Incorporating the alternative demographic scenarios into the EBS County Model

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Experian's long-term county modelling framework incorporates supply-side factors. These include labour supply, participation rates, labour force quality, infrastructure, population density and ethnic mix. Changes in the size and structure of the population and labour market participation trends will affect the supply of labour available. These factors influence the potential for economic growth and changes in employment in the South East.

The demographic projections provided by SEERA are used to estimate new long-term "potential participation" for each county. Potential participation is a measure of the propensity of people of different ages to enter the labour market. Potential participation rates are available by gender and age band (including people aged 65 and over). When applied to population levels this provides an estimate of all the people who could potentially participate in the labour market, or the theoretical maximum level of employment.

Not everyone who can potentially participate in the labour market would do so in their county of residence. To account for commuting effects and the fact that employment within a county depends partly on what is happening elsewhere potential participation is weighted to derive workplace-based potential participation for each county.

Workplace-based potential participation is then applied to the employment rate for that county derived from the long-term modelling process. The supply-side model is then solved and drawn together with our short-term demand-side model (described in the next section) to produce employment and output at county level.

Supply-side modelling is generally accepted as being more reliable for forecasting the direction of an economy over the longer-term as the long-term variables change relatively slowly over time. Numerous economic models, including the HM Treasury's long-run fiscal projections, view long-term economic growth as a function of productivity and employment. Our long-term county model is consistent with this type of approach in that it uses demographics and the employment rate to predict long-run employment.

County and district (UA/LA) level forecasts

The Long-term County Model provides the long-term 2016 view of each county's economy based on supply-side factors. To model the short to medium term, demand-led econometric modelling is employed.

In broad terms, the historical performance of county economies is interpreted in terms of their share of the regional economy of which they are a part. In turn, the performance of the LAD areas is based on their share of their encompassing county. For each sector of the economy, equations are produced for output and employment that explain the observable relationship between these variables at the local and regional level.

The equations used for forecasting output in the production industries make use of this first level of modelling (i.e. they model the changes at the county and regional levels) without further refinements.

The equation used for the service industries are driven by a greater range of variables. The output equations for the service industries incorporate both population and intermediate demand (business-to-business) demand.

The construction sector is also treated slightly differently. Its equations are based upon those used to model the service industries, but instead of including a measure of intermediate demand, they incorporate data on investment spending by both service and production industries.

The models are solved to produce forecasts of output for each of the counties for each of the 30 industries. Again, in broad terms, if a county X has accounted for a steadily rising share of a sector P in region Y, then its share will continue to increase into the future. This applies whether, at the regional level, the sector is increasing or decreasing in size.

These calculations are executed for every sector and every county in a region. All totals must sum to regional totals. In turn, the calculated sub-county level totals must sum to county total.

The long-term supply-side and short-to-medium demand-side models are drawn together, and the whole process culminates with a set of county and sub-county level forecasts that are entirely consistent with the national and regional forecasts upon which it is based.