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Speech

How Much Spare Capacity is there in the UK Economy?

Speech given by

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Summary

1. Judging the extent of spare capacity in the economy is one of the key tasks in setting interest rates to hit an inflation target. As a general rule, the less spare capacity, the more inflationary pressure.
2. Estimates of spare capacity in the UK in 2004 by different forecasting groups vary substantially. At one extreme, the OECD thinks there is less spare capacity in 2004 than in the boom years of 1999-2000. By contrast, HM Treasury sees much more spare capacity in 2004 than in 1999-2000 and, indeed, more than the average during 2001-3.
3. The results presented here suggest the following. First, capacity utilisation data provided by firms indicate slightly more spare capacity in 2004 than in 1999-2000 and considerably less than in 2001-3.
4. Second, within the labour market, there is more evidence of spare capacity in 2004. Indeed, the data suggest that in 2004, spare capacity is greater, on average, than the whole period 1999-2003. Wage inflation and labour cost data are broadly consistent with this picture.
5. Overall, my impression is that the amount of spare capacity in the UK available in 2004 (and indeed today) is slightly greater than in 1999-2000, not very different from that in 2001-3 and slightly less than in 1995-98. This suggests more spare capacity than the OECD numbers indicate but less than the Treasury figures. On balance, there still appears to be some spare capacity available in the labour market, but within firms the overall situation is tight. Finally, it is plain from the data that the amount of spare capacity available is significantly greater than in the boom of the late 1980s.

1. Introduction

The amount of spare capacity in an economy is the difference between potential output and actual output, where potential output is the amount which can be produced given the existing capital stock using the equilibrium number of employees working for equilibrium hours at the equilibrium level of intensity. Without going into unnecessary detail, one may think of the equilibrium levels of labour inputs as those consistent with stable inflation. Consequently, if actual output exceeds potential output, there is no spare capacity and we may expect inflation to be rising. So the extent of spare capacity in an economy is a key variable when setting short-term interest rates to hit an inflation target.

Many forecasting groups produce inverse measures of spare capacity which they term the output gap (actual output less potential output). In Figure 1, we show a number of different measures of the output gap. What is plain is that, currently, there is a wide variety of estimates of the level of the output gap. To see more precise numerical estimates, we set out some averages in Table 1. What we find is that at one extreme, HM Treasury sees the UK economy in 2004 as having at least as much spare capacity as in the previous three years, on average, and very much more than in either of the periods 1995-98 or 1999-00. By contrast, the OECD¹ estimates that there is no available spare capacity in 2004, with more spare capacity available in 2001-03 and much more in 1995-98. The other forecasters lie between these two extremes.

The measures of the output gap seen in Figure 1 differ because the teams use different methods, particularly in the treatment of the public sector, and have different estimates of equilibrium employment, hours etc. Our purpose here is not to try and construct yet another measure of the output gap but to see what light other published data can shed on this issue. The first data series which we consider refer to capacity utilisation, where firms are asked questions of the form “Are you operating at full capacity?” or “Is system capacity likely to limit your ability to increase business over the next 12 months?”. A problem here is that the notion of full capacity is not well defined. It seems reasonable to suppose that a manufacturing firm is operating at full capacity if it is using its capital stock at the normal maximum level of operation. The same would also apply to a service firm like a restaurant. An accountancy firm

would, however, probably say it was operating at full capacity if all the professionals within the firm were busy. It is obvious from these examples that working at full capacity does not refer to the production of the absolute maximum level of output. However, data on capacity utilisation does tell us something about the extent of spare capacity within firms given the existing levels of physical or human capital employed.

Spare capacity in the economy, however, also exists if there are individuals who are not currently employed who are willing and able to assist in the expansion of existing capacity by, for example, manning an extra shift or increasing the number of professionals in a business services company. This leads on to the second group of data series we consider, namely those which capture the extent of spare resources in the labour market. In particular we look both at pure labour market data, such as the unemployment rate, and at data capturing firms' views on the extent of spare capacity in the labour market.

Finally, the third type of data series we consider refers to the direct inflationary consequences of both labour market tightness and high levels of excess demand facing firms. We then finish with our overall conclusions on the current level of spare capacity in the UK.

2. Spare Capacity Within Firms

Information on capacity utilisation in manufacturing (20.5% of the private sector) is available from CBI (Confederation of British Industry) surveys, and these are set out in Fig.2. We have three capacity related questions. The first, in Fig.2a, reveals the proportion of firms which are currently operating at full capacity. In Fig.2b, we see the proportion of firms where (shortage of) plant capacity is expected to limit output over the next three months and in Fig.2c we have the proportion of firms where (shortage of) capacity is a reason for capital expenditure over the next twelve months. The overall picture is one where the 2004 level of capacity utilisation is close to that in 1999-00, above that in 2001-03 but below that in 1995-98 and well below that in the late 1980s boom.

Turning to the service sector (67.4% of the private sector), the main overall measure of capacity utilisation is that reported by BCC (British Chambers of Commerce), presented in Fig.3. On this measure, capacity utilisation in the service sector in 2004 is a little above that in 1999-00 and above that in 2001-03 and 1995-98. The CBI produces data on the service sector which gives a slightly different impression. Services are divided into three sub-sectors, business services (39% of services), consumer services (48% of services) and financial services (13% of services). The data series presented in Figs.4a, 5a, 6a, refer to the proportion of firms whose level of business is above normal and those in Figs.4b, 5b, 6b, capture the proportion of firms where system capacity is likely to limit the level of business over the next 12 months. The overall picture here suggests that the 2004 level of capacity utilisation is, on balance, below that in 1999-00, which contrasts with the BCC series.

In order to help us obtain a complete picture, we present a summary table of all the series (Table 2). The overall impression is that capacity utilisation within firms in 2004 is a little below that in 1999-00 but well above 2001-03. Looking at the first four rows, it is clear that capacity utilisation in 1995-98 is only a little below that in 2004. Finally, it is plain that manufacturing sector capacity utilisation was far higher in the late 1980s boom than in any recent period.

3. Spare Capacity in the Labour Market

One way for a firm to raise its output without increasing its capital stock or employing more people is to raise weekly hours. Average weekly working hours have been falling steadily since the 19th century, essentially because as individuals become richer, they choose to take more of their time in the form of leisure. Over the last ten years, average weekly hours worked in the private sector have still been falling in part as a continuation of the long-term trend increase in the demand for leisure, in part as a consequence of the EC Working Time Directive and, more recently, as a response to the cyclical weakness in 2001-03. In recent months, average weekly hours have started to rise (see Fig.7). This turn round may simply reflect a temporary blip in the secular downward trend. On the other hand, it may represent the start of a cyclical upturn leading to a more permanent increase in normal working hours.

Which of these is correct has important implications for the extent of spare capacity. In the latter case, firms could expand output significantly without hiring any more employees. In the former case, when weekly hours fall back to their normal levels, firms would have to raise employment significantly in order to sustain output levels². It is hard to say which of these is correct although the fact that there is no apparent increase in weekly pay corresponding to the rise in weekly hours may suggest a degree of measurement error in the latter series.

Turning now to the labour market, the overall picture is one where the UK population aged 16 or over is rising at around 300k p.a. with a little under half of this being the consequence of net in-migration. This rate of net in-migration has been relatively stable since 1998 and is significantly higher than in previous decades, probably because of the buoyancy of the UK labour market over this period relative to that in continental Europe. In order to maintain a constant employment rate, employment would have to rise by around 180k p.a. Over the last 12 months, employment has in fact risen very close to this “neutral” rate. That is consistent with the flattening off of the employment rate observed in Fig.8 and the unemployment rate in Fig.9. These days, the unemployment rate is not a particularly good measure of labour market slack because of the large number of individuals who enter employment from the inactive population (those who are without work who say they are not looking for work). To deal with this, we may look at the weighted non-employment rate, which covers all the non-employed, the numbers in different groups³ of non-employed being weighted by their exit rates into employment relative to the exit rate of the short-term unemployed. This series is presented in Fig.10 and shows that the current level of spare capacity in the labour market is a little above the minimum level attained in 2000.

These overall labour market ratios are not wholly reliable as indicators of labour market slack in part because structural changes in the labour market have raised effective labour supply in recent years (see, for example, Nickell and Quintini, 2002). And this is a continuing process with the various New Deal programs and in-work benefits (tax credits) still raising the effective supply of labour, albeit slowly.

Looking at the extent of labour market slack from the point-of-view of firms, we have a number of relevant series in both manufacturing and service sectors. In manufacturing, we present in Figs.11a, 11b the CBI series giving the proportion of firms where one of the factors limiting output over the next three months is a shortage of skilled labour and the BCC series on the proportion of firms suffering from recruitment difficulties. Both series give the same impression of more labour market slack in 2004 than in 1999-00 and the first reveals much more slack than in the late 1980s boom. In the services sector, we show the BCC series on recruitment difficulties (Fig.12) and three CBI series on the proportion of firms where the availability of professional staff is likely to limit the level of business over the next 12 months (Figs.13a, b, c). The overall picture suggests again that there is more labour market slack in 2004 than in 1999-00.

To arrive at an overview, we present a summary table of all the series (Table 3). The overall picture is one in which the labour market tightness in 2004 is somewhat lower than in recent years, being well down on 1999-00 and a little down on 2001-03. This contrasts with the degree of capacity utilisation within firms in 2004 which is well up on 2001-03

4. Direct Measures of Inflationary Pressure

If there is no spare capacity in a market and demand continues to rise, then prices in that market will tend to accelerate, rising relative to costs. So, in circumstances where it is hard to detect the levels of spare capacity directly, it may be useful to look at what is happening to prices. Of course, there may be other reasons why prices accelerate or rise relative to costs, for example, falls in the level of competition in the market, so this sort of evidence can never be decisive. But it may nevertheless be helpful to see whether it is consistent with the quantity evidence.

Starting with the labour market, we see in Fig.14 that underlying annual earnings growth in the private sector has been rising since mid-2003 at roughly the same average rate as it rose during 1999 and 2000. However, the rate of increase has slowed in the second half of 2004. Indeed, if we look at the three-month-on-three-month rate, this had been flat for nearly a year. Turning to the unit labour costs faced

by companies, as opposed to pay, we see from Fig.15 that this has been trending downwards in recent years, essentially because private sector productivity growth has been outpacing private sector pay growth over this period. Overall, this evidence is consistent with the view that labour market tightness has not significantly worsened since 2000.

Turning to product market prices, first we look at the pattern of price inflation and second we consider the key issue, that is whether or not output price inflation has been higher than unit cost inflation, since this would be a typical consequence of excess demand. Output price inflation exceeding unit cost inflation is equivalent to rising profit margins⁴, so we look at profit margins in various sectors.

A broad picture of domestic output price inflation is provided in Fig.16, where we present domestic goods price inflation (excluding petroleum products) in Fig.16a and CPI service price inflation in Fig.16b. Goods price inflation started rising in 1999 and continued rising until 2004. However, since mid-2004, the inflation rate has stopped rising, flattening off at around 2%, despite cost inflation continuing to rise (driven by commodity prices). CPI service price inflation started rising in 2000 and continued to rise for nearly three years before falling back. Recently, however, it has gradually begun to increase again mainly because package holiday prices were unusually weak in 2003.

Turning to profit margins, in Fig.17 we present two measures, one based on the Annual Business Inquiry (ABI), the other on National Accounts (NA) data. In Fig.17 a), c), we present estimates of average profit margins in manufacturing from 1995. The overall picture is one of declining margins from 1997 to 2001. Then, the ABI data suggest some recovery of margins in 2002 and 2003. However, the NA data suggest a continuing slow decline in margins right up until 2004. As yet, we do not clearly understand this discrepancy. (The ONS indicates that the ABI numbers for 2003 are probably better. However, the Datastream estimates of manufacturing margins for quoted companies look more like the NA data.)

The data are more consistent in the service sector, where both the series in Figs.17 b), d) indicate declines in service sector margins around the turn of the century then stability in recent years. There is no evidence of any increase in margins in 2004 in the NA data.

Overall, the data suggest that margins have been relatively stable recently, whereas they were generally falling around the turn of the century. In the manufacturing sector, falling margins from 1998 were only to be expected following the huge rise in the Sterling exchange rate during 1996-7. This would have vastly increased the competitiveness of foreign companies leading to strong pressure on the margins of home companies which would have masked any excess demand effects in 1999-00. Quite why service sector margins were falling for several years after 1999 is not clear because all the other data suggest that demand was particularly strong in 1999-00.

5. How Much Spare Capacity is there in the UK Economy?

The general picture from the within firm data is that there is slightly more spare capacity in 2004 than during the previous peak in 1999-2000 with slightly less capacity than in the late 90s and considerably less than in 2001-03. Within the labour market there is more evidence of spare capacity in 2004, the data suggesting that in 2004, spare capacity is greater, on average, than over the whole period 1999-2003 although a little less than 1995-98. The wage inflation and labour cost data are broadly consistent with this picture. However, the price and margins data are more difficult to interpret although there is no strong evidence of either accelerating prices or rising margins in 2004.

So what does this all add up to? The overall impression is that the amount of spare capacity available in 2004 is greater than in 1999-00, not very different from that in 2001-03 and slightly less than in 1995-98. This is at variance with the OECD numbers in Table 1, where there is less spare capacity in 2004 than in any other period. It is also at variance with the HMT numbers, where there is more spare capacity in 2004 than in any other period. On balance, there still appears to be some spare capacity available in the labour market, but within firms the overall situation is

relatively tight. It is plain, however, that the amount of capacity available is significantly greater than in the boom of the late 1980s.

Footnotes

1. When estimating the output gap, the OECD correctly focuses on the private sector. The other forecasters tend to operate in the context of the whole economy including the government sector.
2. It is worth noting that apparently small changes in average weekly hours generate significant changes in overall GDP. Thus an increase of half an hour in average weekly hours corresponds to a 1 ½% rise in GDP.
3. The groups are short-term unemployed (<12m), long-term unemployment (>12m), students, temporarily sick, discouraged, caring for family, long-term sick, retired, other.
4. The profit margin is profit/(sales revenue).

$$\begin{aligned} \text{profit}/(\text{sales revenue}) &= (\text{sales revenue} - \text{costs})/(\text{sales revenue}) \\ &= 1 - (\text{costs}/\text{sales revenue}) \\ &= 1 - (\text{unit cost}/\text{price}) \end{aligned}$$

So if prices are rising relative to unit costs, then the profit margin is rising.

References

Nickell, S. and Quintini, G. (2002), "The Recent Performance of the UK Labour Market", Oxford Review of Economic Policy, 18(2), Summer.

Table 1**Output Gap Measures (%)**

	1995-98	1999-00	2001-03	2004
OECD	-0.8	0.3	0.1	0.4
EC			0.0	-0.3
NIESR	0.1	0.2	-0.1	-0.1
OEF	0.2	-0.1	-0.8	-0.7
HMT	-0.3	0.6	-0.7	-0.8

Source: Bank of England. OECD is the Organisation for Economic Co-operation and Development, EC is the European Commission, NIESR is the National Institute of Economic and Social Research, OEF is Oxford Economic Forecasting, HMT is HM Treasury.

Table 2**Capacity Utilisation Measures (%)**

	% of private sector	1987-88	1995-98	1999-00	2001-03	2004
CBI manufacturing (fig.2a)	20.5	63.1	46.0	39.4	31.7	41.5
CBI manufacturing (fig.2b)	20.5	23.8	18.6	14.8	12.4	17.5
CBI manufacturing (fig.2c)	20.5	36.8	35.4	31.3	24.5	34.3
BCC services (fig.3)	67.4		38.7	39.4	37.3	40.5
CBI business services (fig.4a)	23.5			12.0	-20.1	-10.0
CBI consumer services (fig.5a)	26.1			-9.6	-27.8	0.8
CBI financial services (fig.6a)	8.6		-4.4	21.6	-10.7	-4.0
CBI business services (fig.4b)	23.5			11.4	7.1	7.3
CBI consumer services (fig.5b)	26.1			4.1	5.8	9.0
CBI financial services (fig.6b)	8.6		27.1	33.5	23.9	19.5
Weighted average				20.2	11.9	18.9

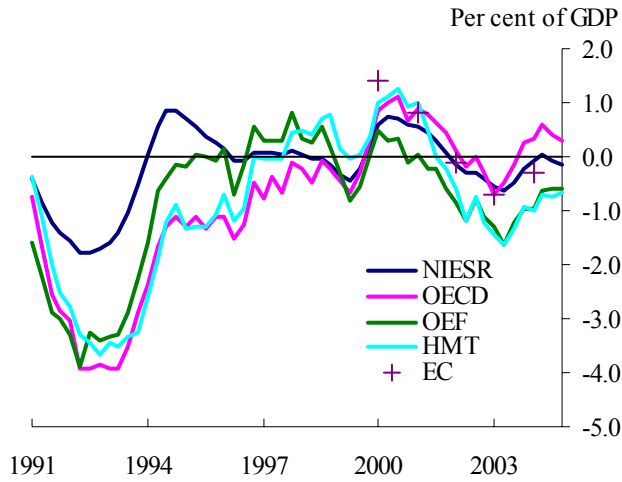
Note: The weighted average is balanced in the sense that the series in this table cover both the manufacturing sector and the service sector three times. The distribution sector is not in CBI consumer services.

Table 3**Labour Market Tightness Measures**

	% of private sector	1987-88	1995-98	1999-00	2001-03	2004
CBI manufacturing (fig.11a)	20.5	20.4	11.6	13.0	11.1	12.8
BCC manufacturing (fig.11b)	20.5		65.6	70.4	66.5	60.3
BCC services (fig.12)	67.4		58.1	62.8	61.5	60.3
CBI business services (fig.13a)	23.5			40.4	31.3	28.5
CBI consumer services (fig.13b)	26.1			14.5	17.6	16.3
CBI financial services (fig.13c)	8.6		24.4	25.5	20.9	15.5
Weighted average				42.8	40.7	38.8
Weighted average (first three rows)			53.5	57.7	56.1	54.6

See Note in Table 2. The weighted average for the first three rows involves averaging the first two rows and then taking a weighted average of this and the third four. The distribution sector is not in CBI services.

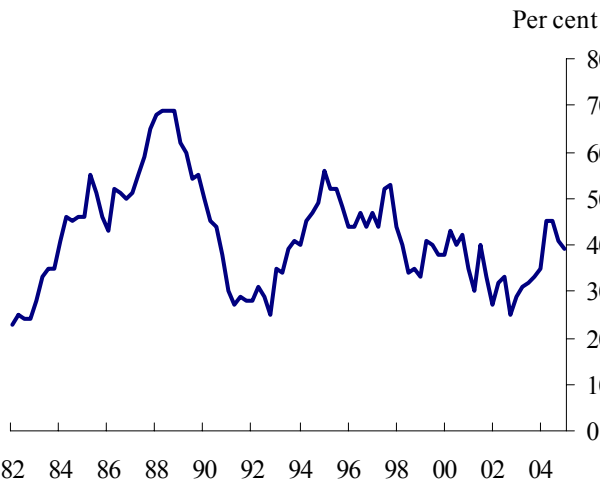
Figure 1: Output gap measures (%)



Sources: NIESR, OECD, OEF, HMT and EC.

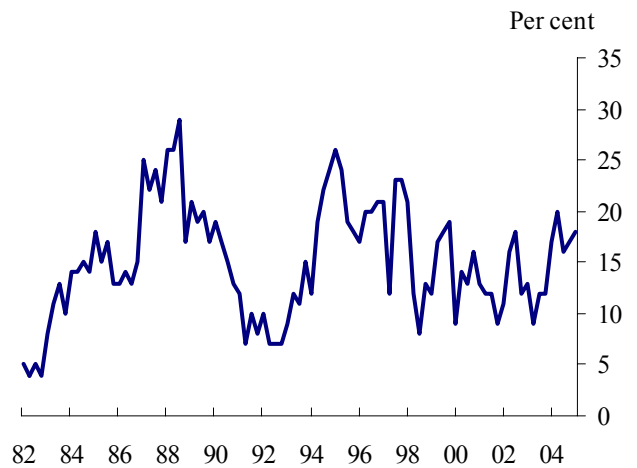
Figure 2: Manufacturing capacity constraints (%)

Figure 2a: Manufacturing capacity utilisation



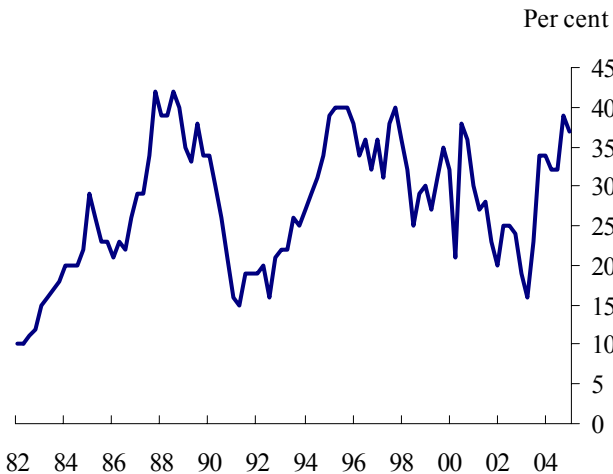
Source: CBI manufacturing, percentage of firms not working below a satisfactory full rate of operation.

Figure 2b: Manufacturing, capacity shortage limits output



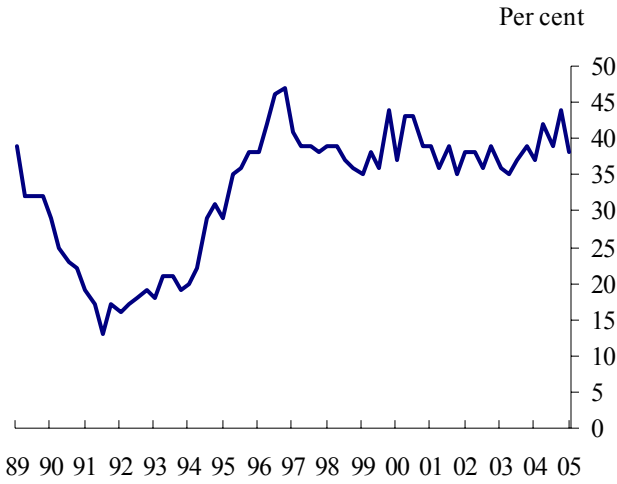
Source: CBI manufacturing, percentage of firms say that plant capacity is a factor limiting output over the next three months.

Figure 2c: Manufacturing, investing for capacity reasons



Source: CBI manufacturing, percentage of firms who say that capacity is one of the main reasons for investing in the coming year.

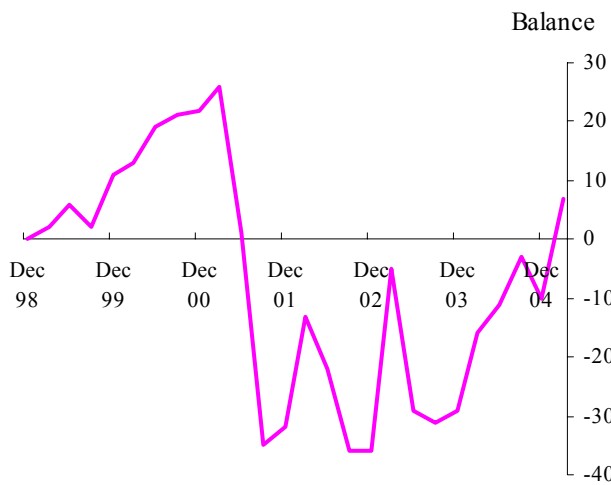
Figure 3: Service capacity utilisation (%)



Source: BCC services, percentage of firms operating at full capacity.

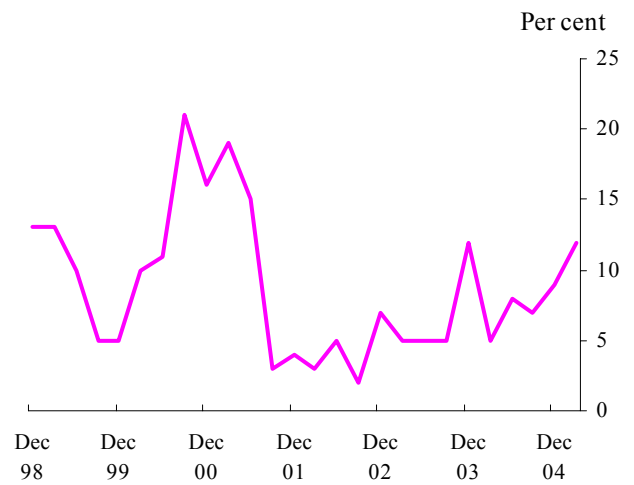
Figure 4: Business services capacity constraints (%)

Figure 4a: Business services capacity utilisation



Source: CBI business services, percentage balance of firms with level of business above/below normal.

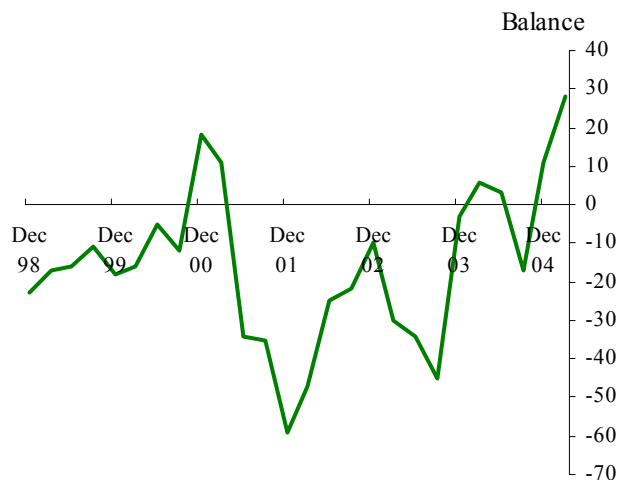
Figure 4b: Business services, capacity shortage limits output



Source: CBI business services, percentage of firms saying that system capacity is a factor limiting the level of business over the next year.

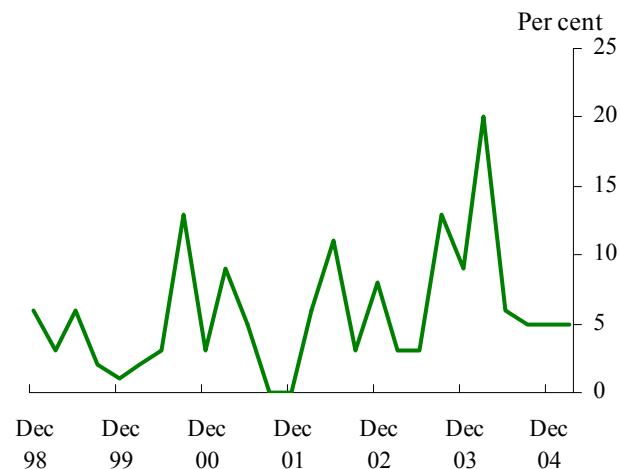
Figure 5: Consumer services capacity constraints (%)

Figure 5a: Consumer services capacity utilisation



Source: CBI consumer services, percentage balance of firms with level of business above/below normal.

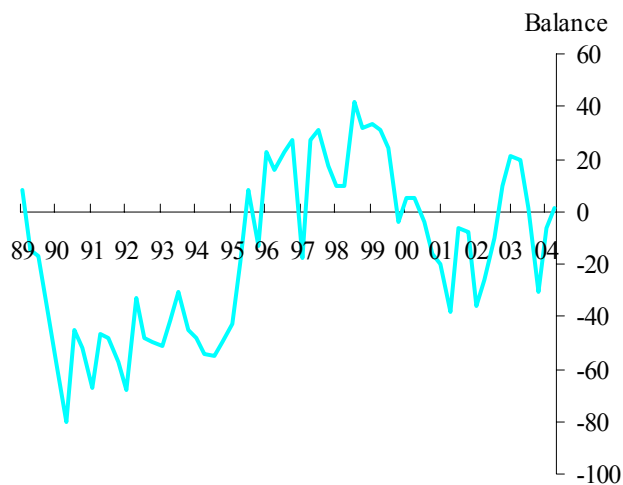
Figure 5b: Consumer services, capacity shortage limits output



Source: CBI consumer services, percentage of firms saying that system capacity is a factor limiting the level of business over the next year.

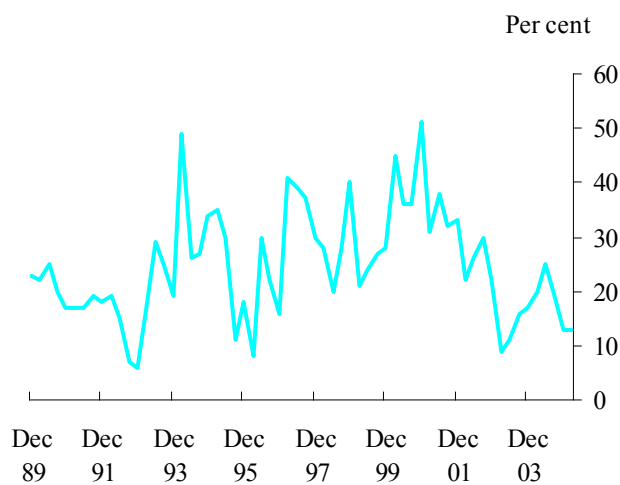
Figure 6: Financial services capacity constraints (%)

Figure 6a: Financial services capacity utilisation



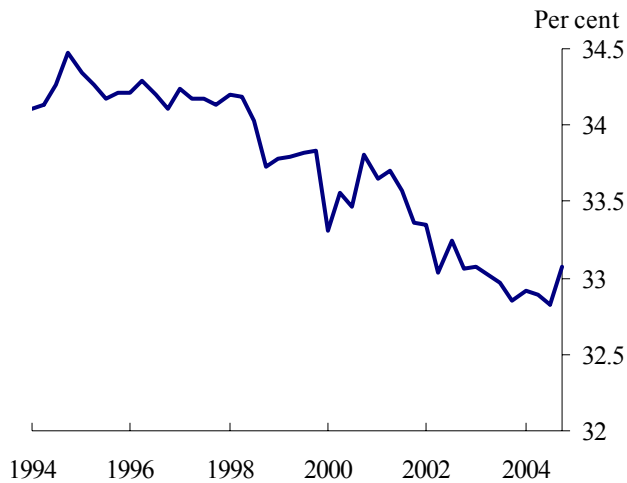
Source: CBI financial services, percentage balance of firms with level of business above/below normal.

Figure 6b: Financial services, capacity shortage limits output



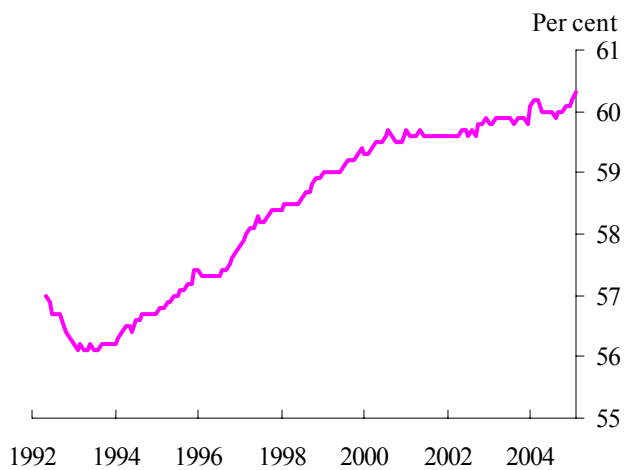
Source: CBI financial services, percentage of firms saying that system capacity is a factor limiting the level of business over the next year.

Figure 7: Average weekly hours of work in the private sector



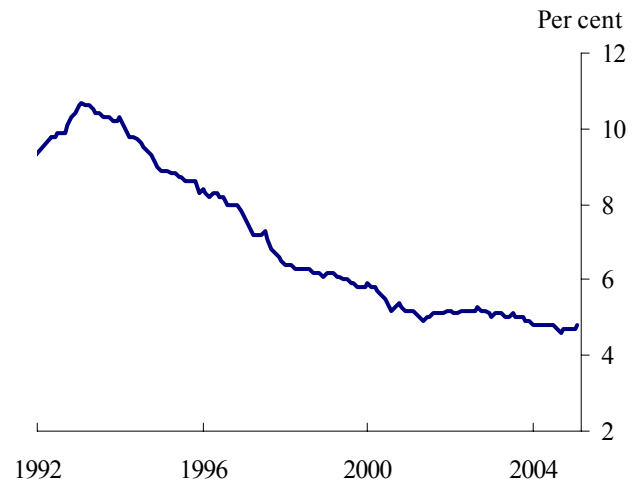
Source: UK Labour Force Survey.

Figure 8: Employment rate (%)

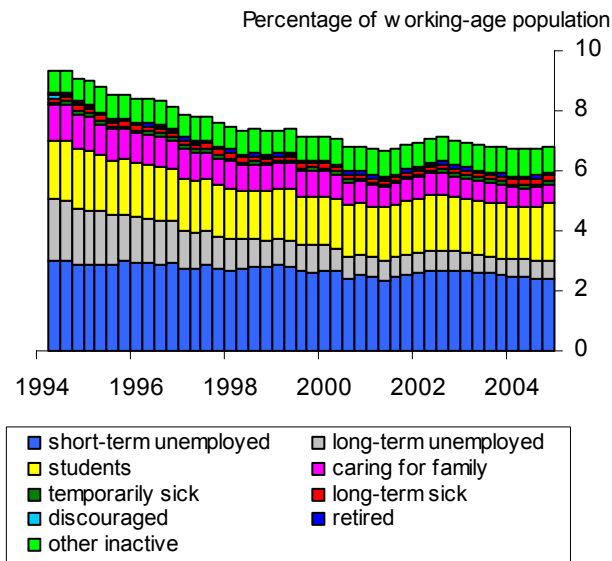


Source: UK Labour Force Survey (LFS). Employment as a percentage of the 16+ population.

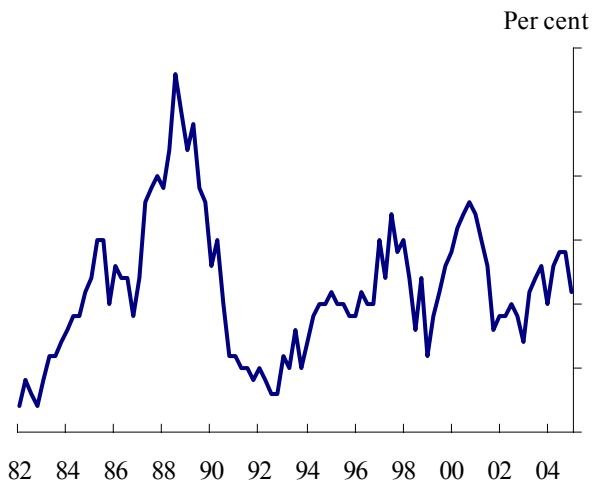
Figure 9: Unemployment rate (%)



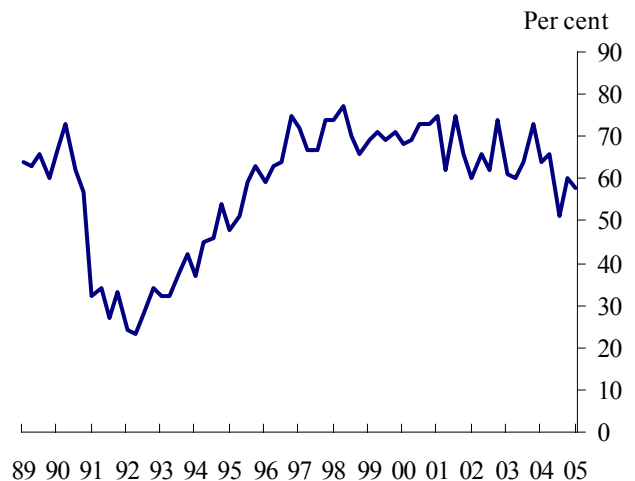
Source: UK Labour Force Survey (LFS). Unemployment as a percentage of the labour force. Data are backward-looking 3 month moving averages.

Figure 10: Weighted Non-employment rate (%)

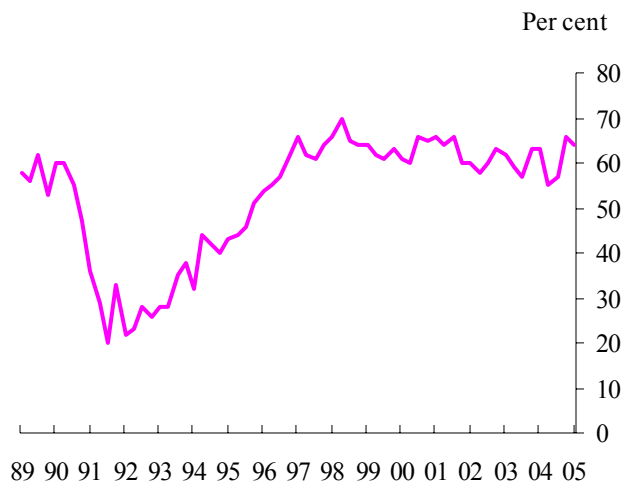
Source: UK Labour Force Survey (LFS). Take nine-groups of non-employed (short-term unemployed, long-term unemployed, students temporarily sick, discouraged, long-term sick, caring for family, retired and other), weight by their exit rates into employment relative to the exit rate into employment of the short-term unemployed, sum and divide by the working age population.

Figure 11: Manufacturing labour shortages**Figure 11a: Manufacturing skilled labour shortage**

Source: CBI manufacturing, percentage of firms who report that a shortage of skilled labour will limit output over the next three months.

Figure 11b: Manufacturing recruitment difficulties

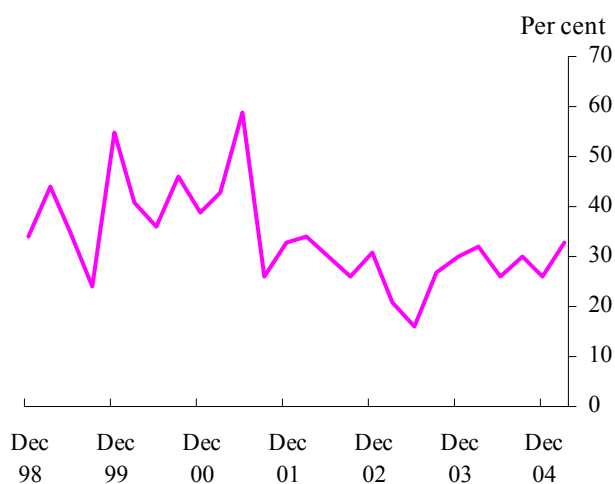
Source: BCC manufacturing, percentage of firms experiencing difficulties finding suitable staff.

Figure 12: Services recruitment difficulties

Source: BCC services, percentage of firms experiencing difficulties finding suitable staff.

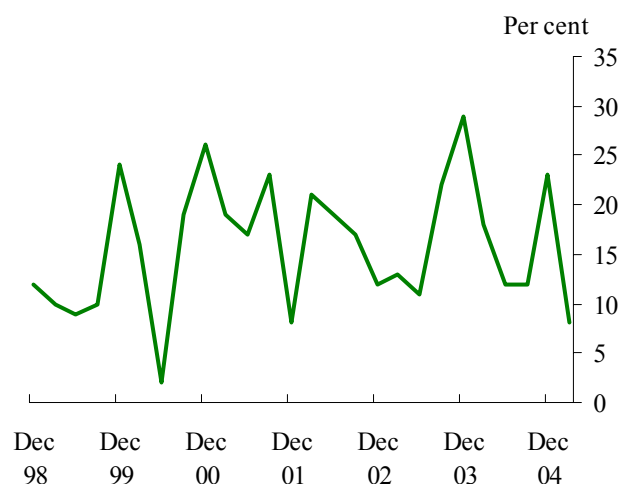
Figure 13: Services - availability of professional staff limits output

Figure 13a: Business services availability of professional staff limits output



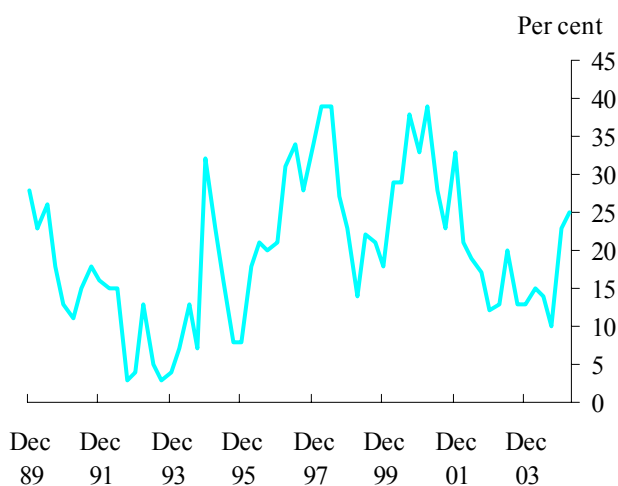
Source: CBI business services, the percentage of firms saying that the availability of professional staff limits the level of business.

Figure 13b: Consumer services availability of professional staff limits output



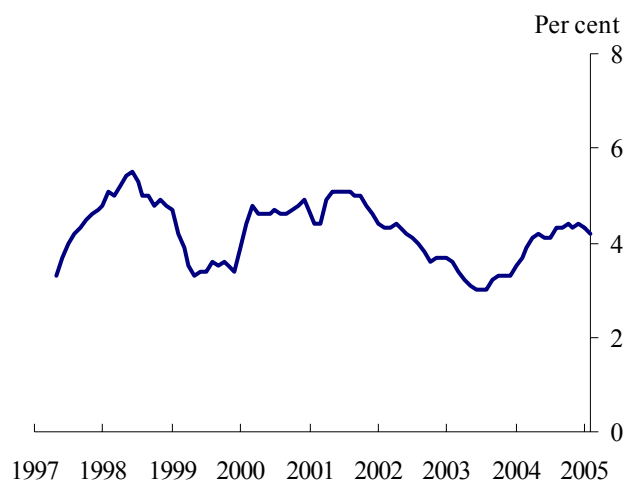
Source: CBI consumer services, the percentage of firms saying that the availability of professional staff limits the level of business.

Figure 13c: Financial services availability of professional staff limits output



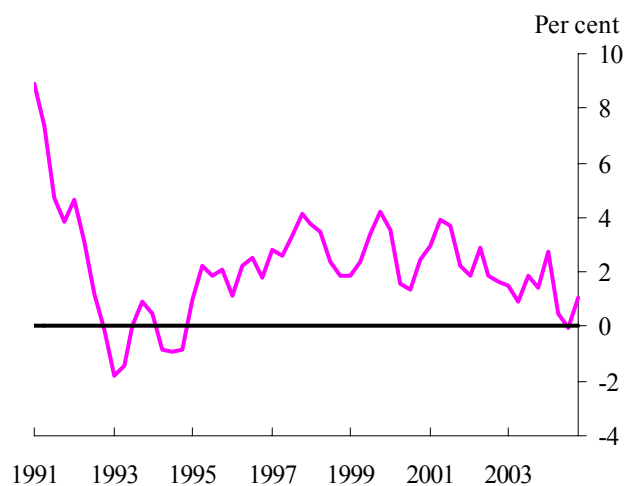
Source: CBI financial services, the percentage of firms saying that the availability of professional staff limits the level of business.

Figure 14: Underlying earnings growth in the private sector (%)



Source: ONS Average Earnings Index, private sector 3 month annual earnings growth excluding bonuses.

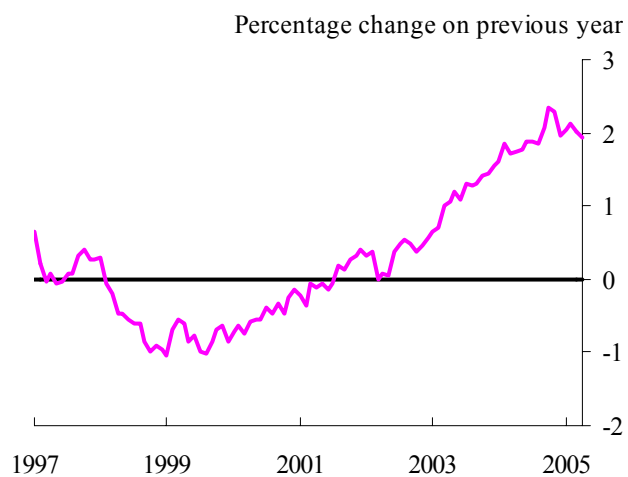
Figure 15: Growth of private sector unit wage costs (%)



Source: Bank of England.

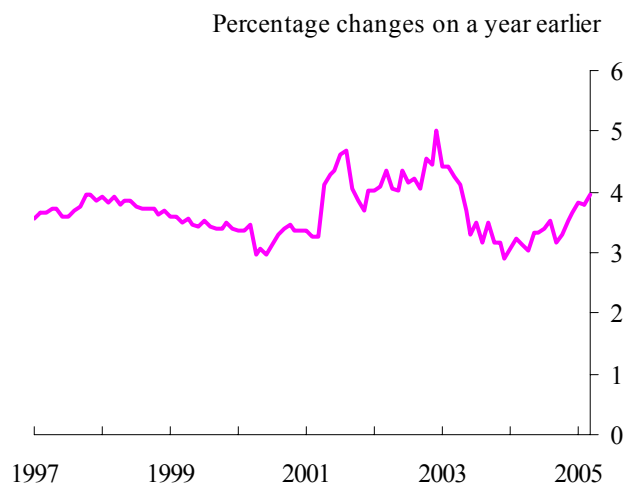
Figure 16: Domestic Price Inflation

Figure 16a: Domestic goods inflation



Source: ONS, domestic goods price inflation excluding petroleum products.

Figure 16b: CPI services inflation



Source: ONS Consumer Price Index, service price inflation.

Figure 17: UK Profit Margins

Figure 17a: Margins in manufacturing (ABI)

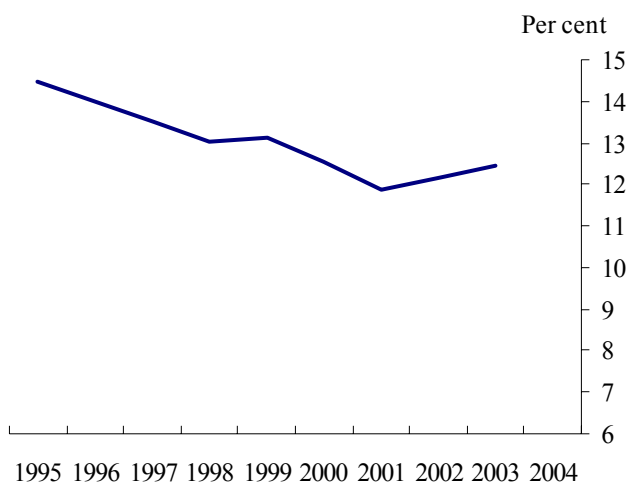


Figure 17b: Margins in services (ABI)

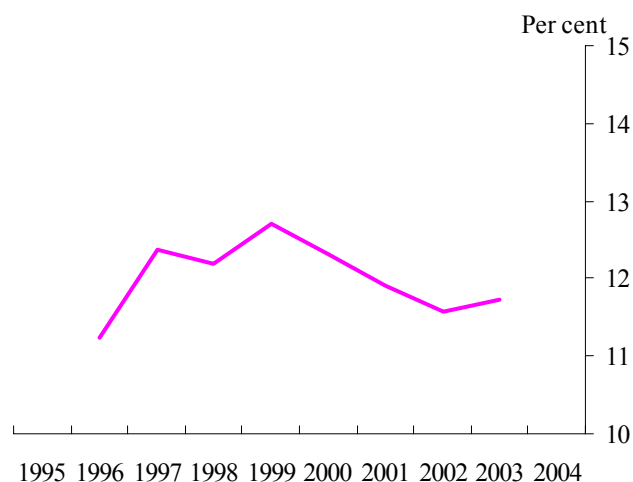


Figure 17c: Margins in manufacturing (NA)

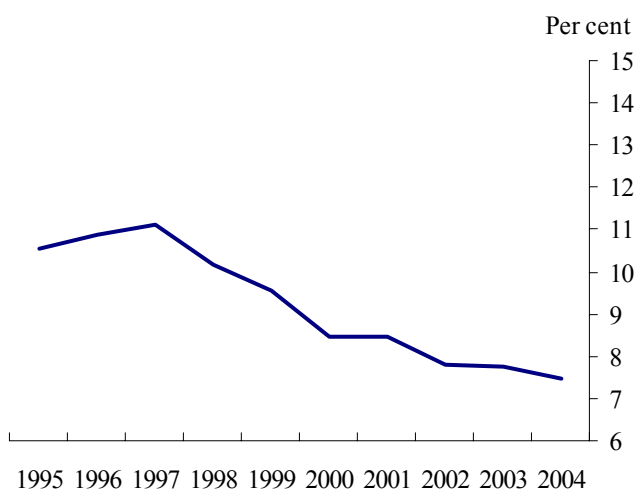
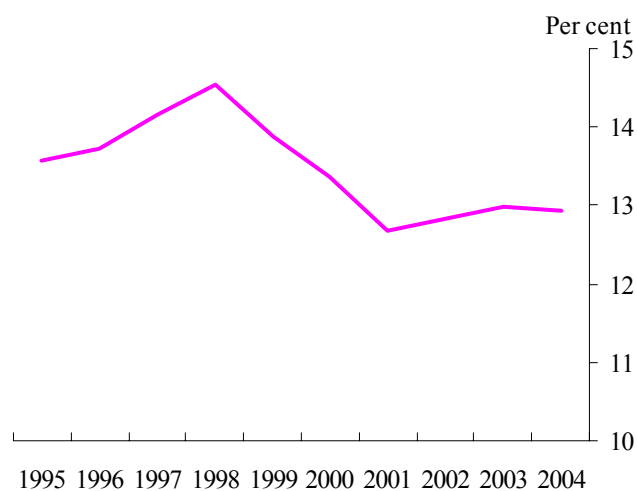


Figure 17d: Margins in services (NA)



The manufacturing sector is defined as SIC(92), sector D.

The service sector is defined as SIC(92), sectors G,H,J,K,O, namely wholesale, and retail, hotels and restaurants, transport and communication, renting and business activities and other services.

Margins are defined as (gross operating surplus)/(gross output). The ABI measure comes from the Annual Business Inquiry, the NA measure from the National Accounts. They differ because the data come from different sources, notably for 2003 and 2004. The pattern of NA data is thought to be more accurate prior to 2002.