

Study to examine the interface between housing & the economy in the West Midlands region

A Final Report to Advantage West Midlands

9 October, 2007

SQWconsulting 

ce *cambridge
econometrics*

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Approved by:	Simon Pringle	Date:	9 October 2007
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1: Setting the Scene

Purpose

- 1.1 This document reports on the work delivered by SQW Consulting (SQW) and Cambridge Econometrics (CE) to examine the interface between housing and the economy in the West Midlands, undertaken between April and August 2007. Specifically, the work explored the scale of housing demand *driven by economic growth* in the West Midlands between 2006 and 2026 and how this compared with housing supply numbers *flowing from regional planning work*. As such, the SQW/CE work is one of a number of inputs helping to identify how alignment in emphases between the draft West Midlands Regional Economic Strategy (WMRES) and Phase 2 of the partial revision to the West Midlands Regional Spatial Strategy (WMRSS)¹ can deliver a balanced housing solution for the regional good.
- 1.2 The work developed assumptions and a model of the relationships between the economic and social drivers for net new housing demand at sub-regional level. Figure 1-1 below presents the interplay of the causal links involved, which the model worked to characterise.

Figure 1-1: The inter-relationships linking economic growth to housing requirement

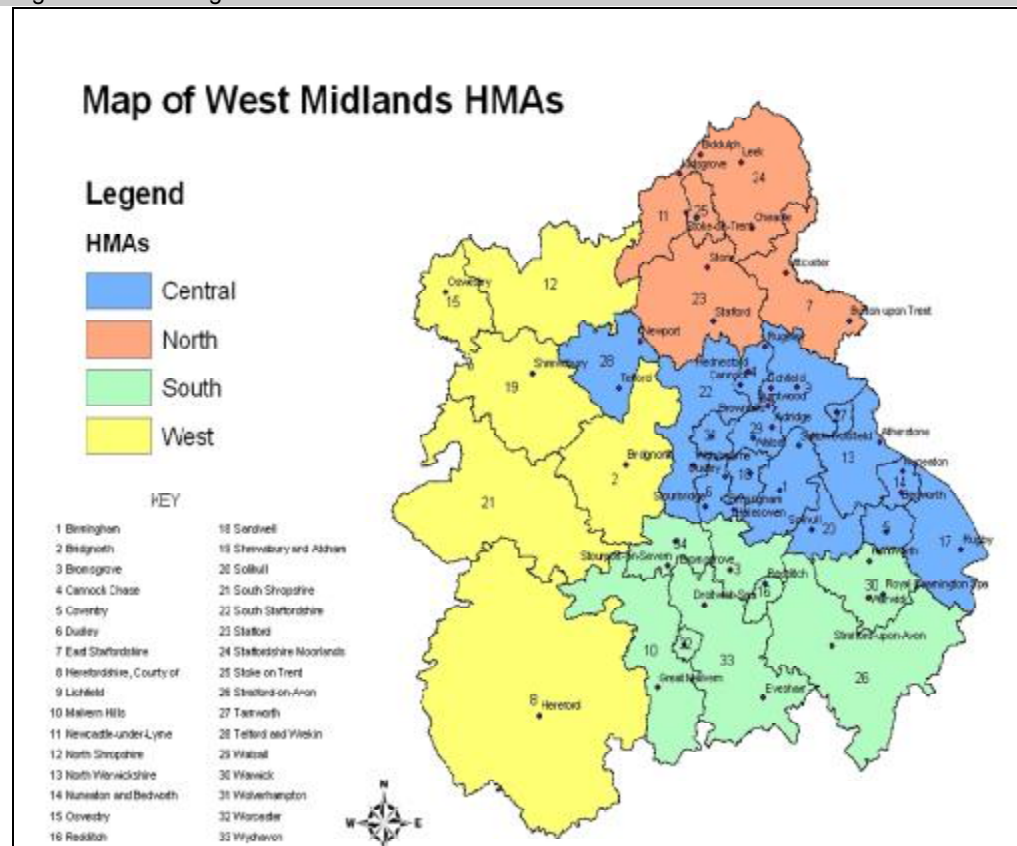


- 1.3 The outcome of SQW/CE's modelling work was a set of assumption-driven consistent 'demand-led' projections for net new housing in the region through to 2026, arising from economic growth. The analysis is disaggregated at the level of the four Housing Market Areas (HMAs), and the following client-defined geographies:

¹ The WMRSS was published by the Secretary of State in June 2004.

- South HMA
- West HMA
- Central HMA, including
 - Coventry, Birmingham/Solihull, Black Country, Telford
 - Rugby/Nuneaton/North Warwickshire, Lichfield/Tamworth
 - South Staffs/Cannock
- North HMA
 - Urban areas – Stoke, Newcastle
 - Outside MUA – Stafford, East Staffs, Staffs Moorlands
- Plus:
 - Major Urban Areas
 - Central Urban Areas.

Figure 1-2: Housing Market Areas in the West Midlands



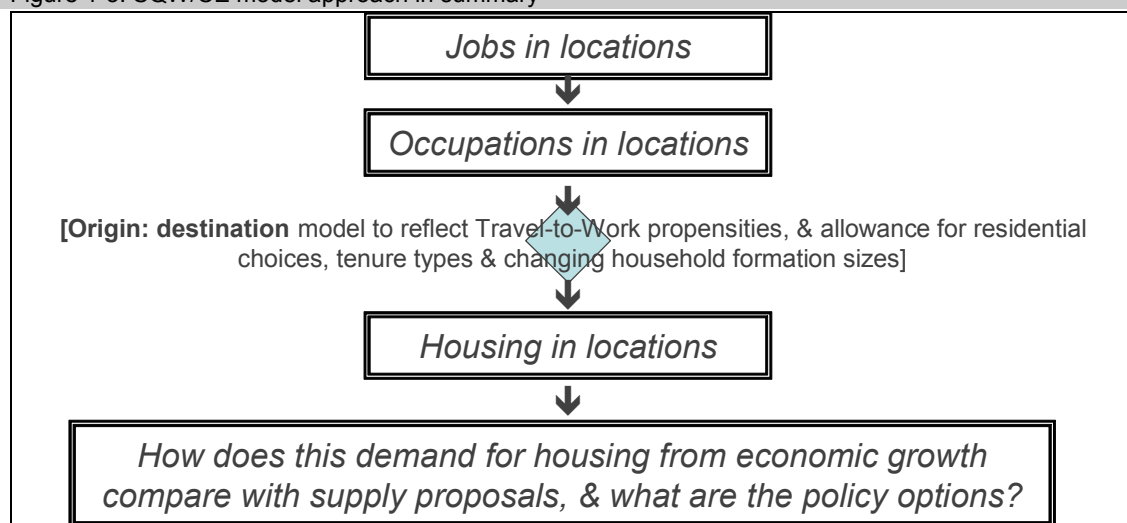
Model Approach

- 1.4 The SQW/CE team modelled future housing demand using *two points on the spectrum of possible GVA growth to 2026, building on employment growth in 40 business sectors for all*

34 local authorities across the West Midlands². The first scenario assumed that recent trend growth in the region's performance will be maintained through to 2026 (the so-called *Trend Baseline* scenario). A second scenario (*Convergence*) assumed convergence with the UK average growth for the region by 2026, delivered by accelerated growth in AWM's existing cluster foci. Both scenarios used CE's well-established Local Economic Forecasting Model (LEFM) approach³, ensuring consistency across the region, sensible economic causality, and matching to up-to-date CE regional and UK national projections of economic activity.

- 1.5 The model's approach is summarised in Figure 1-3 below. *Projections of new employment* within sectors were translated into *projections of occupations* using Standard Industrial Class (SIC) to Standard Occupational Class (SOC) 'converters'. These converters draw on the coefficients used by CE in the *Working Futures*⁴ projections used to guide national skills policies. Households with different occupational mixes and living in different housing tenures were then linked to occupations wishing to reside in local areas via an underlying *travel-to-work model*. The resulting translation was then used to project housing demand by different tenures and types for each of the local authority areas of the West Midlands.

Figure 1-3: SQW/CE model approach in summary



- 1.6 Projected tenure types and household sizes were then brought together to give the anticipated net new demand for houses by 2026. This was summarised at the level of the West Midlands HMAs and sub-geographies, and compared with the WMRA Reference Point housing allocations data provided by Assembly Officers in considering 'Options' in the Regional Spatial Strategy (RSS)⁵.

² The West Midlands comprises 34 local authorities and four county authorities. . Housing numbers are planned in the WMRSS at the level of the 34 local authorities – for parity, the SQW/CE analysis has been undertaken using these same authority areas.

³ See http://www.camecon.com/suite_economic_models/lefm.htm for a full description

⁴ Working Futures 2004/14, Sector Skills Development Agency (SSDA), January 2006 . See <http://www.ssda.org.uk/ssda/default.aspx?page=28>

⁵ WMRA Officers provided a 'Reference Point' table to the SQW/CE team on 18 June 2007, based on an analysis and interpretation of the responses of individual authorities to the Spatial Options consultation at that point. The Reference Point figure is thus an officer-sourced one and has no formal status as it has not been endorsed by the Regional Planning Partnership. For the purposes of SQW/CE's model, a figure of 412,557 has been used throughout as an approximation for an 'Option 3' figure (2006/26)

Using this report

- 1.7 The report is designed to be read in conjunction with the set of PowerPoint slides that were progressively developed during the course of the study. These slides are separately available to this report. Key slides from that slide pack have, however, been included in this report to enable the document to be read on a freestanding basis for those less concerned with the analytical detail.

2: Tracing the model's logic

Purpose

- 2.1 This Section summarises in greater detail the key logic steps that were undertaken to progress the model. It does not report on every slide in the full PowerPoint pack; rather it focuses on those of particular importance and significance.

Starting at the beginning – Trend Baseline & Convergence scenarios for regional GVA . . .

- 2.2 Underpinning the model were two scenarios for regional GVA, as previously trailed:
- A *Trend Baseline* projection of the West Midlands regional GVA to 2026, built on CE's February 2007 forecast (the latest available at the time the study was initiated) with associated calibrated projections produced at the level of 34 West Midland LADs using CE's Local Economic Forecast Model (LEFM)
 - A *Convergence* scenario was developed to reflect boosts to those sectors targeted by AWM's current cluster policy, using data on cluster coverage at SIC level provided by the West Midlands Regional Observatory (WMRO). Under this scenario, selected clusters were 'boosted' growth-wise to achieve an overall growth rate such that the regional GVA growth rate converged with that of the UK as whole by 2026.

Figure 2-1: Modelled regional GVA growth rates for WM to 2026, & UK

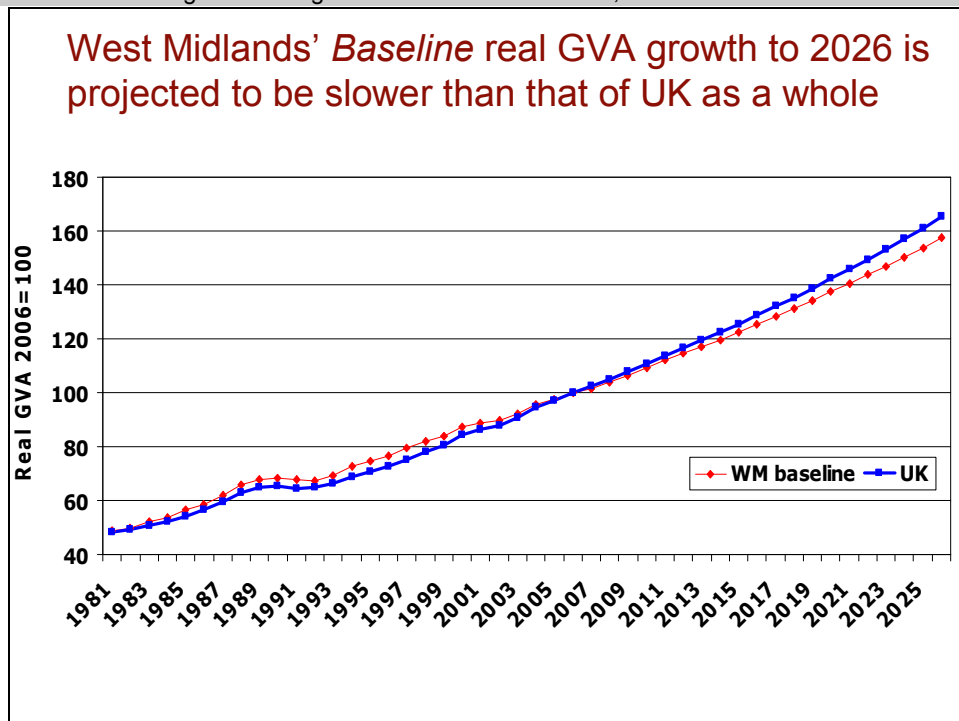
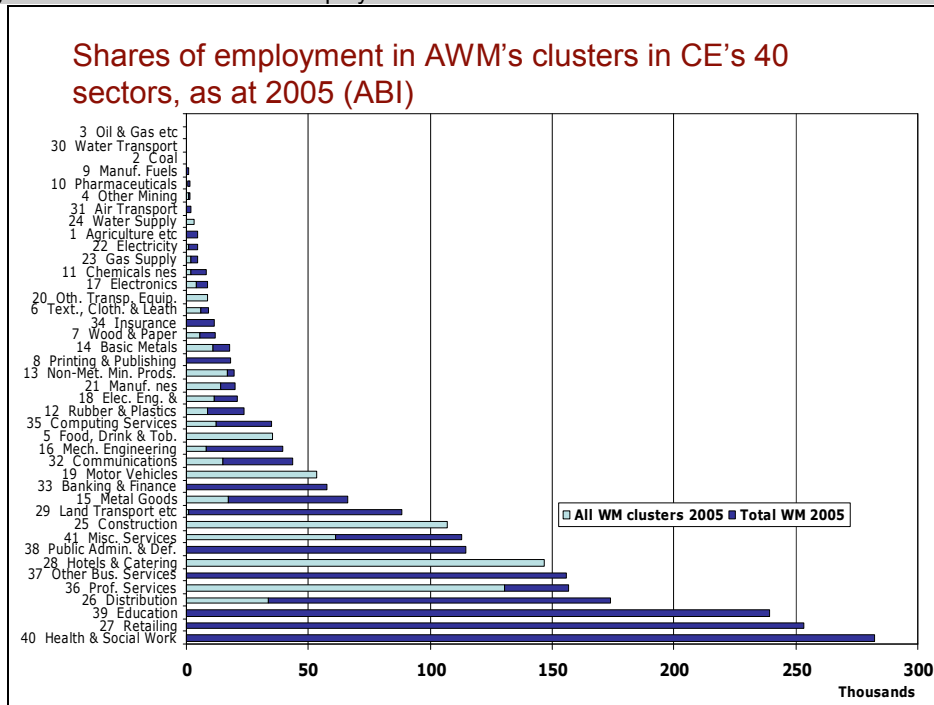
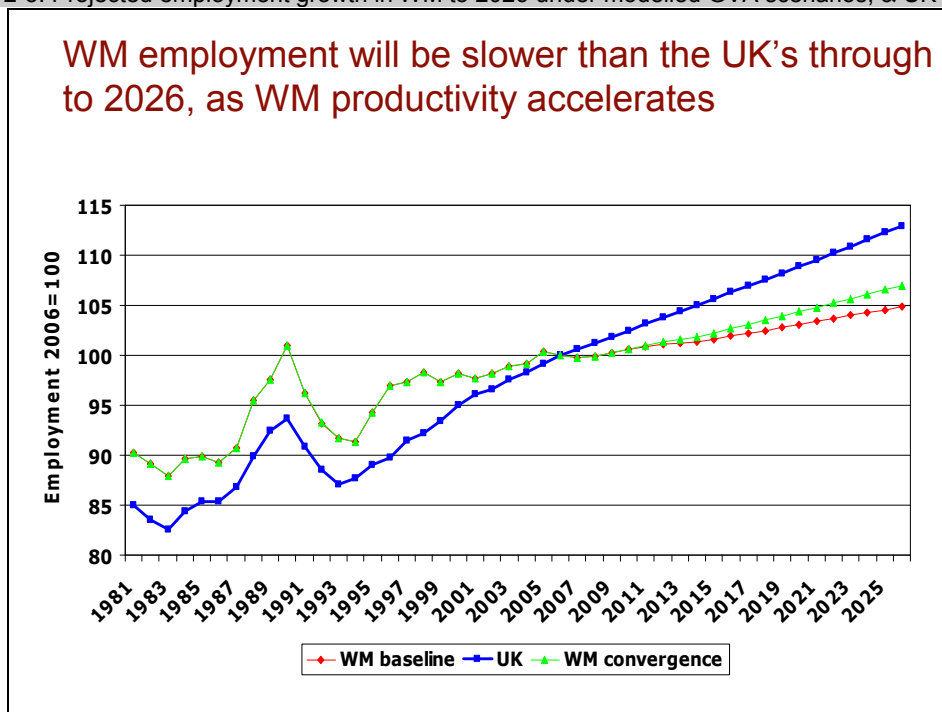


Figure 2-2: Shares of sectoral employment in 2005 in AWM's clusters



2.3 The outcome of the *Convergence* growth scenario at 2026 favours high value added activities so that, as Figure 2-3 shows, employment growth even under the growth scenario is slower than that for the UK baseline as a whole. As we detail more fully below, this manner of achieving future growth has important implications for subsequent housing requirements, impinging on both tenure type and land density.

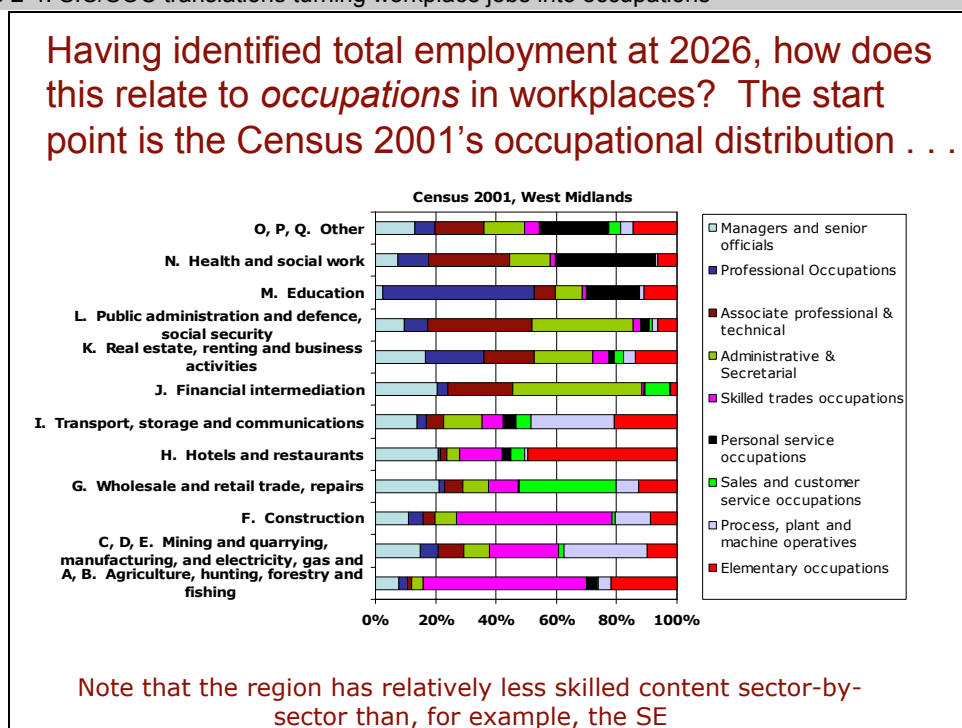
Figure 2-3: Projected employment growth in WM to 2026 under modelled GVA scenarios, & UK



. . . and then linking GVA growth in sectors to occupations in residential locations

2.4 The LEFM projections for types of jobs created in sectors to 2026 were translated into occupations going forward using the SIC-to-SOC converters (40 SICs to 22 SOCs) developed by CE and the Institute of Employment Research (IER) for the Sector Skills Development Agency as part of the national *Working Futures* study⁶. Figure 2-4 summarises the relationship linking broad sectors and occupation specialisation for establishments in the 2001 Census. The figure also demonstrates that the levels of high value-added occupations vary by sector. More generally, when compared to the South East of England for example, the proportions in higher value-added occupations are generally lower in the West Midlands.

Figure 2-4: SIC/SOC translations turning workplace jobs into occupations



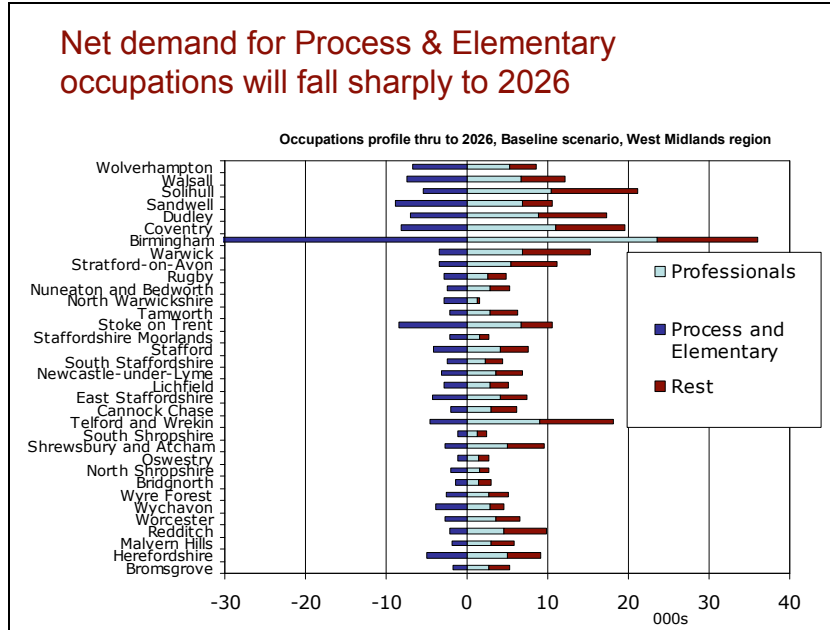
2.5 In progressing the on-translation from occupations in workplaces to occupations in residential locations, and onto new housing demand by 2026, a number of critical assumptions were made. These included:

- No innovations (and hence no radical changes) in workers' travel-to-work patterns. Clearly, if major developments such as congestion charging, increased home working, or radically altered transport infrastructures came into play, then these would have a significant impact on the model's predictions
- The model taking as given the forecast changes in household size (average number of occupants) developed by DCLG, which project a regional fall from 2.5 people on average per household in 2006 to 2.2 in 2026 (a 12% reduction on 2006).

⁶ Working Futures 2004/14, Sector Skills Development Agency (SSDA), January 2006 . See <http://www.ssda.org.uk/ssda/default.aspx?page=28>

2.6 More widely, the model as structured did not take account of other discontinuities such as Carbon and/or energy pricing, or radical changes in business processes going forward. Neither, other than the boosted growth in Clusters, does the model include any 'policy on' options.

Figure 2-5: Substantial shifts in the nature of demand for occupations flowing from employment growth



2.7

2.8 Figure 2-5 shows the projected decline in net demand for Process and Elementary occupations and the boost to Professionals and Other Occupations over the period to 2006-26. This is fully aligned with the regional economy becoming increasingly knowledge-based in its activities, and progressively competing on content, rather than price. Figure 2-6 then shows the manner in which the demand for occupations in workplaces translates into resident locations, using the key assumption that travel-to-work patterns for occupational groups remains the same as that observed in the Census 2001. For example purposes, the chart shows origin:destination flows for *Professionals*. Similar profiles have been developed within the model for the travel-to-work area flows of all occupational classes.

2.9 Applying the origin:destination matrix summarised in Figure 2-6 to the data in Figure 2-5 then provided projections of residence based-demand for locations by broad occupational group. Figure 2-7 suggests there is a strong residential demand coming from higher Professional Workers and Associated Support occupations (again to be expected as the region becomes more knowledge-based in its activities) which, as is shown later, will be key in driving tenure and housing type. For validation purposes, Figure 2-8 shows the recent existing patterns of migration into 'favoured' local authority areas over the 1999-2004 period. Future migration was projected by CE in its model, and allocated in accordance with DCLG's population projections at LAD level.

Figure 2-6: Propensity to travel-to-work by occupational class using origin:destination data from Census 2001.

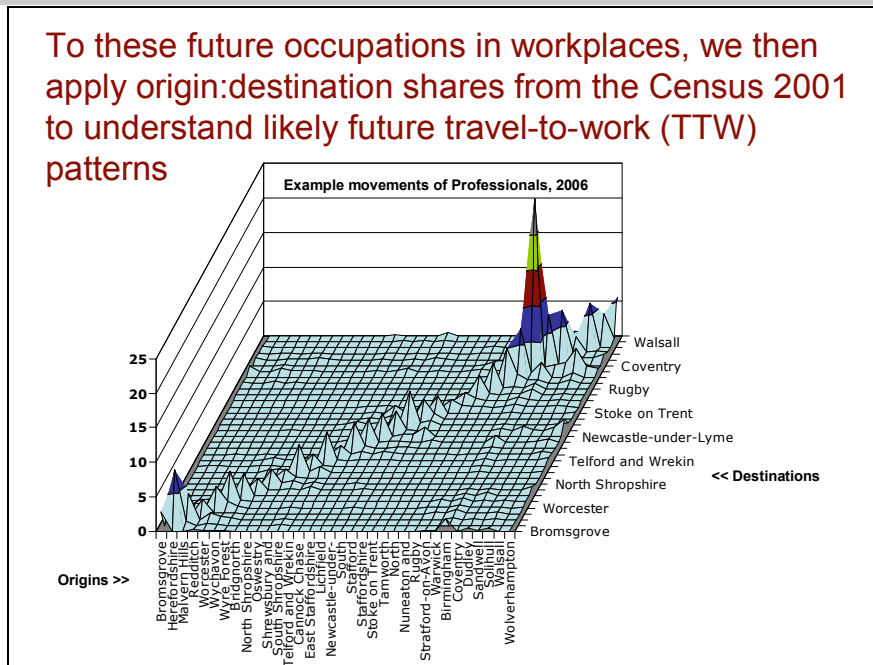


Figure 2-7: Translating onto demand for residence by occupational group, 2006-2026

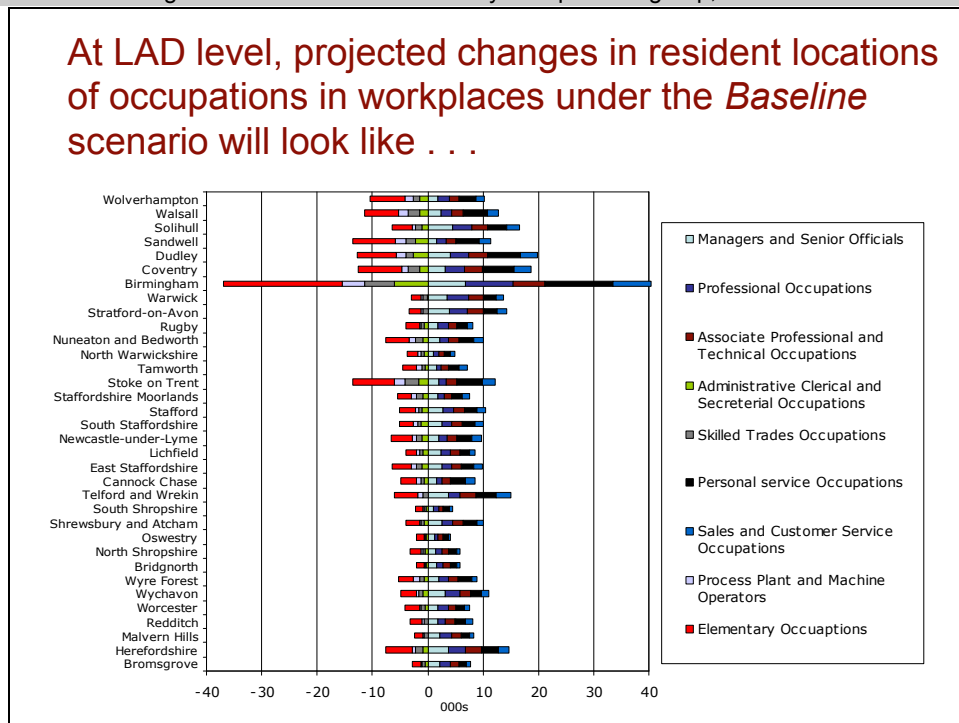
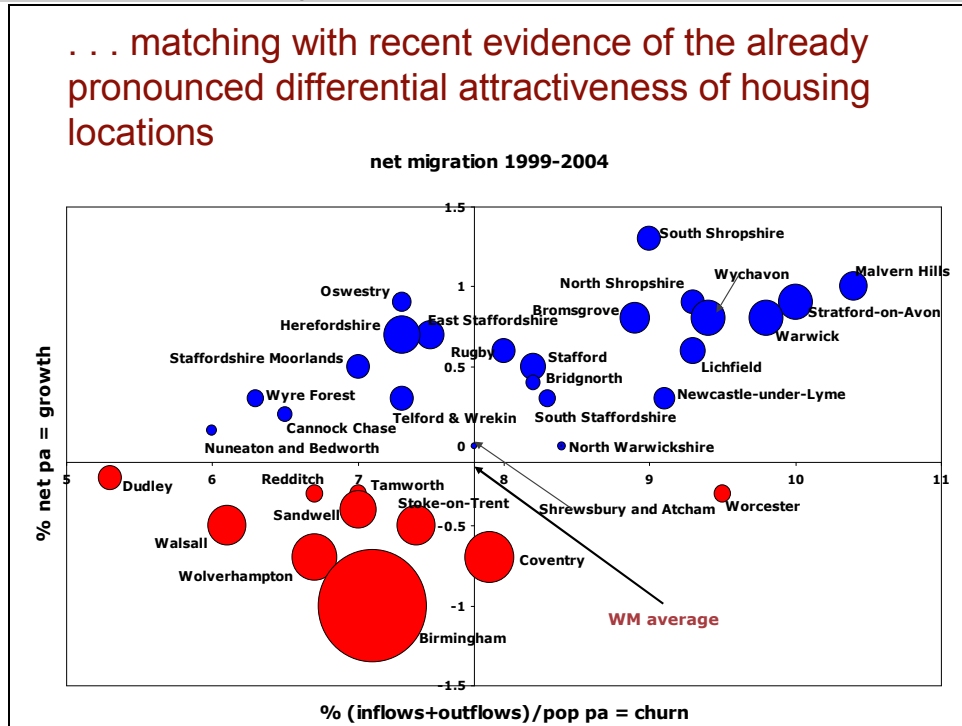


Figure 2-8: Recent evidence of migration patterns



- 2.10 The final steps in translating from new occupations in workplaces to residential demand in specific locations assumed that the occupation of the representative head of households was distributed as in the Census 2001 period with the same social class characteristics and consequent housing tenure demand characteristics. Outside of working adults, unemployed households were projected to reflect similar shares as in 2006 in local areas, while inactive members and young and old households were projected using simple share relationships to working households. A critical assumption the model used here is that average household sizes fall in LADs through to 2026, as projected by DCLG.
- 2.11 Figure 2-9 presents the tenure links to housing types aggregated from Census 2001 data at LAD level. Figure 2-10 then provides the final projections of housings demand by type and broad area location flowing out of these assumptions, as at 2026.

Figure 2-9: Tenure and housing type translations

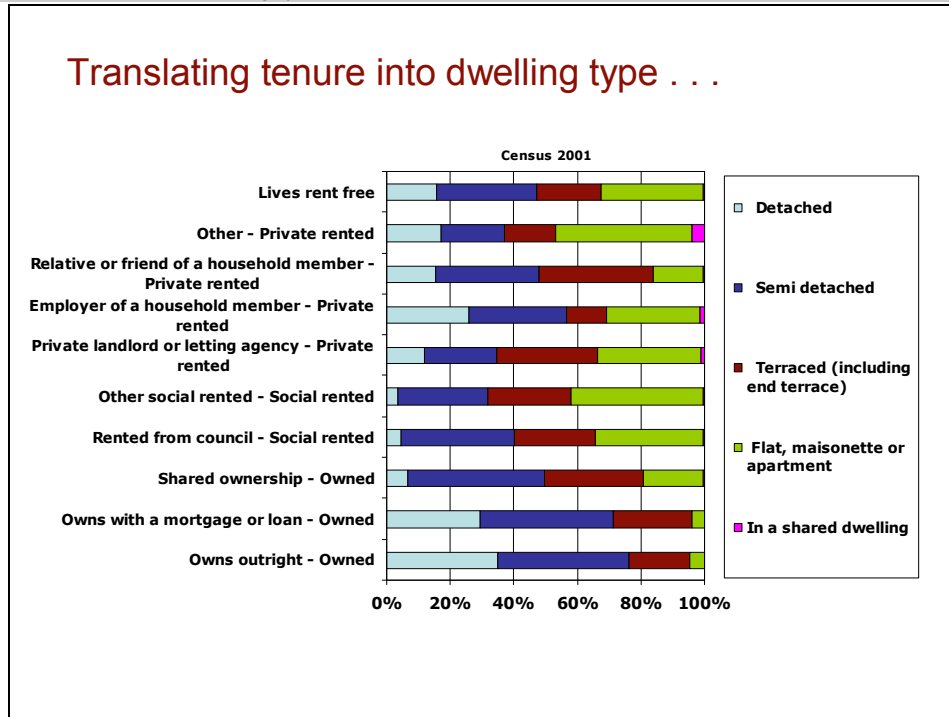
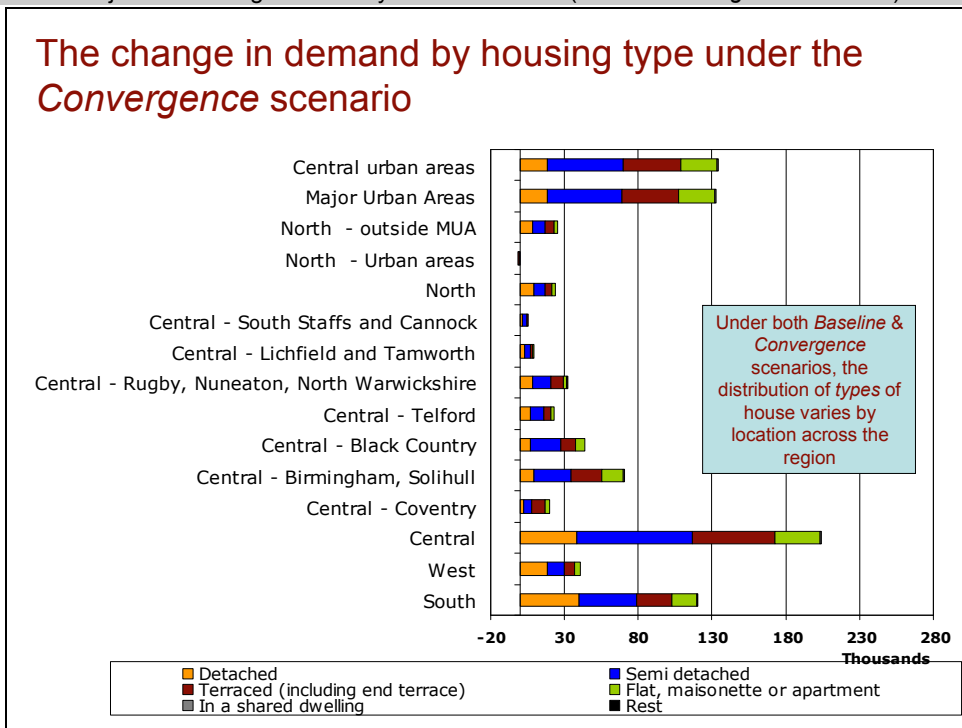


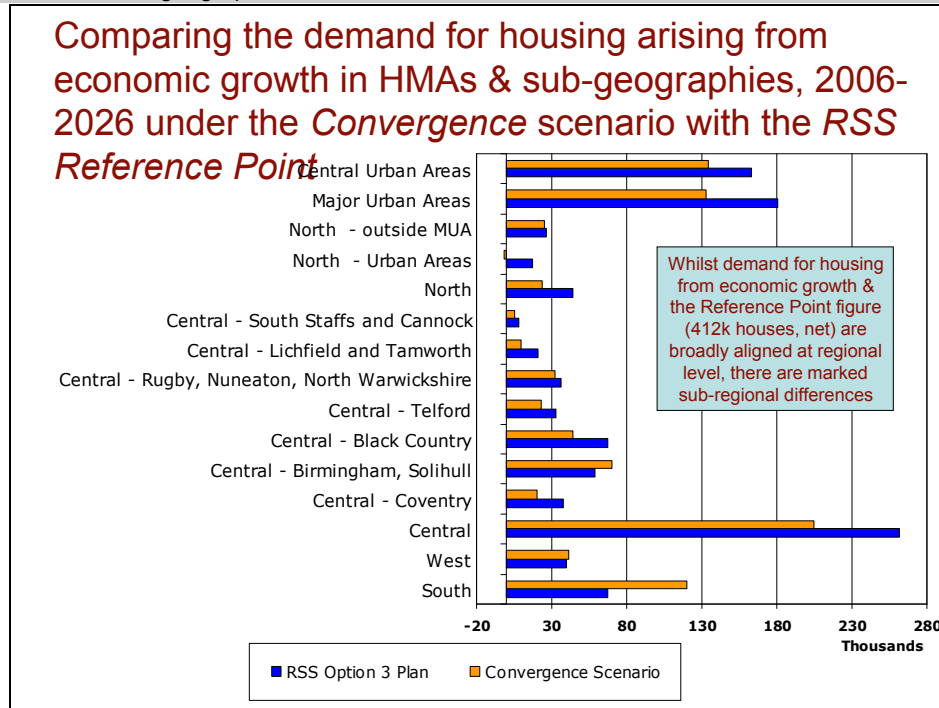
Figure 2-10: Projected housing demand by tenures at 2006 (for the *Convergence* scenario)



2.12 Figure 2-11 finally shows the difference at aggregate Housing Market Area and sub-area between the SQW/CE modelled housing demand, and the Reference Point numbers (412k) provided by the WMRA. In overall regional terms, the model predicted under both *Baseline* and *Convergence* scenarios that economic demand for new housing was broadly aligned with the 18 June 2007 Reference Point planning assumption provided to the SQW/CE team; there are, however, significant differences at HMA and sub-area

geographies, and the model provides some interesting perspectives on housing type and tenure.

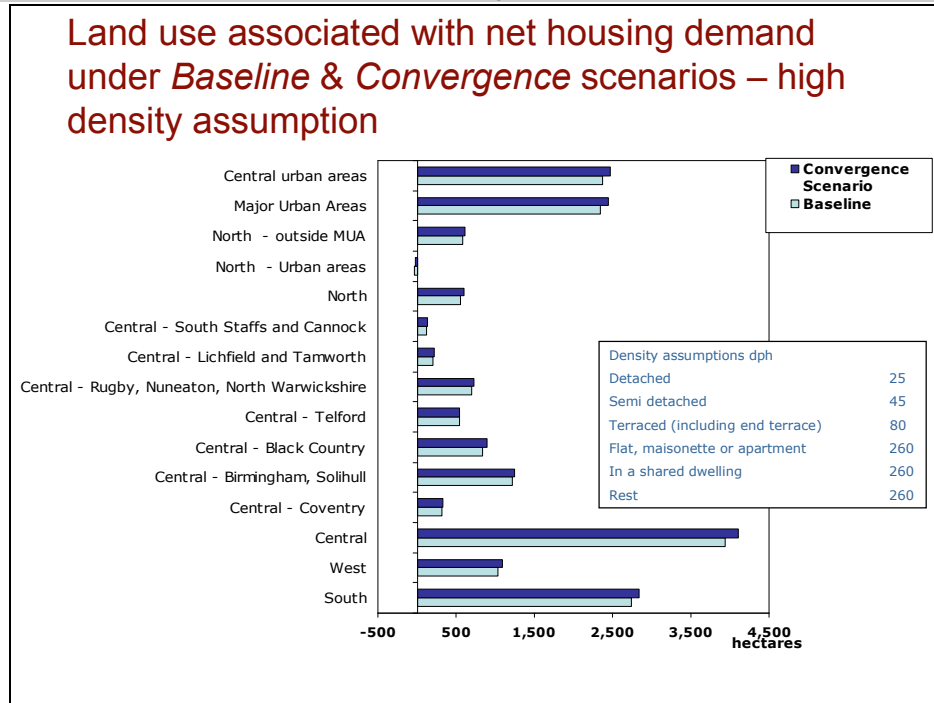
Figure 2-11: Comparing modelled economy-driven housing demand with net Reference Point numbers at HMA and sub-area geographies



2.13 Figure 2-12 shows the implications of the two scenarios for net land use based on the highest density assumptions used in the study⁷. The *Convergence* scenario sees an additional demand for 8,600 hectares of housing land, based on the highest density of dwellings defined.

⁷ Based on standard national densities referenced by DCLG.

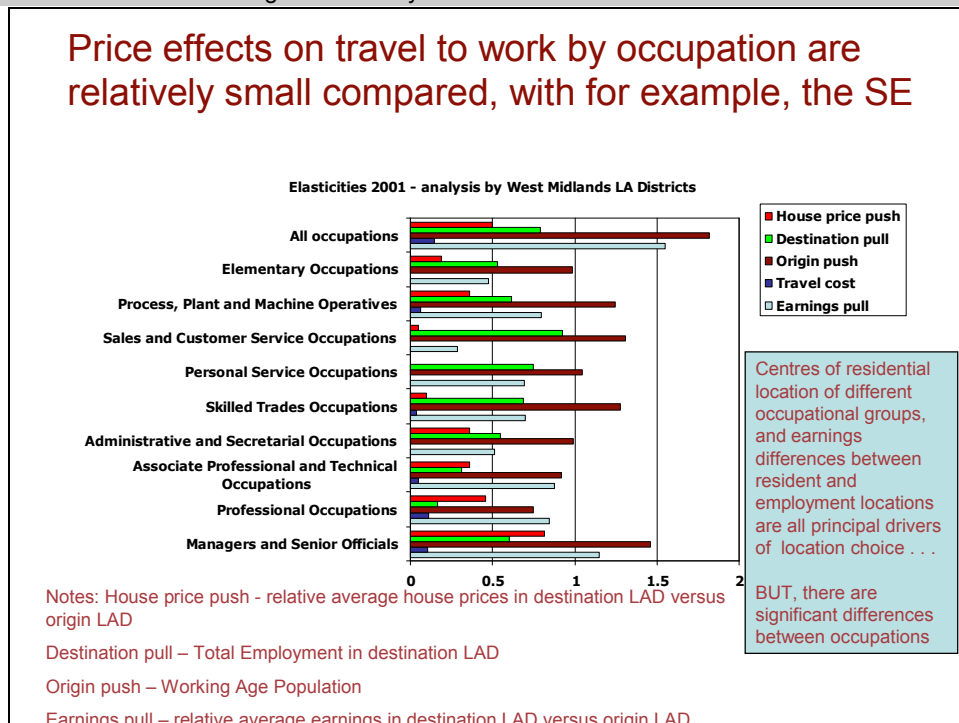
Figure 2-12: Land use implications for modelled GVA growth scenarios



... and what about sensitivities?

2.14 A key question is the extent to which future growth-driven demand for housing will be influenced by pricing mechanisms. Analysing the sensitivity of the model's findings to variations in earnings and house prices, the SQW/CE team reviewed the sensitivity of travel-to-work behaviour using the Census workplace data for 2001. Figure 2-13 displays the outcome of this analysis, demonstrating the relatively low responsiveness of travel-to-work flows to earnings and house price differentials, as at 2001.

Figure 2-13: Cross-sectional regression analysis of travel-to-work flows for WM LADs



2.15 This has implications. Figure 2-14 shows the movement in house price differentials across the region over 2001-2006. Importantly, as Figure 2-15, there has been a substantial reduction in affordability relative to earnings.

Figure 2-14 Recent changes in second-hand house prices by LAD

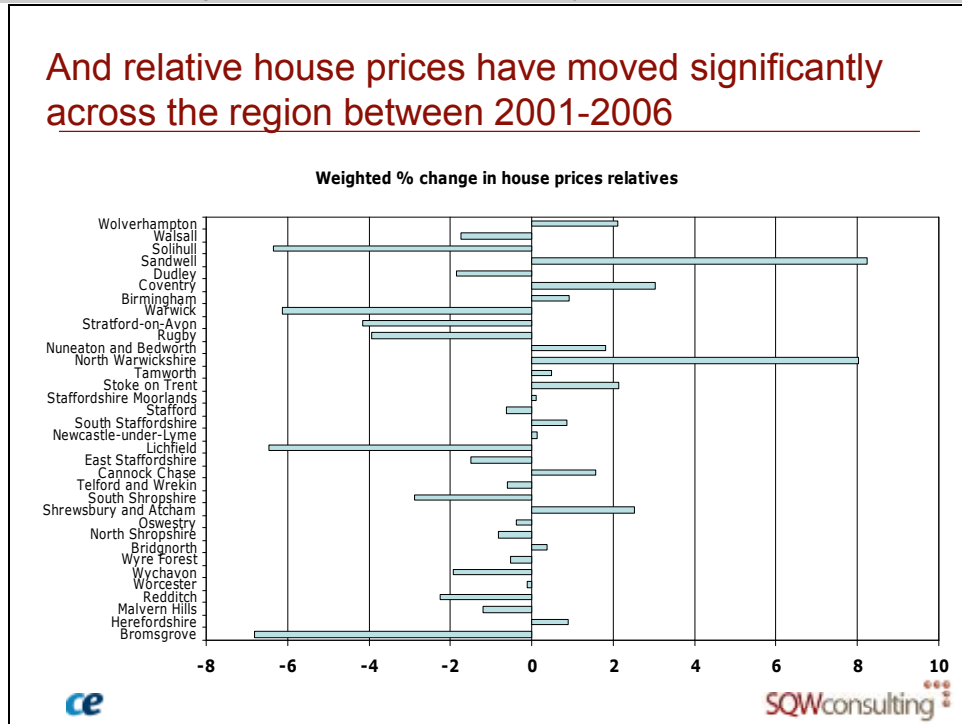
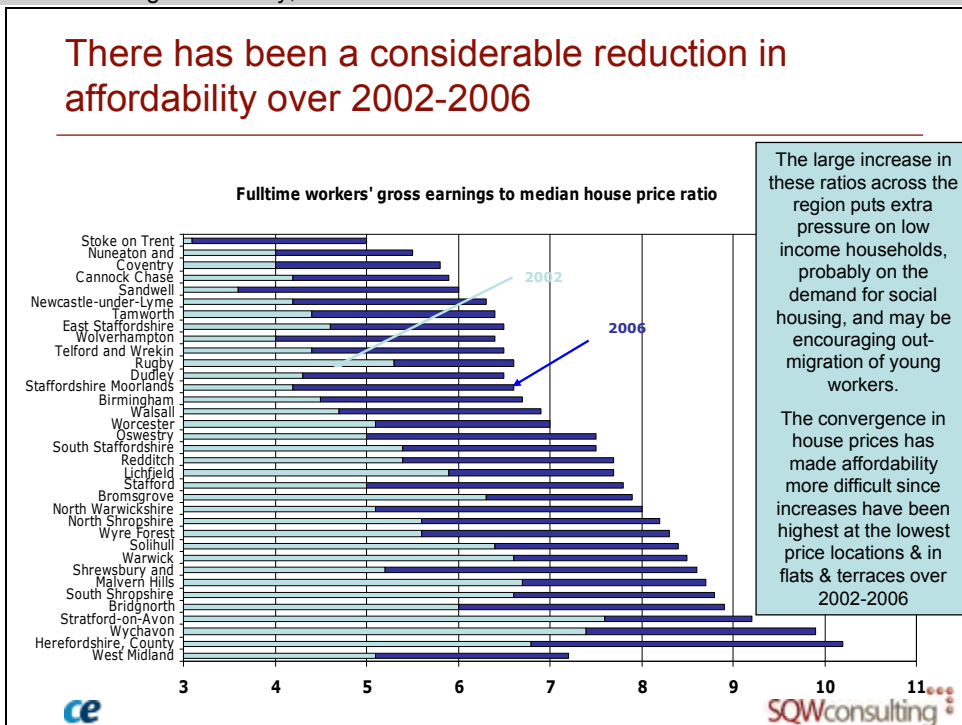
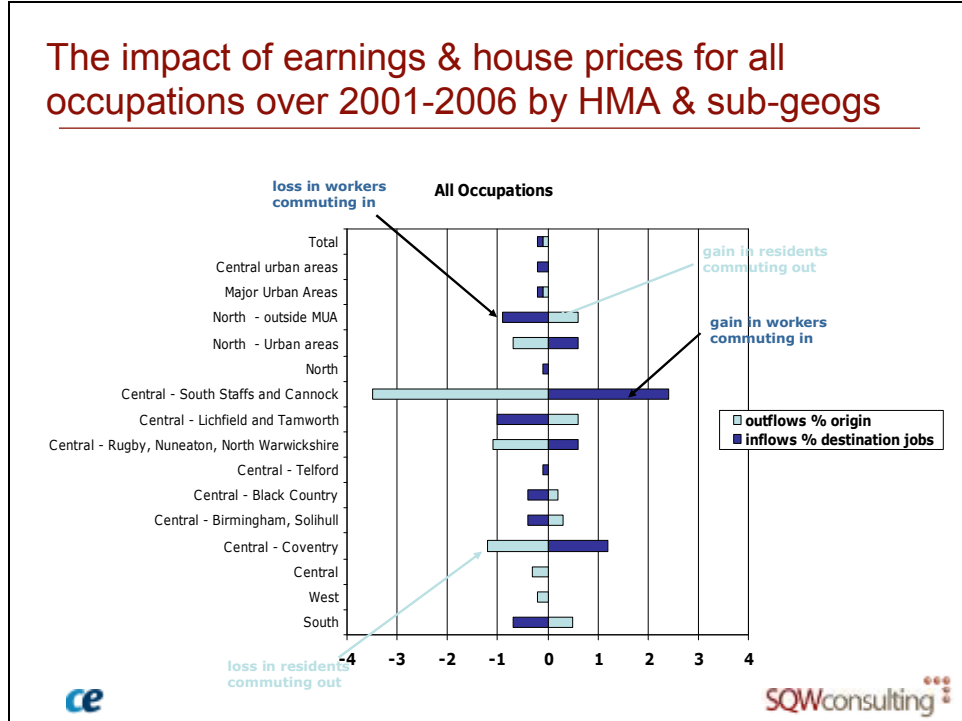


Figure 2-15: Housing affordability, 2001-2006



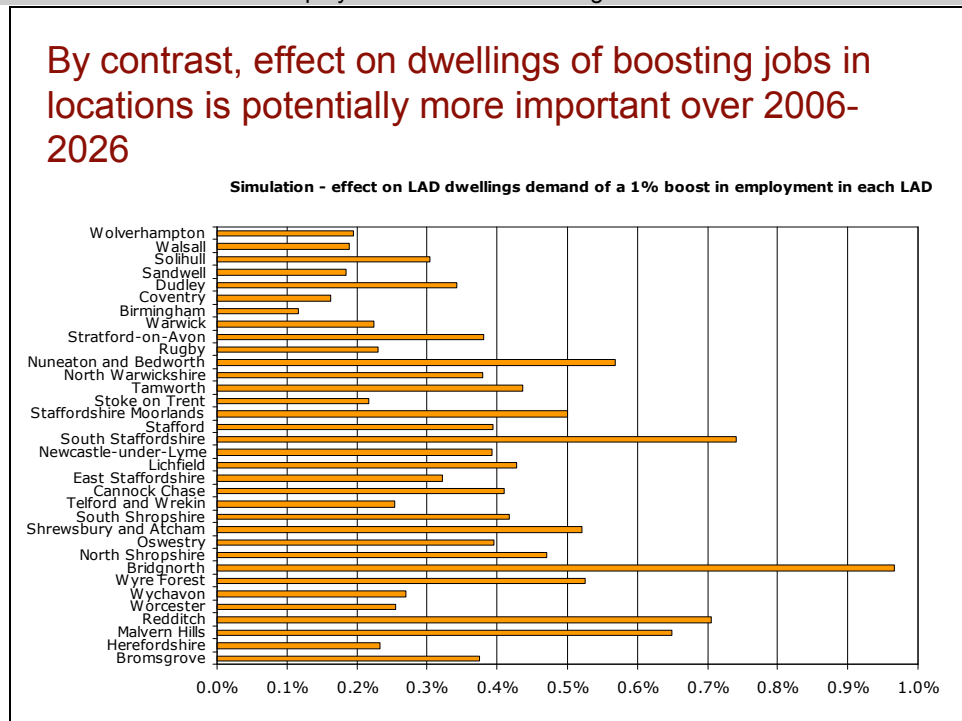
2.16 There is projected to have been relatively little change in location for travel-to-work or travel-to-work flows. Figure 2-16 displays these predicted effects, showing Central, South Staffs and Cannock as the largest likely responses, albeit still rather small in scale.

Figure 2-16: Predicted price and earnings effects on recent travel-to-work



2.17 Figure 2-17 shows the simulated predicted effect of 1% job boosts in each local area on housings demand by local area. The model suggests that job creation is a much more effective tool for changing housing demand than prices, given the lower propensity in the region (as opposed to, say, the South East) for individuals to commute long distances.

Figure 2-17: Predicted effect of employment boosts on housing demand



3: Summary

- 3.1 This study has examined the scale and location of housing demand which is likely to be driven by potential economic growth in the West Midlands in the period 2006 to 2026, and compared this with housing provision flowing out of regional planning work. Potential economic growth and its implications for housing demand have been modelled based on two main scenarios – *trend based growth*, and *assumed convergence with the UK average growth rate for the period to 2026 resulting from accelerated growth of AWM's priority clusters*.
- 3.2 The study has shown that there is a strong link between net housing market demand and employment. Sensitivity testing on the assumptions has shown that the projected household size reduction is critically important in driving the size of the expansion of dwellings demand. We have used DCLG's projections for household size going forward, but outcomes will reflect a range of disparate social forces, only some of which will be within the influence of regional policy-makers. In particular, the social and occupational mix of the population in 2026 will strongly influence the tenures and housing types sought at that time. Importantly, changing patterns of household formation are *critically* important in driving the future economic demand for housing, with GVA growth and employment coming from convergence with UK growth rates being significantly less so.
- 3.3 The result using the *Convergence* assumption – which is consistent with the headline focus of AWM's new draft WMES – is an overall scale of housing demand in the region which is broadly consistent with Reference Point planning assumptions (net 412k houses regionally, between 2006 and 2026). However, within this reassuringly consistent regional picture, there are significant differences between forecast demand and proposed supply at the sub-regional scale. It is vital to note that the work of this demand study has not examined issues of infrastructure or land supply; these latter factors could, in practice, prove to be significant constraints in responding to economic demand for housing.
- 3.4 In general, the forecasts based on the economic growth assumptions suggest a continued concentration of dwellings demand in local areas that are already favoured for recent in-migration, which substantially exceeds the Reference Point planning assumptions for these same areas. This demand reflects three main factors:
- The perceived desirability of living in these areas (be this mix and type of housing offer, natural/built environment and wider Quality of Life factors such as access to schooling, health services and wider amenity)
 - The continued relative economic buoyancy of many of these areas, including particular concentrations of activity in many of AWM's priority clusters
 - The continued propensity of people to choose to commute from areas of high housing demand to jobs elsewhere, rather than to respond to house price signals by locating in lower cost areas closer to their workplaces

- 3.5 Conversely, in areas where the economic growth-based forecasts suggest relatively low levels of demand, the planning assumptions are for a much higher level of housing provision. The WMRSS is seeking to secure a more sustainable pattern of development by stemming the migration of people and jobs from major urban areas using a range of instruments, whilst at the same time responding to household growth projections.
- 3.6 Whilst recognising that the study has not taken account of infrastructure or land supply issues, based on the forecasting methodology used for this study, achieving the headline focus of the WMES to close the GVA growth gap between the region and that of the UK as a whole appears to be inconsistent at sub-regional level with the proposed regional housing provision to 2026, based on the Reference Point data the study was provided with. In extremis, the result could be increased disparities within the region – both in terms of the demand for and proposed supply of housing, and in economic performance between different sub-regions. This has significant implications for delivering balanced, sustained and equitable growth across the region.
- 3.7 At the same time, analysis of the effect of house price and earnings differentials on travel-to-work flows as we currently understand them shows that housing demand is not likely to be overly responsive to price or earnings signals across the region. Indeed, the model work suggests very significant hikes in private house prices in favoured locations will be necessary to close the gaps in these areas with the Reference Point housing allocations.
- 3.8 Jobs boosts at the local area level are a potent force in driving housing demand, but this is complicated by travel-to-work choices as the economy becomes more knowledge-centric and the propensity to travel increases. The model indicates that from an economic growth perspective, meeting the Reference Point proposals for housing in particular sub-regional places will demand pronounced employment growth.