Leading indicator information in UK equity prices: an assessment of economic tracking portfolios

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Although movements in asset prices often seem to defy rational analysis, they do seem to respond to macroeconomic news in fairly predictable ways—see, for example, recent event studies such as Clare and Courtenay (2000). Clare and Courtenay relate asset prices only to the announcement of the most recent data point. But because equities are claims on cash flows over an indefinite time period, one might expect equity prices to respond to changes in expectations of macroeconomic events some way into the future. The question addressed in this paper is whether equity price movements can be used to infer changes in investors' expectations about particular macroeconomic variables over a variety of time horizons.

The approach taken is based on Lamont (1999), who constructs what he calls 'economic tracking portfolios' (ETPs). The returns on an ETP track how investors revise their expectations about the relevant macroeconomic variable period by period. To understand this relationship, note first that the level of asset prices is likely to incorporate forecasts of future macroeconomic outcomes. For example, equity prices are likely to reflect expectations of future dividends, interest rates and risk premia, all of which may be related to forecasts of a variety of macroeconomic variables. Changes in equity prices should therefore be related to **revisions** to investors' forecasts. An ETP is constructed so that the unexpected portion of the portfolio return has the maximum correlation with revisions to expectations of the target variable. In this paper I construct a set of ETPs using UK data, and assess their usefulness for macroeconomic forecasting.

When assessing the information content of equity prices, ETPs have a number of attractive features:

- One can, in principle, construct a tracking portfolio for any macroeconomic variable of interest over any forecast horizon.
- Previous studies have looked at the relation between capitalisation-weighted equity indices and macroeconomic variables. But it seems likely that the values of the largest companies are more dependent on macroeconomic factors outside the United Kingdom, and should therefore be given less weight than smaller firms' equity. The weights of an ETP are tailor-made to maximise the relationship with the target macroeconomic variable.
- Once the portfolio weights have been estimated, we can study the portfolio's performance at any frequency of interest. In this way, ETPs may provide a more timely indication of the economic state than the lower-frequency economic data on which they are based.

An important aspect of this study is that I focus on the out-of-sample properties of tracking portfolios. Many previous studies have found that, over a long sample, there is a significant relationship between equity prices and various macroeconomic variables. But if one were to use ETPs in real-time conjunctural assessment, what matters is the out-of-sample performance, which in turn depends on the stability of the relationship.

I construct ETPs for three target variables: inflation, industrial production growth, and growth in the volume of retail sales. I present results for forecast horizons of 0, 6, 12 and 24 months. The tracking portfolios are constructed using sectoral equity indices. In sample, practically all of the tracking portfolios are highly significant. But out of sample, the results are poor. There is a marked deterioration in the relationship between the target variables and the ETPs, such that the latter provide virtually no reliable information. This finding is apparent for all forecast horizons, and holds regardless of the frequency with which the portfolios are rebalanced or of the data window over which the weights are estimated.

This analysis suggests, therefore, that ETPs should be treated with some caution. One should certainly not automatically assume that an ETP will prove useful for out-of-sample analysis: a full statistical analysis needs to be conducted on a case-by-case basis to determine whether a given set of base assets can track a particular target variable over a particular horizon. The potential benefits of tapping into information that is not available from any other source need to be weighed against the danger of uncovering spurious relationships, which is a problem with any data-based approach to forecasting.