INFOCUS

MACRO COMMENT

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Leading vs. lagging indicators

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Contrasting data can create a confusing picture about the economic environment. One reason is that some data leads the business cycle while other data lags. In this edition of *Infocus,* Economist Sam Jochim analyses what leading and lagging indicators are telling us about the current state of the US, eurozone and UK economies.

The Conference Board, an independent US think tank, produces leading indicators for many economies.[1] These include data which are thought to lead – that is, move in advance of – the business cycle.[2] For example, average weekly hours for the manufacturing sector are included as a leading indicator because employers tend to reduce work hours before they make staff redundant.

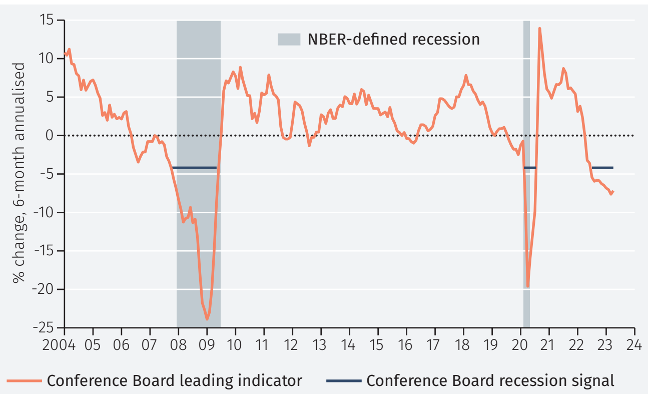
US Conference Board Indicators

The Conference Board also produces coincident indicators for many economies. These aim to provide an indication of the current state of the business cycle and include data such as net hiring and industrial production.

For the US, the Conference Board also produces a lagging indicator. It includes items that lag – or follow – the business cycle. For example, a series measuring the level of outstanding commercial and industrial loans is included because it tends to peak after the business cycle as falling profits encourage an increase in the demand for loans (sometimes referred to as ‘distress lending’).

Historically, the 6-month annualised change in the leading indicator has been a useful tool for identifying turning points in the business cycle. In October 2007, this measure of the leading indicator passed its recession warning threshold (see Figure 1).[3]

1. US leading indicator

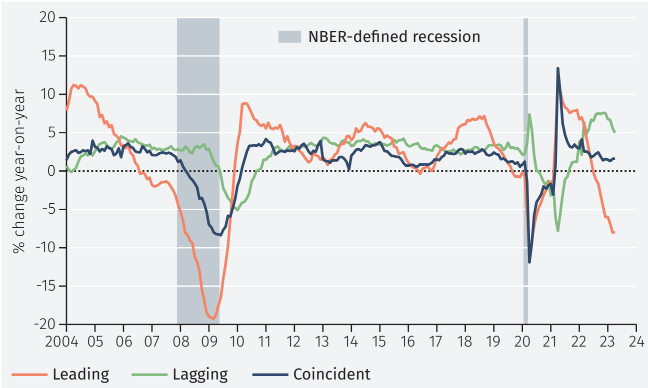


Sources: Refinitiv and EFGAM calculations. Data as at 9 June 2023.

The US entered recession, according to the National Bureau of Economic Research (NBER), two months later in December 2007.[4] It is notable that this measure is currently signalling a recession in the US.

While the 6-month annualised change in the leading indicator is used by the Conference Board as a recession signal, we use year-on-year changes to assess the general strength of leading and lagging data (as shown in Figure 2, below). At the onset of the recession in 2007, the leading indicator was negative in year-on-year terms. Contrasting this, the coincident and lagging indicators were both still positive. The coincident indicator only turned negative in year-on-year terms five months into the recession and the lagging indicator only did so in the first month following the end of the recession.

2. Conference Board indicators – US



Sources: Refinitiv and EFGAM calculations. Data as at 9 June 2023.

In 2020, the Covid pandemic caused a recession. Despite the sudden-stop nature of that recession, it is notable that the leading indicator declined before the coincident and lagging indicators although it was less useful as a predictor of recession than it had been in previous downturns.

The contrasting signals sometimes given by leading and lagging indicators highlight an issue which is particularly important in the current economic climate. While it is plausible that the US economy avoids a recession, the argument should

1 https://www.conference-board.org/topics/business-cycle-indicators
2 https://www.conference-board.org/data/bci/index.cfm?id=2160#BCI01
3 The Conference Board’s recession signal thresholds depend not on the leading indicator falling blow zero. Rather, it depends on the number of inputs for the leading indicator declining compared to the number remaining stable or rising; and (where the overall index is already negative) the decline over the last six months falling below its median value.
4 https://www.nber.org/news/business-cycle-dating-committee-announcement-december-1-2008

not be based purely on lagging data as it is possible that this data remains strong while the economy is already in recession. Furthermore, even data which are defined by the Conference Board as coincident can remain positive while the economy is in recession.

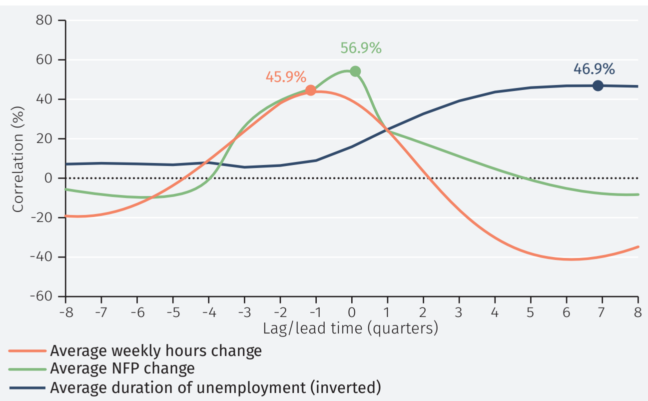
US Conference Board Indicators and employment data

Looking at the 'Employment Situation Summary' for May from the Bureau of Labor Statistics highlights some interesting points.[5] The data appeared contradictory. The increase in non-farm payroll employment was strong at 339,000. The average duration of unemployment also suggested strength in the labour market: it declined from 22.4 weeks to 21.9 weeks and continued the downward trend since January 2022. However, these signs of labour market strength were accompanied by signs of weakness. For example, there was a fall in average weekly hours worked from 34.4 to 34.3, continuing the downward trend since March 2022.

An explanation for these conflicting messages is that some data is leading while other data is lagging. According to the Conference Board, the change in non-farm payroll employment is coincident with the business cycle and reflects actual net hiring and firing. Changes in average weekly hours worked lead the business cycle as firms tend to cut hours before they cut staff in economic downturns. Unemployment duration lags the business cycle as the sharpest increases in unemployment tend to occur after recessions have begun.

Investigating the relationships of these variables with real GDP in the US confirms the Conference Board's assertions (see Figure 3). Average duration of unemployment is inverted so that an increase in unemployment duration is reflected as a

3. Cross correlations with US GDP (Q1 1965 – Q1 2023)



Sources: Refinitiv and EFGAM calculations. Data as at 9 June 2023.

decline in the data. Quarterly averages are constructed, and correlations are computed with real GDP with leads and lags up to eight quarters.

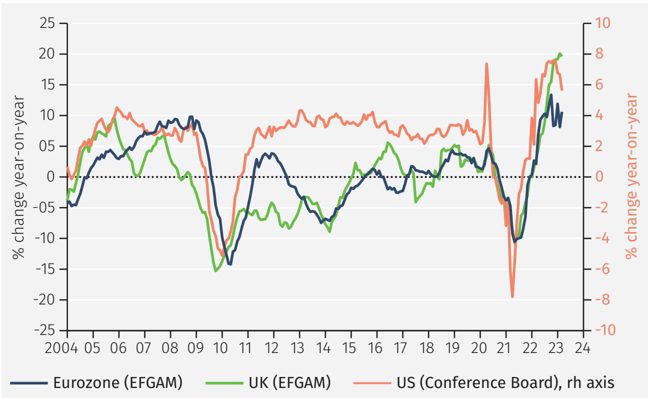
The correlation between average weekly hours and real GDP peaks one quarter ahead of real GDP growth, implying that changes in average weekly hours lead changes in GDP by around one quarter. The correlation between the change in non-farm payroll employment and real GDP growth peaks without any lead or lag. The correlation with average duration of unemployment implies a lag of around seven quarters.

When framed in this context, strength in the latest US labour market report appears in the lagging and coincident data, while weakness appears in the leading data. More broadly, the Conference Board coincident and lagging indicators currently remain positive in the US in year-on-year terms. Looking only at this data, the US economy does not currently appear weak. However, the leading indicator is negative in year-on-year terms, implying that weakness may lie ahead. Looking at the 6-month annualised change, as the Conference Board does to signal recession warnings, it appears that the risk of recession in the US has risen materially.

UK and eurozone indicators

While the Conference Board produces a lagging indicator for the US, it does not do so for other economies. It is therefore an interesting exercise to replicate the lagging indicator for the eurozone and the UK (see Figure 4).[6]

4. US, UK and eurozone lagging indicators



Sources: Refinitiv, ONS and EFGAM calculations. Data as at 9 June 2023.

As with the US, the lagging indicators for the eurozone and the UK both remain positive in year-on-year terms. For the eurozone, this is predominantly driven by commercial and

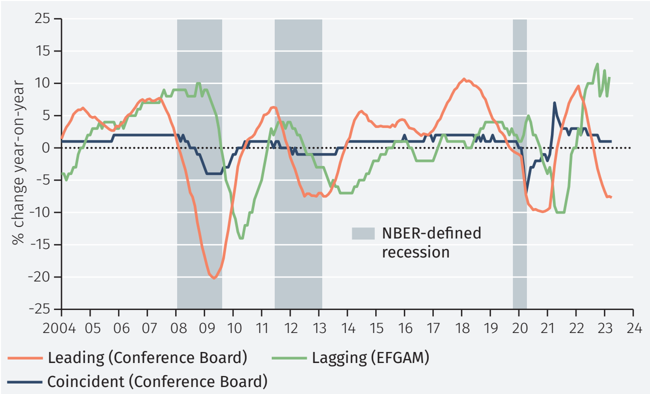
[5] https://www.bls.gov/news.release/empsit.nr0.htm

[6] The lagging indicators include the consumer price index for services, consumer installment credit to personal income ratio, commercial and industrial loans, and average prime rate. The lagging indicator for the eurozone also includes labour cost per unit of output for the manufacturing sector in Germany as a proxy for the eurozone. The lagging indicator in the UK also includes a diffusion index created using ONS data to represent average duration of unemployment. Monthly inventory to sales ratios for manufacturing were unavailable for both regions.

industrial loans outstanding and the change in the consumer price index for services. For the UK, it reflects an increase in the average prime rate and the change in the consumer price index for services.

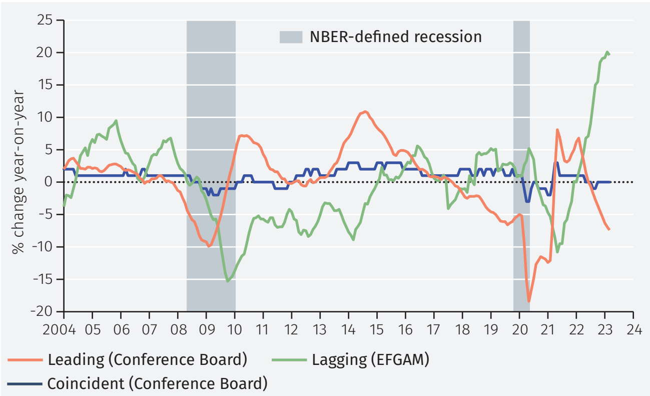
The coincident indicators are also positive in year-on-year terms, though they are growing at a much slower rate than the lagging indicators. Contrastingly, the leading indicators are both negative year-on-year (see Figures 5 and 6).

5. Eurozone leading, lagging, and coincident indicators



Sources: Refinitiv, Bloomberg, Conference Board and EFGAM calculations. Data as at 9 June 2023.

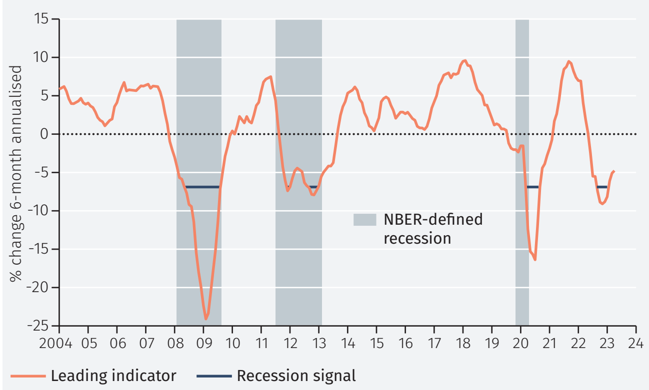
6. UK leading, lagging, and coincident indicators



Sources: Refinitiv, Bloomberg, ONS, Conference Board and EFGAM calculations. Data as at 9 June 2023.

Looking at the annualised 6-month change, the eurozone leading indicator appears to have troughed and no longer signals a recession (see Figure 7). Notably, the same happened during 2012 and it did not coincide with a new phase of economic growth as the recession continued and the leading indicator continued to fall after a short rebound. On the other hand, the leading indicator for the UK remains below the

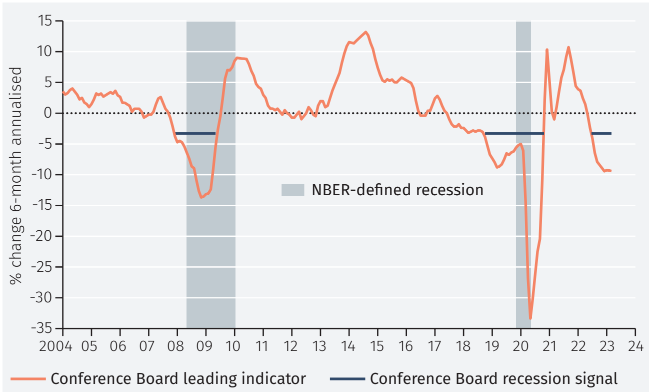
7. Eurozone leading indicator



Sources: Blomberg, Conference Board and EFGAM calculations. Data as at 9 June 2023.

threshold that signals recession and is declining at almost the same pace as in 2008 during the Global Financial Crisis (see Figure 8).

8. UK leading indicator



Sources: Blomberg, Conference Board and EFGAM calculations. Data as at 9 June 2023.

Conclusions

In summary, when some data are leading while others are lagging, the information content of different economic time series are often seemingly in conflict. Distinguishing between leading and lagging data is therefore critical, particularly at turning points in the business cycle. In the US and UK, the risk of recession has increased materially according to Conference Board leading indicator. In the eurozone, however, a recession is no longer signalled. It is worth noting that the historical behaviour of the leading and lagging indicators at turning points in the business cycle should not be taken as an indication that they will behave in the same way in the future.

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