III – Sectoral trends and prospects

Introduction

Discussion of trends in economic variables at the national and international level may often hide important divergences at the sectoral level. This has been particularly true in the UK in recent years, where relatively stable growth at the macroeconomic level has disguised a multi-speed economy at the sectoral level, with some industries booming and others stagnating. In this section of the report, we provide a more detailed analysis of historic trends and future prospects for individual sectors of the UK economy[1], with a particular focus on their exposure to major economic risk factors.

The discussion is structured as follows:

Section III.1 - Historical context and analysis of current position

Section III.2 - Sectoral exposure to key risks

Section III.3 - Future prospects

Section III.4 - Summary and conclusions

Figure 3.1 – Sectoral composition of UK output

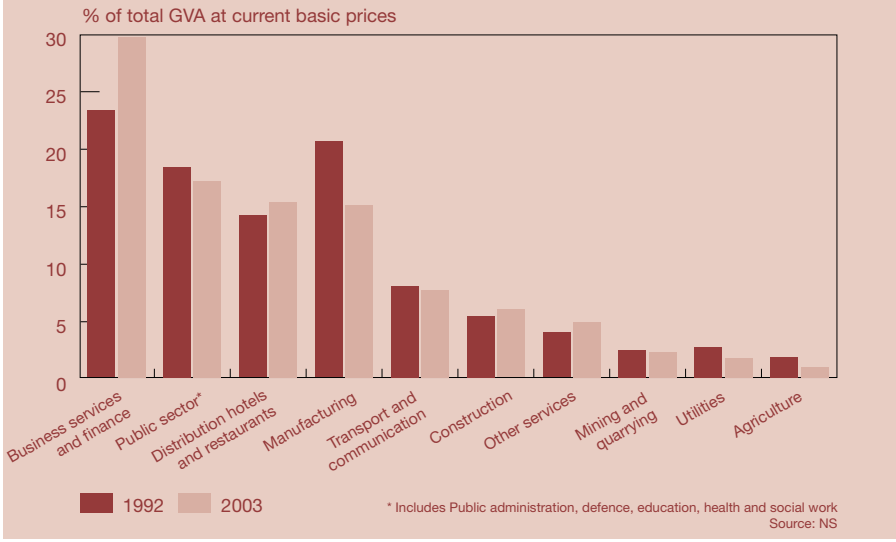
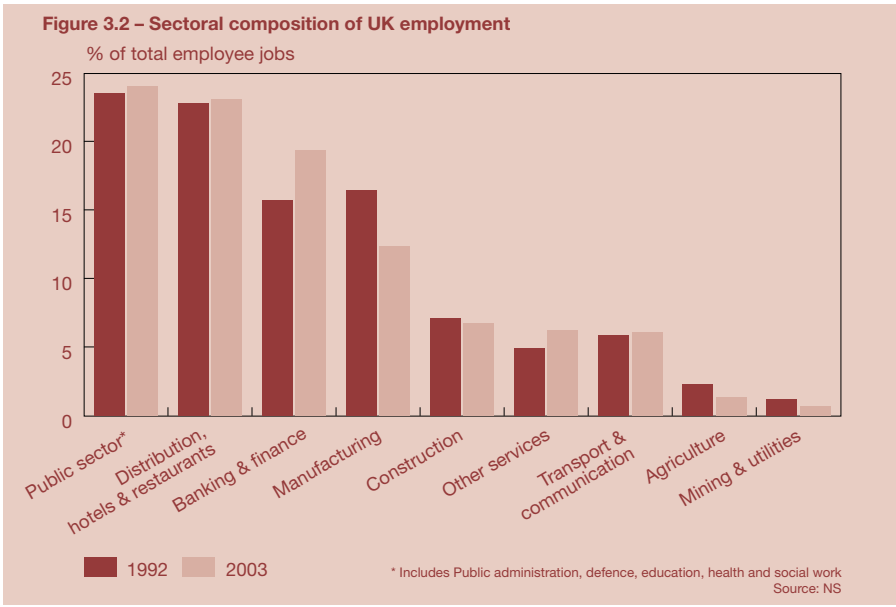


Figure 3.2 – Sectoral composition of UK employment



III.1 – Historical context and analysis of current position

Sectoral composition of UK economy

Business services and finance is now the largest sector of the UK economy, accounting for just under a third of total Gross Value Added (GVA)[2] in 2003 (see Figure 3.1), up from around 23% of GVA a decade earlier. The sector includes banking and finance, which accounts for around 4% of GVA, computer services (around 3% of GVA) and letting of dwellings (around 8% of GVA).

In contrast, the manufacturing share of the UK economy has gradually been falling, reaching 15% in 2003, compared with around 21% in 1992. The most recent data show that engineering and allied industries account for just under 30% of manufacturing output, followed by the food, drink and tobacco industries, which together account for just under 15%. The chemicals and man made fibres and basic metal and metal products sub-sectors each account for around 10% of manufacturing output, while the textiles, leather and clothing industry now accounts for only around 4% of total manufacturing output (reflecting particularly stiff overseas competition in this latter sector).

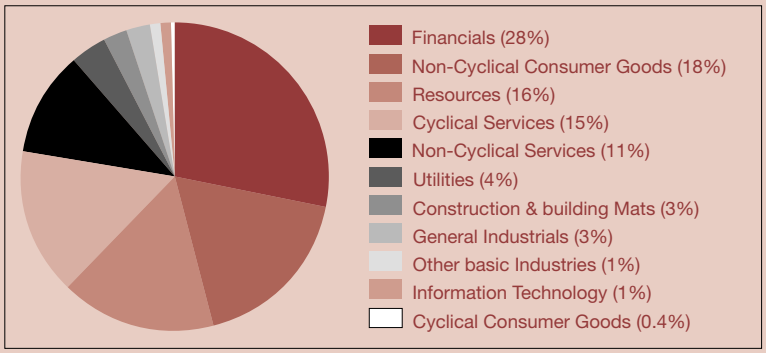
The distribution industry, which encompasses wholesale and retail trade together with hotels and restaurants, accounted for just over 15% of total GVA in 2003, up slightly from around 14% a decade earlier. The wholesale and retail trades each accounted for around 5% of total GVA in 2003. The construction industry saw its share of GVA rise from 5.3% in 1992 to just under 6% in 2003, while the shares of the transport and communications and mining and quarrying sectors remained broadly unchanged over the same period, at around 8% and 2.3% respectively. At the same time, the agricultural sector saw its share of UK GVA fall from around 1.8% in 1992 to just under 1% in 2003, while the utilities sector's share of GVA fell to around 1.7% in 2003, down from around 2.7% a decade earlier.

The sectoral composition of UK employment (see Figure 3.2) is somewhat different to that of output. The relatively labour intensive distribution, hotels and restaurants and public sectors account for around 23% and 24% of employment respectively, compared to only around 15%

[1] This complements an analysis of sectoral trends and prospects in other major EU economies in the October 2004 issue of our regular European Economic Outlook report (see www.pwc.com/eeo for details).
[2] GVA measures the difference in the value of outputs from non-labour inputs to each sector and therefore captures the net contribution of each sector to total national output.

Figure 3.3 – Sectoral composition of FTSE All Share Index

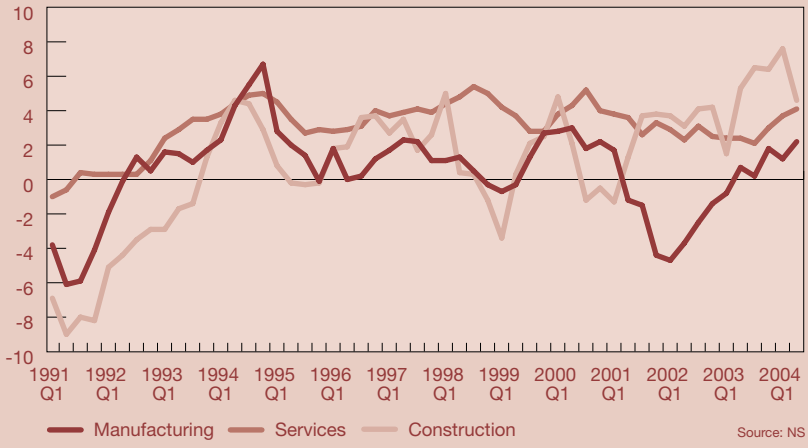
% of total index market capitalisation



Source: LBS Q3 2004

Figure 3.4 – Sector output trends

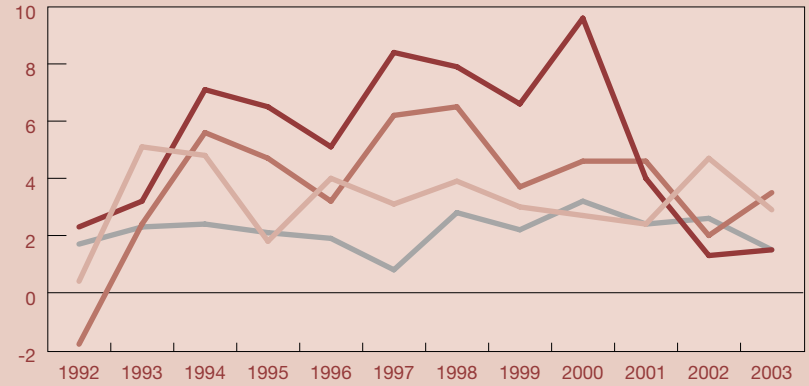
% change on a year earlier



Source: NS

Figure 3.5 – Service sector output trends

Annual % growth



Source: NS

and 17% of GVA. In contrast, mining and quarrying and utilities together account for only around 0.7% of employment compared with just under 4% of GVA. Manufacturing also has a somewhat lower share of employment (around 12%) than of output (15%), reflecting its relatively high capital intensity.

Industry shares of total UK stock market capitalisation are also somewhat different to their share of UK GVA, although comparisons can be misleading as sector categories often do not match exactly. The weight of utilities in the FTSE All Share (FTAS) index, for example, is just over double its share of GVA, while the construction & building materials sector in the FTAS index accounts for a little less than half its share of GVA (see Figure 3.3). The main disparities, however, are in the mining and quarrying industry, which is represented by a much larger resources section in the FTAS (16.3% compared with only around 2.2% of GVA), partly because the distribution of gas and oil derivatives is accounted for separately under the distribution sector in GVA, but also because the FTAS includes major global energy companies, whose international activities would not be included in UK GVA. While the banking and finance sub-sector accounts for only 3.8% of GVA, the banks' share of the FTAS index is a much heftier 19%.

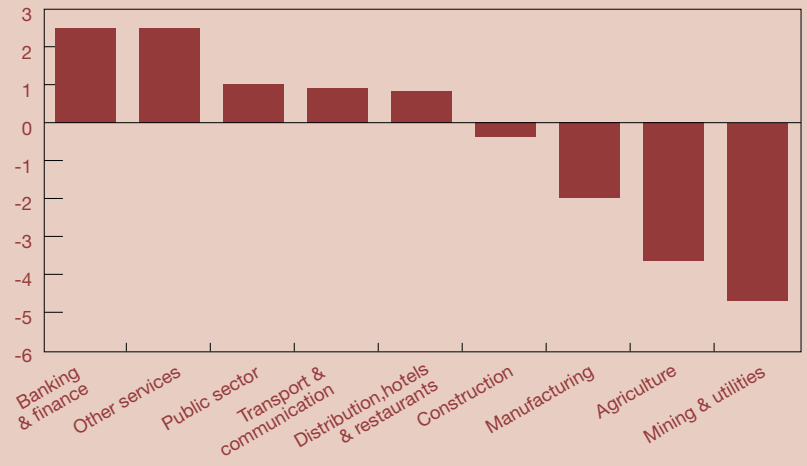
The manufacturing industry, which is largely spread between the other basic industries, general industrials and consumer goods sectors of the FTAS, represents a larger share of FTAS (just under 22%) than its corresponding share of GVA (15%). This is mainly due to the larger share of pharmaceuticals (8.8% in FTAS compared to around 0.7% of GVA) and the fact that alcoholic beverages and tobacco account for only around 0.3% and 0.1% respectively of GVA, but represent 3% and 2% respectively of the FTAS index. Within services, retailers account for a similar share in both (6.3% of FTAS compared to just under 6% of GVA), while transport had a lower weighing in the FTAS (1.9%) than its GVA share of just under 5%. The computer services sector also currently has a lower share of FTAS (0.7%) than of GVA (just under 3%), though again this may partly reflect definitional differences.

Output and employment trends

The services sector has performed consistently better than manufacturing since the early 1990s (see Figure 3.4), 7while output of the construction industry has been cyclical, with a prolong downturn at the start of the 1990s and a strong surge since 2001, reflecting the earlier bust and recent boom in house prices. Growth in agricultural output has fluctuated significantly in recent years, due in particularly to the foot and mouth epidemic in 2001, while growth in the output of the mining and quarrying sector has experienced a more gradual decline.

Figure 3.6 – Employment trends

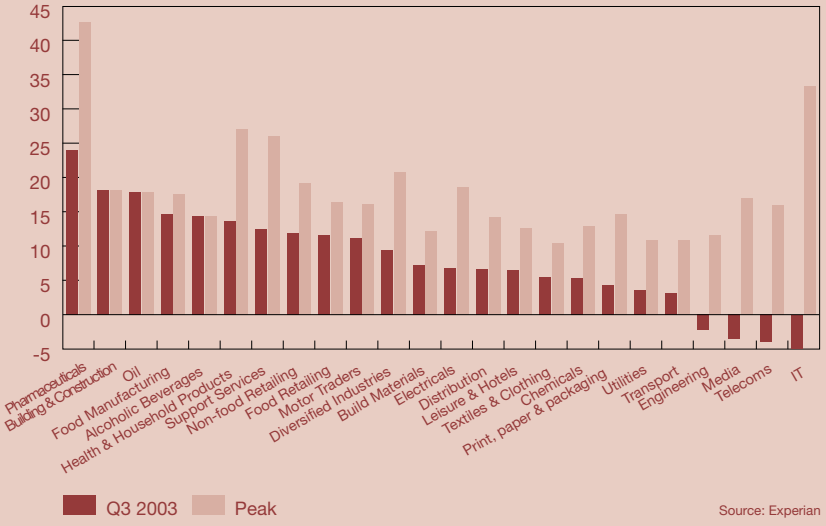
Average annual % growth in employment 1992-2003



* Includes Public administration, defence, education, health and social work
Source: NS

Figure 3.7 – Sector profitability

% Average return on capital employed



Source: Experian

Business services and finance has performed consistently better than most other sectors, with only a small dip in growth during 2002, related in part to the downturn in stock market-related activities. The transport and communications sector was also hit by the bursting of the telecommunications bubble, as well as by a fall in air travel following the events of 9/11. Buoyant consumer spending has helped to lift growth of the distribution sector in recent years (see Figure 3.5).

Employment growth has shown broadly similar sectoral patterns to output growth, with employment in manufacturing falling by an average of nearly 2% a year between 1992 and 2003 (see Figure 3.6). Employment in the construction sector has been on the rise since 1998, but it remained broadly flat on average during the 1992-2003 period as a whole due to falls earlier in the period. Most services sectors have experienced positive growth in employment since the early 1990s (see Figure 3.6), although the public sector has been the only one to experience a consistent rise in employment in each of the past 6 years.

Sector profitability

Figure 3.7 illustrates the significant variations in profitability across sectors, with pharmaceuticals companies on average reporting the highest return on capital employed (24%), although this was well below the sector's peak of 43% in Q2 1998. The booming property market helped average returns in the building and construction sector reach a new ten-year high of around 18% in Q3 2003, although the average return in the building materials industry (around 7%) remains below its 10-year peak of Q3 1998. Higher oil prices also saw average returns in the oil industry reach a new high of just under 18% in Q3 2003 and they are likely to have risen further since then[3].

Overall, non-cyclical sectors tended to be more profitable in Q3 2003 than cyclical ones, with the alcoholic beverages industry recording a new 10-year high of over 14% and the average return in the food manufacturing sector also close to its 10-year high. Among the more cyclical industries, motor traders, non-food retailers and the textiles & clothing industries all saw returns increase somewhat over the year to Q3 2003, although they remained well below their 10-year peak. The media sector, leisure & hotels and support services all experienced a significant fall in average returns over the year to Q3 2003.

Negative average returns were recorded in four sectors, which is an unusually high number. The last time the engineering industry recorded a negative average return was back in 1993, for example. Both the information technology and telecommunications sectors saw returns fall steeply after the ICT bubble burst, although they only turned negative in 2003.

III.2 – Sectoral exposure to key risks

In this section we look at a range of key risk factors that could cause sectoral growth to diverge either upwards or downwards from its long term potential. These are:

- the economic cycle;
- external demand shifts;
- exchange rate fluctuations;
- oil price changes;
- house price falls; and
- stock market volatility.

[3] The data quoted here on sectoral returns on capital employed are from an Experian survey for Q3 2003. Comparable data are not yet available for later periods.

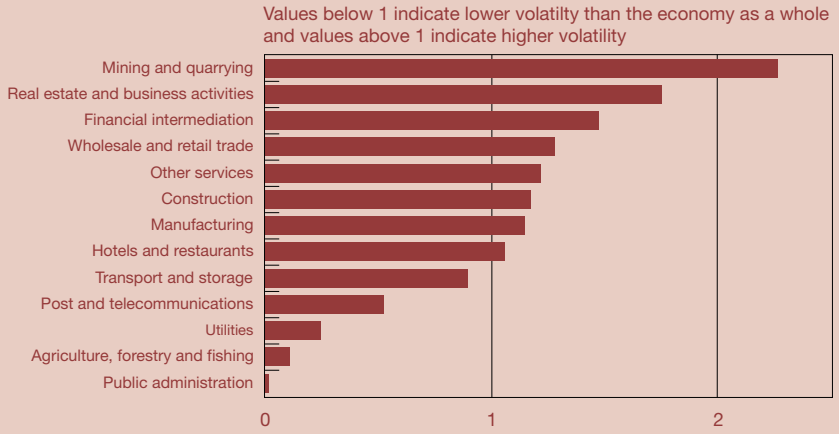
Exposure to the economic cycle

Some sectors tend to have more cyclically volatile output than others. In periods of economic upturn they generally benefit from higher growth than does UK GDP as a whole, and vice versa. We have measured cyclical output volatility here by using a regression[4] of sectoral quarterly output on UK GVA, with the coefficients in Figure 3.8 indicating each sector's volatility compared to UK GVA as a whole.

It is not surprising that public sector output turns out to be least sensitive to the general economic cycle, closely followed by agriculture and utilities. Another relatively non-cyclical sector was post and telecommunications, which we found had historically experienced only around half the output volatility of the economy as a whole, although structural changes in the telecoms sector over time (i.e. a combination of increased market competition and rapid product innovation) seems to have increased its relative cyclicality over the past decade. Meanwhile, sectors such as hotels and restaurants and (non-food) retailers have historically shown a relatively high degree of cyclicality.

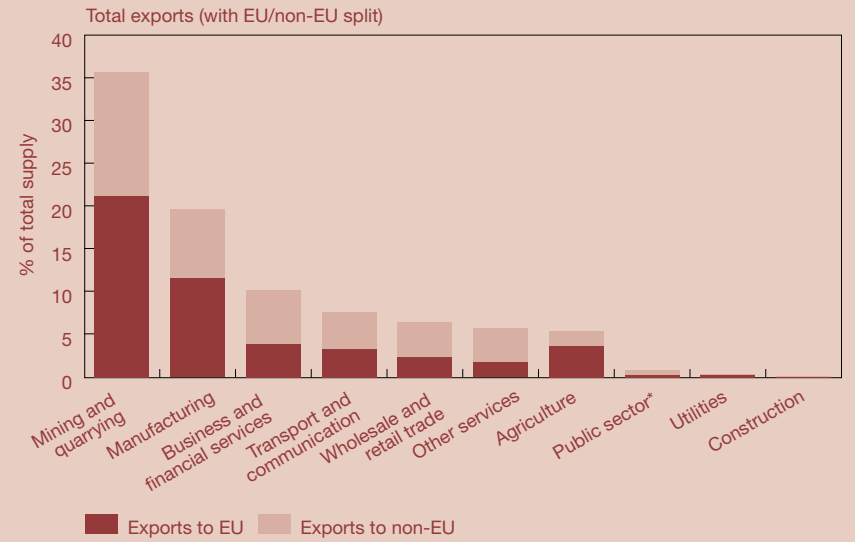
Real estate and business activities, as well as financial intermediation, have been among the most cyclical sectors in the economy. Other services and the construction sector have also historically shown above average cyclicality, as has the manufacturing sector, although some types of manufacturing will be more sensitive to the cycle than others (e.g. engineering would generally be expected to be more sensitive to the cycle than pharmaceuticals). The apparent high cyclical volatility of the mining and quarrying sector, however, is probably less a result of variations in overall GDP growth and more to do with variations in North Sea oil production in particular, which in turn feed back into movements in overall GDP growth.

Figure 3.8 – Cyclical output volatility



Source: PricewaterhouseCoopers

Figure 3.9 – Exposure to external demand



* Includes Public administration, defence, education, health and social work
Source: NS, 2002

Exposure to external demand

Exposure to external demand varies significantly between the different sectors, as illustrated in Figure 3.9[5]. Sectors such as construction and utilities are almost completely reliant on domestic demand, while sectors such as mining and quarrying (which includes North Sea oil and gas) and manufacturing are much more export intensive and are therefore more exposed to any downturn in the global economy.

Sectors with a larger exposure to non-EU economies than to EU economies, such as financial intermediation, have benefited in recent years from the relatively strong recoveries in the US and Asia. In contrast, the manufacturing sector has suffered f rom the relatively slow growth in its major Euroland markets in recent years.

Exposure to exchange rate fluctuations

The pound has experienced significant fluctuations in the past few years, but has generally remained relatively strong. This has put further downward pressure on exporters, particularly in the manufacturing sector (although the euro has recovered some ground against the pound since 2002).

Another important factor here relates to relative sectoral import propensities. These are actually highest for sectors such as manufacturing and mining and quarrying that are also large exporters (see Figure 3.10), reflecting the high level of inter-industry trade. To some extent, exchange rate effects therefore tend to offset each other at the overall sectoral level, although at a lower level of disaggregation there will be some manufacturing sub-sectors that are net exporters and others that are net importers. Sectors such as construction and distribution tend to be net importers and so would be potential gainers from a stronger pound (and vice versa).

[4] We used quarterly GVA data from 1955 to 2003 for all sectors except for: real estate and business activities, financial intermediation, and other services, where we used data from 1986, wholesale and retail trade data from 1973, and hotels and restaurants data from 1968. In all cases, we used the longest available run of sectoral data.

[5] Note that Figure 3.9 shows exports as a proportion of the total supply of goods and services from that sector (including imports).

Exposure to oil prices

Oil prices have been very volatile over the past decade, but the general trend has been for prices to rise significantly since 1998 (although in real terms they remain well below the highs of the early 1980s). Higher oil prices benefit the North Sea oil industry, but are less favourable for the rest of the UK economy. Although some of the effect of the rise in oil prices has been mitigated by the relative weakness of the US dollar over the past 18 months, sterling oil prices have also risen significantly, particularly in recent months. Sectors with a high proportion of intermediate consumption of oil, such as transport and communications and parts of manufacturing, will therefore have seen their margins squeezed significantly as a result of higher oil prices (see Figure 3.11).

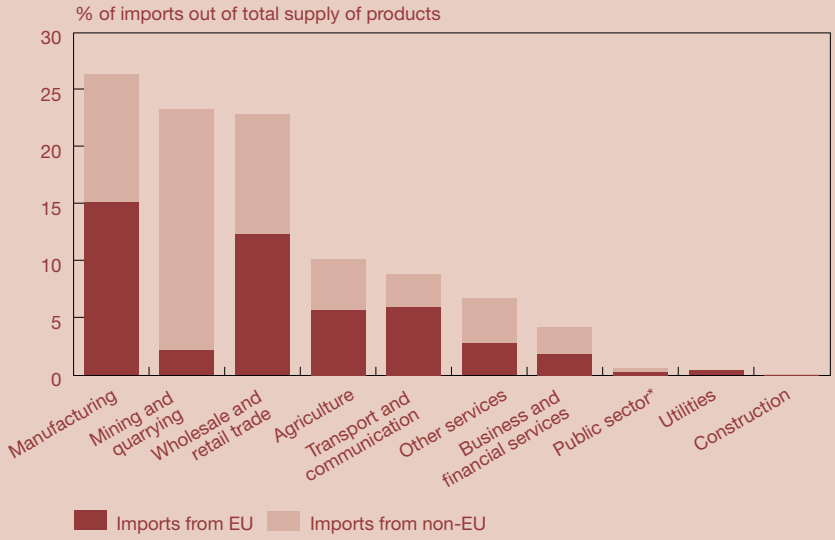
Sectors that have become more reliant on oil in the past decade, such as the wholesale and retail trade (possibly due to greater transport costs), may also be more vulnerable to higher oil prices than previously. In contrast, the manufacturing sector has become slightly less reliant on oil over the past decade (see Figure 3.11).

Exposure to the housing market

The UK housing market has experienced a massive boom in recent years, but latest data suggest that the market has begun to cool down6 . Sectors that are particularly vulnerable to a change in direction in the housing market include housebuilders, as well as the manufacturing and retailing of household and consumer durables and the mortgage lending industry (and associated activities such as estate agency and surveying).

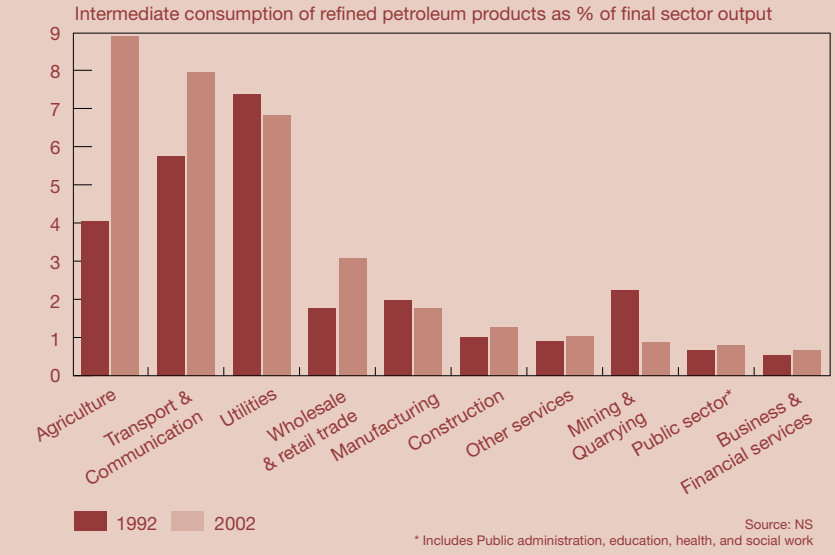
At the same time, negative wealth effects from lower house prices are likely to have a more general adverse impact on overall consumer spending growth, and so on sectors such as general retailing, restaurants and leisure.

Figure 3.10 – Sectoral import propensities



* Includes Public administration, defence, education, health and social work
Source: NS, 2002

Figure 3.11 – Exposure to oil prices



Source: NS
* Includes Public administration, education, health, and social work

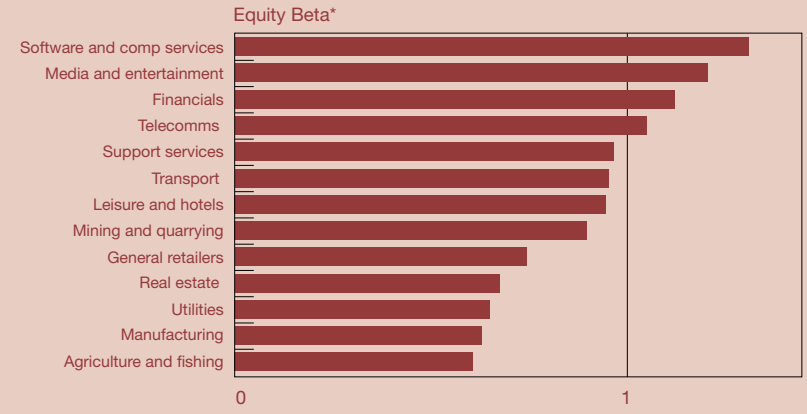
Exposure to stock market volatility

Equity prices around the world began to recover from April 2003 onwards, following a three-year bear market. The recovery in 2003 had a favourable impact on the growth of the wholesale financial services industry and associated business advisory sectors, but trends in equity markets have been more mixed during 2004 and the future outlook for equity prices remains highly uncertain.

We can get an indication of the exposure of sectoral share prices to general stock market volatility by looking at a sector's 'beta'[7] As shown in Figure 3.12, share prices of companies in the software and computer industry have been amongst the most sensitive, moving by 1.36 times more than the market as a whole on average over the past five years. The media and entertainment industry is the second most sensitive, with share prices moving by an average of 1.25 times the market as a whole over this period. Other sectors such as agriculture and utilities have generally seen their share prices move by significantly less than the market as a whole. The manufacturing sector has a relatively low average equity beta of around 0.6, although sub-sectors such as IT hardware, steel and other metals, and engineering all have an equity beta higher than 1. In contrast, the equity betas

[6] The Halifax house price index showed a rise between August and September, but the underlying trend is for house price inflation to decelerate on this and other indices.
[7] These are equity betas, which also take into account the effects of relative financial gearing. They are calculated by London Business School based on the last five years of monthly data.

Figure 3.12 – Relative share price volatility compared to overall stock market



* Measure of how far sector share prices vary with market as a whole
Source: LBS Q3 2004

Table 3.1 – Summary of sectoral risk analysis

Sector	Global downturn	Stronger pound	Higher oil prices	Lower house prices	Stock market fall	Overall risk rating*
Manufacturing	***	***	**	*	**	11
Financial and business services	**	*	*	**	***	9
Transport and communications	**	*	***	*	**	9
Distribution	*		**	**	**	7
Construction			*	***	**	6
Agriculture	*	**	**			5
Utilities			**		*	3

*Total number of stars in previous five columns
Source: PwC analysis

of the pharmaceuticals and biotech sub-sector and the food, drink and tobacco sub-sector are both relatively low at around 0.5 and have a heavy weight in the overall manufacturing stock market index.

Summary of risk analysis

Table 3.1 summarises the above analysis by providing an assessment (on a 0-3 star system) of the relative vulnerability of different sectors to major economic risk factors. We focus here on key downside risks, although it should be borne in mind that there is also upside potential in most of these areas (e.g. oil prices could fall sharply, or stock markets could rise) with beneficial effects on the sectors most sensitive to these variables. In the case of a stronger pound, there will also be gainers as well as losers, as discussed above.

The table ranks sectors in terms of their overall risk exposure, based on the total number of stars in the five columns. A more sophisticated analysis might attempt to weight the different risk factors according to the probability of the relevant downside risks materialising, but any such assessment would be subject to great uncertainty and so might not add much value to the simple rankings shown in Table 3.1. These suggest that manufacturing remains the most vulnerable sector, although clearly there will be significant differences within manufacturing sub-sectors according to, in particular, their degree of exposure to external demand, their energy intensity and their exposure to the housing market.

The financial and business services and transport and communications sectors appear the next most vulnerable, although their exposure to individual risk factors varies significantly (e.g. the transport sector is particularly vulnerable to further oil price rises, while the financial and business services sector would be particularly vulnerable to a significant fall in the stock market).

The distribution and construction sectors are ranked in the middle of the table in relation to overall risks, but would both be relatively vulnerable to a hard landing in the housing market. The agriculture and utilities sectors appear least vulnerable to the kind of macroeconomic risks discussed here, although there may be sector-specific risks that would mean that their overall risk exposure may be greater[8] than suggested by this analysis (e.g. BSE and foot-and-mouth or CAP reform in the case of agriculture, or the impact of regulatory change on the utilities sector).

In practice, different companies within each sector will have varying risk profiles, but the analysis in Table 3.1 could provide a framework within which to carry out a more detailed analysis at the corporate or business unit level.

III.3 – Future prospects

In this section we first look at PwC scenarios for UK sectoral output growth in 2004 and 2005, and then consider briefly whether anything can be deduced from price-earnings (P/E) ratios about market expectations for sectoral profits growth.

PwC sectoral growth scenarios

Our analysis of recent sectoral trends and the general economic situation, combined with the insights provided by our analysis of potential risk factors, were used to construct sector growth projections for 2004 and 2005 that are consistent with our main scenario for growth in the UK economy, as detailed in Section II.2 above. Figure 3.13 shows actual growth figures for 2003 together with our main scenario for 2004 and 2005, while Figure 3.14 shows how sectoral growth rates in 2005 might vary if we instead assume either a strong growth scenario or a low growth scenario for the economy as a whole (as described in Section II.2 above).

According to our main scenario, growth in the construction and distribution sectors is expected to moderate somewhat in 2005 as a result of the cooling of the housing market and weaker consumer spending. The business services and finance sector

[8] Although, from a shareholder perspective, these sector-specific risks may be easier to diversify away than general macroeconomic risks, which is consistent with them having relatively low betas (as shown in Figure 3.12).

is expected to continue to grow faster than the economy as a whole in 2005, but at a somewhat slower rate than in the previous two years. The mortgage lending sector in particular is expected to see slower growth as the housing market cools down.

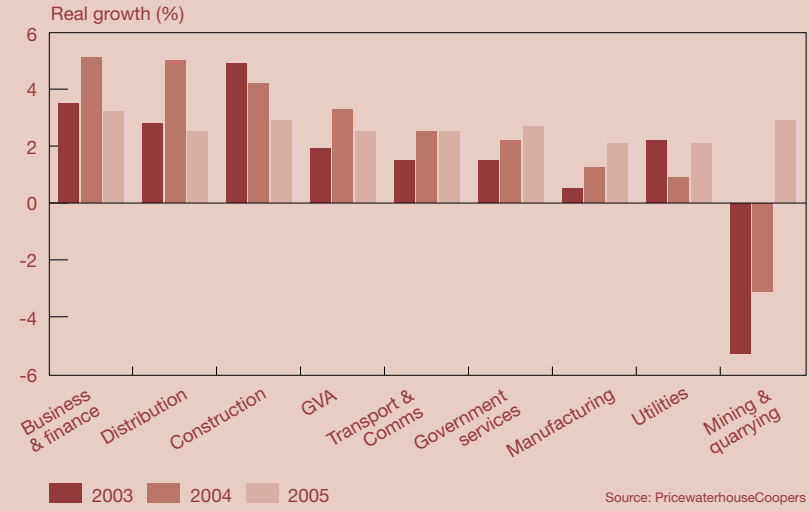
The manufacturing sector is expected to see a gradual improvement in growth to around 2% in 2005, although this is still somewhat below the 2.5% average growth rate projected for the economy as a whole in our main scenario. The mining and quarrying and utilities sectors are expected to bounce back somewhat in 2005 from earlier lows, with a recovery in North Sea oil and gas production being the main factor driving mining and quarrying sector output.

Under our two alternative scenarios, the cooling off in the housing market is either more rapid in the case of the low growth scenario or delayed in the case of the strong growth scenario. Consequently, the slowdown in construction sector growth is, respectively, either accelerated or delayed. The impact of such scenarios on consumer spending is captured by variations in the output of the distribution sector. At the same time, manufacturing output growth varies with the assumed growth rate of the world economy in the different scenarios. In contrast, the government services and utilities sectors are relatively insensitive to the economic cycle, with similar growth rates projected in all three scenarios. These results tend to mirror the risk analysis in Table 3.1 above.

Market expectations of future profit growth

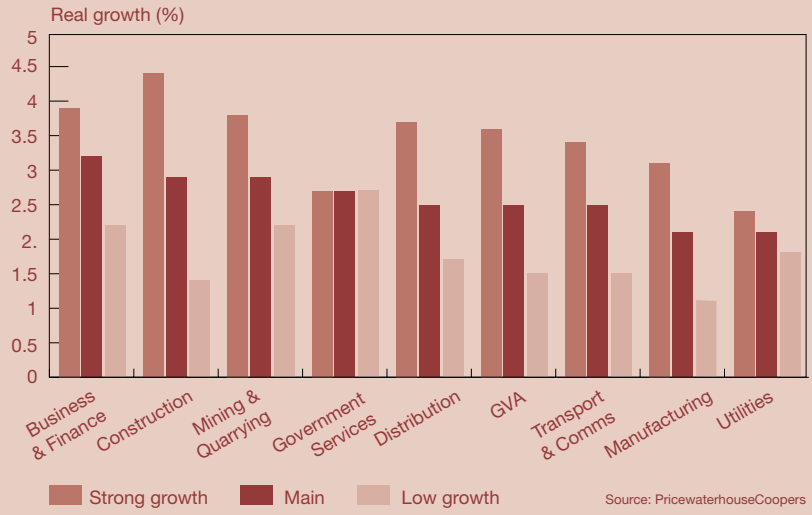
While economists tend to focus on output growth, businesses and their shareholders will generally be more concerned about profits growth. This is more difficult to forecast using standard macroeconomic models, but it is possible to get a broad indication of market expectations of future sectoral profits growth by looking at average P/E ratios in each sector (see Figure 3.15), with high ratios generally suggesting higher expected profits growth and vice versa. This method is not foolproof, since P/E ratios could also be high due to a relatively low required return on equity[9] (as reflected in a low equity beta), or indeed due to market expectations of profits growth that are

Figure 3.13 – PwC main scenario for sector growth in 2004 and 2005



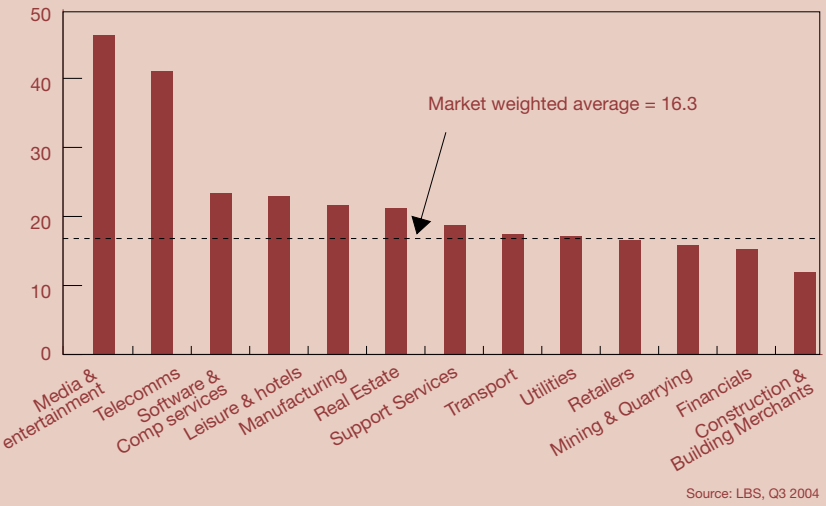
Source: PricewaterhouseCoopers

Figure 3.14 – PwC alternative sector growth scenarios for 2005



Source: PricewaterhouseCoopers

Figure 3.15 – Sector P/E ratios



Source: LBS, Q3 2004

[9] Using a constant dividend growth Gordon model, it can be shown that, if shares are fairly valued, then P/E = d(1+g)/(re-g), where d is the dividend payout ratio, g is expected dividend growth and re is the required return on equity.

unrealistic, as was the case for technology sectors in the late 1990s. But we can allow for these factors to some degree in our interpretation of the P/E ratios.

It is not surprising that the construction and building merchant industry displays the lowest P/E ratio of the sectors shown in Figure 3.15, as it is a mature sector and is likely to see lower future profits growth as the housing market cools. Most of the other sectors are reasonably close to the market average P/E ratio with the notable exceptions of media and entertainment and telecoms, whose P/E ratios are more than twice the market average. Since both these sectors have equity betas above 1 (see Figure 3.12 above), this seems to indicate high expected profits growth rather than relatively low required returns on equity. We would certainly expect some rebound in profits in these sectors from the low levels of recent years after the bursting of the new economy bubble in 2000-2, but whether this is sufficient to justify such high P/E ratios remains to be seen.

III.4 – Summary and conclusions

The UK economy has seen an upturn in economic activity over the past 18 months, which has benefited most sectors, particularly those reliant on domestic demand. But growth may now have peaked and some sectors (e.g. housebuilding, household durables manufacturing and retailing, mortgage lending and associated property-related services) are particularly vulnerable to a change in direction in the housing market and an expected slowdown in consumer spending growth. Other sectors (e.g. manufacturing and transport) are more vulnerable to global economic developments and possible further oil price rises.

Our main scenario projects that sectors such as construction and distribution (and, to a somewhat lesser extent, financial and business services) will see their output growth rates moderate in 2005. The information and communications technology sector should see some further recovery from its post-bubble bust, although this remains subject to significant uncertainties. The manufacturing sector is projected to see a modest improvement in growth in 2005, but this remains vulnerable to any marked downturn in global economic growth, particularly if this is associated with continued high oil prices.