 4 in 2007. There is a consistent pattern towards significantly increased profitability combined with declining, or at worst broadly stable, gearing.

As such, most parts of the UK corporate sector appear to be in reasonably good financial health: if a storm is coming, they are generally well placed to weather it. There are, however, some sectors where comparatively weak finances and relatively cyclical markets could nonetheless make them vulnerable to a sharper than expected downturn, including the computer software, technology, automotive, non-food retailing, construction and media sectors. Some banks and other financial institutions are

[1] Business investment is the largest component of total fixed investment, which also includes housebuilding and government investment. In recent years, however, government investment has been the fastest growing category within total fixed investment.

clearly also relatively exposed to the credit crunch. Businesses in these relatively exposed sectors would be prudent to stress test their financial robustness against downside scenarios for the economy and consider how to respond to such a downturn if it occurs.

Table 1.2: Key financial health indicators for FTAS companies in 2002 and 2007

Key indicators	2002	2007
1. Net gearing		
- average	**21%**	**13%**
- % of companies with gearing over 50%	13%	6%
2. Profitability (ROCE)		
- average	**6%**	**20%**
- % of companies making losses	25%	8%
3. Interest cover		
- average	**2.4**	**9.3**
- % of companies with interest cover < 2	38%	20%

Source: PricewaterhouseCoopers analysis using Datastream data for all FTAS companies excluding banks and equity investment instruments. All data are the latest available as at 1 September in each year shown.

UK housing market outlook

In Section IV below we update some modelling work we did on UK house price prospects this time last year, enhancing the analysis by including a measure of supply constraints directly in the estimated model. On this basis, we conclude that average UK house prices in mid-2007 were around 10% above their equilibrium value relative to earnings, interest rates and supply conditions. This compares to an estimated 20% overvaluation in a model that does not take account of supply constraints.

Table 1.3 – Summary of house price modelling results

	Approximate probability of a fall in house prices	
	Between 2007 and 2010	Between 2007 and 2020
Nominal terms	1 in 5	< 1%
Real terms	1 in 3	1 in 6

Source: PwC analysis

Using our preferred model including supply constraints, we then produced estimates of the probabilities of future house price changes falling into particular ranges for periods up to 2010 and 2020 in both nominal and real terms. The key results of this analysis are summarised in Table 1.3.

The table shows that there is an estimated one in five chance of house prices being lower in nominal (i.e. cash) terms in 2010 than in 2007, but a significantly higher probability (around one in three) of house prices being lower in real (inflation-adjusted) terms in 2010 than in 2007. The most likely scenario is for a slowdown in the housing market rather than an outright fall in prices, but this does represent a material downside risk for the economy more generally given the likely knock-on effects of lower house prices on consumer confidence and spending.

Looking further ahead, there is only a very small chance of house prices being lower in 2020 than in 2007 in cash terms, but a somewhat higher probability (around one in six) of real house prices being lower in 2020 than in 2007. The most likely outcome, however, is that house prices will continue to rise faster than general price inflation on average in the long run, although probably not as rapidly as in recent years.

II – UK Economic prospects

Introduction

In this section of the report we detail recent developments in the UK economy and review future prospects for the economy. The analysis is divided into the following sub-sections:

II.1 Recent developments and the current situation

II.2 Economic growth prospects

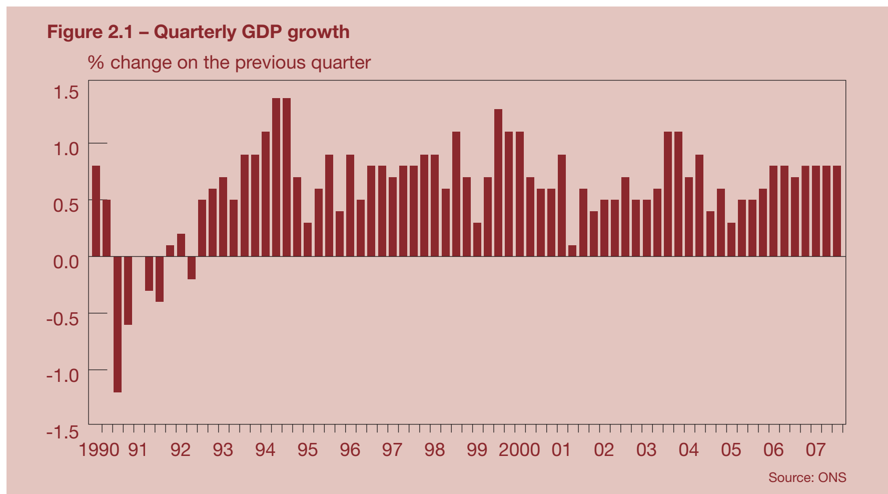
II.3 Prospects for inflation and interest rates

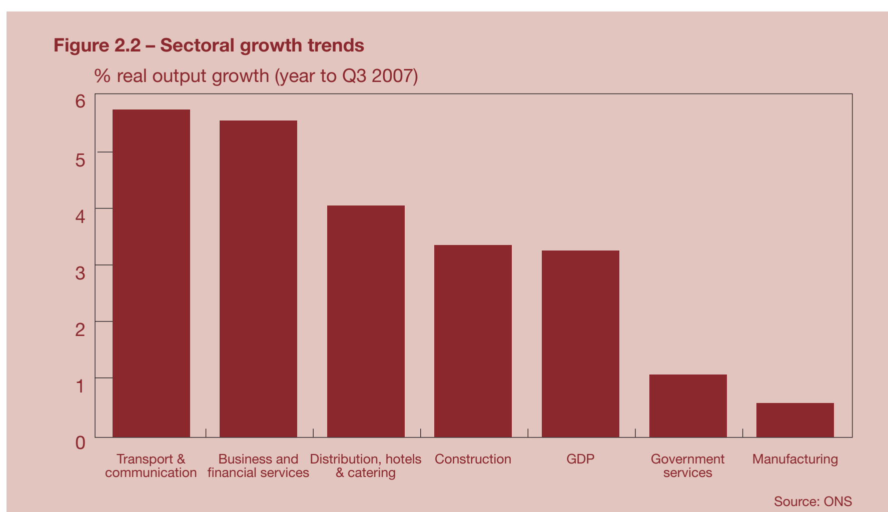
II.4 Sectoral and regional prospects

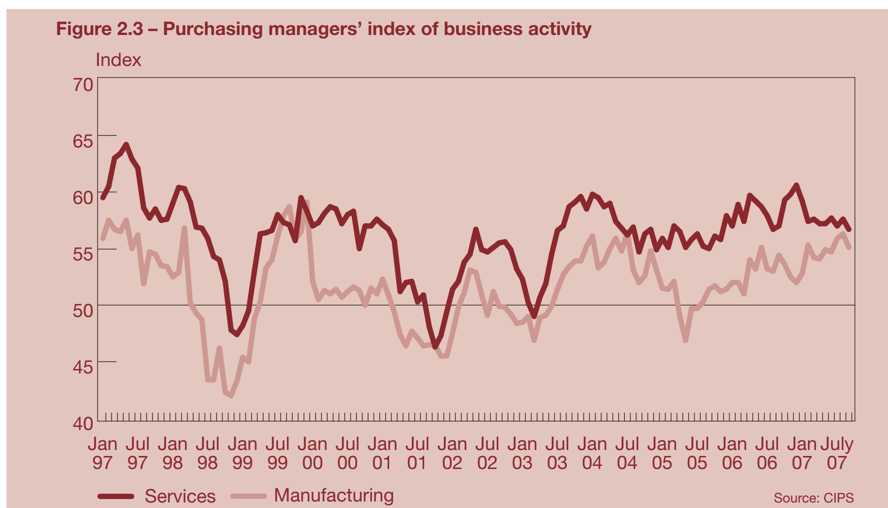
II.5 Longer term prospects

II.6 Summary and conclusions

The analysis is supported as usual by a review of global trends and prospects (Appendix A). Historic trends in selected UK economic indicators are included for reference in Appendix B.







II.1 Recent developments and the current situation

Growth of GDP and major industry sectors

Growth in the UK economy remained robust in the third quarter (Q3) of 2007, expanding by 3.2% on a year-on-year basis, according to latest preliminary estimates. Quarterly GDP growth was 0.8% for the fourth consecutive quarter (see Figure 2.1).

From an output perspective, the service sector remains the driver of growth with industrial production continuing to expand only modestly. In the year to Q3, total services grew by 4.0%, while over the same period industrial production expanded by only 0.6%. The sectoral breakdown of industrial production reveals that:

- growth in output from the mining, oil and gas sector contracted by 0.3% in Q3 2007 compared to 1.3% growth in the previous quarter, with falling gas extraction driving the downturn;
- the manufacturing sector grew by just 0.2% in Q3 after growing by 0.8% during the second quarter; the September Chartered Institute of Purchasing & Supply (CIPS) index of manufacturing activity was down slightly on the August figure, which was a three-year high (see Figure 2.3); and
- the electricity, gas and water sector rebounded to expand by 1% in Q3 following a contraction of 0.4% in the previous quarter.

The construction sector expanded by 0.8% in Q3 and was up by 3.4% compared to a year earlier (see Figure 2.2). The industry

appears unaffected by recent interest rate increases and signs of a cooling property market; the September Construction PMI fell from a near decade high in August,but remained at a level indicating continued robust growth.

Service sector activity was up by 1% quarter-on-quarter in Q3, with growth being recorded across all service industries. Output was up 4% on the same quarter of 2006. The Services PMI indicates buoyant activity in the sector during September, although there was some moderation with the index falling to a thirteen-month low (see Figure 2.3). Turning to the services sub-sectors we can see that:

- with quarter-on-quarter growth of 1.7%, activity in the business and financial services sector accelerated during the third quarter; however, according to the September CBI/PwC Financial Services Survey, sentiment in the sector has declined significantly over the summer months, due to the global credit and liquidity crunch;
- the output of the distribution, hotels and catering sector grew by 1.1% in Q3, up from 0.6% in the previous quarter, with the pick up driven by increased output within the retail and wholesale sub-sectors;
- the transport, storage and communications sector grew by 1.1% in the third quarter, up from 0.8% in Q2; and
- the government and other services sector stagnated, recording zero growth in Q3 after expanding by a modest 0.1% in the second quarter.

Drivers of GDP growth

Turning to the demand side of the economy, latest available data relate to Q2 in which year-on-year growth was driven exclusively by domestic demand, with the external sector continuing to make a negative contribution to growth (see Figure 2.4).

Domestic demand

Growth in consumer spending remained robust in the second quarter, expanding by 0.8% compared to the previous quarter. Year-on-year growth dipped marginally to 2.7% (see Figure 2.5) but remains close to trend. The household savings rate increased by over one percentage point to 3.1% in Q2, the first quarter-on-quarter increase since Q4 2005, albeit from a very low base (see Figure 2.6).

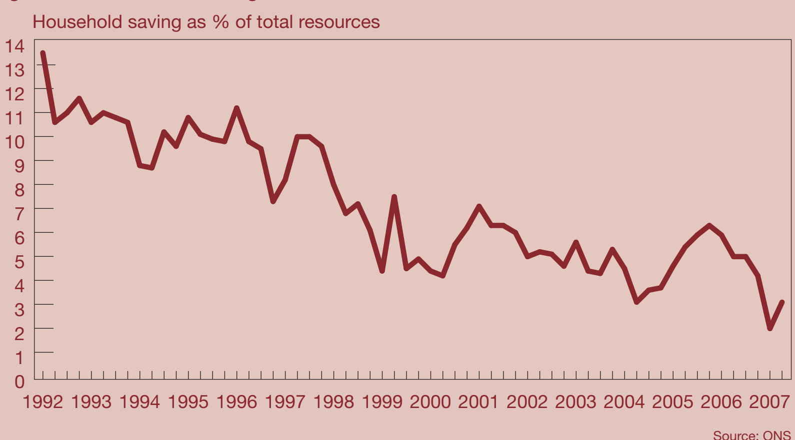
Retail sales volume growth has remained solid in the third quarter, accelerating in July, August and September on a three-month moving-average basis (see Figure 2.7). In September, growth was driven by strong demand in the household goods and food sectors. Better weather conditions and price discounting have contributed to the on-going observed acceleration.

After rebounding in August, consumer confidence deteriorated in September

Figure 2.4 – Drivers of growth

Figure 2.5 – Domestic demand growth

Figure 2.6 – Household savings ratio



according to the GfK NOP survey. However, the Nationwide consumer confidence index improved in the same period. By historical standards both indices remain relatively robust, although financial market unrest is likely to erode both confidence measures moving forward.

Annual house price inflation, as measured by the Halifax index, was 10.7% in September, while the Nationwide index recorded slightly lower inflation of 9.7% in October (see Figure 2.8). Analysis of quarterly inflation figures reveals that house price growth is beginning to decelerate, however, with Q3 inflation in the Halifax index decelerating to 0.9%, down from 2.3% in Q1. Section IV below contains more detailed analysis of housing market trends and prospects.

Evidence of a slowing housing market is also apparent in the mortgage market, with higher interest rates now clearly affecting demand. Bank of England figures reveal that growth in mortgage lending again decelerated in September. Also, the total number of mortgage approvals remained subdued after falling in the previous three months. The recent crisis in the UK banking system surrounding Northern Rock is likely further to reduce mortgage lending going forward, with lenders becoming much more stringent with borrower requirements.

Investment in fixed capital contracted by 0.9% in Q2 compared to the previous quarter, although this was still up by 6.2% on Q2 2006. On a quarterly basis, investment was dragged lower by falling government investment, while business investment reversed its Q1 contraction to expand by 0.4%. Growth in services, construction and other production investment drove headline business investment growth. Based on past trends and survey evidence, however, it is quite possible that these initial estimates of business investment growth will be revised upwards in due course.

Growth in general government consumption expenditure was 0.3% in the second quarter, down slightly on Q1 but up by 2.0% compared to Q2 2006.

Inventories grew by £0.9bn in the second quarter, leading to a positive growth contribution of 0.3 percentage points on a year-on-year basis and reversing two quarters of negative growth contributions.

Figure 2.6 – Household savings ratio

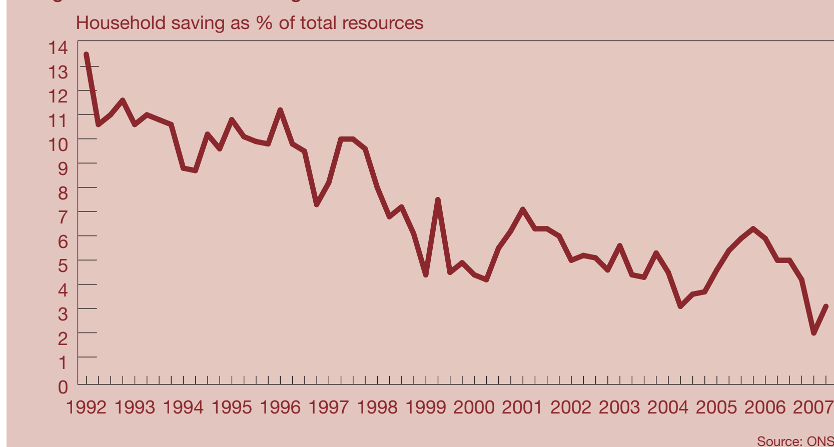


Figure 2.7 – Retail sales volume growth

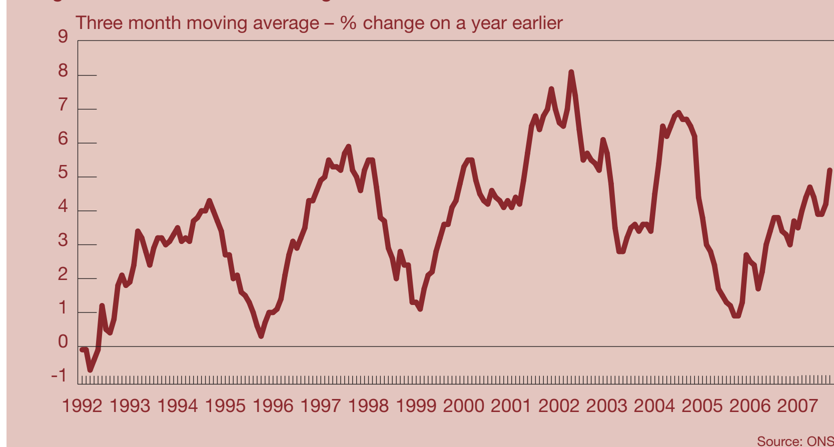
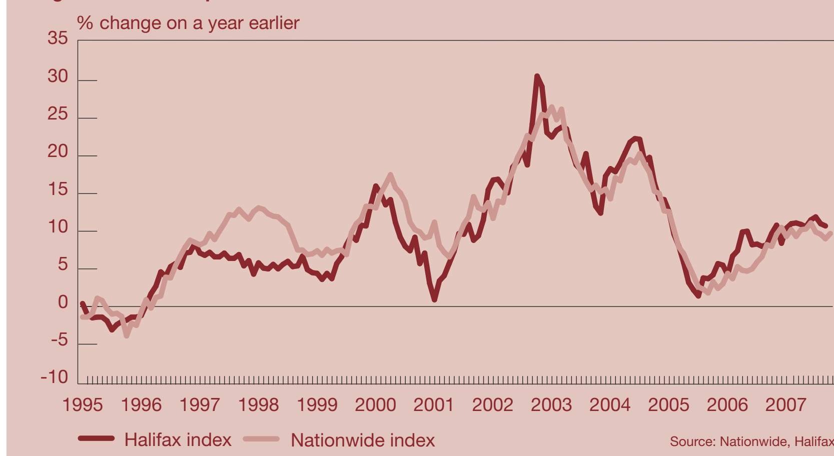


Figure 2.8 – House price inflation



The trade deficit and current account balance

Initial estimates suggest that the current account deficit narrowed to £9.1bn (2.6% of GDP) in the second quarter, down from £10.6bn (3.1% of GDP) in Q1 (see Figure 2.9). An increasing surplus on trade in services contributed most to the narrowing, but the deficit on goods trade also fell. These factors also led to a reduction in the trade deficit of approximately £0.9bn to £11.5bn in Q2. But latest ONS estimates suggest that the underlying trend in the trade deficit is fairly flat.

On the expenditure volume measure, exports grew modestly in Q2, although a significant contraction in late 2006 meant

exports were down 12.4% on Q2 2006. Import volumes were down 0.4% on the quarter and 9.9% on Q2 2006. VAT MTIC (Missing Trader Intra-Community) fraud, although declining in recent months, does continue to distort UK trade statistics, meaning that these figures should be treated with caution.

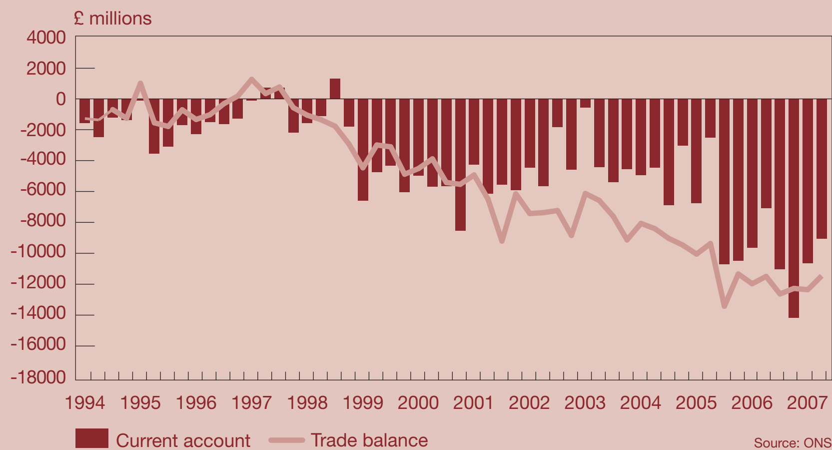


Figure 2.9 – Current account and trade balance

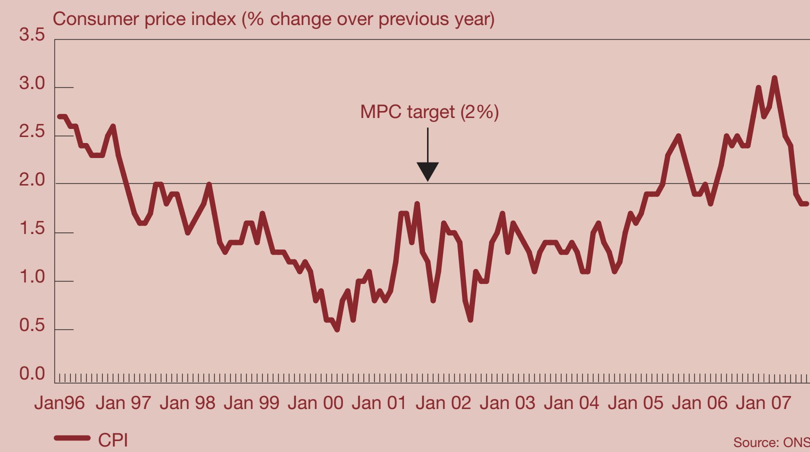


Figure 2.10 – Inflation (CPI)

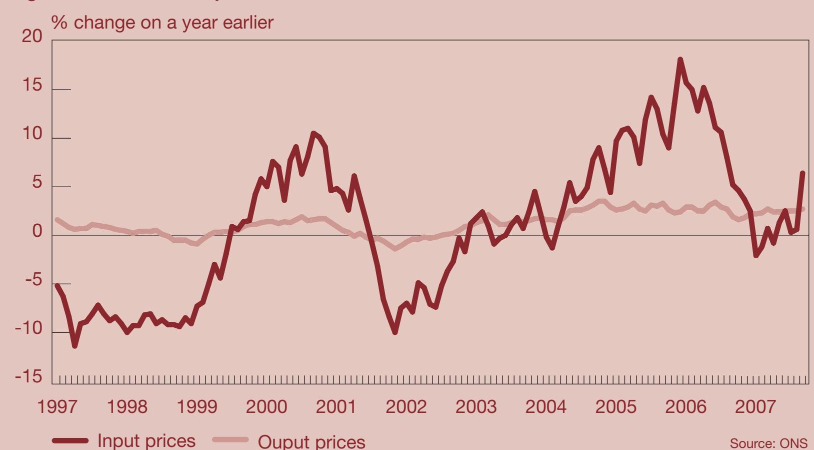


Figure 2.11 – Producer prices

Inflation and the labour market

Inflation, as measured by the Consumer Price Index (CPI), has fallen back significantly from the 3.1% peak witnessed in March (see Figure 2.10). Annual inflation slowed to 1.8% in August and remained at this level in September. Falling household electricity and gas bills continue to lead the reduction in inflation, owing to the continued phasing in of tariff reductions.

RPIX (the Retail Prices Index excluding mortgage interest payments) inflation, which had also been trending downwards since March, rose marginally to 2.8% in September from 2.7% in August. Headline RPI inflation actually fell from 4.1% in August to 3.9% in September, as mortgage interest payments failed to match the increase of a year earlier when lenders passed a base rate increase onto borrowers. Prospects for inflation looking forward are discussed further in Section II.3 below.

Producer input price inflation in the year to September rose to 6.4% (see Figure 2.11), the increase of 3.2% in seasonally adjusted data between August and September was primarily driven by the rising price of crude oil. Renewed oil price increases in September should continue to place upwards pressure on input prices moving forward. Producer output price inflation picked up to 2.7% in the year to September, slightly higher than the 2.5% recorded in August on account of higher food prices.

Latest figures suggest continuing strength in the labour market, although wage pressures remain subdued. In the three months to August, the total employment level increased by 22,000 compared to the previous three months, leading to an employment rate of 74.4% for the period. Unemployment has been trending gradually downwards since late 2006, and in the three months to August the unemployment rate remained 5.4%. The claimant count of unemployment, which is a narrower definition of unemployment, is also falling and in September stood at 835,800, down by 12,800 on August.

Activity levels and trends in regional labour markets remain diverse. In the three months to August, employment rates were highest in the South East (78.4%) and South West (78.6%) and lowest in London (69.9%) and the North East (71.4%). Northern Ireland recorded a large drop over the quarter, with the total employment rate falling 1.4 percentage points to 69.6%. Growth in employment in Scotland has been robust over the past year, although total employment rate slipped by 0.1 percentage points over the quarker. Prospects for regional economies are discussed in Section II.4 below.

Average earnings growth, which is closely watched by the Bank of England Monetary Policy Committee (MPC) due to its impact on price inflation, has picked up in recent months. Earnings growth including bonuses crept up towards the end of 2006, due to strong City bonuses, but slipped back in the first half of 2007. In the three months to August, annual average earnings growth both including and excluding bonuses crept up to 3.7% (see Figure 2.12), still comfortably below the MPC's 4.5% reference value for earnings growth. With the recent unrest in global financial markets hurting investment bank profit levels, City bonus growth is likely to be constrained in the short term, limiting further average earnings growth.

Monetary and fiscal policy developments

Following a 25 basis point increase in July, the MPC decided to leave interest rates unchanged at 5.75% between August and October (see Figure 2.13). Minutes from the September meeting of the MPC suggested that upside risks to inflation had begun to recede, while recent unrest in financial markets had increased economic uncertainty looking forward. This unrest contributed to reduced liquidity in money markets in September, leading to overnight interbank interest rates diverging significantly from the Bank's target rate. This prompted several rounds of liquidity injection by the Bank, which has since returned overnight rates to more normal levels. Future interest rate prospects are discussed further in Section II.3 below.

Turning to the public finances, Alistair Darling's first Pre-Budget Report (PBR) as Chancellor saw a downward revision to the Treasury's 2008 economic growth forecasts and an upward revision to borrowing projections in the current financial year and for the next two years. In an attempt to keep borrowing under control in the medium term, the Chancellor confirmed that real public spending growth would be constrained to only around 2% over the next three years and introduced net tax increases of around £1.4 billion from 2009/10. In the short term, however, the Chancellor is allowing the fiscal stabilisers to operate, with borrowing allowed to rise in response to slower expected economic growth and the effects of the global credit crunch on tax revenues from City profits and incomes next year.

Figure 2.12 – Average earnings growth (including bonuses)

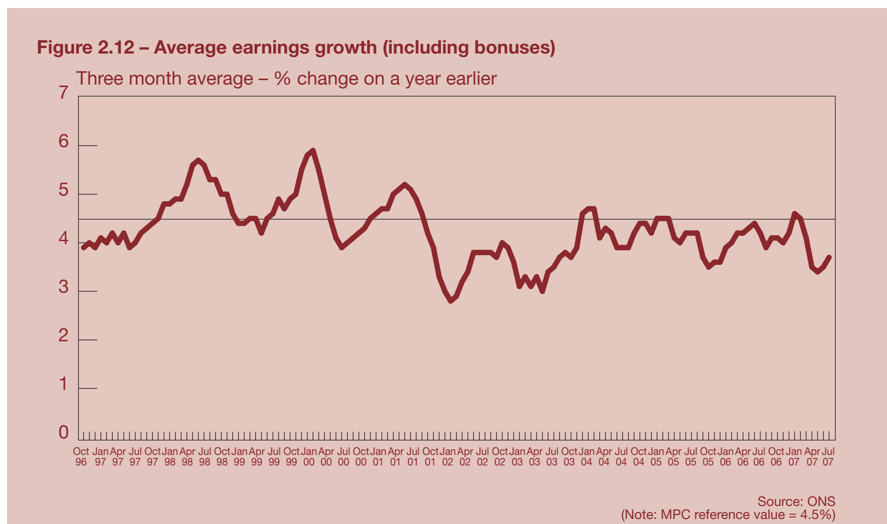


Figure 2.13 – Short and long term interest rates

II.2 – Economic growth prospects

Independent forecasts

The October 2007 survey of independent economic forecasts by HM Treasury showed average real GDP growth of 2.9% in 2007 (see Table 2.1). This figure is in line with the 3% estimate indicated by the 2008 Pre-Budget Report, which was released in October. According to the August 2007 Inflation Report, the Bank of England's view for 2007 GDP growth is broadly similar.

Although presenting similar headline GDP growth rates, the Treasury and average independent forecasts differ somewhat in their outlook for the drivers of growth in 2007, as Table 2.1 illustrates. In particular, government consumption growth slows to 1.9% in the independent forecasts, while the Treasury foresees an acceleration in spending growth to 2.5% in 2007. Fixed investment growth is set to slow to 5.3%, according to average independent forecasts, while the Treasury expects a less pronounced deceleration to around 5.75%.

Both the Treasury and independent forecasters expect a deceleration of GDP growth in 2008, although (after downward revisions in recent months reflecting the impact of the global credit crunch) independent forecasters now expect growth of 2%, which is at the bottom end of the Treasury's revised 2-2.5% forecast range. Independent forecasters are more pessimistic than the Treasury about fixed investment and manufacturing output growth in 2008.

It should be noted that the range of independent forecasts for 2007 and 2008 reveals the uncertainties inherent in such projections: independent forecasts range between 2.5% and 3.1% for 2007 and

between 1.5% and 2.8% for 2008[1]. The main factors driving uncertainty in the outlook are discussed below.

Risks facing the UK economy

Global growth is expected to remain robust in the short term, with the slowdown in the US economy likely to be offset by continued dynamic growth in emerging markets. Average independent forecasts suggest growth in world trade of 6.9% in 2007 and 6.8% in 2008. Additionally, the IMF expects world GDP growth of 3.5% in 2007 and 3.3% 2008, with growth in both years remaining above the long-term average[2]. There are, however, a number of important international risks that have the potential to impact upon the UK's economic performance (see Appendix A for a more detailed discussion of the global economic outlook):

- there is a risk that the slowdown in the US housing market could intensify over the next 6-12 months. This would have both direct and indirect impacts on the UK economy via exports and business confidence more generally;

- global financial markets remain fragile following the upheaval surrounding assets backed by US subprime mortgages. The possibility remains of renewed turmoil that would hit the UK particularly hard due to its relatively high reliance on wholesale financial services and related business services;

- the downside of rapid growth in China and India has been growing upward pressure on commodity prices; this has the potential to feed through gradually to higher core inflation in the UK and other OECD economies, so making it more difficult for central banks in these countries to cut interest rates in response to slower economic growth; such price rises would also squeeze household spending power in these countries;

- additionally, oil prices, which fell over the second half of 2006, have since rebounded to record nominal highs. Further price rises may threaten growth, while fuelling inflationary pressures;

Table 2.1 – HM Treasury and independent forecasts for the UK economy

Indicators (% real growth)	Actual	HM Treasury forecast (October 2007)		Average Independent forecast (October 2007)	
	2006	2007	2008	2007	2008
GDP	2.8	3	2 to 2.5	2.9	2.0
Manufacturing output	1.3	1	1.5 to 2	0.9	0.8
Consumer spending	2.0	3	1.75 to 2.25	2.8	1.8
Fixed investment	8.2	5.75	3.25 to 3.75	5.3	2.5
Government consumption	2.1	2.5	2.5	1.9	2.2
Change in stockbuilding (contribution to % GDP growth)	-0.2	0	-0.25 to 0	0	0
Domestic demand	3.0	3.25	2 to 2.5	3.1	2.0
Exports*	10.3 (7)	-3.25 (3.25)	4.5 to 5	-4.8	3.9
Imports*	9.8 (6.75)	-2.0 (3.75)	3.75 to 4.25	-3.3	3.6
Current account (£ billion)	-41.9	-45.75	-45.25	-43.5	-45.9
Unemployment (m) claimant count – Q4	0.95	n/a	n/a	0.9	0.9

*Export and import growth were both distorted upwards by missing trader fraud in 2006, while their 2007 growth rates will be distorted downwards for the same reason. The Treasury gives alternative export and import growth estimates for 2006-7 excluding missing trader fraud effects, which are shown in brackets above.
Source: ONS for 2006, HM Treasury Pre-Budget Report (October 2007) and Comparison of Independent Forecasts (October 2007).

- the large US current account trade deficit remains a medium-term concern. However, recent depreciation of the US dollar, which has improved the competitiveness of US exports, may have lessened the possibility of a disorderly unwinding of the deficit; and

- the possibility of major geopolitical shocks continues to threaten global growth. Tension with the West over Iran's nuclear ambitions continues to develop and Iraq remains unstable. Also, political relations with Russia remain strained.

On the upside, economic activity in emerging markets, particularly China and India, remains vibrant and growth in these economies should help world economic growth remain robust in the short term.

On the domestic front, the UK corporate sector as a whole remains in relatively strong financial shape in terms of profitability (as discussed in more detail in Section III), while business surveys for both manufacturing and non-financial services remain reasonably upbeat about future prospects. The outlook for consumer spending remains generally positive, with UK employment growth remaining reasonably healthy, without generating any apparent upward pressure on earnings growth. The latest UK retail sales figures for August show continued healthy growth in volumes, although in part this has been driven by discounting.

In recent months, however, domestic downside risks have increased markedly. Housing market data has confirmed that the market is beginning to cool, with much of the effect of past interest rate rises yet to come through for borrowers on fixed rate mortgages. If the UK market follows the same kind of downward trend as seen in the US, consumer spending growth is likely to retreat significantly as debt servicing, equity withdrawal and wealth effects impede consumer spending plans (prospects for the UK housing market are discussed in more detail in Section IV below).

Overall, risks to the domestic and international economies are now weighted more to the downside than in July and this is reflected in the alternative scenarios considered below. It is also worth noting that downside risks tend to have more important consequences for companies

[1] The range for 2008 excludes an outlier of -0.3% growth, which we believe to be implausibly low.
[2] These figures are aggregated using market exchange rates. Using purchasing power parity exchange rates, which give a much greater weight to fast-growing emerging markets such as China and India, the IMF projects world GDP growth to be 5.2% in 2007 and 4.8% in 2008, comfortably above its long-run average.

and thus merit particular attention in stress testing business plans, particularly in more cyclically-sensitive industry sectors (including financial services in relation to equity market and credit cycles).

Alternative UK growth scenarios

Our main scenario for the UK economy, as summarised in Table 2.2, has the following features:

- GDP growth averages around 3% in 2007 before decelerating to around 2% in 2008 (see main scenario in Figure 2.14), reflecting the impact of higher interest rates and tighter credit conditions on consumer spending and investment;
- consumer spending also slows from around 3% in 2007 to 2% in 2008, with high household debt levels, a slowing housing market and higher interest rates acting as a drag on spending;
- tighter credit conditions and decelerating public sector investment plans seem likely to see investment growth moderating in the short term, with growth slowing from 5.25% in 2007 to around 2.5% in 2008 in our main scenario projections; and
- the contribution of net trade to overall GDP growth is projected to be broadly neutral in 2007 and 2008[3].

This main scenario is broadly similar to the latest average independent forecasts for both 2007 and 2008 (as can be seen by comparing Tables 2.1 and 2.2). It also similar to the Treasury's 2007 forecast but at the bottom end of the Treasury's revised 2008 forecast range.

We also present two alternative growth scenarios, which reflect the uncertainties surrounding our central projection for the UK economy (see Figure 2.14):

- 'High growth', in which the UK housing market remains resilient and indeed regains momentum in early 2008. This would boost consumer sentiment and, along with continued reasonably healthy employment and earnings growth, contribute to a renewed acceleration of consumer spending growth next year. Additionally, the US and Euroland economies would shrug off recent troubles in credit markets in this scenario, which, combined with continued strength in emerging economies, would lead to buoyant export and manufacturing sector growth. UK growth could remain around 3% in 2008 in this scenario. Although inflation currently remains relatively restrained, this scenario would likely lead to renewed wage and price pressures, prompting the MPC into further interest rate rises. These increases would then dampen growth in the second half of 2008 and beyond.
- Under our 'Low growth' scenario, the probability of which has increased in recent months, the slowing of the housing market accelerates, with house prices dropping significantly. Lower household wealth along with negative employment growth, particularly in the construction sector, would lead to a rapid deceleration in consumer spending growth. Also, continued malaise in financial markets would lead to higher borrowing costs and slower investment growth, while falling M&A activity would reduce activity in the important financial services sector. A hard landing in the US, also brought about by a retreat in the domestic housing market, would lead to a slowdown in the Euroland and Japanese economies, reducing export demand. Rising oil prices would further increase inflationary pressures in emerging markets, with central banks acting to slow growth by raising interest rates or allowing their currencies to appreciate, which would further reduce UK export sector activity. Growth in the UK economy may slow to around 1% in 2008 under this scenario. An outright recession cannot be dismissed either, although rapid monetary loosening would likely preclude this outcome.

Although these alternative scenarios are broadly symmetric around our main scenario, we would see the probability of the low growth scenario as being rather greater at present.

Table 2.2 – Main scenario for the UK economy

% change unless stated	2003	2004	2005	2006	2007	2008
GDP growth	2.8	3.3	1.8	2.8	3	2
Consumer spending	3.0	3.5	1.5	2.0	3	2
Government consumption	3.5	3.2	2.7	2.1	2	2
Fixed investment	1.1	5.9	1.5	8.2	5.25	2.5
Change in stock-building (% GDP)	0.2	0.1	-0.1	-0.2	0	0
Domestic demand	2.8	3.8	1.6	3.0	3.25	2
Net exports (% of GDP)*	-0.1	-0.6	0.0	-0.2	-0.25	0
CPI (%: Q4)	1.3	1.5	2.1	2.7	2	2

*Export and import figures have both been biased upwards by the effects of missing trader fraud recently, so we focus here on net exports, which are less affected by this distortion.
Source: ONS for historic data to 2006, PwC main scenario for 2007 and 2008 (rounded to nearest quarter of a percentage point).

Figure 2.14 – Alternative GDP growth scenarios

Source: ONS, PricewaterhouseCoopers

[3] On an unrounded basis, our main scenario projections imply a small negative contribution to growth from net exports in 2007-8, but the magnitudes involved are small relative to the uncertainties surrounding any such projections.

II.3 – Prospects for inflation and interest rates

Table 2.3 presents average independent and HM Treasury forecasts for CPI inflation, earnings growth and interest rates over the short term. Both the Treasury and independent forecasters expect CPI inflation to remain close to its 2% target during the remainder of 2007 and on average in 2008. The August Inflation Report indicated that the Bank of England shared a similar view at that time, although it does point to higher oil prices and a smaller margin of spare capacity as upside risks to inflation in the short term.

Our main scenario is similar to the Bank's view in that we expect headline inflation, as measured by CPI, to remain around 2% over the next year. This scenario assumes a dampening effect from lower domestic energy price inflation and continued strength of the pound that constrains import price inflation. Additionally, this scenario assumes that inflationary expectations do not drift up, which would pose a risk that businesses become more likely to raise prices, which could also lead eventually to higher wage claims. Oil prices remain a possible risk to this scenario given they remain high and volatile.

Figure 2.15 shows this main scenario for CPI inflation, as well as two alternative scenarios that are consistent with the alternative growth scenarios discussed in Section II.2 above. CPI inflation could fall to around 1% by the end of 2008 in our 'low growth scenario', but could increase to around 3% in our 'high growth' scenario.

Figure 2.16 shows illustrative profiles for the official UK short-term interest rate in each of our three growth/inflation scenarios. We can see that, in our main scenario, the official rate remains at 5.75% to the end of 2007 and then falls back slightly in 2008 as economic conditions deteriorate, broadly in line with current market expectations.

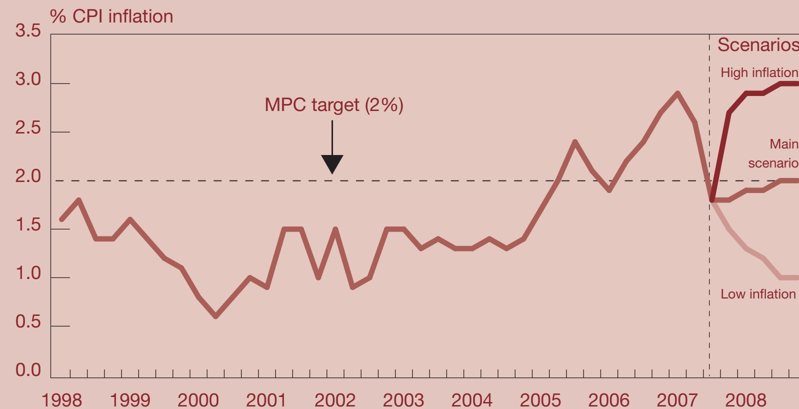
The expected path of interest rates is subject to considerable uncertainty, however, as evidenced by recent financial market turmoil. Interest rates could rise to well above 6% in a 'high growth/inflation' scenario, but might fall back to below 5% by the end of 2008 if the 'low growth/inflation' scenario emerges. Clearly, there are particularly large uncertainties surrounding both inflation and interest rate projections at present.

Table 2.3 – Inflation, earnings growth and interest rate projections

Indicator	HM Treasury (October 2007)		Consensus forecasts (October 2007)			
			Average		Range	
	2007	2008	2007	2008	2007	2008
CPI (%: Q4)	2.0	2.0	2.0	2.0	1.7 to 2.4	1.5 to 2.5
Earnings growth (% annual average)	n/a	n/a	4.0	4.0	3.7 to 4.6	3.3 to 4.7
BoE official rate (%: Q4)	n/a	n/a	5.7	5.3	5.3 to 6.0	4.8 to 6.3

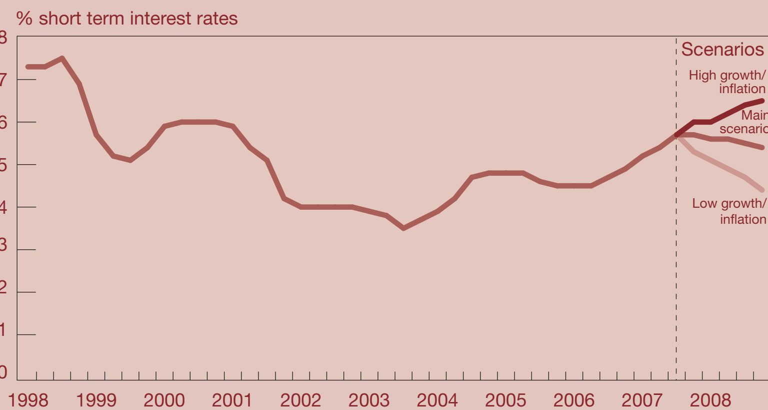
Source: HM Treasury Pre-Budget Report (October 2007) and Comparison of independent forecasts (October 2007).

Figure 2.15 – Alternative inflation scenarios



Source: ONS, PricewaterhouseCoopers

Figure 2.16 – Illustrative short term interest rate scenarios



Source: Bank of England, PwC scenarios

II.4 – Sectoral and regional prospects

Figure 2.17 illustrates our main scenario for sectoral output growth in 2007 and 2008. Projected divergences in growth rates between sectors remain significant, with manufacturing output growth decelerating to just below 1% in 2007 before picking up gradually in 2008. The business and financial services sector, together with transport, are expected to see the highest average growth rates in 2007-8 in our main scenario, while the distribution and construction sectors are projected to show reasonably healthy but more moderate growth over this period. All of the aforementioned sectors are expected to see slower growth rates in 2008 as demand within the UK economy eases.

Illustrative estimates of regional growth prospects in 2007 and 2008 based on our UK main scenario are shown in Figure 2.18. The projected growth differentials between regions are driven in part by variations in industry structures, although our model also takes account of relative regional growth rates for particular sectors, based on a combination of judgement and extrapolation from historic trends. These estimates are subject to a wider margin of error than are the national projections, not least because regional GDP estimates are much less up-to-date than national data.

Subject to this important qualification, however, the South East is still expected to be the fastest growing UK region in 2007, where the dynamic business and financial services sector contributes a significant share to overall growth. In addition to the buoyant services sector, Greater London has benefited from robust construction growth as speculative office space projects got underway. The East Midlands and East Anglia are also expected to grow in line with the national average in 2007. At the other end of the scale the North, Scotland and Wales are expected to see the slowest pace of growth of all UK regions in 2007. All regional economies are expected to experience a deceleration of growth in 2008 as UK economy loses momentum.

Figure 2.17 – Sector growth profile in PwC main scenario

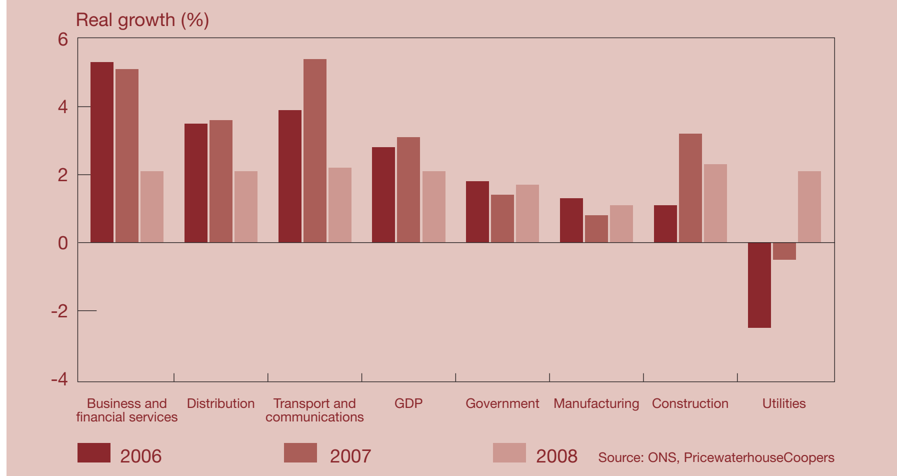
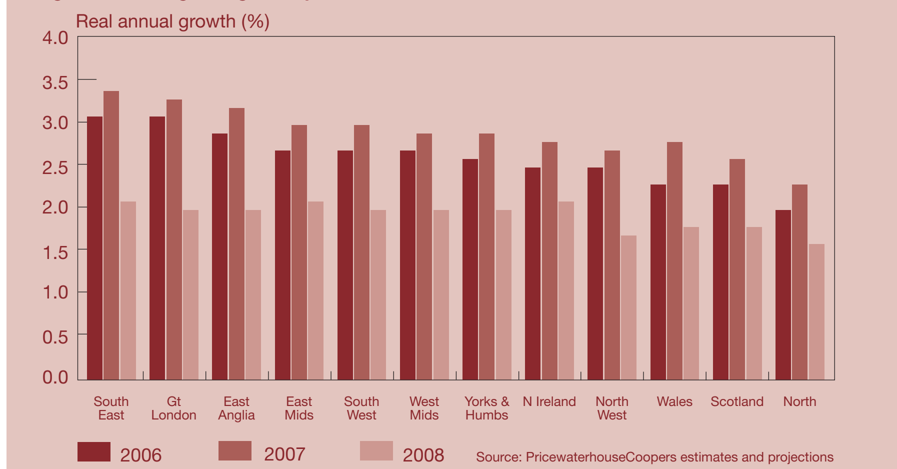


Figure 2.18 – Regional growth profile in PwC main scenario



II.5 – Longer term prospects

The most recent average long-term independent forecasts for the UK economy, based on the August HM Treasury survey, are presented in Table 2.4. Between 2007 and 2011, annual GDP growth is expected to average around 2.5%. This is slightly below the Treasury's trend growth estimate of 2.75% (as published in the 2008 Pre-Budget Report), although at these horizons the difference is not significant.

According to these forecasts, domestic demand should expand at roughly the same pace as overall GDP growth over the medium term, with net trade continuing to make a broadly neutral contribution to growth. With low-cost competition from producers in Asia for manufactured goods likely to continue, manufacturing's share of GDP seems likely to continue to decline.

Table 2.4 – Long-term independent forecasts for UK economy

% growth unless stated	2006	2007	2008	2009	2010	2011
GDP	2.8	2.9	2.0	2.4	2.5	2.5
Domestic demand	3.0	3.1	2.0	2.4	2.5	2.5
Consumer prices (CPI)	2.3	2.0	2.0	2.0	2.0	2.1
Retail prices (RPIX)	2.9	2.7	2.5	2.6	2.6	2.8
Short term interest rate (%)*	4.6	5.7	5.3	5.2	5.2	5.3

*Bank of England official rate (average for year rounded to nearest 0.1%)
Source: ONS for 2006, Treasury comparison of independent medium-term forecasts (October 2007 for 2007-8, August 2007 for 2009-11). Note that the average projections for 2009-11 are based on a smaller sample of forecasters than the average independent forecasts for 2007-8 shown in Tables 2.1 and 2.3 above (see Treasury website for details).

Personal indebtedness and high interest rates should constrain consumer spending growth moving forward, while business investment is likely to remain relatively robust given the comparative strength of corporate finances at present (as discussed in Section III below).

CPI inflation is projected to average around 2% – the MPC's target rate – in the medium term. With projected nominal interest rates of just over 5%, this implies average real interest rates of around 3%.

Given the level of uncertainty inherent in macroeconomic forecasting at this horizon, we would recommend considering alternative scenarios in which average GDP growth was, say, 0.5 percentage points higher or lower than the central scenario, and in which inflation and interest rates were, say, around 0.5-1 percentage points higher or lower on average.

II.6 – Summary and conclusions

The UK economy grew by 2.8% in 2006, slightly above its trend rate, and the robust pace of growth continued in the first three quarters of 2007. Economic growth is being driven primarily by the expanding services sector, fuelled by business and financial services. Manufacturing output has picked up after starting the year poorly, proving resilient in the face of elevated oil prices, a strong pound and higher interest rates. Consumer spending growth accelerated slightly during 2006 and has generally remained relatively strong during 2007, supported by continued job creation and house price rises. However, there are indications that the housing market has begun to soften recently in reaction to previous interest rate rises and tighter mortgage credit conditions.

In our main scenario, annual UK GDP growth moderates gradually from around 3% in 2007 to around 2% in 2008. Consumer spending growth is also expected to slow to around 2% in 2008 in this scenario. Business investment should be stronger than this given recent healthy corporate profitability levels and business sentiment indicators, but may also moderate over the next year.

CPI inflation is projected to remain around its 2% target rate during 2008 in this scenario, under the assumption that there is no significant renewed upward trend in oil and gas prices, or any upward drift in inflationary expectations that feeds into wage settlements (there is no sign of this yet). We assume that base rates are maintained at 5.75% to the end of 2007 in this scenario before falling back gradually in 2008.

A number of uncertainties are associated with this main scenario and risks currently appear to be weighted somewhat to the downside. The possibility remains of renewed financial market turmoil that would hit the UK particularly hard due to its relatively high reliance on wholesale financial services and related business services. Also, uncertainties around inflation are especially significant at present, depending both on the future path of UK retail energy prices and on the extent to which firms try to push up prices in response to recent relatively strong economic growth and signs of capacity constraints from business surveys. These risks to economic growth and inflation also translate into large uncertainties surrounding the future path of interest rates.

III – Which industry sectors would be most vulnerable if there was an economic downturn?

Introduction

The global credit crunch during the summer has clearly increased downside risks for the world economy and has had immediate consequences for the UK via its impact on the banking sector and other financial institutions. The Bank of England's Credit Conditions survey for Q3 2007 indicated that this could feed through to the non-financial sector through significantly reduced availability of credit from lenders, at least in the short term. Although our main scenario, as discussed in the previous section, is for a slowdown in 2008 rather than a severe economic downturn, it is clear that the balance of risks has shifted to the downside since we published the last issue of UK Economic Outlook in July. An obvious question arises as to which industry sectors would be most vulnerable if these downside risks were to materialise.

To explore this issue we carried out a review of some key financial ratios (profitability, gearing, interest cover) for 540 companies in the FT All Share (FTAS) index on 1 September 2007 and also compared this to the position five years earlier. The sample covers all FTAS sectors except banks and 'equity investment instruments', for which these ratios are not generally meaningful or comparable with non-financial companies. Some banks, of course, may be significantly affected by the credit crunch and equity investment vehicles will also be adversely affected by any consequent downturn in global equity markets, as well as any investments in securities linked to sub-prime lending, but exploring these effects is beyond the scope of the present article.

All information was taken from Datastream, although it should be noted that the FTAS only covers currently quoted companies, so it does not pick up the effect of the rapid growth in private equity deals in recent years. To the extent that companies taken private often become more highly geared in the process, this may understate the financial vulnerability of sectors where private equity deals have been prominent (e.g. retailing).

Unfortunately, data limitations mean that including private companies was beyond the scope of this analysis.

The discussion below is structured as follows:

- Section III.1 summarises the distribution of key financial ratios for the dataset as a whole, covering all industry sector in 2007 and comparing this to the position in 2002;
- Section III.2 compares and discusses key financial ratios for each industry sector in 2007;
- Section III.3 looks at trends between 2002 and 2007 in the financial health of each industry sector; and
- Section III.4 summarises and draws conclusions from the analysis.

III.1 Financial health of the UK quoted corporate sector as a whole in 2007 and changes since 2002

The starting point from our analysis is the assumption that more highly geared companies are potentially more vulnerable to an economic downturn triggered by a credit crunch, but that sectors with relatively high profitability will be 'buffered' against such effects to some degree. The key indicators we look at are therefore:

- net gearing: net debt expressed as a percentage of total enterprise value (EV), which is calculated as net debt plus equity market capitalisation;
- return on capital employed (ROCE): profit before interest and tax (PBIT) expressed as a percentage of total capital employed as shown in company accounts; and
- interest cover: defined as the ratio of PBIT to net interest payments.

Other indicators could be considered (e.g. interest cover ratios based on EBITDA[1] rather than PBIT, or gearing based on book values of equity[2]) but these three should together give a fair indication of a company's financial robustness.

Table 3.1 summarises average values of these indicators for all companies in our sample in 2002 and 2007 and also provides an indication of the proportion of companies for which these ratios fall into what might be considered a potential 'danger zone' in terms of financial vulnerability.

The main conclusions that emerge from this analysis are that:

- the UK corporate sector as a whole is in relatively good financial health now, with average profitability comparatively high and gearing at moderate levels;
- all the key indicators we consider have improved markedly since 2002 in terms of average values across all the companies considered:
  - ROCE is up from 6% to 20%;
  - net gearing has fallen from 21% to 13%; and
  - interest cover is up from 2.4 to 9.3;
- there is still a minority of companies that might be considered vulnerable to the credit crunch and any subsequent economic downturn, but this is a much smaller group now than in 2002 (e.g. only 20% now have interest cover less than two as compared to 38% in 2002).

The conclusion on profitability is broadly consistent with ONS rate of return measures derived from national accounts data (see Figure 3.1), which have shown a general upward trend in recent years, particularly in the services sector. Bank of England estimates also suggest that the gearing of the corporate sector as a whole is not particularly high at present by historical standards.

[1] EBITDA is equal to PBIT before deducting depreciation and amortisation. Looking at EBITDA would give an indication of a company's ability to meet interest payments in the short term from operating cash flows. In the longer term, however, EBITDA makes no allowance for the need to maintain the company's capital base, so focusing on interest cover ratios based on PBIT may be more prudent.

[2] In fact we also calculated book values of gearing, but the broad messages were similar, with the average net gearing ratio on this basis declining from 29% in 2002 to 23% in 2007. For clarity of exposition, we prefer to focus on just one measure of gearing in this article.

III.2 Sectoral financial health indicators for 2007

While the overall corporate sector financial position appears reasonably healthy, however, this could disguise significant variations at sectoral level. As indicated in Figure 3.2, there is indeed a broad spread of results across sectors when looking at net gearing ratios as compared to profitability (ROCE). There is also no particular statistical relationship between these two variables, so it is not that more profitable sectors feel more able to take on debt. Indeed the most profitable sector, pharmaceuticals and biotechnology, has negative net gearing, while other currently profitable sectors like oil and gas, mining and personal goods also have relatively low levels of net gearing.

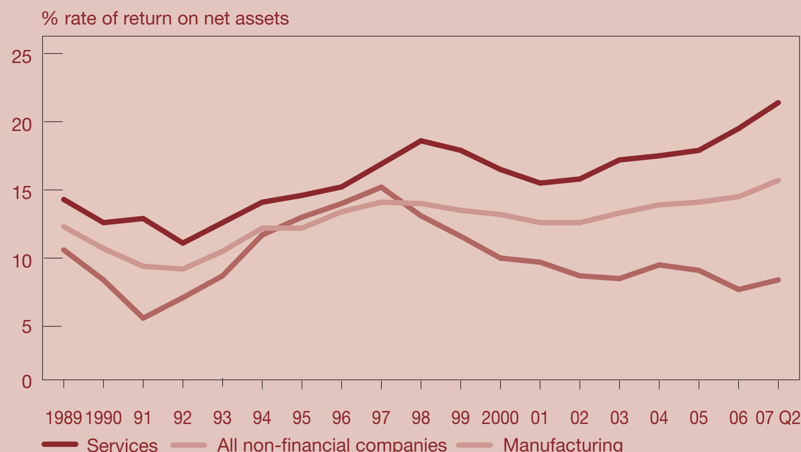
In terms of vulnerability, there are no sectors that have both low profitability (i.e. ROCE < 10%) and relatively high gearing. Instead we see that:

- the currently least profitable sectors, such as mobile telecommunications (MTEL)[3], technology hardware (TECH), leisure goods (LEIS) and automobiles & parts (A&P) have low to moderate gearing levels; and
- the utilities sector (UTL) has higher gearing and only moderate levels of profitability, but this reflects its status as a relatively low risk regulated business, so this position may be quite sustainable.

There are, however, some more cyclical sectors with above average gearing and only moderate profitability levels, most notably the real estate sector (RE), but also sectors such as media (MED), industrial transportation (INDTR), general industrials (GIND) and travel & leisure (TR&L). These could be the industry sectors that would be most vulnerable to any significant economic downturn, although it should be borne in mind that optimal gearing will vary by sector and that ROCE may be a less reliable measure for service sector firms whose assets may largely be intangible and may therefore not be adequately covered by book values of capital employed.

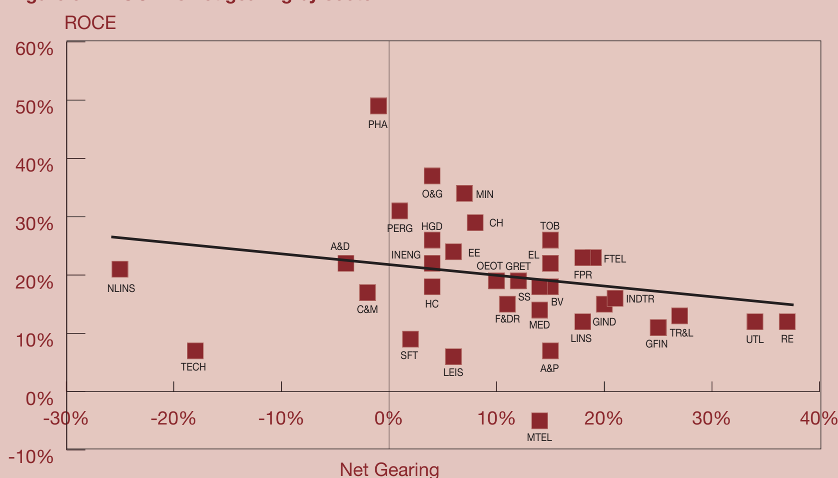
To explore this further, it is useful to look at how interest cover varies by sector (see

Figure 3.1 – Profitability of non-financial UK companies



Source: ONS based on national accounts data
*including North Sea oil and gas

Figure 3.2: ROCE vs net gearing by sector



Source: PwC analysis using Datastream data (latest available as at 1st September 2007)

Table 3.2). These ratios factor in both gearing and profitability levels, as well as interest rates on debt. The companies that appear relatively exposed (with interest cover below 4 and also relatively volatile/cyclical markets) would include mobile telecommunications, software, automobiles, leisure goods and industrial transportation[4]. But, as the table shows, there are also ten further sectors with interest cover in the 4-6 range that appear healthy enough for now, but could find themselves moving into more vulnerable territory if squeezed by a combination of slower demand growth and higher interest rates on their debt. The media sector, being potentially relatively pro-cyclical, may be one of the most exposed of this second group.

A further indication of relative cyclicality and so potential exposure to an economic downturn is given by looking at relative sectoral asset betas[5] as compared to the all sector average of around 0.8 (see Figure 3.3). We can see that sectors such as software and computer services, aerospace, technology hardware, industrial engineering, construction and media might be the most exposed here. Relatively non-cyclical sectors such as utilities, tobacco and beverages, and food retailers and producers are correspondingly less exposed on this measure.

Table 3.2 also shows, however, that 18 of the 34 sectors had interest cover ratios in excess of 6 in 2007, which should provide them with a reasonable buffer against the kind of relatively moderate economic slowdown that we are anticipating in our main scenario. Of course, if an outright recession were to arise then this could hit profitability severely for more cyclical sectors like construction and general (non-food) retailing and household goods,

[3] The apparent negative ROCE of mobile telecommunications may be somewhat misleading as it reflects a particularly high depreciation charge. The figures look better using EBITDA rather than PBIT as a profits measure.

[4] The gas distribution and water utilities sector also has a relatively low interest cover of 2.8, but a more stable business.

[5] Asset betas are equity betas (from the LBS Risk Measurement Service) multiplied by (1-g), where g is net market gearing. Asset betas provide an indication of relative undiversifiable business risk, reflecting in particular the cyclicality of profits for each sector relative to the market average.

particularly if this involved a sharp downturn in the UK housing market with severe knock-on effects for consumer confidence and spending. As discussed in detail in Section IV below this may not be the most likely scenario, but it is certainly not something that can be ruled out entirely.

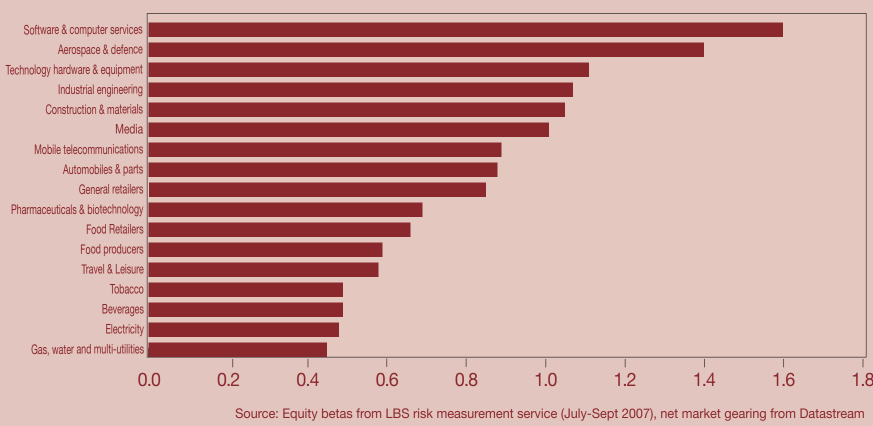
III.3 Sectoral trends in financial health between 2002 and 2007

Our analysis shows that the financial health of most industry sectors has improved since 2002, with rising profitability and declining gearing ratios in the great majority of cases. While it is true that the economy was somewhat below trend in 2002 (with an estimated output gap of around 0.5-1% of GDP at the time according to HM Treasury, IMF and OECD estimates), this was a period of economic slowdown for the UK rather than recession. While some cyclical recovery would have been expected between 2002 and 2007, the extent of the improvement in company finances in most industry sectors seems also to have had a structural element as most quoted companies remained relatively cautious about investment and borrowing[6]. Indeed the relatively subdued level of business investment in recent years has been in marked contrast to previous cyclical upturns in the late 1980s and late 1990s.

Focusing on interest cover ratios as an overall summary measure, there were only four sectors (out of 34) that saw a decrease between 2002 and 2007 (see Figure 3.4).

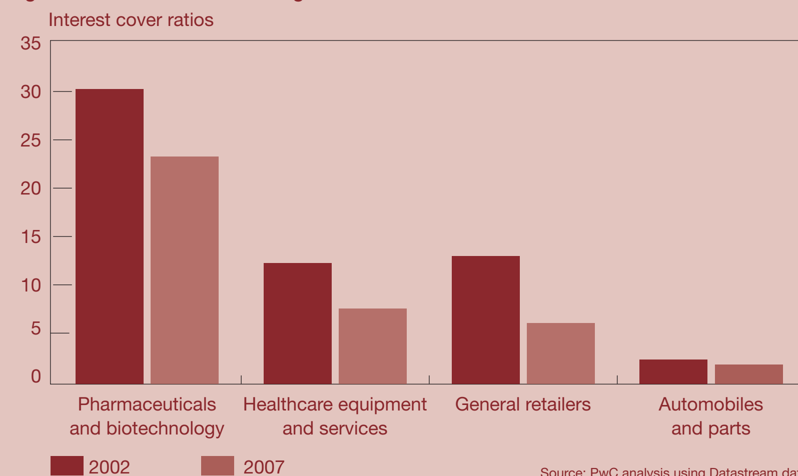
Of these, pharmaceuticals and biotechnology fell from 30.5 to a still relatively high 23.5 in 2007, although for companies that need to make big bets on developing new drugs that may often not prove to be successful, even this relatively mild downward trend might raise a few concerns. The healthcare sector interest cover ratio remains reasonably comfortable at 7.8 in 2007, with the decline since 2002 reflecting a move from high to moderate levels of profitability but net gearing actually falling slightly over the period. At the other end of the scale, the automotive sector fell from an already weak interest cover of 2.5 in 2002 to just 2.0 in 2007, reflecting continued very difficult market conditions for Western companies in the face of increasing competitive pressure in this sector from lower cost car-makers in China and Eastern Europe.

Figure 3.3: Asset betas for selected sectors



Source: Equity betas from LBS risk measurement service (July-Sept 2007), net market gearing from Datastream

Figure 3.4: Sectors with declining interest covers between 2002 and 2007



Source: PwC analysis using Datastream data

The other sector where the decline in interest cover ratios takes it into rather more vulnerable territory is general (non-food) retailing. This is a potentially cyclical sector exposed to downturns in consumer spending, which in turn may be vulnerable to any housing market downturn following on from the credit crunch (as discussed further in Section IV below).

At the same time, Table 3.2 shows that there are many more sectors (12 in total) that have seen their average interest cover ratios move above what might be considered a safe level of 4 since 2002. Some of these sectors (e.g. construction and media) are relatively cyclical, with above average asset betas in Figure 3.3, and so potentially still vulnerable to any future economic downturn, but at least they are starting from a position of reasonable financial health.

III.4 Summary and conclusions

A key uncertainty facing the UK economy at present is how far the effects of the recent credit crunch will spill over from banks and other financial institutions to the rest of the economy. In this article we have explored one aspect of this by looking at how strong the finances of the rest of the UK corporate sector are at present.

The results from this are reasonably reassuring. The UK corporate sector as a whole is in much better financial health than it was five years ago. Profitability is significantly higher, gearing is markedly lower and interest cover ratios have risen from an average of 2.4 to 9.3 between 2002 and 2007.

[6] Although, as noted in the introduction, the increase in highly leveraged private equity deals represent an exception to this, which is not captured by our dataset.

Similar conclusions apply at sectoral level. Only 4 of the 34 sectors considered have seen their interest cover fall since 2002 and only one of these (automotive) had an interest cover less than 4 in 2007. There is a consistent pattern towards significant increased profitability combined with declining, or at worst broadly stable, gearing.

As such, most parts of the UK corporate sector outside the City appear to be in reasonably good financial health: if a storm is coming, they are generally well placed to weather it. There are, however, some sectors where comparatively weak finances and relatively cyclical markets could nonetheless make them vulnerable to a sharper than expected downturn, including the computer software, technology, automotive, non-food retailing, construction and media sectors. Businesses in these relatively exposed sectors would be prudent to stress test their financial robustness against downside scenarios for the economy and consider how to respond to such a downturn if it occurs.

Table 3.2: Trends in sectoral interest cover ratios between 2002 and 2007

Sectors	Interest cover	
	2002	2007
Oil & Gas Producers	12.9	114.6
Pharmaceuticals & Biotechnology	30.5	23.5
Personal Goods	8.4	19.2
Mining	6.7	17.8
Nonlife Insurance	-14.9	14.2
Household Goods	11.1	12.7
Industrial Engineering	1.7	10.5
Tobacco	5.4	10.2
Food & Drug Retailers	7.0	10.0
Health Care Equipment & Services	12.5	7.8
Oil Equipment & Services	4.9	7.3
Construction & Materials	3.4	6.8
Food Producers	4.6	6.7
Electricity	-4.1	6.6
Life Insurance	1.9	6.5
Aerospace & Defence	4.4	6.4
General Retailers	13.2	6.3
Beverages	1.8	6.0
Real Estate	2.1	5.8
Support Services	-3.5*	5.1
Electronic & Electrical Equipment	-4.3	5.1
Chemicals	3.4	4.8
General Financial	0.1	4.7
Media	0.1	4.2
Fixed Line Telecommunications	-7.7	4.1
General Industrials	1.4	4.1
Travel & Leisure	3.4	4.0
Industrial Transportation	1.2	3.6
Leisure Goods	-0.8	3.2
Gas, Water & Multi-utilities	2.4	2.8
Automobiles & Parts	2.5	2.0
Software & Computer Services	-14.9	0.8
Mobile Telecommunications	-4.8	-4.1
Technology Hardware & Equipment	-256.9	-49.6

* For this sector, negative interest cover in 2002 was due to negative interest payments rather than negative profit. It was therefore a sign here of financial strength rather than weakness.
Source: PricewaterhouseCoopers analysis using Datastream data for all FTAS companies excluding banks and equity investment instruments. All data are the latest available as at 1 September in each year shown.

IV – Outlook for the UK housing market

Introduction

Housing continues to be the UK economy's most valuable asset by far. Housing was estimated by the Office for National Statistics to have a total value of £3.9 trillion at the end of 2006, equivalent to 60% of the total value of all UK assets (valued at some £6.5 trillion). In 2006, the total value of housing is estimated to have increased by 10% on the previous year.

The weight of housing in total UK assets underlies the importance of a good understanding of the outlook for the housing market in forming views on the broader economy. There are, of course, many organisations and academics that produce house price forecasts, with a correspondingly wide range of views, but past experience suggests that such forecasts are subject to wide margins of error. Given this uncertainty, any investor in housing (which effectively includes all owner occupiers as well as those buying to rent) should be aware not just of the central forecast for house prices, but also the degree of uncertainty that surrounds any such forecast.

Last year, PricewaterhouseCoopers LLP (PwC) presented its findings from research into uncertainty surrounding future UK house price trends[1]. This research produced a broad range of possible outcomes with estimated probabilities using 'fan-charts' for future house prices. It concluded that, while the most likely outcome was a moderate rise in average UK house prices between 2006 and 2010, there was also a significant risk that prices could fall over this period.

In this article we update our earlier findings with the latest data and develop our model further to take better account of the influence of supply constraints on house prices. The analysis below is structured as follows:

- Section IV.1 provides a brief overview of developments in the UK housing market;
- Section IV.2 describes the stochastic model that we have estimated for this analysis, which includes 'random' shocks calculated to reflect the past cyclicality of house prices;
- Section IV.3 presents simulations of house price uncertainty; and
- Section IV.4 provides a summary of the key results.

Figure 4.1 - Average UK house price 1974Q1-2007Q3

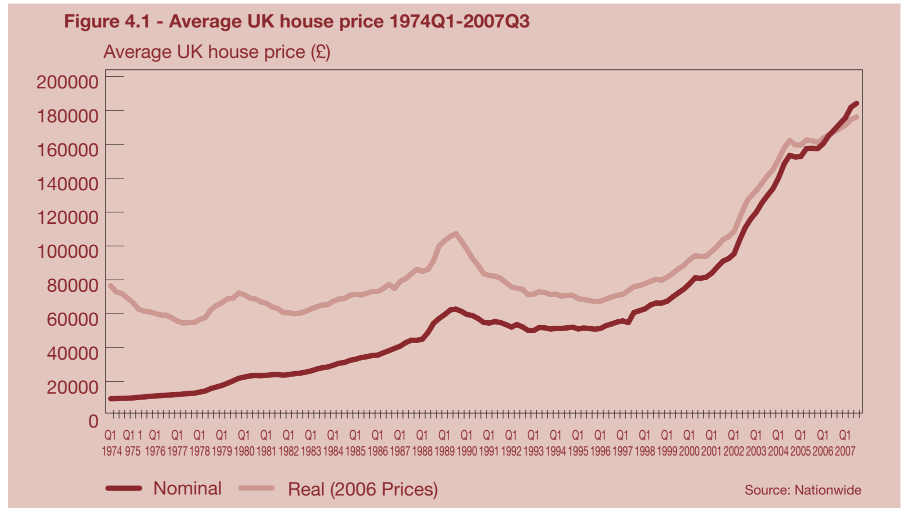
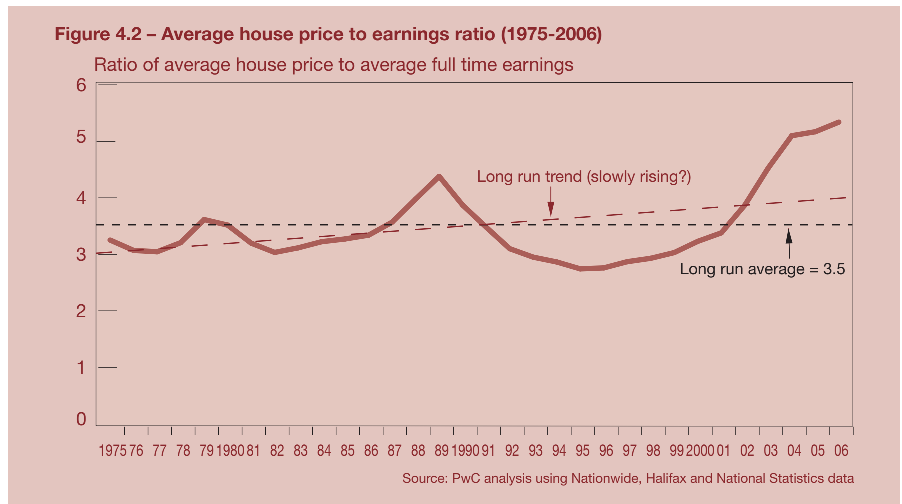


Figure 4.2 – Average house price to earnings ratio (1975-2006)



IV.1 Key developments in the UK housing market

The UK housing market has been highly cyclical – there have been booms and busts as well as periods of relatively stable price inflation. Average UK house prices (in both real and nominal terms) have grown significantly over time (see Figure 4.1), despite some notable periods of weakness such as the early 1990s. However, the cyclicality of the housing market is most apparent when viewing fluctuations in the ratio of average house prices to average earnings (see Figure 4.2).

In the long run, one might expect house prices to move broadly in line with earnings, as the latter ultimately determine the affordability of housing[2]. Figure 4.2 suggests that historically house prices may be regarded as having cycled around an 'equilibrium' level for the house price to earnings ratio, with the peaks in prices being clearly shorter and sharper than the long periods of prices below equilibrium. The late 1980s housing 'boom', for instance, lasted for around four years according to this analysis (1987-90), while the subsequent period of relatively low prices was much longer (1991-2001).

But the level of any such 'equilibrium' average house price is a matter of

[1] The research was published in the November 2006 issue of UK Economic Outlook.

[2] Although it is important to note that the relationship between house prices and earnings need not be a steady one, as the share of earnings spent on housing can change. There is some evidence that the house price to earnings ratio has been rising slowly over time, as shown by the long run trend line in Figure 4.2.

considerable debate with a wide range of views amongst commentators. Figure 4.2 could be interpreted as suggesting that current house prices are far above equilibrium, as the house price to earnings ratio has reached record highs. However, there are arguments to suggest that the equilibrium has shifted upwards significantly in recent years due to lower interest rates, plentiful mortgage credit and constraints on housing supply. As incomes rise, households may also tend to allocate more of their disposable income to housing (in technical terms, it may be a 'superior good'). Nevertheless, we still believe that it is instructive to model house prices as following a cyclical path around some sort of equilibrium level, even if the latter evolves gradually over time.

The other striking feature of this market is its relative short term inertia. For example, during the deep recession of the early 1990s, house prices did not fall overnight but instead declined gradually over a number of years. This is in sharp contrast to other asset markets – price levels in equity and commodity markets can crash over a matter of hours. The housing market itself is very illiquid compared to these other markets and any sharp fall in demand tends to result initially in a sharp fall in transactions rather than a sharp fall in prices. Most houses are owned by individuals, who can delay any sale of the property when facing unusually weak demand conditions. Any model therefore needs to take account of the relatively slow rate of change of house prices.

IV. 2 Stochastic model of house price uncertainty

The key to modelling uncertainty in the housing market is to identify a statistical model that can best simulate the cyclical behaviour that we witness in this market – i.e. large medium term cycles with relatively little short term volatility due to inertia.

To capture these features we have chosen to use a 'mean reversion' model of house prices, in which the rate of growth of prices today is negatively influenced by the level of house prices in the past – i.e. if house prices were above equilibrium in the past then the rate of house price growth is lower, and vice versa. This process naturally results in house prices returning to equilibrium (reverting to the mean) in the long term, but it is possible for prices to 'overshoot' the equilibrium on the return path. This last point is important, as most commentators would agree that house prices 'overshot' equilibrium in the last downturn (the 1996 house price to earnings ratio was low by historic standards).

Table 4.1 – Econometric model for change in the house price to earnings ratio (D.HPE)

Variable	LD.HPE	L2.HPE	L.INT	D.SUPPLY	Constant
Co-efficient	0.3906	-0.1258	-0.0345	-15.9473	0.78045
t-value	*(2.2)*	*(-1.8)*	*(-2.4)*	*(-1.3)*	*(2.7)*

Note: Prefix 'D' indicates change in the variable, and 'L' indicates a lagged variable. Therefore LD.HPE is the change in the house price to earnings (HPE) variable in the previous year. L.INT is the nominal interest rate, lagged one year, which we found to be statistically the most reliable driver. D.SUPPLY is the change in the natural log of the ratio of housing stock to households in the current year.
Source: PwC analysis

In our previous research we assumed that, in the long run, house prices would fluctuate around some 'equilibrium' level relative to average earnings and we therefore sought to model the house price to earnings ratio rather than just the average house price. Interest rates were also included in the analysis, as these were found to be a key driver of buoyant house price trends. In this article we extend the model by also including supply constraints in our analysis[3], since these are commonly believed to be a key driver of house price trends in recent years.

More specifically, we modelled the relationship between the annual change in the house price to earnings ratio and:

- the change in the house price to earnings ratio in the previous year;
- the house price to earnings ratio two years before;
- interest rates (nominal) two years before;
- the change in the (natural log of the) housing stock to households ratio (as an indicator of possible supply constraints);
- a constant term, which acts as a proxy for the 'equilibrium' house price to earnings ratio; and
- an 'error term' that captures the degree of uncertainty.

The parameters of the model were estimated using standard ordinary least squares (OLS) econometric methods based on annual data for 1975-2006[4]. We also identified the most appropriate model specification (e.g. which lag terms and interest rate variables to include) using standard diagnostic tests. The technical details of our preferred model are set out in Table 4.1. In summary, this model has the following key features:

- the actual house price to earnings ratio was about 10% above the estimated historic equilibrium house price to earnings ratio in 2006, suggesting house prices were around 10% over-valued in that year on average;
- a permanent increase in the interest rate variable by one percentage point would, eventually, reduce house prices by about 27%; the full impact of this change would take up to a decade to become apparent, however, due to the considerable inertia in this market;
- the stochastic model creates housing market cycles of around ten years in length, which is broadly in line with past experience; and
- the simulated house price to earnings ratio can diverge significantly from equilibrium levels, as the results shown later make clear.

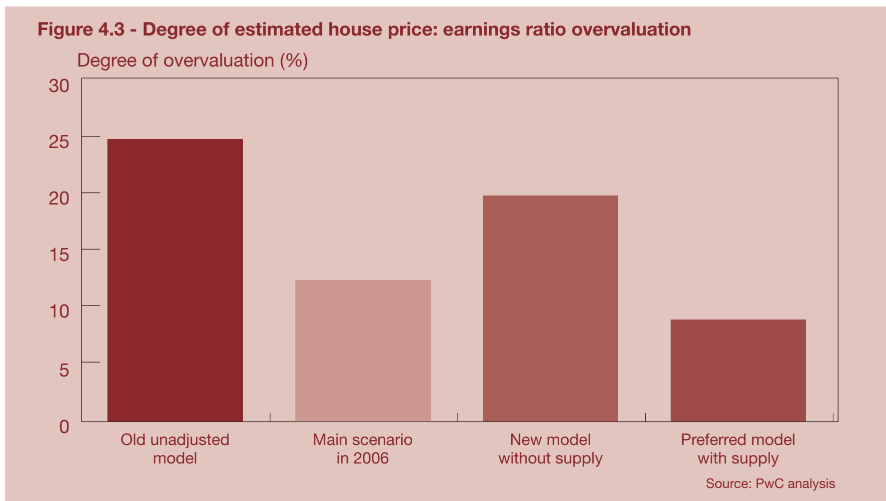
Figure 4.3 shows the degree of estimated house price overvaluation in different versions of our model. Last year we estimated a basic unadjusted model which yielded an overvaluation estimate of around 25%. We felt this was unrealistic and therefore adjusted it to incorporate supply constraints as well as the views of a number of commentators, resulting in an adjusted estimate of 12.5% that we took to be our main scenario for the purpose of forward projections.

[3] In our previous analysis, we allowed for supply constraints through judgemental adjustments to the estimated initial disequilibrium in the house price to earnings ratio at the start of the projections period. This was a rather ad hoc approach, however, which is why we now prefer to address this issue directly in the econometric analysis, although it should be recognised that a single indicator such as the ratio of housing stock to household numbers is subject to some limitations since the number of households will tend to adjust to the available housing stock over time. But better indicators of supply constraints for which long runs of data are available are not easy to find and our approach mirrors that taken in other recent studies (e.g. Meen, 2006).

[4] We constructed a house price index based on a the simple average of the Nationwide and Halifax house price indices, with the value for 2007 being fixed to our estimate for average house prices in 2007 (which we set at £183,417).

Our updated unadjusted model, without taking into account supply constraints, shows an estimated overvaluation of 20%, slightly lower than the previous year's 25% due to new data and a slightly refined model structure. However, our new preferred model, which incorporates supply constraints, shows an overvaluation of approximately 10%. Intuitively, the degree of estimated house price overvaluation should be less once a model takes account of supply constraints, which is what our results show.

Figure 4.3 - Degree of estimated house price: earnings ratio overvaluation



Source: PwC analysis

'Random shocks'

The resulting model can be used to produce 'stochastic simulations' of house prices based on 'random shocks'[5]. Without random shocks, the model would simply produce a 'deterministic' forecast, which would see prices returning to their 'equilibrium' level relative to earnings. However, our model also allows us to include 'random shocks', which can produce prices moving away from the equilibrium in the short term (although they always tend to revert back to the equilibrium in the longer term). These simulation results are presented in Section IV.3 below.

The 'random shocks' are the key component of a stochastic model. In order to produce simulations of house prices using this model, we need to consider five sources of uncertainty:

1 Uncertainty of the house price to earnings ratio, which is not explained by the cyclical nature of prices or by interest rates or supply constraints. These unexplained movements in prices reflect such things as consumer confidence and taxation[6]. Technically, this is the error term from the econometric regression.

2 Uncertainty of interest rates, which is an exogenous driver in our model. Future interest rates are not certain and we need to add random shocks to interest rates as well. We model this uncertainty based on past fluctuations in interest rates during the period since Bank of England independence in 1997.

Table 4.2 – Assumptions on random shocks

Form of uncertainty	Measure adopted	Standard deviation
1. Uncertainty of house price to earnings ratio	Error term from the econometric regression of past data (1975-2006)	0.2 (house price to earnings ratio
2. Uncertainty of interest rates	Annual standard deviation of nominal interest rates since Bank of England independence (1997-2006)	1.1% (interest rate)
3. Uncertainty of housing stock to households ratio	Annual standard deviation of housing stock and households (1976-2006)	0.2% (housing stock and households)
4. Uncertainty of inflation	Assume that there is a 95% probability of inflation being within the 1%-3% target range	0.5% (CPI inflation rate)
5. Uncertainty of (long term) real average earnings growth	Standard deviation of 30 year real earnings growth rate (1976-2006)	0.4% (earnings growth rate)

Source: PwC analysis

3 Uncertainty of the housing stock to households ratio, which is an exogenous driver in our model. The size and number of the future housing stock and households are uncertain. We model this uncertainty based on past fluctuations in these variables applied to government projections of household numbers and targets for growth of the housing stock up to 2020.

4 Uncertainty of the rate of consumer price inflation. We assume that there is a 95% chance of the rate of inflation remaining within the Bank of England's target range (1%-3% for CPI) each year.

5 Uncertainty of average earnings growth, as clearly we need to multiply the house price to earnings ratio by average earnings in order to model average house prices. We model this uncertainty based on past fluctuations in real average earnings growth[7], then add simulated inflation (see 4 above) to produce nominal average earnings growth.

Further details of these random shocks are set out in Table 4.2. In the next section we present results from this model.

IV.3 House price simulation

The model that we estimated using econometric techniques was necessarily based on historic data. There has been considerable change in the UK economy over the past few decades and, like many commentators, we suspect that there has been structural change in the UK housing market. By including supply in this model, we believe that the model better reflects current conditions. Furthermore, by modelling supply constraint uncertainty based on past fluctuations in housing stock and households applied to government projections/targets of households and

[5] We introduce normally distributed random shocks to the model to simulate unexpected shocks in the housing market.
[6] Note that we do not attempt to forecast these key drivers, but instead model them through random simulations.
[7] Real earnings growth has averaged around 2.5% per annum in recent decades (based on the CPI measure of inflation), which we assume continues in the future.

housing stock, we can take account of recently announced government plans to boost housing supply over the period to 2020.

In order to understand the distribution of possible outcomes for house prices, we produced 2,000 randomly-generated simulations using a well-established statistical modelling technique known as ‘Monte Carlo simulation’. The key results of this exercise are presented in Figures 4.4, 4.5 and 4.6.

In Figure 4.4, we present the distribution of outcomes as a ‘fan diagram’, which is derived in a similar way to the Bank of England’s well known inflation fan chart. The chart presents ten lines, outlining the nine deciles of the probability distribution lying between 5% and 95%. So, for instance, there is a 5% chance of prices lying below the bottom line in the chart and a 95% chance of prices being above it. The two centre lines – the 45% to 55% probability range – represent the centre of the distribution and could be viewed as the central estimate of this modelling approach. It is clear from Figure 4.4 that there is a non-negligible possibility of falling average house prices over the next few years. The 5% probability line suggests prices falling by over 8% in nominal terms by 2010.

Figure 4.5 presents these results for nominal house price changes in an alternative form that may be easier to interpret, while Figure 4.6 does the same for real house price changes. The charts show the estimated probability of cumulative nominal or real house price growth in the years from 2007 to 2010 and from 2007 to 2020 falling into certain bands.

Figure 4.5 suggests that there is around a one in five chance of house prices being lower in 2010 than in 2007 in nominal terms (the four columns showing negative price changes sum to 19%), although the central view is that there will be a moderate further rise in nominal house prices over this period, but at a slower rate than in recent years. The outlook for 2020 is much more positive, as earnings growth should push prices higher, although these parameters suggest that there is still a very small chance (0.6%) of lower nominal average house prices in 2020 than 2007.

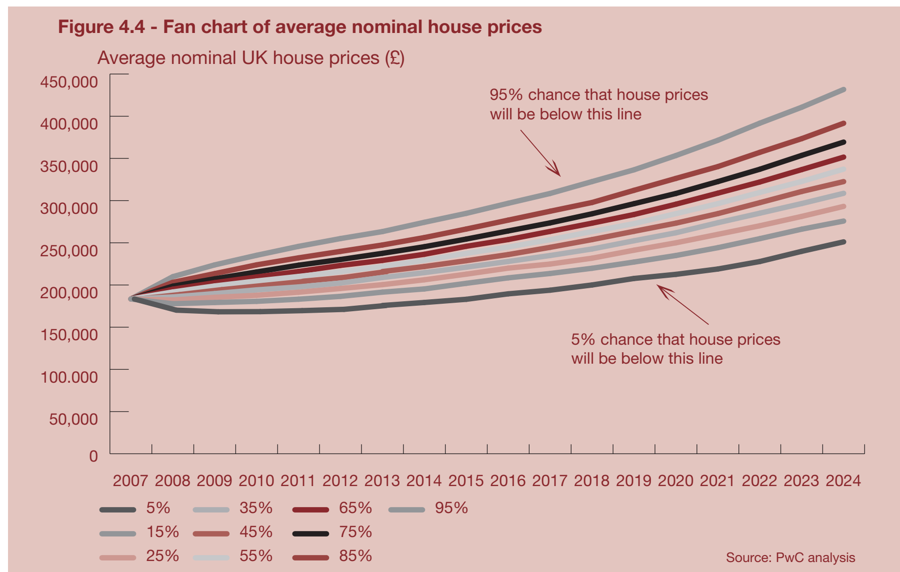


Figure 4.4 - Fan chart of average nominal house prices

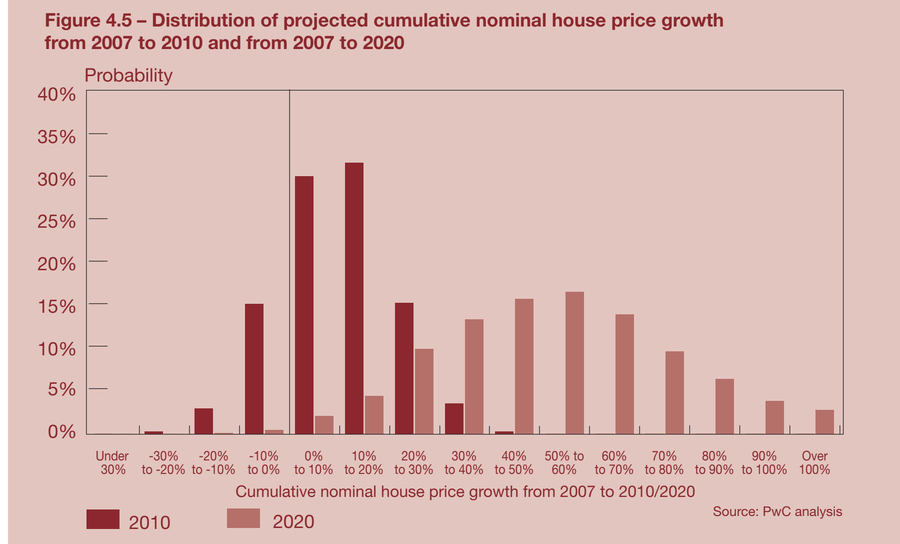


Figure 4.5 – Distribution of projected cumulative nominal house price growth from 2007 to 2010 and from 2007 to 2020

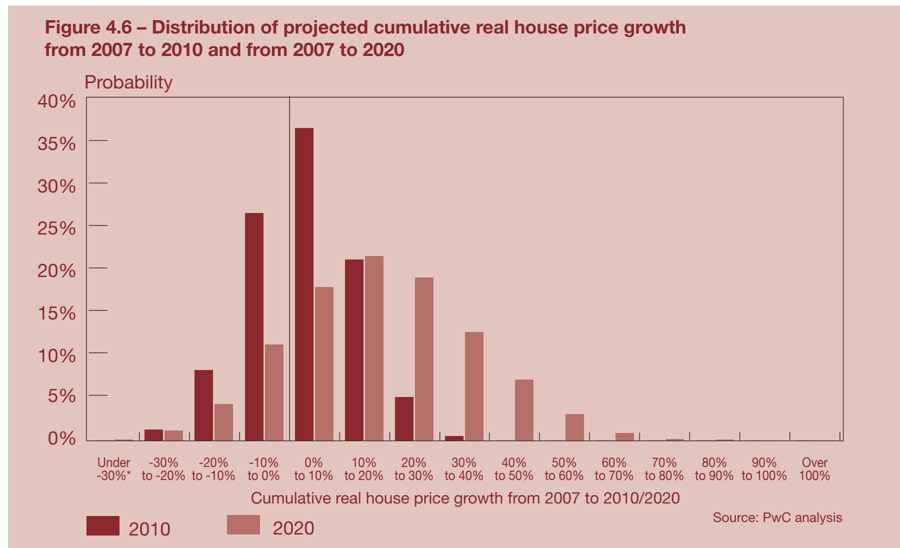


Figure 4.6 – Distribution of projected cumulative real house price growth from 2007 to 2010 and from 2007 to 2020

Figure 4.6 shows the same results for real house prices, after adjusting for general consumer price inflation. This shows around a one in three chance of a real house price fall between 2007 and 2010, but the odds of this lengthen to around ine in six for the period to 2020.

IV.4 Summary of key results

As set out in the introduction, housing is the most important single asset of most UK households, and therefore has a potentially crucial effect on the performance of consumer spending and the wider economy.

Table 4.3 – Summary of house price modelling results

	Approximate probability of a fall in house prices	
	Between 2007 and 2010	Between 2007 and 2020
Nominal terms	1 in 5	< 1%
Real terms	1 in 3	1 in 6

Source: PwC analysis

In this article we have developed probabilistic house price projections that allow estimates to be made of the chances of future house price changes falling into particular ranges for periods up to 2020. The key results are summarised in Table 4.3.

The table shows that there is a 1 in 5 chance of house prices being lower in nominal (i.e. cash) terms in 2010 than in 2007, but a significantly higher probability (around 1 in 3) of house prices being lower in real terms in 2010 than in 2007.

Looking further ahead, there is only a very small chance of house prices being lower in 2020 than in 2007 in nominal terms, but a somewhat higher probability (around one in six) of real house prices being lower in 2020 than in 2007. The most likely outcome, however, is that house prices will continue to rise significantly faster than general price inflation, although probably not as rapidly as in recent years.

Appendix A – Global Economic Outlook

This appendix reviews recent developments and assesses short-term prospects for the major global economies (other than the UK). We consider North America, Europe, the Asia-Pacific region and Latin America (see Table A.1 for a summary of recent growth and inflation projections for the countries covered). To give an overview of the importance of each economy in the global market, its estimated share of total world GDP (at average market exchange rates in 2005) is also shown in the table.

Table A.1 – Global economic prospects

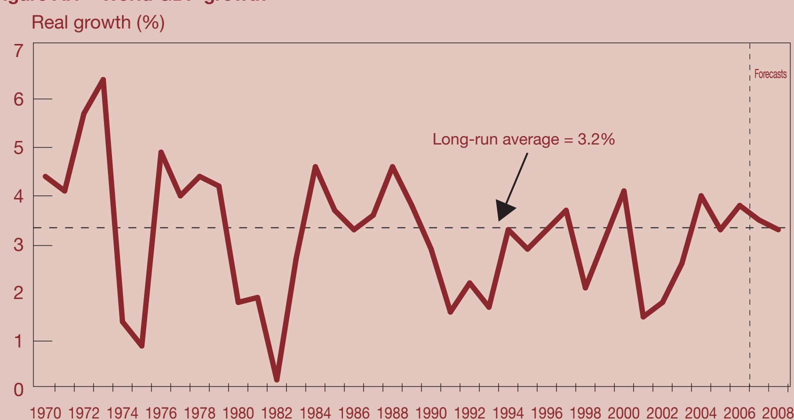
Country	Share of World GDP (%:2005)	GDP growth (%)			Consumer price inflation (%)		
		2006	2007	2008	2006	2007	2008
USA	27.8	2.9	1.9	1.9	3.3	2.6	2.4
Canada	2.5	2.8	2.6	2.4	2.0	2.2	2.2
Germany	6.3	2.9	2.6	2.3	1.8	1.9	1.6
UK	4.9	2.8	3.0	2.0	2.3	2.0	2.0
France	4.8	2.0	1.9	2.0	1.9	1.4	1.6
Italy	3.9	1.9	1.8	1.6	2.2	1.8	2.0
Spain	2.5	3.9	3.6	2.7	3.5	2.6	2.7
Netherlands	1.4	2.9	2.5	2.5	1.1	1.7	2.2
Japan	10.2	2.2	2.0	1.9	0.3	0.0	0.4
China	5.0	10.7	10.4	9.8	1.5	3.3	3.1
India[1]	1.8	9.4	8.3	7.9	5.4	5.1	4.9
Australia	1.6	2.7	3.9	3.5	3.6	2.4	2.7
South Korea	1.8	5.0	4.8	4.6	2.2	2.5	2.7
Russia	1.7	6.7	7.4	6.6	9.7	8.4	8.1
Turkey	0.8	6.1	4.9	5.4	9.3	9.2	5.8
Poland	0.7	6.1	6.4	5.5	2.1	2.3	2.9
Czech Republic	0.3	6.1	5.6	4.8	2.1	2.6	3.4
Hungary	0.2	3.9	2.4	3.0	2.1	7.3	3.8
Brazil	1.8	3.7	4.6	4.3	3.7	4.6	4.3
Mexico	1.7	4.8	3.1	3.3	3.6	3.9	3.7
Argentina	0.4	8.5	7.5	5.5	10.9	8.9	9.0

[1]Data for India refers to fiscal years beginning 1st April.
Source: National statistical offices; PricewaterhouseCoopers main scenario projections for 2007 and 2008 (but note that the latter are subject to wide margins of error at this stage). World Bank for GDP shares (at market exchange rates) in 2005.

Global Overview

The global economy is on track to post a strong growth rate in 2007 and is expected to maintain a buoyant pace in 2008. The most recent IMF estimates suggest that the world economy will expand by 3.5% in 2007 (at market exchange rates[1]), before growth decelerates to 3.3% in 2008 (see Figure A.1). These growth expectations are similar to our own forecasts, which are subject to a number of important risk factors that have increased on the downside in recent months.

Figure A.1 – World GDP growth



Source: World Bank up to 1997, IMF for 1998-2007 (using market exchange rates to aggregate world GDP)

Global financial markets are suffering from increased volatility, reduced liquidity and higher borrowing costs. These problems stem from rising default rates in the US subprime mortgage market and uncertainty surrounding the scale and distribution of exposure to these non-performing loans. In August and September the increased uncertainty caused banks to cut the volume of lending to each other, which in turn led to an increase in short-term interbank rates, a fall in stock markets and subsequent liquidity injections by a number of nervous central banks. The issue is onging and the impact on economic growth has yet to emerge fully, but tighter credit conditions are already expected to dampen global economic growth during 2008. Should the recent financial problems escalate to a severe credit crunch, then the price and volume of commercial bank lending could be severely affected. This outcome, together with associated lower consumer, business and investor confidence, would further undermine growth rates in both developed and developing economies.

High and rising commodity prices are threatening levels of inflation in both developed and developing nations. Oil prices, after retreating over the second half of 2006, have since rebounded strongly and are presently fluctuating around record nominal highs[2] (see Figure A.2). The recent depreciation in the US dollar, together with strong demand – particularly from the rapidly expanding emerging economies – and supply constraints are combining to put upward pressure on oil prices.

The strength of global demand is also contributing to rapid increases in a wide range of food prices, which are increasing

[1] Average world growth would be significantly higher using GDP at purchasing power parity (PPP) exchange rates, since this would give much greater weight to the strong growing emerging markets such as China and India, whose market exchange rates are well below PPP rates. On this alternative basis, the IMF estimates world GDP growth to have been 5.4% in 2006 and forecasts 5.2% growth in 2007 and 4.8% in 2008. However, from the perspective of assessing the total size and growth of global markets for Western companies operating in hard currencies, market exchange rates are more immediately relevant.

[2] In real terms, dollar oil prices in mid-2007 were still below their 1980 peak levels, while sterling oil prices have been mitigated by the recent weakness of the dollar against the pound.

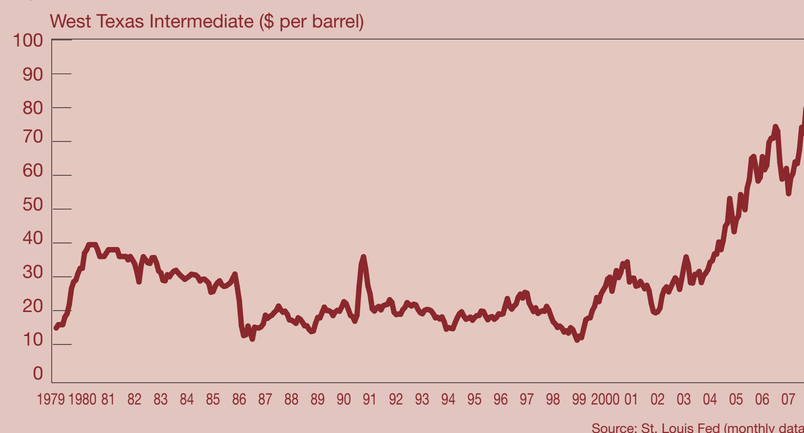
inflationary expectations and reducing consumers' disposable incomes. Recent poor harvests and the growing use of biofuels, which are manufactured from the same raw materials as many food products, have added impetus to the run-up in prices. The combination of rising commodity prices and slowing growth in many parts of the world is likely to challenge the commitment to price stability of many central banks in the year ahead.

Activity in the US housing market, the original source of recent turmoil in financial markets, has continued to slow in recent months (see discussion of US economy below for further detail). Although US consumer spending has remained robust to date, growth should begin to slow in the short term as the negative wealth effects from falling prices and higher borrowing costs weigh upon consumers. Any significant further weakening of the housing market has the potential to induce a recession in the US (although this is not our main scenario as discussed further below), which would have serious repercussions for those countries that target its enormous consumer market.

The US current account deficit remains very large by historic standards and makes the US dollar vulnerable to a sharp depreciation, which could undermine global financial market stability. However, the continued steady easing of the US dollar is more likely as the economy achieves a 'soft landing'. Directly related to the historic US current account deficit is the enormous Chinese trade surplus. China's trade surplus has hit record levels and is fuelling protectionist sentiment, particularly in the US. Should this sentiment escalate it could begin to threaten international trade flows and ultimately global growth.

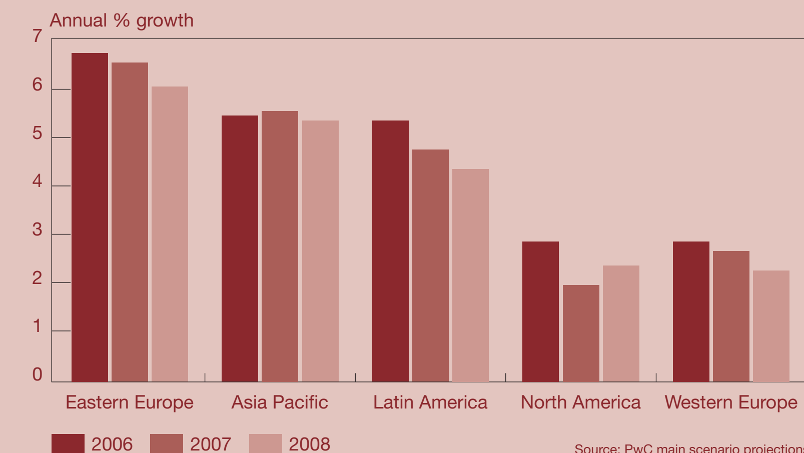
Geopolitical shocks remain a downside risk to global growth prospects. Iraq remains unstable, nuclear developments in Iran are still a potential source of conflict, and political relations between Russia and both the US and Europe have been somewhat strained recently.

Figure A.2 – Oil price trends



Source: St. Louis Fed (monthly data)

Figure A.3 – Growth prospects for the main world regions



Source: PwC main scenario projections

Despite the risks outlined above, the strength of activity in the Asian emerging economies, particularly India and China, continues to present an upside to the outlook for the world economy. Although the rate of inflation is now trending higher in these economies and exporters are likely to be confronted by weaker demand from key export markets, stronger domestic demand should help boost economic growth and enable these countries to remain amongst the fastest growing economies in the world.

Overall, under our main scenario we anticipate that economic momentum will decelerate over the remainder of 2007 and 2008, with slower US consumer spending translating into easing trade flows from Europe and the emerging Asian economies. In the latter countries, however, intra-regional trade and strengthening domestic demand should maintain robust growth overall (see Figure A.3). Significant uncertainties to this outlook remain, as described above.

North America

US economic growth remained robust in Q3, with the quarterly rate of expansion rebounding to 1%, the highest level in over a year (see Figure A.4). Growth was driven by a surge in exports and a resilient consumer spending.

However, the weak housing market and evolving subprime mortgage crisis have led to a deterioration of economic conditions. Higher interest rates and greater difficulty in obtaining home loans are contributing to lower housing demand, causing house prices to come under renewed downward pressure. In addition, easing activity in the housing market has led to home-building activity trending downwards, contributing to job losses in the construction sector.

The Fed responded to the unrest in financial markets by cutting interest rates by 50 basis points at its September meeting. It cut rates again in October and the Federal Funds rate

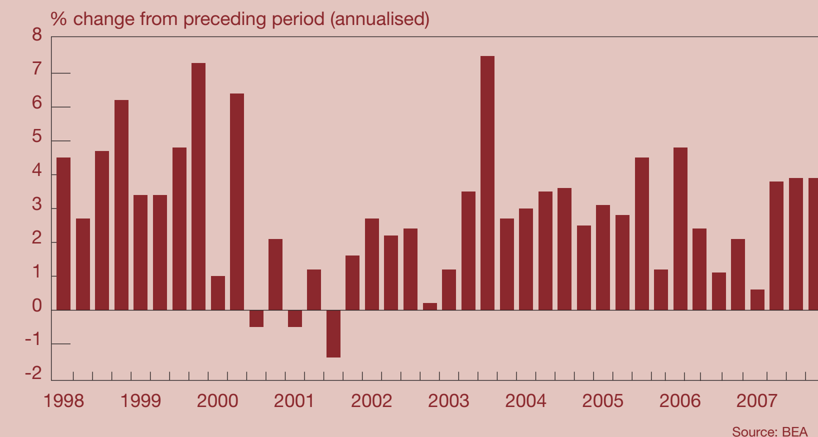
now stands at 4.5%. The potential for the situation in financial markets to have an adverse impact on the real economy was cited as the primary reason behind the rate reductions.

Under our main scenario, we forecast a reduction in the rate of US economic growth just under 2% in both 2007 and 2008. The weak housing market and related financial market volatility are expected to disrupt household spending and business investment next year, leading to continued subdued GDP growth.

The problems arising in financial markets appear to have had only a minor impact so far on the Canadian economy. The decision by the Bank of Canada to hold its base interest rate steady in August, instead of raising it as was expected, points to the Bank's determination to act decisively to shield the real economy.

Despite a strong Canadian dollar exports are expected to grow strongly due to the robust demand from Asia for western Canada's commodities. We expect the Canadian economy to grow by 2.6% in 2007, with a slightly slower pace of expansion in 2008.

Figure A.4 – US GDP growth



Source: BEA

Table A.2 – Outlook for European GDP growth (%)

Country/region	2006	PwC Main scenario	
		2007	2008
Germany	2.9	2.6	2.3
France	2.0	1.9	2.0
Italy	1.9	1.8	1.6
Spain	3.9	3.6	2.7
Netherlands	2.9	2.5	2.5
Euroland	**2.7**	**2.5**	**2.1**
Plausible range	-	*2-3.0*	*1.5-2.5*
UK	2.8	2.9	2.0
Sweden	4.2	3.6	3.3
Switzerland	3.2	2.6	2.0
Western Europe	**2.9**	**2.7**	**2.3**
Poland	6.1	6.4	5.5
Czech Republic	6.1	5.6	4.8
Hungary	3.9	2.4	3.0

Source: Eurostat for 2006 and main scenario projections for growth in 2007 and 2008 (note that the latter are subject to wide margins of error at present, as indicated by the 2008 range shown for Euroland).

Euroland

After growing rapidly in Q1, the Euroland economy decelerated to achieve more modest growth in Q2. The slowdown in economic activity was led by business investment growth, which contracted after growing rapidly in Q1. On the upside, unemployment rates have been falling across Europe for some time, pushing up consumer confidence levels and strengthening consumer demand.

The German economic expansion slowed slightly in Q2, with GDP growing by a reasonably subdued 0.3%. GDP growth was driven by exports primarily over this period, which rebounded from a weak first quarter. Investment and export growth are likely to drive the GDP expansion through to 2008, with consumer spending likely to accelerate next year. The improvement in consumer spending, which has not grown by more than 1% per annum since 2001, should be underpinned by falling unemployment and rising real wages, which are projected to boost purchasing power.

French economic growth slowed to 0.3% in Q2, falling below the long term average rate. Growth was dampened by weak investment and a negative contribution from net trade, driven by resurgent imports. The expansion was underpinned by consumer spending, as the falling unemployment rate helped contribute to an improvement in consumer confidence in Q2. France's economy is expected to slow slightly in 2007, compared to 2006 and is now unlikely to meet the 2.0% to 2.5% growth originally predicted by its Government. In 2008, continued low inflation combined with tax cuts announced in President Sarkozy's first budget, should help consumer spending recover.

The Italian economy grew by only 0.1% in Q2, slowing from 0.3% growth in the previous quarter. The Q2 slowdown was led by a contraction in exports, with exporters beginning to feel the pinch from a strengthening euro. The Spanish economy continues to grow strongly and unemployment is on a downward trend. The cooling property market is likely to dampen economic growth going forward, although there is still some uncertainty about the extent and wider economic impact of this slowdown.

Inflation in the Euroland stood at 2.1% in September, marginally above the ECB's 2% target inflation ceiling. Inflation has trended downwards since early 2006, following repeated interest rate rises by the ECB. Despite the easing of inflation, risks to price stability remain on the upside in

the medium term. Tighter labour market conditions and high commodity prices, particularly oil, continue to put upwards pressure on prices. However, the recent squeeze on financial market liquidity is acting to tighten monetary conditions in the Euroland and we no longer expect the ECB to increase interest rates further towards the end of the year.

Looking forward, the economic outlook for the remainder of 2007 is positive. Consumer confidence levels remain robust, suggesting that buoyant consumer spending should prevail over the short-term at least. The expected continuing strength in the labour market reinforces this outlook. We expect the Euroland economy to expand by 2.5% in 2007, then to slow to 2.1% in 2008. However, uncertainty to our outlook has increased as a result of the turmoil in financial markets. The true extent of the problems continues to evolve and the full impact on the real economy remains to be seen.

Economic growth across Central Europe remains strong and 2007 is expected to be a year of above-trend GDP expansion, before a gentle slowdown takes hold in 2008. Hungary is the exception, where economic growth is weak by this region's standards, although a mild recovery is forecast in 2008. Polish growth remains strong despite the slightly slower expansion of both consumer spending and investment in Q2. Meanwhile, the pace of growth in the Czech Republic is strong but slowing, as consumer spending is dampened by rising prices of basic household goods and services.

Asia-Pacific

The Japanese economy shrank in Q2 2007, driven by a sharp contraction in investment that offset positive contributions from consumer spending and exports. The outlook for Japanese economic growth does not appear to be especially bright, while the threat from deflation lingers on. Business investment growth is unlikely to recover significantly in the short-term given the weakening of business confidence and the recent appreciation of the yen.

Chinese economic growth picked up to a rapid 11.9% year-on-year in Q2 2007, from 11.1% in Q1. The Q2 expansion was driven by double digit growth in industry and services sector output. Rapid investment growth is a defining characteristic of the Chinese economy. Also, consumer spending remains buoyant owing to increased household purchasing power, driven by employment and wage gains, and the positive wealth effects from rising stock market and real estate valuations.

Rapid economic growth, an extremely strong stock market, above normal money supply growth and trade surpluses at record levels suggest further economic policy tightening can be expected in 2007 and 2008. The current policy mix of interest rate rises and credit controls are expected to contribute to a slight dampening of the current blistering pace of China's growth, as will weaker demand in the key US market.

The Indian economy has continued to grow rapidly, expanding at a year-on-year rate of 9.3% in the three months to June 2007. Rapid growth in the manufacturing and service sectors are driving the economy.

In response to fears that the economy may be overheating, the Reserve Bank of India has been gradually tightening monetary policy. With high levels of capacity utilisation likely to maintain pressure on inflation, we expect monetary conditions to tighten further in the short term. This should see a deceleration in growth in the 2007 (April to March) fiscal year to around 8.3%.

The Australian economy slowed during Q2, but the growth rate remains higher than the quarterly average over the previous two years. The prospect of stable interest rates in the short term reduces the pressure on over-leveraged consumers, while recent currency depreciation should help improve export competitiveness. Barring any further shocks to the global financial system, the rate of growth of the Australian economy is likely to increase to 3.9% in 2007, followed by a slight deceleration in 2008, with GDP forecast to expand by 3.5%.

Latin America

Brazil's economic growth slowed in Q2 to 0.8%, remaining slightly below the average for 2006. Consumer spending, which grew by 1.5% in the quarter, was boosted by lower import prices, low interest rates and rising disposable incomes. The outlook for the Brazilian economy is reasonably upbeat, with the economy projected to grow by 4.6% in 2007 and 4.3% for 2008.

The Argentine economy expanded by 8.7% year-on-year in Q2 2007, marking the fourth consecutive quarter of GDP growth above 8%. Consumer spending maintained its role as a key driver of the economy, as falling unemployment, rising real wages and increased borrowing boosted household expenditure. The economy is likely to feel the impact of a slowdown in US demand in 2008. However, intra-regional trade should remain reasonably strong as Brazil continues to grow at a healthy pace, while the continued rapid pace of growth in China and reasonable growth in Europe should also help offset the weaker demand in the US. Weak consumer spending and business investment growth are expected to lead to slower GDP growth in 2008. Our growth forecast for 2007 is 7.5% falling to 5.5% in 2008.

Mexican economic growth accelerated to 1.3% in Q2 2007. Exports recovered from the Q1 contraction but remained subdued owing to weak demand in the US. Consumer spending grew at a robust 1.8% in Q2, in part propelled by the recent boom in customer credit. Reasonably strong consumer spending and business investment growth, supported by increased consumer credit and tax reforms, should help underpin economic growth in 2008. However, the slowdown in the US is also likely to impact export demand significantly and we expect the economy to grow by 3.1% in 2007 and growth to improve marginally to 3.3% in 2008.

Appendix B – UK economic trends: 1979-2006

Annual averages	GDP growth	Household expenditure growth	Manufacturing output growth	Inflation (RPIX)	3 Month interest rate (% annual average)	Current account balance (% of GDP)	PSNB* (% of GDP)
1979	2.6	4.7	-0.2	12.6	13.9	-0.5	4.7
1980	-2.1	0.0	-9.5	16.9	16.6	0.8	4.3
1981	-1.4	0.0	-6.6	12.2	14.0	1.9	3.5
1982	1.9	0.7	-0.0	8.5	12.2	0.8	2.6
1983	3.5	4.1	2.1	5.2	10.1	0.4	3.5
1984	2.6	2.1	3.6	4.5	10.0	-0.4	3.7
1985	3.6	3.7	2.7	5.2	12.3	-0.2	2.9
1986	4.0	6.5	1.3	3.6	10.8	-0.9	2.3
1987	4.6	5.4	4.6	3.7	9.6	-1.8	1.5
1988	5.0	7.6	6.8	4.6	10.4	-4.2	-0.8
1989	2.2	3.4	3.8	5.9	14.0	-5.1	-0.8
1990	0.8	0.8	-0.1	8.1	14.7	-4.0	1.6
1991	-1.4	-1.6	-5.3	6.7	11.5	-1.8	3.1
1992	0.2	0.5	-0.1	4.7	9.5	-2.1	6.4
1993	2.3	2.7	1.5	3	8	-1.8	7.9
1994	4.3	2.8	4.7	2.3	5.5	-1.0	6.8
1995	2.9	1.7	1.5	2.9	6.7	-1.2	5.8
1996	2.8	3.9	0.4	3	6.0	-0.9	4.1
1997	3.1	3.5	2.1	2.8	6.9	-0.1	2.1
1998	3.4	3.8	0.7	2.6	7.3	-0.4	-0.1
1999	3.0	4.7	0.7	2.3	5.4	-2.4	-1.2
2000	3.8	4.5	2.4	2.1	6.0	-2.6	-1.7
2001	2.4	3.1	-1.3	2.1	5.1	-2.2	-1.0
2002	2.1	3.6	-2.6	2.2	4.0	-1.6	1.6
2003	2.8	3.0	0.2	2.8	3.6	-1.3	3.3
2004	3.3	3.5	2.0	2.2	4.7	-1.6	3.2
2005	1.8	1.5	-1.2	2.3	4.7	-2.5	3.2
2006	2.8	1.9	1.3	2.9	4.9	-3.7	2.9
Average over economic cycles**							
1979-89	2.4	3.5	0.8	7.5	12.0	-0.8	2.5
1989-2000	2.3	2.5	1.0	3.8	7.7	-2.0	2.6

*Public Sector Net Borrowing (calendar years), ** peak-to-peak for GDP relative to trend

Source: NS

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