LEADING INDICATORS POINT TO A RECOVERY

Last year’s economic slowdown in Sweden was unexpectedly marked. The GDP forecasts that had been presented in 1999 and 2000 averaged 3.4 and 2.3 per cent, respectively. There is nothing unusual about this; forecasters frequently miss turning points in the economic cycle.

The difficulty in predicting slowdowns has stimulated interest in leading indicators, that is, in variables that contain information about the probable future path of some other variable. The issues considered here are whether leading indicators predicted cyclical turning points and whether they now signal that a recovery is imminent.

There are a number of reasons for giving credence to the notion of leading indicators. Firstly, the economic cycle has some recurrent patterns. Changes in people’s expectations about the future tend to be mirrored sooner in some GDP components than in others (see the box on pp. 41–47). A slackening of GDP growth and employment is often preceded by, for example, downward tendencies in exports, overtime and the consumption of durable goods and an accumulation of stocks. Secondly, there is a time lag before the monetary conditions affect demand. Partly for this reason, interest rates, the exchange rate and the money supply can be assumed to lead the paths of consumption and investment. Thirdly, fluctuations in growth may be discernible in surveys that mirror expectations. Examples are the National Institute of Economic Research’s business tendency surveys of households, firms and purchasing managers. Fourthly, asset prices and other financial variables can point to an imminent turning point in that the pricing of shares, bonds and currencies, for example, is influenced by expectations of the future.

However, the significance of these leading indicators should not be exaggerated. All the categories – real variables, monetary conditions, surveys of expectations

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and financial variables – are associated with problems of interpretation.

One difficulty with leading GDP components is that economic shocks of various types probably do not affect every sector in the same way. The impact of an oil price rise, falling share prices or a bank crisis does not necessarily follow the same pattern as, for example, a productivity shock driven by technology.

A problem with the forecasting performance of survey data is that the participants base their responses on the available economic information. In certain surveys the future expectations reported by households and firms can be explained almost entirely in terms of other underlying variables such as the actual development of unemployment, share prices, GDP growth or household disposable income.6

In the case of asset prices it has been pointed out that the forecasting ability may not be stable over time. Financial indicators may perform well in certain periods and countries but it is difficult to detect any general patterns.7

There are no grounds for supposing that leading indicators in general would predict economic development more satisfactorily than more sophisticated models or that they can replace the latter.

A simple evaluation of some leading indicators for GDP in Sweden is presented here. The target variable is growth, measured as the percentage annual change in GDP ($DY$). The predictive expressions are simple, consisting of one indicator ($DI$), its time lag and a constant.8

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8 Most of the indicators are estimated on the period 1970 Q1 – 2001 Q3. All variables except interest rates, discharge notices and job vacancies are calculated as the percentage change from the corresponding period the previous year. The forecasting performance of the indicators is assessed outside the sample with simulated recursive forecasts. To cover the period with the inflation-targeting policy, the assessments begin at 1993 Q1. The forecast horizon is one year, that is, the models predict the annual GDP growth rate four quarters ahead. When a forecast has been obtained, an observation is added to the sample and the model is re-estimated to obtain a further forecast. In this way, only information that was available at the time of the historic forecast is used. With the generated forecasts, the expected changes in the direction of the growth rate can be studied to determine how often the model can predict whether annual GDP growth one year ahead will be higher or lower than at present.
\[ \Delta Y_{t+4} = \alpha + \beta_1 \Delta I_t + \beta_2 \Delta I_{t+4} + \epsilon_{t+4} \]

The simple approach has the advantage of making it easy to interpret and compare the results. A drawback is that only some information is used, for instance because each indicator is considered separately. The indicators should therefore be seen as such, not as full-blown forecasts. The indicators are arranged in Table B5 in categories. Some major indicators with a forecasting performance (based on historical errors) that is relatively good are the OECD’s leading indicators, the Swedish krona’s effective exchange rate, households’ expectations of the Swedish economy, stock market prices, confidence among manufacturing firms and a money supply aggregate (Table B3). Briefly, it can be said that:

- The forecasting error is large and the confidence interval broad for all indicators (Table B3). However, the forecasting errors are smaller than for a ‘naive’ or a ‘random walk’ forecast.
- A sizeable number of indicators are seemingly capable of predicting whether growth will strengthen or weaken.

These two conclusions are in line with results from other studies. Leading indicators are an uncertain guide to the level of growth in the coming period but appear to provide some support in the prediction of changes in growth’s direction.

**TWO OF THE LAST THREE UPTURNS WERE PREDICTED**

It may be worth taking a brief look at the signals some indicators provided in connection with turning points in the 1990s. These estimations suggest that a majority

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9 The OECD’s leading indicators have successfully predicted rising or falling growth almost 9 times out of 10 and accordingly attract interest in this context. As they consist of many different variables (e.g. hours worked, discharge notices, order inflow, manufacturing output, the money supply, commodity prices, share prices and interest rates) and are revised to agree as far as possible with GDP growth, they are not comparable with the other variables.

10 A random walk is based on the latest outcome.

11 Note, however, that the evaluated period covers only two economic cycles and the growth path displays a high degree of serial correlation. In general, this should increase the accuracy of the directional forecasts.

of the indicators signalled both the slowdown in 1995 and the upswings in 1994 and 1997. However, they also signalled a slackening of demand during 1998, approximately two years before this actually happened, and missed the high activity in the next two years. These leading indicators accordingly predicted two of the last three cyclical upturns.

WHERE ARE THE INDICATORS POINTING NOW?
According to a majority of the leading indicators, a cyclical low has been passed and growth is going to strengthen. The exchange rate, household confidence in the future and the money supply, for example, suggest that four quarters from now, GDP growth will be above the 2001 Q4 rate of about 1 per cent. The fact that most indicators point in this direction makes the interpretation somewhat more reliable.

On the other hand, the OECD’s leading indicators, the stock market, job vacancies and discharge notices point to a weakening of growth prospects in the coming year.

13 The indications of a slowdown may have been connected with the crises in Asia in 1997 and Russia in 1998.