

OXFORD ECONOMIC FORECASTING'S UK COUNTY MODEL

Introduction

As part of the development of our regional service, run in conjunction with the Northern Ireland Economic Research Centre, Oxford Economic Forecasting has developed a model of economic activity for counties within the UK which breaks down the regional forecasts further. There are a number of benefits of adding county modelling to our longer-established macro, sectoral and regional forecasts of the UK economy:

- By giving us a more detailed understanding of geographical developments, it can help inform our more aggregate forecasts. Although the approach remains essentially top-down, and the County Model is designed to produce forecasts or scenarios entirely consistent with the regional picture, it can still act as a cross-check on whether the regional projections are plausible. This is very similar to the way the sectoral forecast can suggest another look at the macro picture, for example.
- Breaking down the regional projections into counties means that it is straightforward - at least for the level of detail included at the county level - to aggregate the forecasts back up to give projections for the 12 new Government Office Regions as well as the 13 old Standard Statistical Regions (counting Greater London and the Rest Of the South East as separate regions as well as the South East as a whole).
- Similarly, it makes more widespread modelling of bespoke regions possible, where clients want results designed to suit internal company regional definitions.
- And the county forecasts act as the driving force for modelling at the level of postal sectors - we use data and projections of employment by industry at the county level, together with information on the occupational mix of different industries, to update the employment profile of residents in each postal sector by occupation, which in turn drives forecasts of incomes and consumption.

Coverage of the County Model

The Model covers all counties in the UK as defined before the latest round of unitary authorities, with Greater London sub-divided into five areas (Central, Inner East, Inner West, Outer East and Outer West). It provides annual forecasts for employment, output and incomes along similar lines to the existing Regional Model, but is deliberately simplified in a number of areas in the interests of transparency and manageability. Sectoral detail remains vital in accounting for the differing prospects for different counties, but this is captured using the following six broad sectors rather than the 26 on the regional model:

- Agriculture and primary production
- Manufacturing
- Construction
- Distribution and transport
- Financial and business services
- Other (non-marketed) services

Data Sources and Construction

Building a model at county level inevitably involves 'constructing' a certain amount of the data required. But there are sufficient data sources to provide a sound basis for this construction, with labour market data, in particular, being a key source of understanding local economies.

Employment

Employment by county and industry is constructed by adding data for employees in employment and estimates for self-employment. Numbers of employees by industry, by county, are taken from the Census of Employment (now succeeded by the Annual Employment Survey), with interpolation for years when the census was not conducted. Self-employment by industry and county is estimated from total self-employment for each county, obtainable from the Labour Force Survey, and UK self-employment, by industry, from the Workforce in Employment series.

For counties within the South East only, there is an extra twist to take account of the significance of commuting in this area. Elsewhere, employment on a residence basis and on a workplace basis are assumed to be equivalent. But for the south-eastern counties,

residence-based employment by industry, by county, is constructed using the ratio for each industry in each county of residence-based employment to workplace-based employment available from the 1991 population census. Residence-based employment is used in the forecast of unemployment and the labour force, while workplace-based employment is used for output forecasts.

Unemployment

Unemployment by county is taken from the claimant count series and added to employment to generate the labour force.

Output

Real output by industry by county is constructed from: value-added per head in manufacturing by county from the Annual Census of Production; total nominal output by county from the Regional Accounts; employment by county, by industry, as discussed above; and estimates of real output by region and sector produced as part of our regional modelling processes.

Population

Total population and working-age population by county are derived from estimates produced by the Population Estimates Unit of the Office for National Statistics.

Incomes

Real household disposable income is constructed from nominal household disposable income per county, from the Regional Accounts, and the consumers' expenditure deflator from the National Accounts.

Earnings

Earnings per occupation per county are used in the postal sector system and therefore included in the County Model, even though the rest of the Model is based on industrial sectors rather than occupations. They are estimated using earnings per occupation per region, and average earnings per county for manual and non-manual workers, all taken from the New Earnings Survey.

Key Driving Forces

The most important driving forces on the Model which affect the relative performance of different counties are those which affect forecasts for population growth, the labour force and employment. Other variables such as

output and incomes are essentially driven by these labour market developments.

Population

Population projections essentially depend on two forces:

- Trends relative to the region, which may reflect tastes or the availability of land for new housing. Typically, counties which have seen faster population growth in the past than the region as a whole are assumed to continue to grow more quickly, and vice versa.
- Participation rates, with higher rates encouraging inward migration.

Labour force

Arithmetically, changes in the labour force are made up of changes in the population of working age and changes in participation. The key influence here in the model is from unemployment, with rising unemployment tending to reduce participation via the so-called 'discouraged worker' effect, and vice versa.

Employment

There are three main influences on the employment projections, which are probably the most important equations in the model:

- Trends relative to the region. Counties which have seen faster growth than the rest of the region in employment in a particular sector, perhaps as a result of the availability of appropriately-skilled labour or location incentives, are assumed (other things equal) to continue to do so, and vice versa.
- The sectoral mix of growth within the region compared with the sectoral composition of the county. So counties with a greater concentration of employment in sectors expected to see relatively fast employment growth in that region will generally see stronger overall employment growth than counties in the opposite situation.
- Unemployment. This term reflects an implicit relative wage effect, with falling unemployment relative to the region as a whole likely to put upward pressure on wages and hence to slow down the growth of employment.