

Box 4

DEVELOPMENTS IN SURVEY DATA ON LIMITS TO MANUFACTURING PRODUCTION

The ECB closely monitors indicators of slack in the goods market, equipment market and labour market, as these can help to improve the assessment of the economic situation in the euro area. The European Commission's quarterly survey of the manufacturing sector is useful for this purpose. This box focuses on the part of the survey which provides an indication of the factors that limit firms' production. It shows that these indicators co-move with the economic situation in the euro area. However, the strength of the relationship may be affected by changes in the production structure and may vary across business cycles.

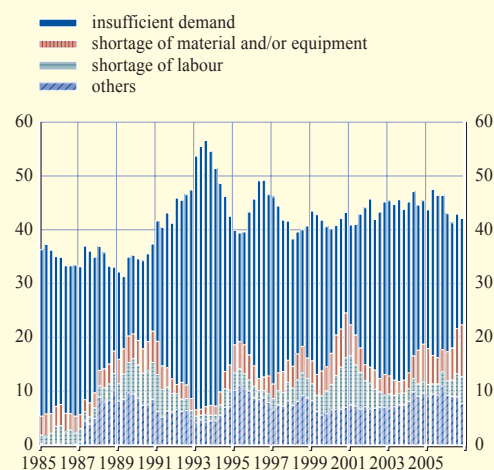
Survey questions on limits to production

Indicators of limits to production can be derived from the question “What main factors are currently limiting your production?” included in the European Commission’s survey. The respondent can choose several answers from among the following: “none”, “insufficient demand”, “shortage of labour force”, “shortage of material and/or equipment”, “financial constraints” and “others”. The answers reflect limits to production through either the demand or the supply side. They are reported as a percentage of the total responses, and thus add up to 100%.

Chart A shows the answers given, aggregated for the euro area, over the whole sample period. The largest fraction of the respondents usually report an absence of limits to production, an answer not reflected in the chart. This is followed by insufficient demand, lack of equipment and shortages of labour.¹ While the category “others” does not seem to vary significantly, Chart A shows that insufficient demand, shortage of labour and lack of material and/or equipment demonstrate the clearest cyclical behaviour and move together. This was particularly notable in the periods 1990-1991 and 1999-2001, and more recently since the middle of 2005. Chart A demonstrates that the supply-side indicators of shortages of labour and capital can approach levels close to zero during economic downturns. Conversely, during economic upswings, such as that currently under way, the “insufficient demand” indicator may reach its lowest point at a level above zero.

Chart A Assessment of limits to production

(percentage of total responses)



Source: European Commission.

Note: Together with the answer “none” (not shown), the answers reported add up to 100%. Prior to 1992 France is excluded for technical reasons.

Limits to production in the current recovery

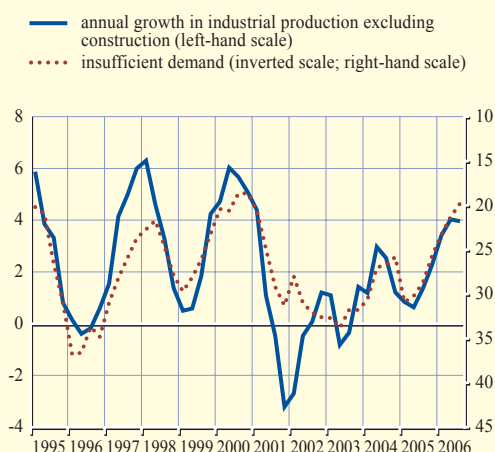
Looking at more recent trends, Chart B shows the insufficient demand indicator alongside growth in industrial production excluding construction. For convenience, the scale of the insufficient demand indicator has been inverted, so that an improvement in economic conditions should translate into an increase in both series in the chart. The series have tracked each other fairly closely. Lack of demand appears to have become less of a concern recently, with insufficient demand decreasing broadly in line with the strengthening of economic activity.

Chart C shows the shortage of labour and lack of material and/or equipment indicators. Higher values are consistent with an upturn in activity in the manufacturing sector. Both series exhibit cyclical fluctuations, with shortages in either labour or material/equipment becoming more

¹ “Financial factors” were introduced as an additional possible answer in 2002. Since the analysis starts before this date, “others” is redefined to include the financial factors answer for the entire sample period.

Chart B Insufficient demand indicator and industrial production excluding construction

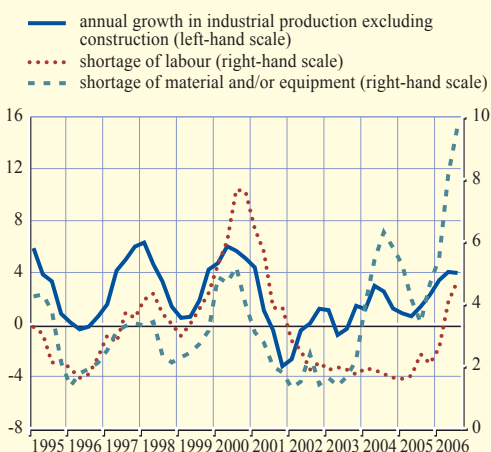
(annual percentage changes; percentages)



Sources: European Commission and Eurostat.
 Note: The insufficient demand indicator is expressed as a percentage of all respondents' answers on impediments to production. It is presented inverted, so that an increase indicates stronger demand pressures. This indicator and the other survey answers on limits to production (not shown) add up to 100%.

Chart C Indicators of limits to production and industrial production excluding construction

(annual percentage changes; percentages)



Sources: European Commission and Eurostat.
 Note: The indicators are shown as a percentage of all respondents' answers on impediments to production. These indicators and the other answers (not shown) add up to 100%.

evident as economic developments improve. Chart C also shows, however, that the way in which these indicators react may vary across business cycles: both seem to be behaving differently at present compared with the past. In particular, the indicator of lack of equipment seems to have been more prominent in 2006 compared with 1999-2001, and currently exceeds the level observed in mid-2000, when the previous expansion peaked (while the current growth in industrial production excluding construction is still lower and has been considerably lower in recent years than it was during the late 1990s). The increasing tightness observed in the lack of equipment indicator in 2006 may reflect the fact that real investment growth, which reached levels of around 6% ahead of the cyclical peak in 2000, has been much more subdued in recent years, rising from somewhat below 2% in 2003-04 to nearly 3% over the course of 2005 and currently standing at around 4%. The low level of investment recorded for some time and an increase in economic depreciation of existing capital may explain to some extent why bottlenecks in material and/or equipment are being reported.

Labour shortages have recently increased, albeit by less than in 1999-2001. This indicator only started to increase significantly in the second half of 2005 and currently stands at about the same level as in September 1999. Structural reforms may have played a role in this development, by facilitating stronger labour force growth and contributing to a decline in the euro area structural unemployment rate in recent years.² In addition, the fact that increasing labour demand was initially able to be satisfied by a rise in hours worked may explain why fewer labour shortages have so far been reported than in the previous economic upturn.

² See the boxes entitled "Recent developments in total hours worked in the euro area" in the September 2006 issue of the Monthly Bulletin and "A longer-term perspective on structural unemployment in the euro area" in the August 2005 issue of the Monthly Bulletin.

Conclusions

All three indicators of limits to production analysed here have signalled a strengthening in euro area manufacturing sector activity since mid-2005. While the reported level of demand is currently proceeding broadly in line with the improvement seen in manufacturing activity, the tightness in the labour market is currently lower than during the 1999-2001 expansion and the lack of equipment much greater. The robustness of these indicators as evidence of capacity constraints needs to be assessed in conjunction with other information, but together they point to a generally positive economic outlook. In particular the indicator of lack of equipment may suggest a fairly favourable outlook for investment trends in the period ahead, whereas the still relatively low level of reported labour shortages may be consistent with a baseline scenario of only moderate wage pressures.