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ECONOMIC ANALYSIS and FORECAST REPORT for MANCHESTER and SALFORD

Manchester Salford Housing Market Renewal Pathfinder.

Research, Intelligence and Foresight Programme.

ECOTEC Consortium Report.

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REVISED ECONOMIC ANALYSIS AND FORECAST REPORT

1. Introduction

In our forecast report of February 2005 we presented a full set of economic forecasts for Manchester and Salford and for the surrounding local authority areas both within Greater Manchester and within the rest of the North West region. Forecasts were produced for local authority areas beyond Greater Manchester because of the close economic and social links between Greater Manchester and these areas, especially with the surrounding rural areas, and due to the need to maintain consistency with our forecasts for the North West and other regions. Forecasts were available outside Greater Manchester for the counties (Cheshire, Lancashire and Cumbria), the unitary authorities (Blackburn, Blackpool, Warrington, and Halton) and for the Merseyside Districts.

This report contains revised forecasts for the same areas. These are presented in the annex to this report covering the period from 2004 to 2021. In the body of the report we have focussed on the shorter periods 2004-14 or 2003-2013 where appropriate to maintain comparability with past periods of ten years duration. The nature of the forecasts means that trends beyond 2013 or 2014 are similar to those in the immediately preceding years.

The annex tables also present the results of a scenario which increases the growth of GVA in Greater Manchester from the levels in the revised forecasts to an average of 2.9% per annum. This increase in GVA is generated by assuming faster increases in employment and output in sectors with higher than average levels of GVA per employee. Various combinations of sectors could have been selected, but we have chosen chemicals, electronics, transport and communications and financial and business services. Further information and results are provided in annex B.

The revisions reflect changes in important employment data from the Annual Business Inquiry (ABI) and also some changes to forecasts for Oldham and Rochdale. The Oldham and Rochdale changes resulted from a more intensive examination of the February forecasts as part of a piece of work specially commissioned by the two local authorities.

This is a partial update in two senses. Firstly, it is still based on The OEF/RF forecasts of Spring 2005 for the UK and all regions. Fully revised Autumn 2005 forecasts are in preparation and will form the basis for a full update of the Greater Manchester forecasts later in this year. Secondly, the new ABI employment data for 2003 is still only partially incorporated in this report. The new ABI data for 2003 was included in the February forecasts only for local areas but not for the North West region as a whole since the latter was part of the wider OEF/RF regional system. This affected employment totals in local areas since these were scaled to the North West regional total. The data in this report does include the official ABI employment figure for the North West in 2003 and is an improvement on the February position. Because the ABI data for 2003 were still not

included for other UK regions there are still some issues of scaling. These will be fully dealt with in the Autumn update. In future we propose to use only the Spring and Autumn updates to avoid complications of this sort.

We have revised the February report to reflect changes in the forecasts. In most cases these are minor. The changes to Oldham and Rochdale affect the totals for Greater Manchester but not the forecasts for individual districts such as Manchester and Salford. Much of the rest of this report thus remains unchanged from the February report.

Population Forecasts

Because the majority of jobs in both the public and private sectors now depend directly on local demand the economic forecasts reported here are heavily influenced by the forecasts for population. Population forecasts are thus a central part of the forecasting system It is important to realise that these forecasts are constructed largely independently of the official projections and are constructed to be consistent with local and national economic conditions as well as national and regional demographic trends.

For the North West region as a whole we have used official estimates for natural increase, but have estimated migration independently, taking account of differences between the North West and other regions in unemployment, house prices and wages. In particular, widening gaps in house prices between the North West and the South East of England result in lower migration outflows, and in some years actual inflows into the North West. This occurred in the early years of the current decade, but the house price gap has narrowed again and we expect outflows of domestic migrants to resume within a few years. The position for international migrants is more difficult and is discussed in section 4 below.

At local level we have projected both natural increase and migration independently. Natural increase is based on projections of past trends in birth rates and in mortality rates by age quintiles. Domestic migration depends on local economic conditions (unemployment), housing conditions (vacancy rates) and social conditions (deprivation) and also, through the regional link, on relative house prices. Migration inflows stimulated by relatively low regional house prices lead mainly to inflows into the county areas where land with planning permission for new dwellings is most available.

Forecasts for international migration are influenced by relative wages and house prices through the equation at regional level. At local authority level, international migrants are determined as a share of regional in and out migration using the same shares as in the official projections. Manchester, for instance is allocated 25% of international in-migrants to the North West and 17% of international out-migrants. Finally, local migration forecasts are scaled to our forecasts for the North West as a whole. The scaling is relatively minor.

It is also important to note that the population forecasts for individual areas, and especially for Manchester, are sensitive to international migration. The official assumptions for future immigration into the UK is important, as are the shares of international migration used for each local authority area. If, for example, Manchester was assumed to have the same share of both the North West's in- and out- migrants (say 20% in each case) its population growth would be substantially less than is given in the forecasts presented in this report. This is discussed in more detail in the demographic report.

Population forecasts that are largely independent of the official forecasts enable us to maintain consistency with economic conditions and to provide for the possibility of scenario work. However in the revised base forecasts reported here, the population forecasts are generally close to the official forecasts. Table 1.1 below shows that Manchester's population is still forecast to grow by close to 6% between 2003 and 2014. This projected increase of 26,000 is only a little below the 27,000 projected in the preliminary report based on the official projection. However, quite small changes in the assumptions about international migration could easily result in projected population growth close to zero over this period.

TABLE 1.1 Change in Population 2003-2014

	September Forecast		**February Forecast**	
	No. (th)	**(%)**	**No. (th)**	**(%)**
Manchester	+26	(+6.0)	+26	(+6.01)
Salford	-3	(-1.3)	-3	(-1.4)
Gtr Manchester	+49	(+1.9)	+44	(+1.7)
Ref. Area	+57	(+2.0)	+52	(+1.8)
Cheshire	+25	(+3.7)	+26	(+3.8)
Lancashire	+49	(+4.3)	+53	(+4.6)
Cumbria	+2	(+0.3)	+3	(+0.6)
Merseyside	-18	(-1.2)	-16	(-1.1)
North West	+132	(+1.9)	+136	(+2.0)

The problematic issue of international migration is less pressing in the case of Salford. This is because Salford's projected share of international migrants, both in- and out-, is much lower than Manchester's (at only 2-3% of the North West's migrants). If Salford were to become a more popular destination for international migrants this conclusion would, of course, need to be changed. The actual projected decline of Salford's population in our revised forecast is 3,000 by 2014. This is only a little below the 4,000 decline projected in official projections. There are also some small changes to the forecasts for Greater Manchester, mainly reflecting alterations to the forecasts for Oldham and Rochdale.

In the wider forecasts for population there is a small decrease in the forecast for the North West region relative to the forecasts of last February due mainly to revisions in the employment data. The revised forecast of an increase of 132,000 people between 2003 and 2014 is a little above the official projection of an increase of 124,000. However the

difference is small and the difference in population estimates for 2014 between the revised forecasts and the official projection is only one tenth of one percent.

Economic Forecasts

In this report the main focus remains on those aspects of the economic forecasts that bear most directly on the demand for housing, both in Manchester and Salford and also in the surrounding local authority areas, especially those within the travel to work areas for Manchester and Salford. The most relevant variables are employment, population and net commuting flows. In order to explain the trends, particularly those for employment, we have a wealth of detail on sectors and occupations, wages and commercial rent costs, but will introduce this only where necessary to explain changes in total employment.

The economic forecasts are generated first at the regional level (i.e. the North West) consistent with forecasts for the UK as a whole and the other UK regions. Economic forecasts for individual sectors in each local authority area are generated from trends in each area relative to such things as the regional trend, local population changes and changes in relative rents or wages. Forecasts for Manchester and Salford include assumptions for known or likely policy changes including the move of BBC jobs to Manchester and the possibility of additional civil service jobs being relocated to Manchester and Salford under the Lyons Review. Other changes that are anticipated locally have not been included but could be added through consultation with Manchester Enterprises.

The changes to employment in the revised forecasts are to increase employment in all areas. The employment increase within Greater Manchester rises from 72,000 in the February forecast to 85,000 in the revised forecast. This is partly due to changes in Oldham and Rochdale. For Manchester and Salford the employment forecasts have only minor changes, again in an upward direction.

TABLE 1.2 Change in Total Employment 2003-2014

	September Forecast		February Forecast	
	No. (th)	**(%)**	**No. (th)**	**(%)**
Manchester	+50	(+16.9)	+47	(+15.5)
Salford	+10	(+8.7)	+8	(+7.5)
Gtr Manchester	+85	(+7.4)	+72	(+6.2)
Ref. Area	+120	(+9.0)	+103	(+7.6)
Cheshire	+24	(+7.8)	+21	(+6.7)
Lancashire	+5	(+1.1)	-1	(-0.1)
Cumbria	-8	(-3.9)	-10	(-5.0)
Merseyside	+16	(+2.7)	+11	(+1.9)
North West	+161	(+5.5)	+129	(+4.3)

Structure of the Report

Since the economic model includes an extensive annual database for all of the variables covering the period since 1981, we are also able to comment in depth on those historical trends and inter-relationships that we believe have influenced the broad demand for housing in the past. We do not wish to repeat existing analyses or to cover unnecessary detail. Instead the report begins, in section 2, with a short analysis of recent trends focussing on those features of particular relevance to the study of housing demand.

The structure of the model is described in section 3 including the links to existing OEF and RF models of the national, world and UK regional economies.

The main forecasts are summarised in section 4 with a brief commentary on trends for Manchester, Salford and the rest of Greater Manchester. Forecasts for most other local authority areas are included in the annex tables, but are not separately discussed in this report.

2. Recent Trends

The most important fact in the recent economic and demographic trends in Manchester and Salford has been the decline in population. Until 2000 the population of Manchester had been falling at a relatively steady rate of around 2,000 people, or half of one percent, each year (chart 2.1). In Salford the decline was around 1,600, or 0.7 percent a year. From 2000 this decline was reversed in Manchester but not in Salford. By 2002 Manchester had gained an extra 18,700 people compared with what would have happened if the pre-2000 decline had continued (chart 2.2).

There has been no similar change in trend in Salford. In the rest of Greater Manchester as a whole population levels have been largely stable since the early 1980s. This pattern is complicated by the uncertainties surrounding the population total in the 2001 census for Manchester, and the way in which the additional 26,200 people have been allocated to mid-year estimates before and after 2001. However an upturn in population is consistent with the, independently estimated, data for employment.

Chart 2.1: Population 1981-2002 (1981=100)

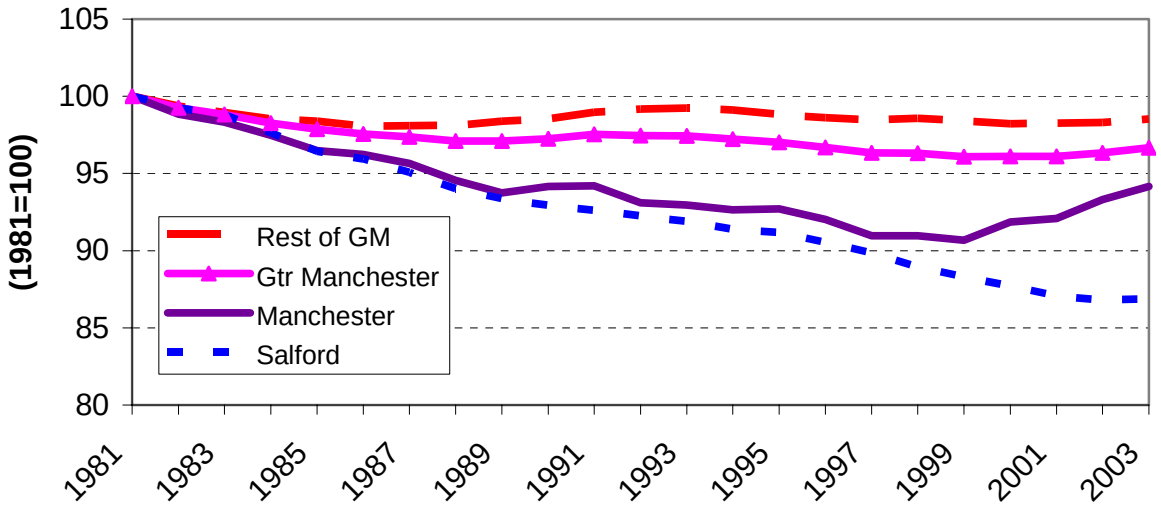
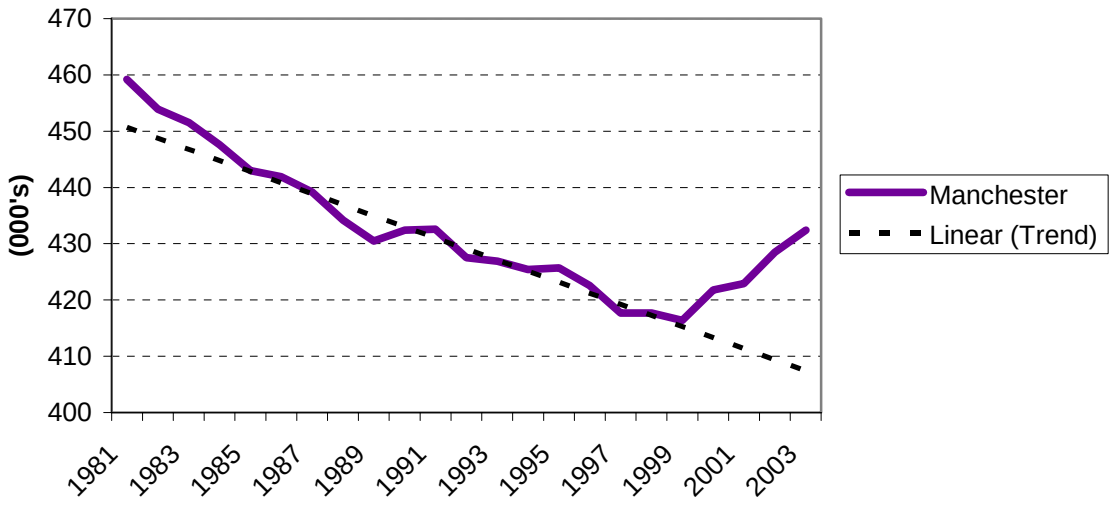


Chart 2.2: Population In Manchester With Time Trend (Fitted Over 1984-99)



Note: Linear trend fitted over 1984-1999

One of the key roles of the economic and demographic forecasts outlined below is to assess whether the upturn observed in Manchester is likely to persist, or whether instead population in Manchester will revert to its previous declining trend. For Salford the equivalent question is whether population will continue along its declining trend or can alternatively be expected to follow the recent improvement observed in Manchester.

As stated in the introduction the answer to these questions turns mainly on future projections for international migration especially in the case of Manchester. Unfortunately we have relatively little historical data for international migration flows at local authority level, although annual data is published for the North West region. Although the 2001 Census contains figures for international migrant inflows into local authority areas, there is no corresponding data for outflows, and hence no measure of net flows.

We have constructed annual data for international migration into local authority districts over recent years but this can only be an approximation to the true flows. The constructed data allocates the known figures for inflows and outflows to and from the North West region. The shares used for allocation are those used by national statistics for projection purposes. These are fixed and do not differ from year to year. For instance, Manchester's share of the regional inflow is 25%, and its share of the outflow is 17%.

This gives Manchester an estimated annual inflow of around 7,000 people in recent years, and an outflow of 4,000. The resulting net inflow of 3,000 a year is quite large. If sustained over the next ten years it would by itself raise Manchester's population by 7%. In practice however this net inflow of international migrants is almost completely offset

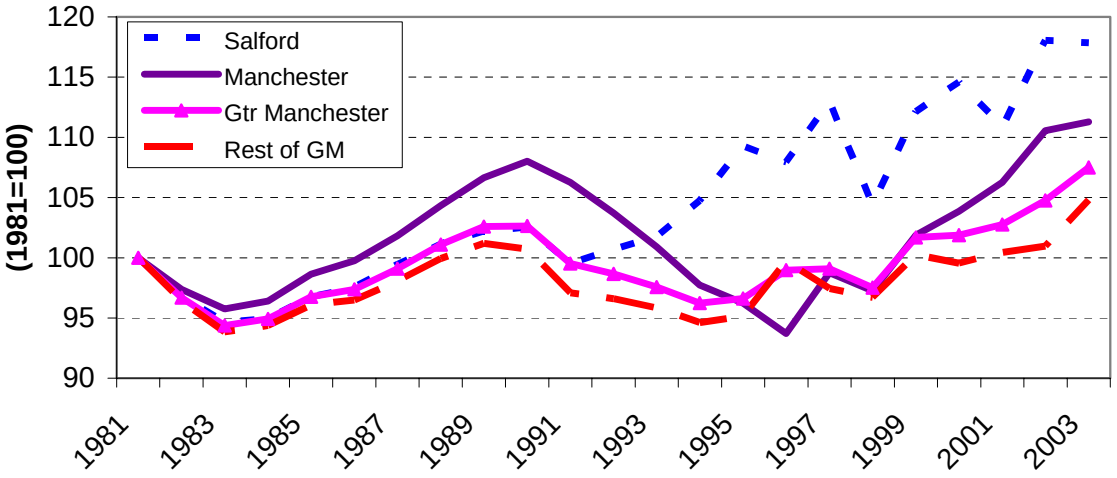
by a net domestic outflow of equivalent size to other parts of the UK. The consequence is that Manchester's population is largely driven by natural increase.

We can also observe that the recent reversal of the declining trend in Manchester's population is not the first time such a reversal occurred. A similar reversal happened at the end of the 1980's economic boom with population in Manchester rising in 1990 and 1991. The gain in population relative to the previous trend, at around 10,000 people, was only half that observed in 2000-02. This reversal was short-lived and by 1992 population was falling once again. We thus need to know whether the current larger and longer lasting population upturn in Manchester is likely to die away soon like that of the early 1990's or whether it may be more permanent.

Employment

To begin to answer this important question we will examine the trends in the economy of central Manchester, the rest of Manchester, Salford and surrounding areas. The closest relationship between employment and population is at the level of travel to work areas. In smaller areas, including individual local authority areas, changes in numbers of jobs can impact on commuting as much as on jobs for residents. The relationship between employment change and subsequent population changes may be weak. Nonetheless, the availability of jobs is the main long-term influence on population levels. When employment rises, net in-migration tends to occur either in the same LA area or within commuting range. Conversely, falling employment is associated with net out-migration.

Chart 2.3: Total Employment (1981=100)



For Greater Manchester as a whole, employment levels including self-employment have been remarkably stable over several decades rising much above the 1981 level only since 2001 (chart 2.3). Even then, employment in 2003 is only 7% above the level in 1981 and more of the 2003 jobs are part-time.

During most of the period up to 1999, the number of jobs could support only a slowly declining population of working age. As chart 2. 4 shows, the population of working age fell slowly but steadily until 1999, since when it has expanded by 2%, and mainly in Manchester itself where the increase has been a remarkable 9%. The 5.6% increase in jobs in Greater Manchester since 1999 thus appears to have a much more marked impact on population than the previous job increase of similar magnitude between 1994-99. This is because more of the extra employment in the earlier period was absorbed by those already in the area, leading to a fast rising employment rate.

The great majority of the additional jobs created in Greater Manchester since 1998 have been in Manchester itself, and to a lesser extent in Salford. Employment in the rest of Greater Manchester has risen by much less since 1998. Manchester's employment fell through most of the 1990's but has grown remarkably since 1998. Growth since 1998 has been much faster than in the UK as a whole and as a consequence its share of UK employment has returned almost to the level of the 1980's at 1.1% (Chart 2.5).

Chart 2.4: Working age population (1981 = 100)

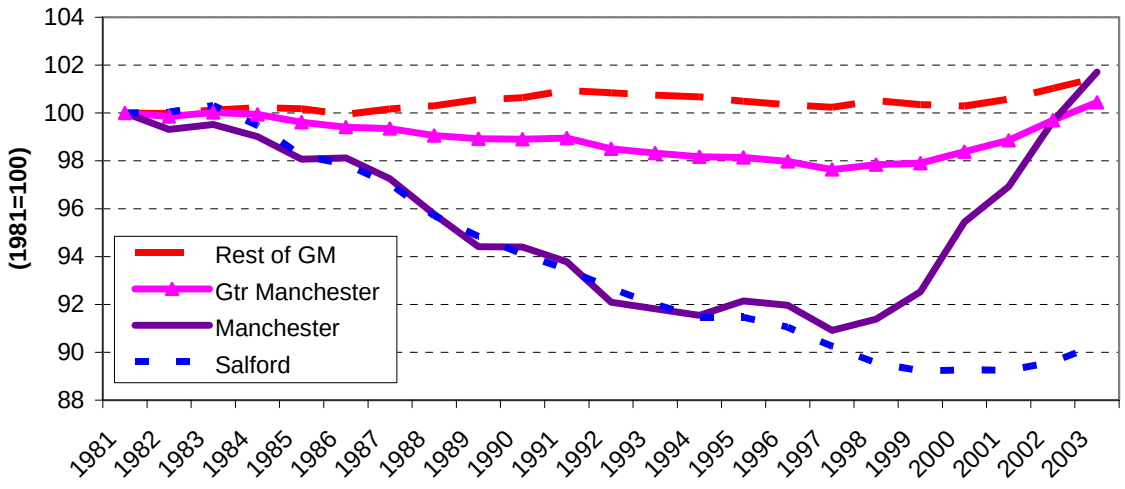
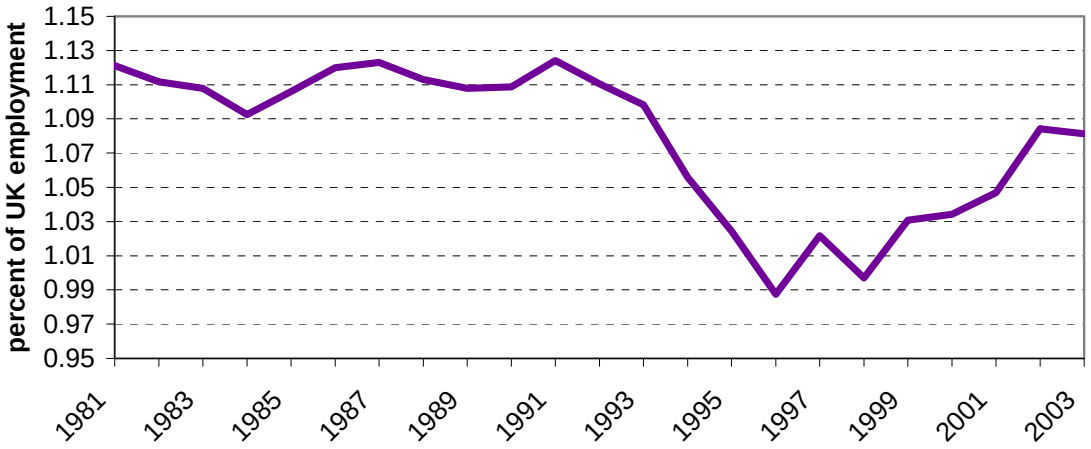
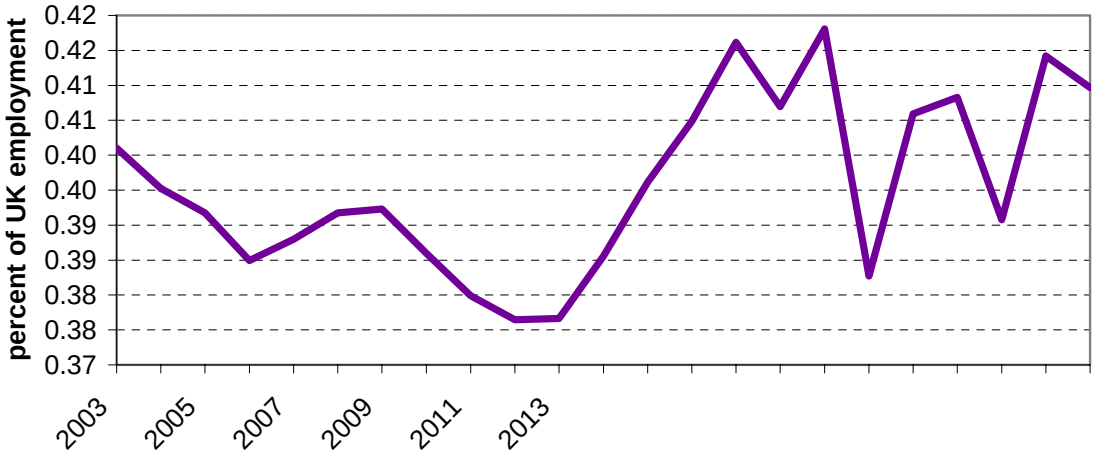


Chart 2.5: Manchester's Share of UK Employment (percent)



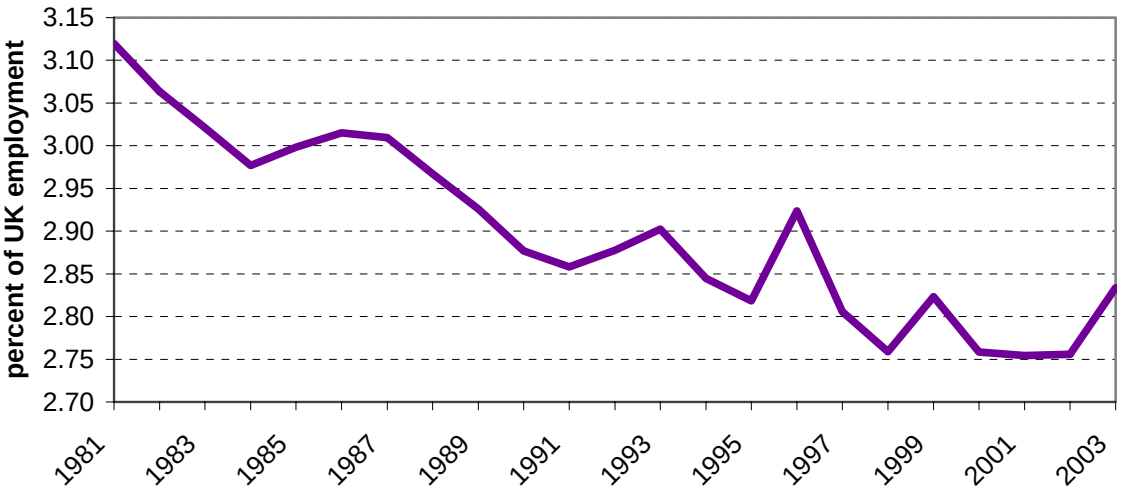
Salford has done even better and increased its share of UK employment despite a persistent loss of population. In Salford's case the main recovery came in the early 1990's. Since then, Salford has grown a little more slowly than the rest of the UK but the difference has been minor.

Chart 2.6: Salford's share of UK Employment (percent)



Favourable employment growth has been largely a city centre phenomenon within Greater Manchester. In the rest of Greater Manchester, i.e. excluding Manchester and Salford, the share of UK employment has declined persistently over the last two decades. The 10% decline in the share of UK employment has been even faster than the 9% decline in share of UK population. There was thus little sign of jobs moving into this area

Chart 2.7: Rest of Greater Manchester's Share of UK Employment (percent)



other than for reasons of local demand for most of the period. The decline in employment share however shows signs of decelerating in the most recent years. Since 1998 employment has grown at rate close to that in the UK as a whole, and the share of UK employment has stabilised.

Financial and Business services

Financial and business services is easily the most important sector for job creation and the evidence is that both Manchester and Salford have performed well in recent years. In Manchester most of the new jobs in the post 1998 boom have been in financial and especially business services (table 2.1), although the latter is exaggerated by a large increase in employees on the books of employment agencies. The increase of 17,900 in the number of Manchester's jobs in financial and business services between 1998 and 2003 largely reflects rising local demand and wider national factors until 2000. Since then there is evidence of significant inward investment since Manchester's share of UK employment in financial and business services has increased from below 1.4% to just over 1.55%. In our view this is influenced by the widening gap in office rents between London and the North West during the late 1990's. The rent gap peaked in 2001 with London's office rents at 3.7 times the level in the North West. Our analysis suggests that

a 50% change in the ratio of London to North West rents results in an extra 10,000 jobs in financial and business services in the North West, and provides a significant addition to the region's 'export' base. These additional jobs appear to be widely spread across the North West with Manchester gaining only around one fifth.

Table 2.1: Additional jobs 1999-2003 in Greater Manchester, Manchester and Salford by main sector (000's)

	Greater Manchester	Manchester	Salford
Manufacturing	-36.3	-6.2	-2.8
Rest of production	2.6	0.2	-1.6
Construction	8.0	1.8	-0.9
Hotels & Distribution	9.2	5.6	3.1
Transport & communications	19.8	6.2	0.9
Financial & Business services	44.1	13.8	3.4
Public admin & defence	-3.0	-2.0	-1.7
Education and health	6.5	0.3	1.8
Other personal services	10.0	3.5	1.4
Total	52.9	21.4	4.5

Chart 2.8: Financial and business services employment (1981=100)

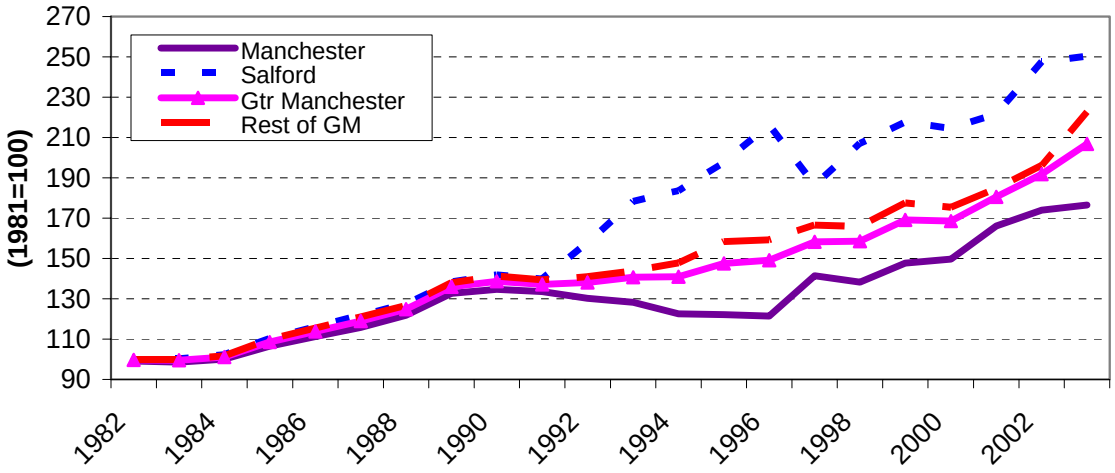
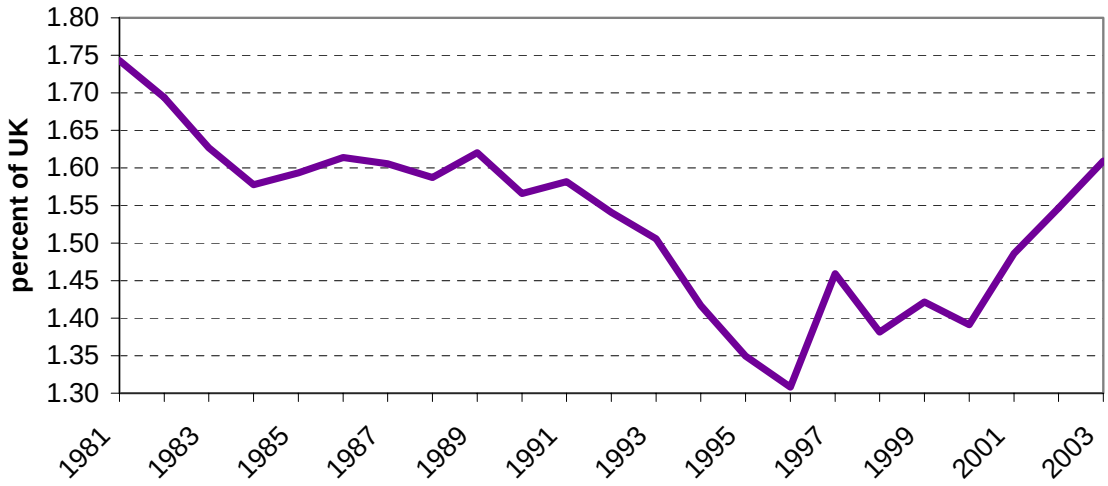


Chart 2.9: Manchester's Share of UK Employment In Financial & Business Services



Salford's employment in financial and business services rose rapidly at the beginning of the 1990's when the national sector was in recession, and Salford's share of UK employment grew rapidly (chart 2.10). Since then Salford has managed to keep pace with national growth in this important sector and its share of UK employment has stabilized.

In the rest of Greater Manchester jobs have expanded rapidly since 2001, and this growth has been much faster than in the UK as a whole. Growth has been rapid in Bolton and Trafford where the sector is well represented, but also in districts where the sector is strongly under-represented. These include Oldham, Rochdale, Tameside and Wigan. A

similar trend is also observed outside Greater Manchester in St. Helens and Knowsley. The most likely cause is inward investment of back office and call centre activity into these areas, but we have no direct evidence on this.

Chart 2.10: Salford's share of UK Financial & Business Services Employment

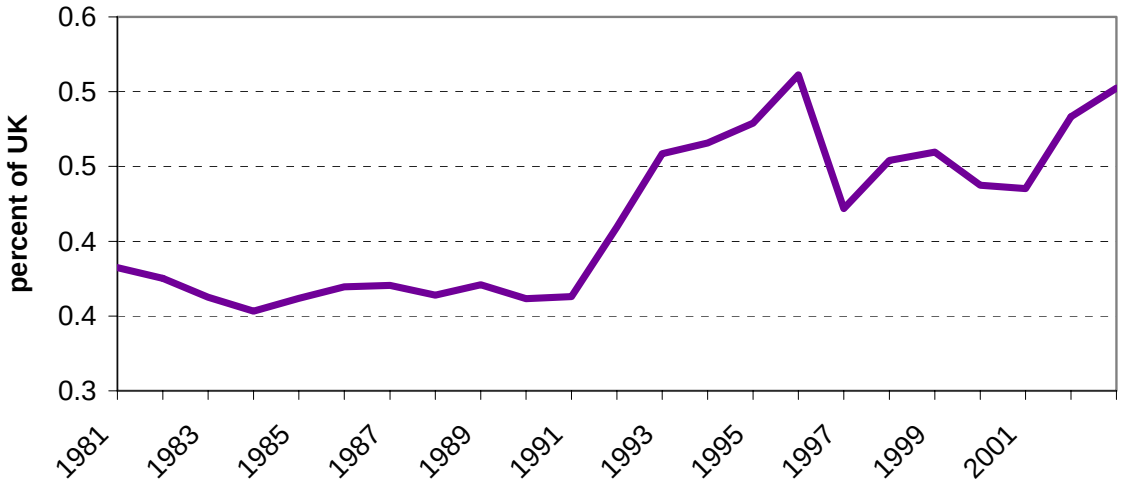
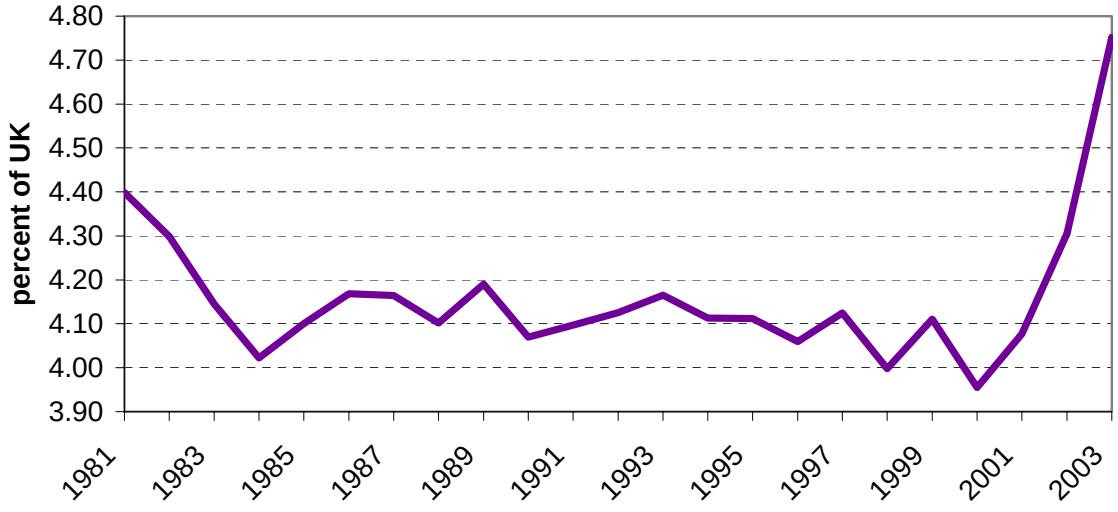


Chart 2.11 Greater Manchester's Share of Employment in Financial & Business Services

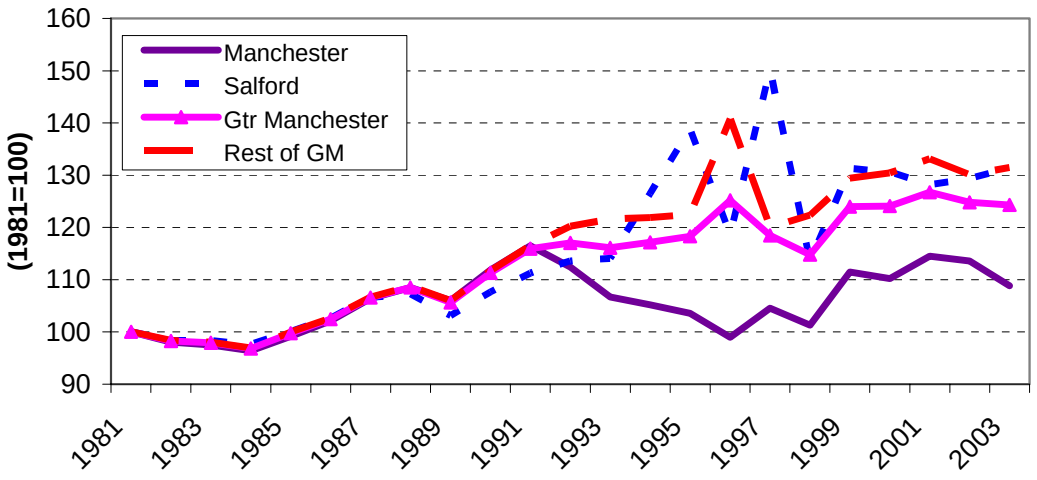


Public Services

As the main centre of public administration and higher education in the North West, Manchester is well represented in employment in public sector and related services. Its s share of UK is around 60% higher than would be expected on the basis of its population. Salford is also well represented although only by around 30%. The share of UK public and related services employment has increased faster in both areas than would expected on a population basis.

In Manchester the share increased after 1997 as public sector and related jobs grew even more rapidly than in the UK as a whole, and faster than would be warranted by the reversal of population decline. This was a trend repeated across much of the North West although Manchester and Salford gained the majority of the additional public sector jobs created in Greater Manchester. Of the extra 13,000 public sector jobs created in Manchester and Salford between 1998 and 2002 over half were additional to the area's pro-rata share of national expansion, and can be viewed as resulting from a policy of concentrating public expenditure in deprived areas and on higher education.

Chart 2.12: Employment in Public Admin, Health and Education (1981=100)



Since 2002 there is evidence that Manchester's share of UK public and related service sector has fallen back to the level of 1997. This suggests that Manchester's share of public expenditure has not kept pace with other parts of the UK through the continued expenditure boom since 2002, even though its population is now rising rapidly. This may reflect the fact that the growth in Manchester's population over the period since 1997 has mainly been in those age groups which make least demand on the public services. Growth has been rapid in young adults, while numbers of children and old people have either been stable or fallen.

Chart 2.13: Manchester's Share of UK Employment in Public Administration, Health and Education

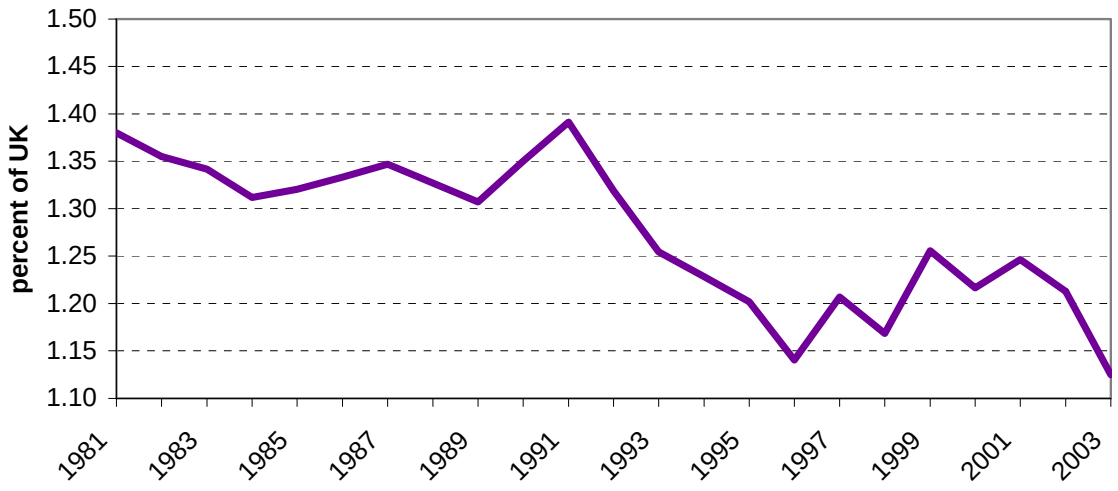


Chart 2.14: Salford's Share of UK Employment in Public Administration, Health and Education

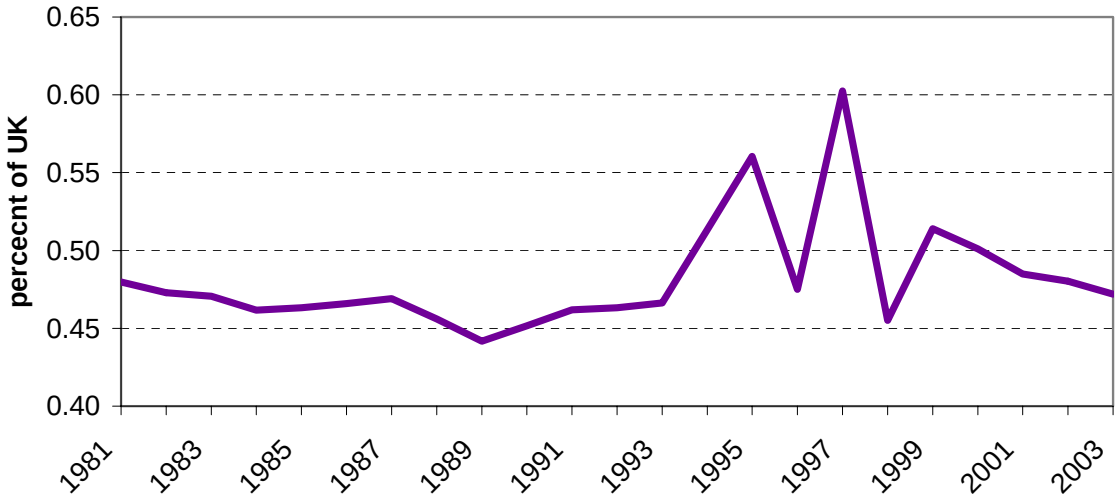
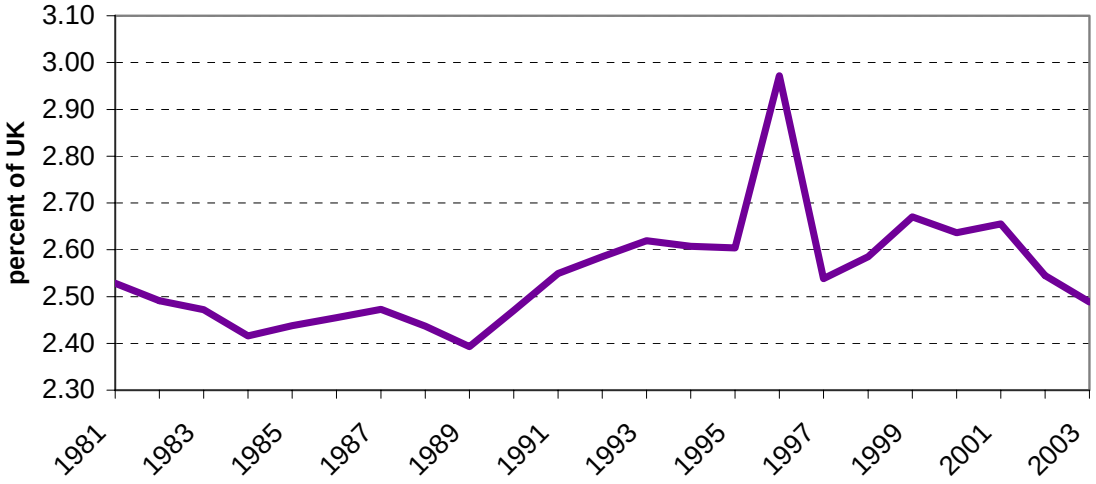


Chart 2.15: Rest of Greater Manchester's' Share of UK Employment in Public Administration, Health and Education



Manufacturing

Manufacturing employment has continued to decline rapidly throughout Greater Manchester, with the most rapid declines in Manchester (chart 2.16). This decline has been more rapid than in the UK as a whole in both Manchester and Salford (2. 17). This has also been true for most areas in the rest of Greater Manchester except for Trafford. Decline in most areas has also been more rapid than in the rest of the North West region. There is a clear pattern in which Greater Manchester has declined fastest. Decline in Merseyside has been limited since the area achieved EU Objective 1 status allowing the government to pay larger inducements to inward investors. Decline has been least in the county areas of Cheshire, Lancashire and west Cumbria.

This represents the normal working of the urban-rural shift that leads to slower growth or faster decline in manufacturing employment in all large urban areas than in rural areas. It is caused primarily by the persistently rapid rise in labour productivity throughout industry, as machines steadily replace labour. The resultant loss of jobs in all areas is partly offset through new investment. However, most new investment goes into green-field sites or to existing sites with room for expansion. Relatively little of this is in inner city areas, and hence manufacturing employment tends to fall most rapidly in the inner cities. Most sites available for expansion are in more rural areas or small towns and these gain most of the new jobs that offset the decline caused by rising productivity.

Decline can be regarded as a normal part of economic change. Just as industry previously displaced agriculture, services are now replacing industry. As long as redundant industrial sites and labour can be redeployed for expanding service sector activities the decline manufacturing within cities can be offset by new jobs in the services. In practice, of course, the transition is rarely smooth. The timing of losses and gains is often not

synchronised and there is often a skills mismatch. Those gaining the new jobs may not be the same people as those losing jobs in declining sectors, and pay in new jobs need not necessarily match that in the old.

Chart 2.16: Manufacturing Employment (1981=100)

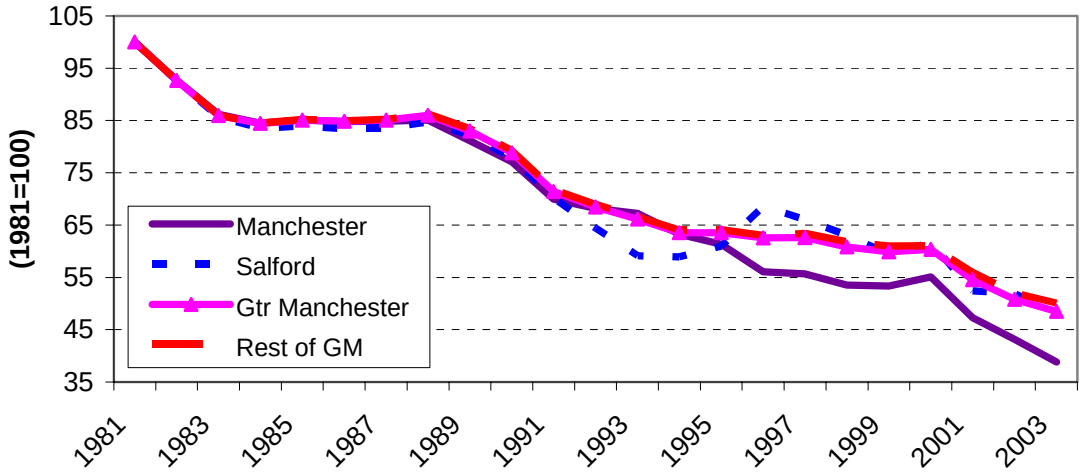
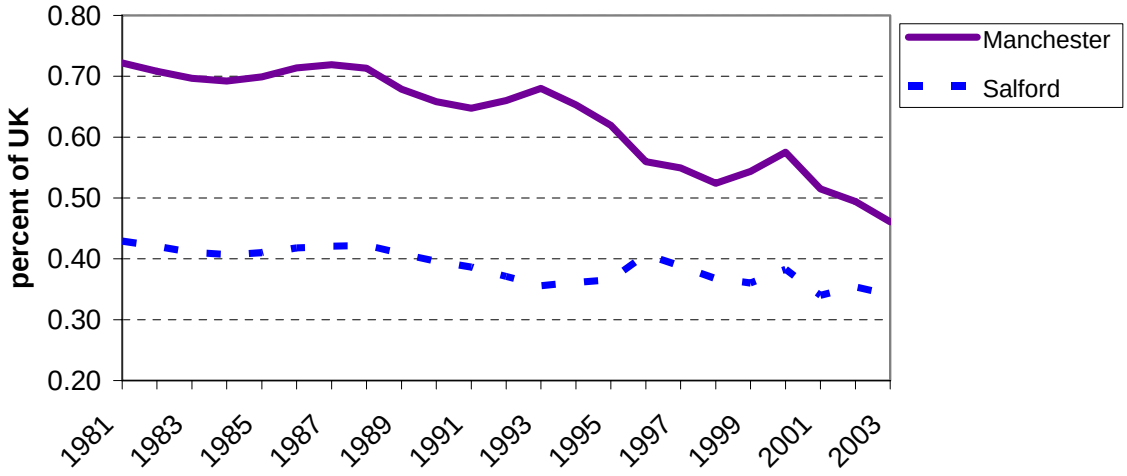


Chart 2.17: Share of UK Employment in Manufacturing (%) Manchester and Salford



Employment in manufacturing is now under 17,000 in Manchester. Many of these are likely to be in white-collar and other non-production occupations within manufacturing firms. In 2001, 41% of Manchester's employees in manufacturing firms were in non-production jobs, leaving only 9,000 in production activities. These production employees represent under 3% of those working in Manchester, and Manchester should now be regarded as an almost completely post-industrial city. The same is a little less true of Salford where 6% of all employees are production workers in manufacturing. Even so this is now a small minority.

Distribution Hotels and Restaurants

Employment in hotels and restaurants in both Manchester rose quite sharply after 2000 in an expansion partly associated with the Commonwealth Games. The latest data, for 2003 show a slight fall-back in jobs since 2002. The much larger wholesale and retail distribution sectors show little trend in employment over the last few years in the latest data. The particularly sharp spike in the distribution employment data for Manchester in 2002, that suggested an additional 12,000 jobs in retail distribution in one year, has been substantially revised down in the most recent ABI data. As the region's major shopping centre Manchester remains over-represented in retail and whole distribution, relative to Manchester's population, by around 30%. However, its degree of over-representation has not increased substantially in recent years. Employment has instead increased in line with national trends and with the increases in population. It thus appears that, as expected, this sector is not a driver of change but instead responds to other economic and demographic changes.

Chart 2.18: Hotels and Distribution Employment (1981=100)

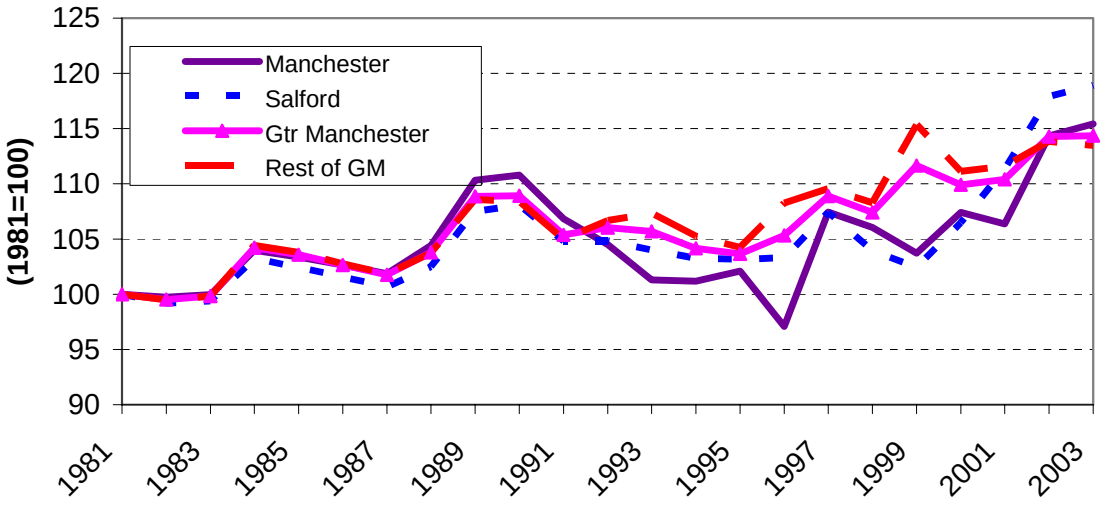
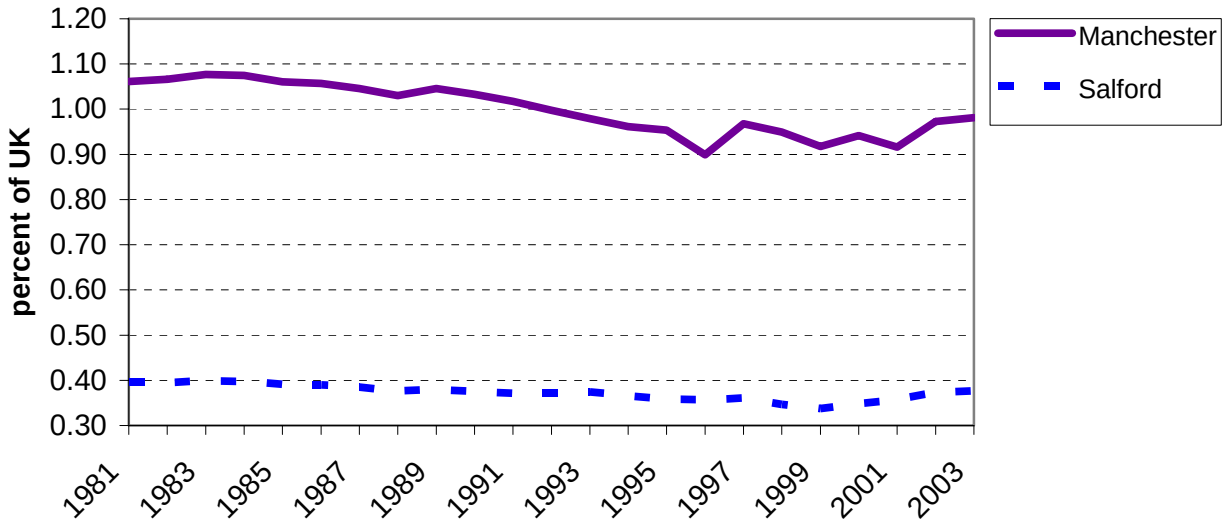


Chart 2.19: Share of UK Employment in hotels and distribution (%) Manchester and Salford



Conclusions

Our main provisional conclusion is two sectors are mainly responsible for the recent upturn in Manchester's share of UK economic activity. Most important has been financial and business services. Here the widening gap in office rents between London and the North West has been an important factor. This sector provides well paid employment for large numbers of highly qualified and often young people, and it is these who are most likely to wish to live in apartments in city centre locations. The fact that the rents gap has now diminished, and has become small by historic standards suggests that Manchester's cost advantage will not persist. The new employment data for 2003 suggests a fall in employment in the financial services sector. However the rise in the more important business services sector remained buoyant into 2003.

The second driver of economic growth in Manchester has been the public sector, as public expenditure became more focussed on urban areas after 1997. The public sector however includes a significant number of highly paid jobs, and has a knock-on effect on demand for other local services including financial and business services. Over the last two years the situation has changed again, and the public services sectors have been growing more slowly in Manchester and Salford than elsewhere. Once again, this sector is unlikely to continue as a *increasing* influence on economic growth although it will remain large. Future growth depends partly on the expansion of Manchester and Salford's large higher education sector. This sector creates jobs directly. However it also brings into the city a predominantly young population that makes few demands on public services and hence leads to a relatively low demand for additional jobs in sectors like health and education.

These two sectors together are likely to have led to increases in population in Manchester. Rising population in turn increases demand, directly and indirectly, for a wide range of local services.

3. Description of the Economic Model

This section outlines the characteristics of the economic model used to produce the forecasts in this report and lists some of the key data issues connected with its construction. The economic model is part of a linked system of three models developed as part of the RFI. The other two parts are a household projection system and a housing model. These form a single integrated system but are described in separate papers to ease exposition.

The role of the economic model within the RFI is to:

- Demonstrate the key ways in which the economies of Manchester, Salford and surrounding areas are interlinked and linked to the wider UK and international economies
- Quantify the links between economic change and population change at local authority level in Greater Manchester
- Produce forecasts of economic and population change consistent with existing projections for the UK and international economies
- Develop the capacity to contribute to simulations of alternative futures including policy-on and policy-off simulations of the MSP HMR initiative. These simulations will involve all three models in the OEF/RF suite of models.

The economic model is used in this paper to produce base forecasts, which can be compared with existing ME forecasts, and to guide us in commenting on the working of the Manchester, Salford and surrounding economies. These forecasts can in one sense be considered to provide baseline 'policy off' projections with which the actual outturn under pathfinder initiatives can be compared. However it must be realised that there are inherent difficulties in using the forecasts as a 'policy-off' baseline. Three difficulties are worth listing:

- forecasts of the kind produced here reflect past trends and that these trends themselves include the results of past policies. Only when future policy initiatives differ from the past in either scale or nature can we expect these initiatives to produce marked deviations from the baseline projections.
- the base projections are 'unconstrained' in the sense that they make no allowance for constraints on development which are greater than in the past. For instance, the population forecasts presented here are associated in the forecasts with higher levels of new house building than in the past. If planning restrictions or difficulties were to constrain or prevent the necessary level of building then the projected level of population is unlikely to materialise.
- Demand for housing is complex and it may not have been possible to capture the full set of influences in this model despite its large size. For instance it is clear that the relatively fast rises in population projected for Manchester depend largely on a continuing net inflow of international migrants. More work would be needed

to ascertain whether international migrants have a significantly different demand for housing than the existing population through such things as a willingness to live at much higher densities.

Geography

The models are constructed for each of the unitary authorities and counties within the North West region. Particular attention is being given to the local authority areas within Greater Manchester, and to other LA areas within the travel to work area of Manchester including Warrington and Macclesfield. It is not feasible at this stage to extend the detail of the geography below the level of unitary authorities and counties except in two cases. These are:

- Macclesfield within Cheshire in each of the three models
- Central ward in Manchester within the economic model (in order to focus on job creation in this important and fast growing core of the Greater Manchester economy).

Time Periods

The economic, and other, models are constructed on an annual basis. Historic data for most variables has been collected for 20 or more years to provide a basis for estimating inter-relationships between variables and future trends. Forecasts are currently being set up for the twelve year period 2004-2016 consistent with existing available OEF and RF forecasts for global, national and regional economies. The forecast period can be extended on the basis of extrapolating the 2004-2016 trends in a consistent manner.

Structure of the Economic Model

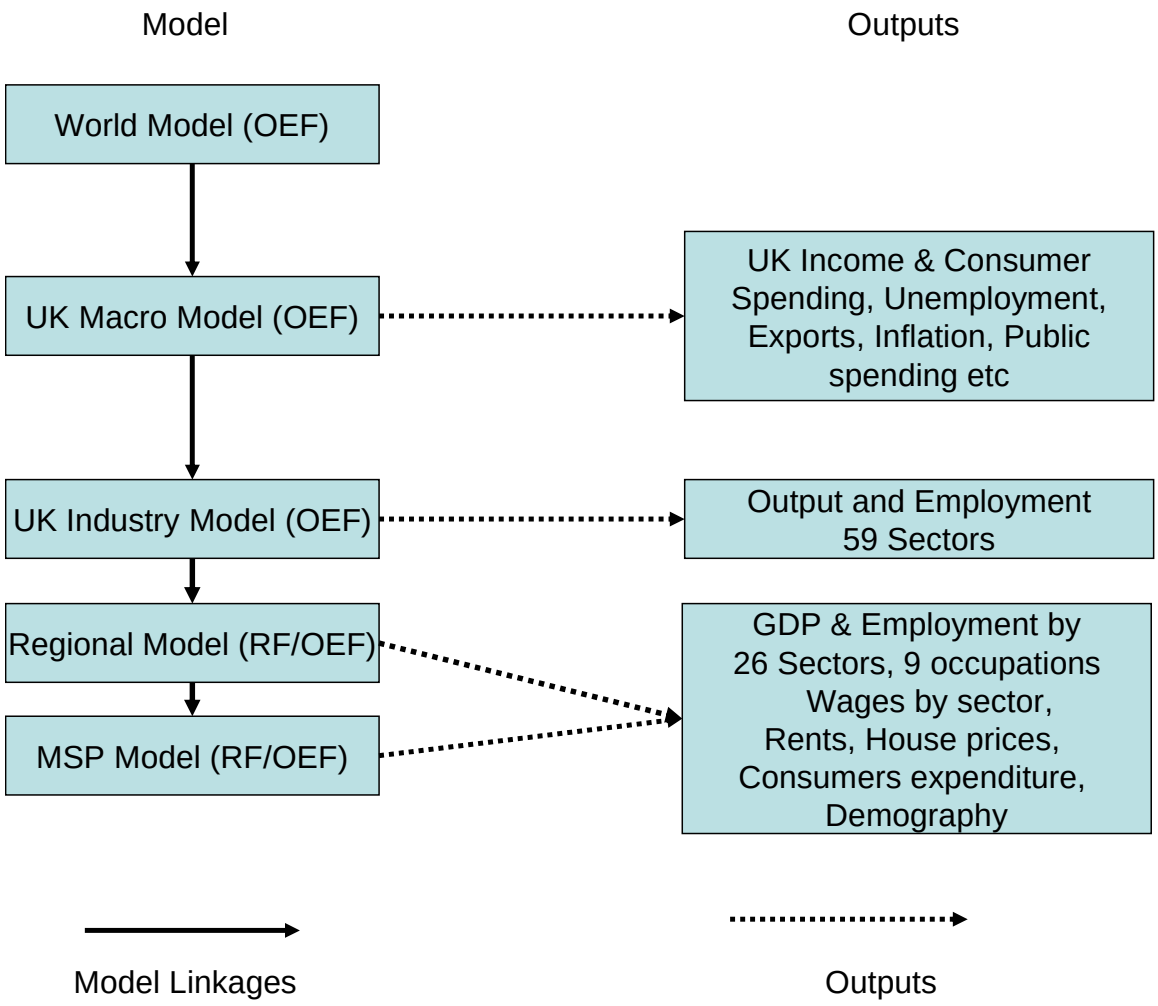
Links with other models

An important aspect of the economic model is the link with existing OEF/RF models to ensure that all forecasts are fully consistent with expected trends in the world, UK macro and UK Regional economies. The links are summarised in chart 3.1.

The main direct links are through employment and productivity in each of 26 individual sectors. UK trends in sectoral employment and productivity are fed into the equations for individual sectors in each LA area in the NW. In this way worldwide and nationwide influences enter the forecasts in each local area. Because local forecasts are constrained to sum to existing OEF/RF forecasts for the NW region, all local forecasts are consistent with our forecasts for all UK regions (which in turn sum to UK forecast totals). Forecasts

for all other variables, including migration and population, are also constrained to add to regional and hence UK totals.

CHART 3.1: Links Between Models in the OEF and RF Suite of Models



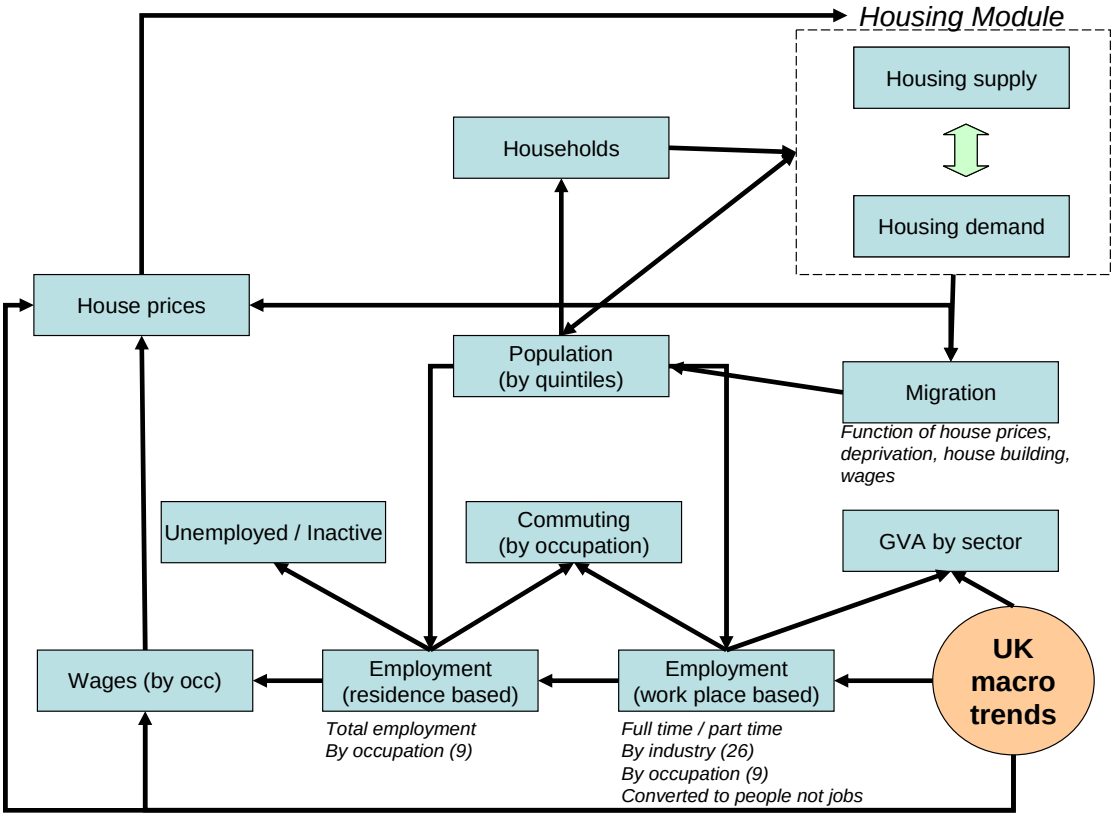
Internal Structure for each Local Area

The models are very large with around 20,000 variables across the three models. Each variable is related to others within the models. Key variables are also related to variables in the other RF/OEF and OEF models. The main internal relationships between variables are summarised in chart 3.2. For convenience some aspects of demography (population and migration forecasts) are included within the economic model.

- *Workplace employment*

The starting point is the determination of workplace-based employment in each of 26 sectors, influenced by UK and NW regional employment in the same sectors and by measures of local demand. Employment in key 'export' sectors of manufacturing and

CHART 3.2: Main Relationships Between Variables in the MSP Model



financial and business services is also influenced by aspects of competitiveness, including relative wage costs and rents. The relationship with rents is particularly important for financial and business services. In this case, the influence is the difference in office rents between London and the North West. This is a particularly volatile influence and is, in our view, responsible for the much of the recent upsurge in growth in this sector across the NW, including in central Manchester. (This in turn is likely to underpin recent growth in demand for apartments and other owner-occupied dwellings in Central Manchester).

The data for employment from the Annual Business Inquiry (ABI) measures jobs rather than individuals. Because a model aiming to simulate housing demand needs to focus on

people, we convert the number of jobs into numbers of employed people. To do this we measure and project numbers of full-time and part-time employees in each sector and area. Individuals are assumed to hold only one full-time job each. The average numbers of part-time jobs per employee is determined using comparisons of Census and ABI data for 2001. Hence the number of people in each area with employee jobs is consistent with the Census in 2001. We have assumed that the 26,200 undercount of people in Manchester involves the same proportion of employed people as in the counted resident population for Manchester. The self-employed are also assumed to have one job each.

Total employment includes the self-employed. The normal source of data on the self-employed is the Labour Force Survey. However this is residence-based and must be converted to a work-place basis. This is achieved using ratios from the 2001 census. Since these are fixed in the forecasts there is an implicit assumption that the commuting behaviour of the self-employed does not change. The numbers of self-employed are forecast through fixed ratios to employees in each sector.

It has not proved possible to match the Census and ABI for individual sectors in each area. Although we put a good deal of effort into obtaining the relevant Census figures, discrepancies between the Census and ABI figures were too large at the level of individual sectors for this approach to be meaningful. Instead we have calculated a sectoral adjustment for the NW as a whole, applied this to individual sectors in each area and scaled the results to the area totals.

- *Occupations (Workplace-based)*

Occupation data (9 divisions within each sector) is obtained from the LFS, and is scaled to the 2001 census. A separate ‘unknown occupation’ category is used for those estimated to be employed among the 26,200 additional people in 2001.Forecasts for the share of each occupation within each sector draw on projections from the University of Warwick Institute for Employment Research for the NW region. To obtain forecasts for each district, growth rates in these shares are applied to sectoral employment in each area. The numbers of employees in each occupation are summed across all areas in the NW region to obtain a NW region control total which is subsequently used in calculating occupation numbers on a residence basis.

- *Population and Migration*

Population and migration data are collected by five-year age groups as mid year estimates (MYE) for each area. The MYE data includes the revised figures for 1981-2000 published by NS in October 2004. The mid year estimate for 2001 includes the 26,200 undercount in Manchester, and we presume that the figures assume that the additional people have the same age distribution as the rest of the census population in Manchester.

Demographic methodology is discussed more fully in the demographic report and the following is a summary. Population is projected in two parts. Natural increase is calculated through a cohort survival method based on projected mortality rates by age group in the North West. Mortality rate projections are the official UK trends by age and gender applied to actual rates for each local area again by age group and gender.Births are projected as the 2003 birth rate in each area multiplied by the projected female population of child-bearing age. The natural increase in each area is then scaled to the natural increase in the North West which in turn is forecast using official projections.

Migration is an important aspect of the model and is calculated via a separate migration equation for each area. We thus do not use the migration assumptions in the official projections since these do not incorporate likely developments in the local economies. The equations for migration within the UK are constructed separately for the North West and for each local area. The North West equation depends on projected house prices relative to London, relative wages and unemployment relative to the UK. Local migration equations depend on the index of multiple deprivation (IMD), housing vacancy rates and the proportion of people aged 15-24 and 25-29 in the population plus a constant for each area. The gap between migrants into the North West and the sum of migrants across all areas is allocated largely to the county areas rather than to the metropolitan districts. The allocation coefficients are obtained from the share of each area in the acceleration in migration since 1997. Local migration is scaled to the North West total. The age distribution of migrants is maintained at a fixed level using the average distribution in each area for the six year period 1996-2002.

International migration is projected for the North West as a whole based on past data, and is allocated to LA areas partly on the basis of the Census data for 2000-01, and partly pro-rata on population. The age distribution of international migrants to each area is assumed to be the same as for international migrants into the UK as a whole.

Data for migration within the UK comes from the NHSCR and has not been scaled to the census figures for 2000-01. This is because we believe that the timing of the NHSCR data is approximate and is unlikely to correspond exactly with the Census. However the NHSCR data should provide a reasonable estimate of migration over a run of years. Data on international migration is from the International Passenger Survey and is not available for individual LA areas. Census data on international migration is available only for in-movers.

- *Residence-based Employment by Occupation*

The total number of resident employees in each area is measured as the LFS estimate scaled to the 2001 census figure. The self-employed from the LFS are added to this figure without scaling. Residence based employment is forecast using a projected employment rate for each area multiplied by the forecast population of working age. The employment

rate is based on LFS data and is projected as a trend on past values adjusted for projected changes in occupational structure in each area.

We forecast resident employment by occupation to provide a link to the structure of the resident population by qualification and hence the demand for housing. The share of each occupation in total employment is taken from the Census for 2001 with the estimated employed among the 26,200 additional people allocated to a separate category of unknown occupation. The separate occupation groups in each LA area are projected to grow in future at the average rate for the same occupations on a workplace basis in the relevant labour market area. The proposed labour market areas for this exercise are Greater Manchester, Merseyside, and the three counties. It would also be possible to use different labour market areas for individual occupations. This would be based on an analysis of gross commuting flows by occupation. Our expectation would be that higher income occupations will have more extensive labour market areas. However this has not been done at this stage of development of the model. Finally, the number of those employed in each occupation is then scaled to total resident employment to ensure adding up.

- *Skills*

The model produces forecasts for the number of resident people aged 15-74 with each 5 levels of qualifications. These are levels 0 (no qualifications) to level 4/5 (graduate and post-graduate) on the NVQ scale used in the census. Data on the number of those in employment at each qualification level in each of 9 occupations were obtained form the census for each area in 2001. Data on annual trends for the proportion of employees at each level was obtained from the LFS and used to construct an annual data series from 1998-2003. The forecasts for this series were extrapolations of the data. For each local area, each qualification level within each occupation is forecast to grow at the North West regional rate for that qualification level. To ensure consistency and adding up to the regional totals one qualification level was left as a residual within each occupation. This was usually the largest. A similar procedure was used for those of working age not in employment and for those aged over retirement age (but under 74).

- *Unemployed, Inactive and Retired People*

In addition to the employed, the demand for housing reflects the numbers of people not in work. These include the unemployed, other inactive people and the retired. A further group of estimated non-employed people among the additional 26,200 people is considered separately. The unemployed plus the other inactive are equivalent in number to the resident population of working age less those in employment. The retired will be taken as those over retirement age less a Census-based estimate of those over retirement age but still in employment.

The distinction between the unemployed and those in certain categories of economic inactivity (e.g. some of those on incapacity benefit) is not always clear. In his model we take the unemployed as the official claimant count, and project this forward for each area as a trend in the proportion of unemployed claimants among the economically inactive population.

As outlined above, the skills distribution of the resident unemployed, other inactive and retired in each area is initially taken from the Census. These are then projected forward as extrapolated trends from the LFS annual time series. The skills distribution among the additional 26,200 people is assumed to be the same as the average for the unemployed, other inactive and the retired.

- *Net Commuting*

Net commuting of those in employment is obtained as a residual between residence-based and workplace-based estimates of numbers of people in employment. This is available both for total employment and for 9 occupation groups. These variables are used in the model as checks on the realism of the employment forecasts on resident and workforce bases. Our broad assumption will be that commuting flows remain broadly in line with past trends without significant changes in transport infrastructure. However, commuting flows may change as a consequence of new house building in an area. Although new house building will induce some automatic changes within the overall suite of models, we will also examine commuting flows to judge whether further adjustment is needed to residence-based employment to produce a balanced outcome.

- *Gross Value Added*

GVA is not an integral part of the system for estimating the demand for housing in our suite of models, but is included to assist Manchester Enterprises in their economic development work. GVA forecasts are currently available for 24 sectors at the level of the NW region as a whole. For areas within the NW region data on total GVA is available at NUTS 2 level. This includes counties and former Metropolitan counties. Our forecasts at LA level are obtained firstly by calculating an ‘expected GVA in each area. This is calculated by multiplying the NW region’s GVA per employee in each sector by workplace employment in each sector within each LA area. Expected GVA is then adjusted for any trend in the historical gap between the actual and expected GVA at county level.

- *Wages*

Wages are an important component in our estimates of future house prices. Data on average wages by sector is available in the regional accounts at regional level. Data for individual occupations is also available at regional level from the New Earnings Survey. At the level of individual LA's we have estimates of total wages on a workplace basis, also from the NES.

Forecasts are constructed firstly by calculating an 'expected' wage level for each area. This is obtained through the NES occupation wage for the NW region weighted by resident employment in each occupation in each area. This is scaled to the NES total wage level in each broad labour market area. For the NW as a whole, forecasts of the wage level in each occupation are obtained by extrapolating trends in the ratio of the wage in each individual occupation to total wages. This ratio is projected using growth rates from our existing forecast for total wages in the NW region.

4. Revised Forecasts

Population

As indicated in the introduction the forecasts for population are produced through a system of migration equations for each local area scaled to sum to the RF/OEF population forecasts for the North West region. The forecasts for domestic include terms for local attractiveness (IMD and housing vacancies), age structure and constants incorporate a migration assumption based on recent trends. Through the scaling mechanism local forecasts also reflect relative wages, house prices and unemployment in the North West. Similar factors also determine international migration into the North West, to produce forecasts that are then allocated to each local area on the basis of the shares used in the official forecasts.

These forecasts are thus not the same as the official GAD projections since they are tied to wider economic forecasts within the model rather than reflecting recent trends in local migration. For Manchester however the results are not very different. We should stress again however that both our forecasts and the GAD projections are heavily influenced by the same assumptions on the future of international migration flows into the UK, and by the assumption that recent shares of each local area in the North West's international migration will persist in future. Changes in these assumptions can result in different, and probably lower, population growth in Manchester.

Chart 4.1: Total population forecast (1981=100)

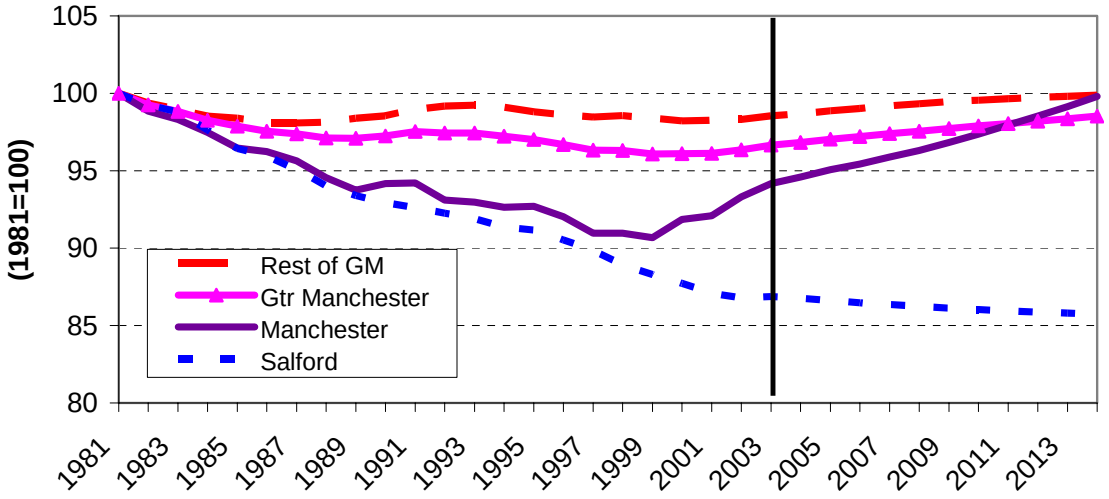


Table 4.1: Changes in total population, selected periods (000's)

	1983-1993	1993-2003	2003-2013
Manchester	-24.6	5.5	22.8
Salford	-17.2	-12.5	-2.7
Rest of GM	5.3	-13.2	24.3
GM	-36.5	-20.2	44.5

The most striking aspect of the forecasts shown in chart 4.1 and table 4.1 is the continuation of the strong growth in Manchester's that has been recorded since the end of the 1990's. This growth is strong enough to nearly restore by 2014 all of the population losses experienced in Manchester since the start of the 1980's. This in turn is single most important driver of economic growth in Manchester over the period. As stated above, the forecast is significantly dependent on international migration trends that must be regarded as uncertain. Since domestic migration is forecast to result in continuing population losses, lower international inflows could potentially remove all of the population growth. Our base expectation is however that international inflows will continue to be large enough to generate the population growth shown here.

Salford's population is forecast to continue declining but at a significantly slower rate than in the past. Like Manchester Salford loses people each year through domestic migration. Unlike Manchester, these losses are not fully offset by international inflows. Although Salford is less influenced by assumptions on international migration, even a small acceleration in international migration inflows could reverse the declining trend.

We also expect a reversal of the gentle decline in population in the rest of Greater Manchester. This reflects relative levels of wages, house prices and unemployment in the North West and also the availability of land for house building. Bolton, Bury, Trafford, Tameside and Wigan are expected to be the main beneficiaries.

Manufacturing

The forecasts show manufacturing employment (which provided jobs for 12.8% of employees in Greater Manchester in 2003) continuing to fall in all areas, with a total of 46,000 jobs going from Greater Manchester over the decade from 2003 to 2013, compared with 59,000 over the previous decade. The smaller job loss forecast for the next decade reflects the fact that the sector has already shrunk to a low level, rather than any deceleration in the rate of decline. Continuing job losses in manufacturing seem inevitable given global trends, and our expectations of almost another million fewer jobs in manufacturing across the UK as a whole over the same period. Forecasts are also

available for 16 sub-sectors within manufacturing, these are available in the annex tables but are not discussed separately in this report.

Chart 4.2: Manufacturing employment forecast (1981=100)

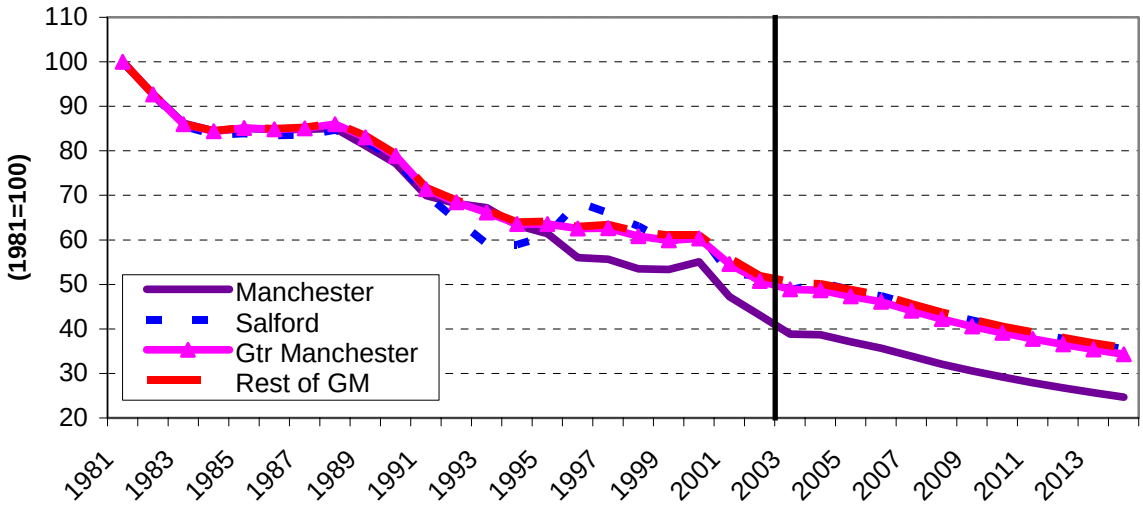


Table 4.2: Changes in manufacturing employment, selected periods (000's)

	1983-1993	1993-2003	2003-2013
Manchester	-8.3	-12.5	-5.8
Salford	-6.9	-2.7	-3.1
GM	-67.5	-58.7	-45.9
Rest of GM	-52.3	-43.5	-37.0

Financial and Business Services

In contrast to the outlook for manufacturing, there is every prospect of increasing employment in financial and business services, which already provided jobs for 21% of employees in Greater Manchester in 2003, almost twice as many as the whole of manufacturing . Indeed, one of the key questions for the economic prospects of the Manchester area is the extent to which recent strong growth in employment in financial and particularly business services can continue. Our national and regional forecasts suggest that it will despite the series of scandals and difficulties in the sector nationally and internationally over recent years. The forecast shows an additional 26,000 jobs in Manchester between 2003 and 2013 compared with 24,000 over the previous decade. Similar percentage increases mean we are forecasting 8,000 extra jobs in Salford over this decade and 67,000 across the whole of Greater Manchester.

Chart 4.3: Financial & business services employment forecast (1981=100)

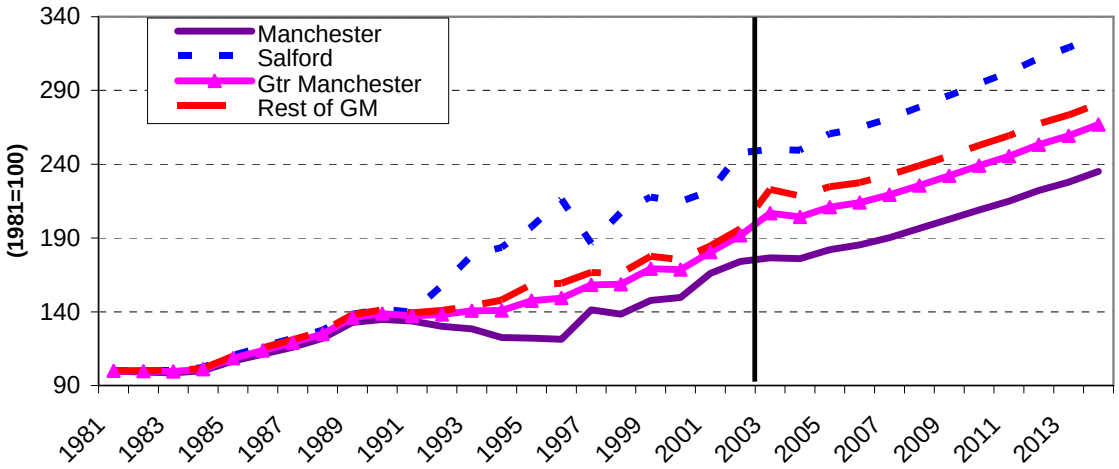


Table 4.3: Changes in financial and business services employment, selected periods (000's)

	1983-1993	1993-2003	2003-2013
Manchester	15.0	24.4	25.9
Salford	8.7	8.0	7.6
Rest of GM	28.8	52.1	33.3
GM	52.5	84.5	66.9

Public Services

Public administration, education and health together employed 22% of Greater Manchester's workers in 2003, almost one in four. Forecasts here are likely to be affected by successive governments' approach to public spending. But the details are also quite heavily dependent on demographic factors, with changes in population affecting the demand for workers in health and education in particular.

Although we forecast slower growth in UK public spending over the next decade, the growth is still likely to be sufficient to generate an extra 38,000 jobs in Greater Manchester between 2003 and 2013 with 40% of these accruing to Manchester itself. A few of these jobs may be civil service relocations under the Lyons review process, but this is unlikely in our view to amount to more than a few thousand. The larger number of jobs are likely to be for providers of local public services including education and health workers. Numbers in these categories will respond to population changes and particularly

to changes in numbers of children and the elderly. Hence, all of the caveats above about uncertainties in population forecasts also apply to public sector service forecasts.

Chart 4.4: Public services employment forecast (1981=100)

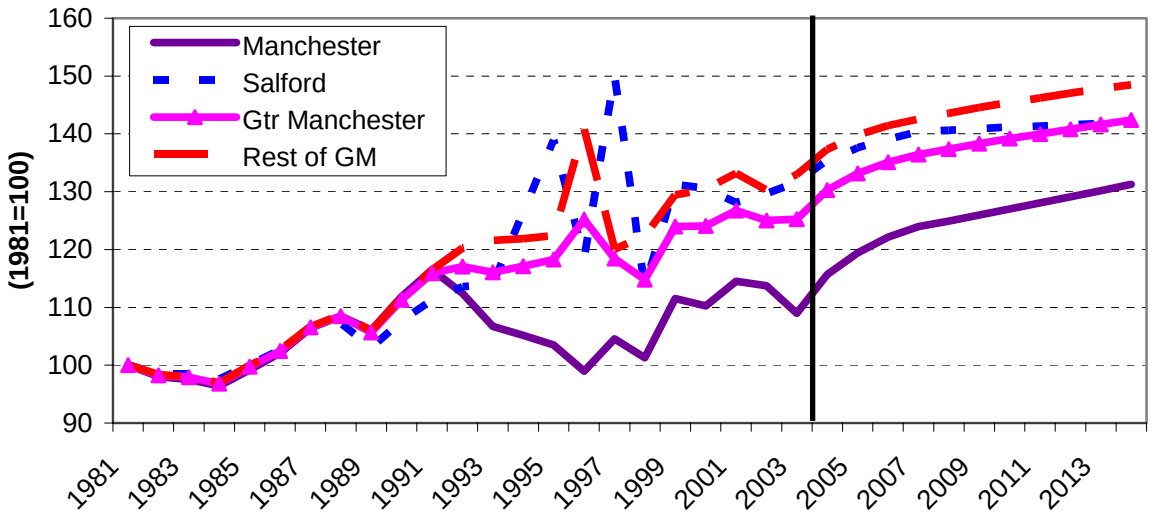


Table 4.4: Changes in public services employment, selected periods (000's)

	1983-1993	1993-2003	2003-2013
Manchester	6.6	1.7	15.3
Salford	3.9	4.4	2.6
Rest of GM	31.1	15.0	19.7
GM	41.6	21.0	37.5

Distribution Hotels and Restaurants

Distribution, hotels and catering accounted for a similar proportion of employees in Greater Manchester in 2003 as public services, at 23%. The recently released 2003 ABI figures show that the substantial rise recorded in distribution jobs recorded in Manchester in 2002 was a statistical anomaly rather than a genuine move to a new level of employment in the sector, but even so we are forecasting a rise in jobs in Manchester between 2003 and 2013 of around 4,200. The forecast for Salford looks less positive, but for Greater Manchester as a whole the forecast is for a rise of 11,500 jobs between 2003 and 2013 in these sectors. Slower growth than in the past reflects a number of factors including slower growth of consumer spending in future, and rising productivity in both

the wholesale and retail distribution sectors. Manchester's employment in these sectors is forecast to rise more rapidly than elsewhere in the conurbation because of its projected rise in population. Since both Manchester and Salford are both reasonably well provided with hotel accommodation after recent expansions, we expect employment in the hospitality sector to increase only slowly in Manchester and perhaps to fall back a little in Salford.

Chart 4.5: Distribution and hotels employment forecast (1981=100)

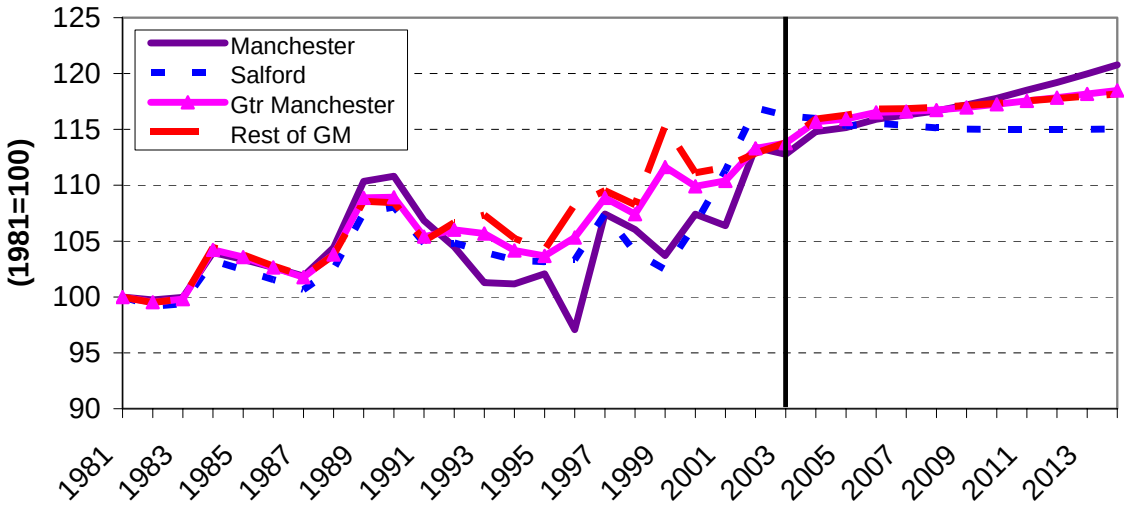


Table 4.5: Changes in distribution and hotels employment, selected periods (000's)

	1983-1993	1993-2003	2003-2013
Manchester	0.8	6.7	4.2
Salford	1.0	2.7	-0.3
Rest of GM	13.5	11.6	7.5
GM	15.3	21.0	11.5

Transport and communications

The remaining service sectors – transport and communications – represent a smaller share of jobs (just over 7% in Greater Manchester in 2003), but nevertheless have the potential to provide a stimulus or drag on growth in different areas. Salford has seen some rapid increases in jobs in this sector in recent years, but this has been from a low base. Over the decade from 2003 to 2013, we are projecting a further net increase of only 1,500 in Salford, about the same in Manchester and little change in the rest of Greater Manchester. In practice the forecast is relatively flat for most areas except Manchester where the airport is expected to provide further growth. The decline in employment reported for the 'rest of Greater Manchester in table 4.6 is probably a statistical aberration. We have assumed that huge reported increase in employment in 2003 for Oldham and Rochdale are errors that will be corrected in future data. In line with our usual practice we have left

the 2003 data unchanged but assumed that the 2004 data returns to normal levels. The consequence of this procedure is an apparent decline in jobs in table 4.6.

Chart 4.6: Transport and communications employment forecast (1981=100)

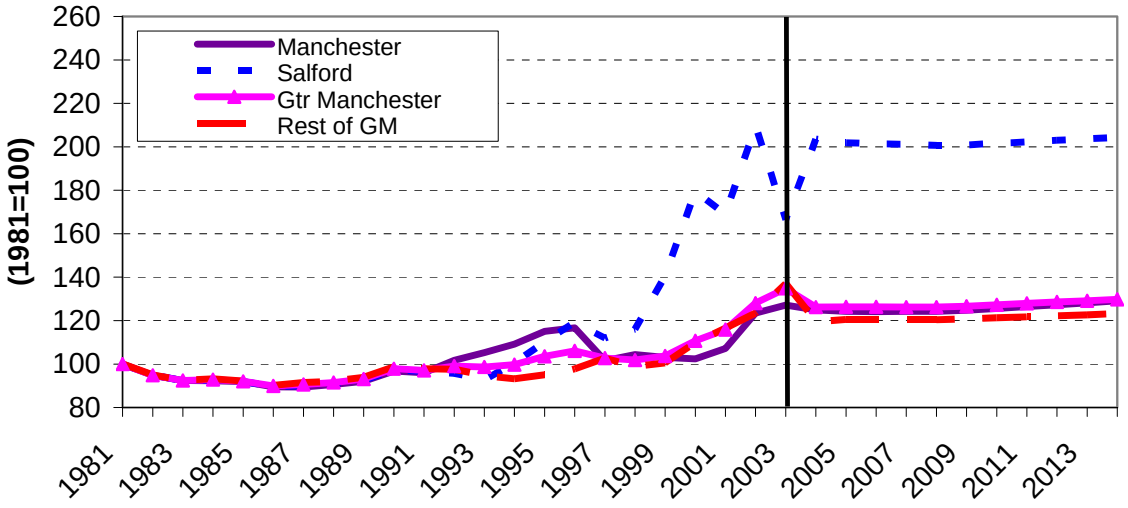


Table 4.6: Changes in transport and communications employment, selected periods (000's)

	1983-1993	1993-2003	2003-2013
Manchester	3.6	35.9	0.3
Salford	0.0	3.0	1.5
Rest of GM	0.9	17.6	-5.9
GM	4.5	26.7	-4.1

Total employment

The result of our forecasts for all these sectors is that total employment is forecast to increase over the next decade in all areas. Jobs in Manchester are forecast to increase by 49,000 between 2003 and 2013 – not as rapidly as over the past five years, but more than matching the 26,000 increase seen over the decade to 2003 as whole. Employment is Salford is projected to rise by 10,000 over the decade, and in the rest of Greater Manchester by 30,000. Overall, therefore, we are expecting a net increase in employment in Greater Manchester of 90,000 between 2003 and 2013.

Chart 4.7: Total employment forecast (1981=100)

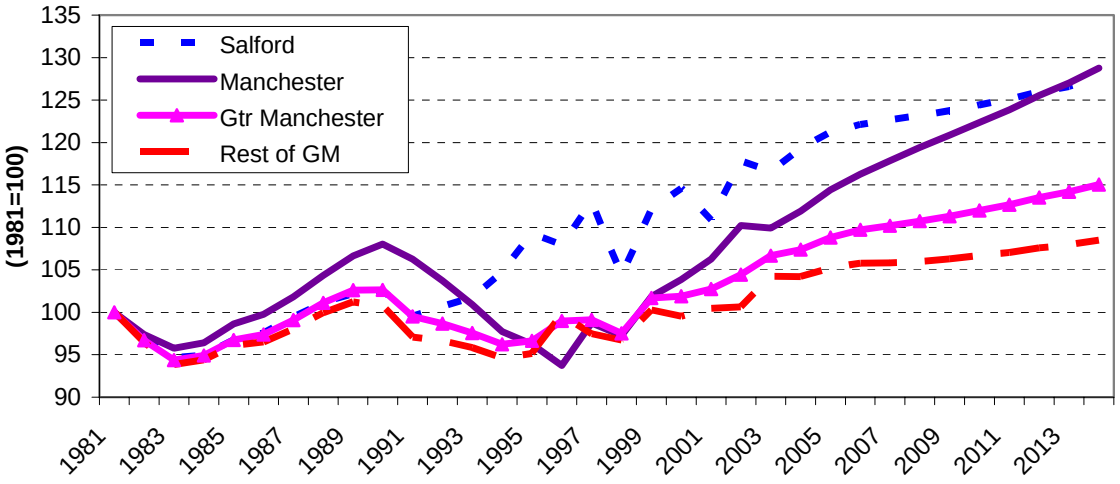


Table 4.7: Changes in total employment, selected periods (000's)

	1983-1993	1993-2003	2003-2013
Manchester	14.9	26.0	49.4
Salford	7.3	15.3	10.3
Rest of GM	15.9	67.6	29.9
GM	38.1	109.0	89.7

Output

The implications of the forecast for GVA are perhaps less directly relevant to housing markets, but the results are summarized in Chart 4.8. While output fell in real terms in most areas of Greater Manchester over the 1980s and part of the 1990s, the growth in jobs we are forecasting is sufficient to generate growth in real GVA over the next decade of 29% in Manchester, 20% in Salford, 19% in the rest of Greater Manchester, averaging 20% in Greater Manchester as a whole.

Chart 4.8: Real output forecast (1981=100)

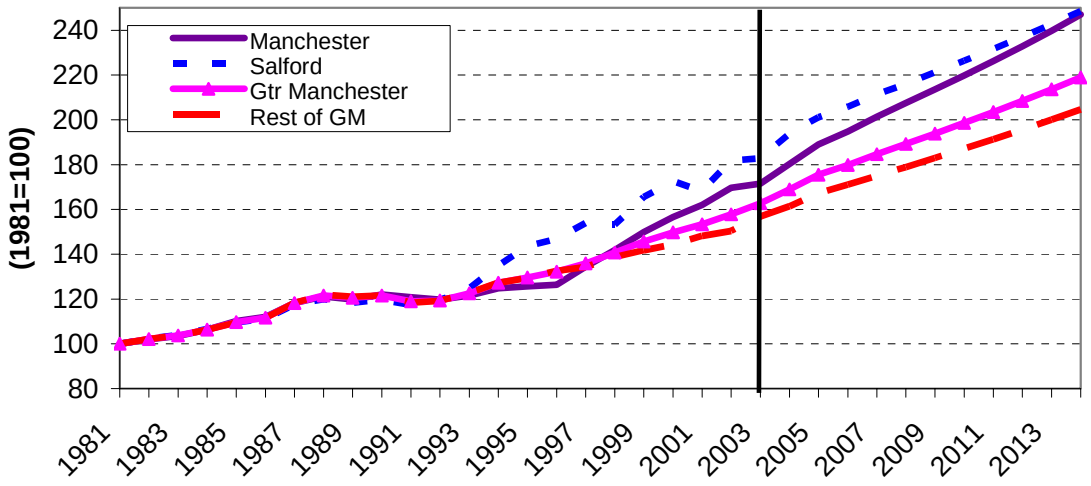


Table 4.8: Average Annual Percentage Changes in Real GVA (2001 prices)

	1983-1993	1993-2003	2003-2013
Manchester	1.8	3.7	3.5
Salford	2.0	4.4	2.9
Rest of GM	1.9	2.8	2.9
GM	1.9	3.1	3.1

Occupations

The occupational forecasts are produced by using OEF/RF National forecasts of occupational employment structure by industry benchmarked using Census information on resident and workplace based occupational structures. The data presented below relates to residence based occupational forecasts.

Chart 4.9: Managerial and professional occupation forecasts (2001=100)

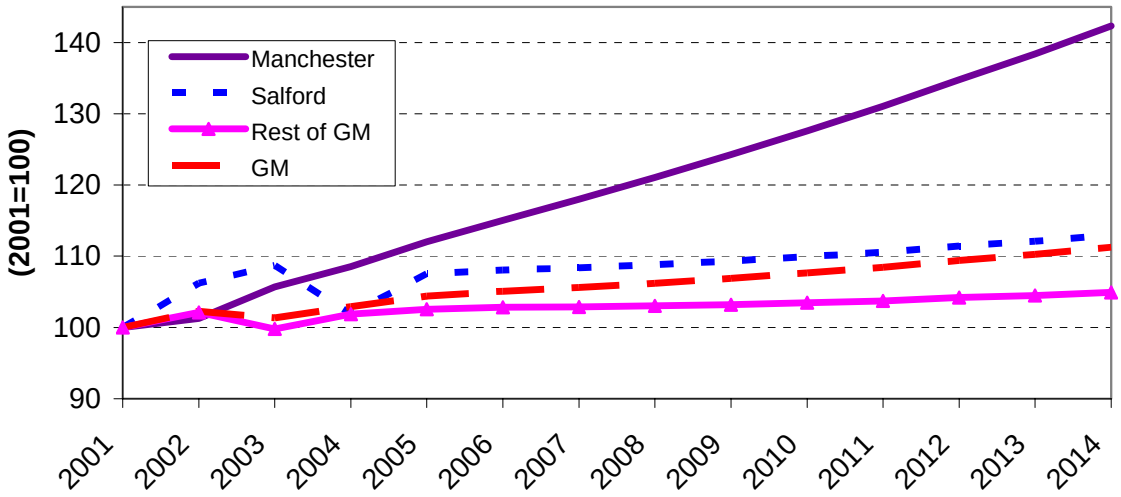


Table 4.9: Changes in managerial and professional occupations, selected years (000's)

	2002-2008	2008-2014
Manchester	6.1	6.9
Salford	0.0	0.6
Rest of GM	6.5	2.9
GM	12.6	10.4

A steady increase in managerial and professional occupations is forecast throughout Greater Manchester with some acceleration projected for Manchester. The growth in managers and professionals in Manchester is driven by a strong working age population forecast. In addition the strong growth in professional service sectors after 2005, which have a strong demand for highly skilled workers, will contribute to the rapid growth. It is projected that over the forecast period Manchester will attract 56% of the new managers and professionals in Greater Manchester (13,000 workers) over the period 2003-2013. The projections for Salford depict a much more modest rise in managerial and professional workers, with less than 500 additional workers, projected over the next decade. This is largely a result of the relatively slow growth in working age population in the area. The rest of Greater Manchester is projected to experience a steady and unbroken growth in managers and professionals thought the forecast period.

Chart 4.10: Intermediate occupation forecasts (2001=100)

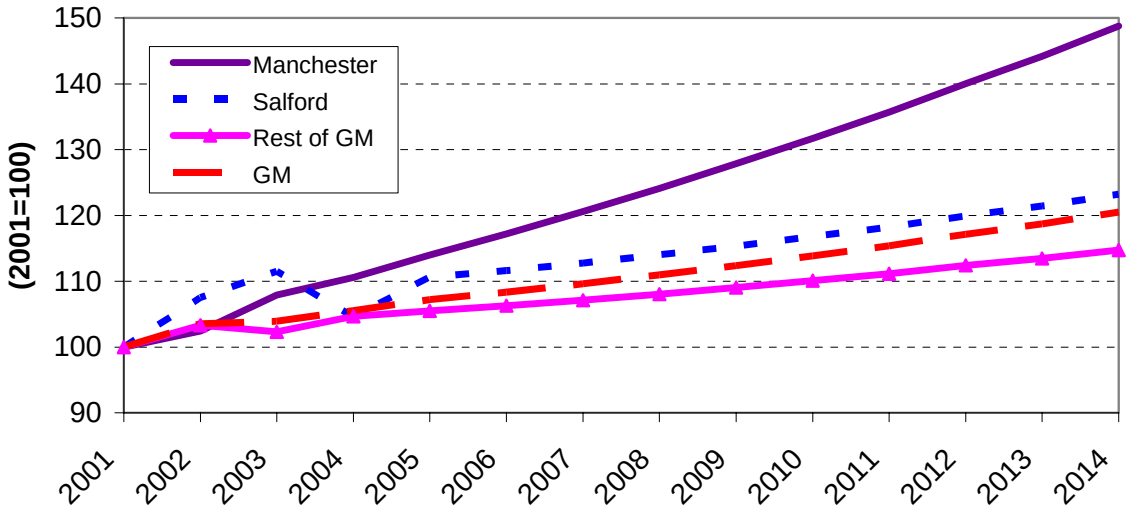


Table 4.10: Changes in intermediate occupations, selected years (000's)

	2002-2008	2008-2014
Manchester	12.5	13.4
Salford	2.1	2.8
Rest of GM	13.5	18.7
GM	28.1	34.9

The forecasts for intermediate occupations follow a similar trend to the managerial and occupational forecasts with Manchester continuing its steady growth as a result of the projected expansion in working age population. Salford is projected have a similar rate of growth in intermediate occupations as in the rest of Greater Manchester after 2005.

Chart 4.11: Manual occupation forecasts (2001=100)

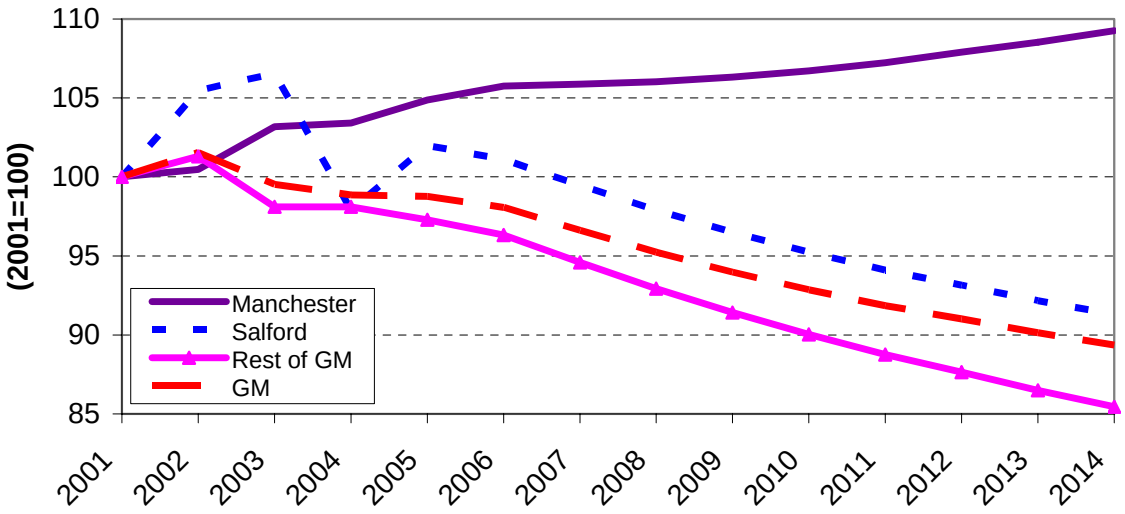
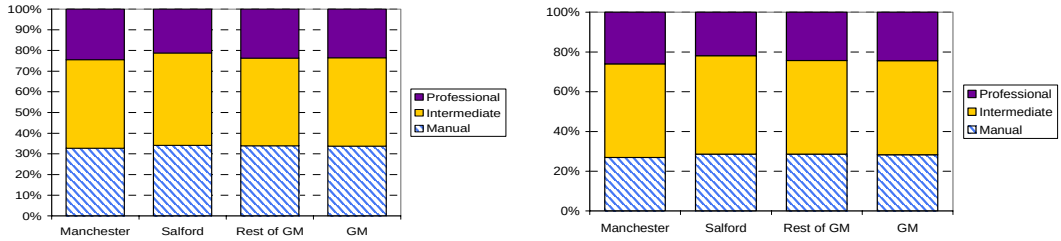


Table 4.11: Changes in manual occupations, selected years (000's)

	2002-2008	2008-2014
Manchester	1.5	1.3
Salford	-2.7	-1.8
Rest of GM	-14.9	-18.6
GM	-16.1	-19.0

A decrease of 35,000 is forecasts in the number of manual workers across Greater Manchester by over the period 2002- 2014. Salford's decline, a loss of 4,500 manual workers is more marked and slightly faster than the overall trend for Greater Manchester. The decline does not occur in Manchester, which gains 2,800 jobs over the same period as the strong growth in population and other occupations provide some demand for the lower skilled occupations.

Chart 4.12: Occupation structure (2002,2014)



By 2014 intermediate occupations remain the dominant occupational sector with 47% of workers in Greater Manchester. The proportion of manual workers, at 28.5%, remains slightly higher than the proportion of professional and managerial workers (24.5%), though the gap will have narrowed since 2002. Notably in Manchester the proportion of managers and professionals is projected to be almost equal to the proportion of manual workers at 26% by 2014, a reflection of the changing structure of inner city employment.

Qualifications

The general trend in qualifications throughout the UK is for the proportions of people with graduate or post-graduate qualifications to increase while that for people with no or few qualifications declines. Since our skills forecasts here are driven by expected national trends the same broad trend is expected for each of the local authority areas. What differs greatly is firstly the starting points in 2001. Secondly, since the skills forecasts depend directly on the mix in occupations in each area, forecast changes in occupational mixes will impact directly on the projected levels of qualifications. This latter factor opens up the possibility of some convergence or divergence in skills mix between areas, but in practice little chance in the ranking of areas is likely.

Our forecast for Manchester, shown in chart 4.14 shows a strong tendency for the resident population to become more highly skilled, while numbers with no qualifications decline. This is one aspect of the forecast that will, however, depend strongly on housing conditions. The recent rise in jobs for the well qualified in Manchester appears to have been associated with an increase in the stock of highly priced city centre apartments. A continuation of this trend may be one way in which rising numbers of well qualified people can be accommodated within the city. Unlike other areas, Manchester's local authority housing accommodates a significant number of well qualified people. It is unclear whether this will continue.

Chart 4.14 Percentage of Working age Population by Qualification Level, Manchester

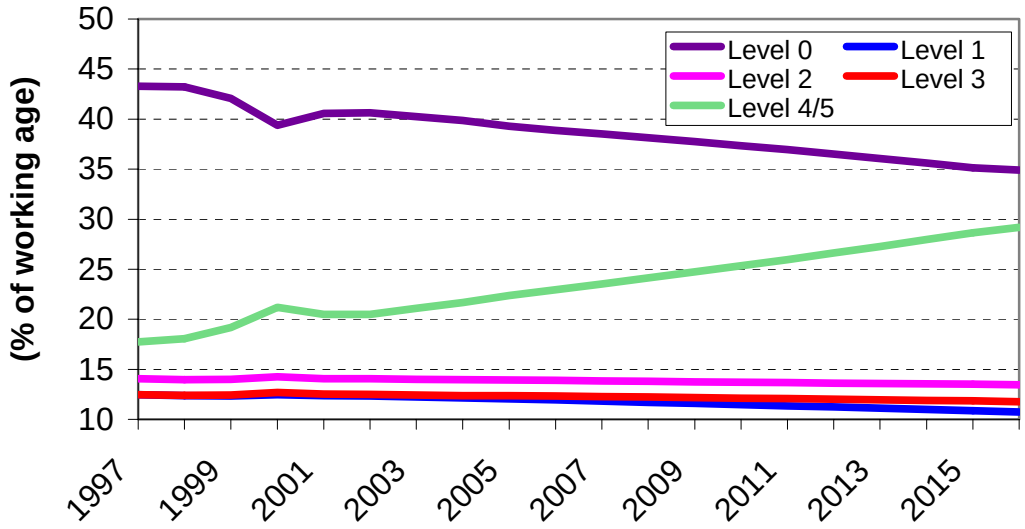
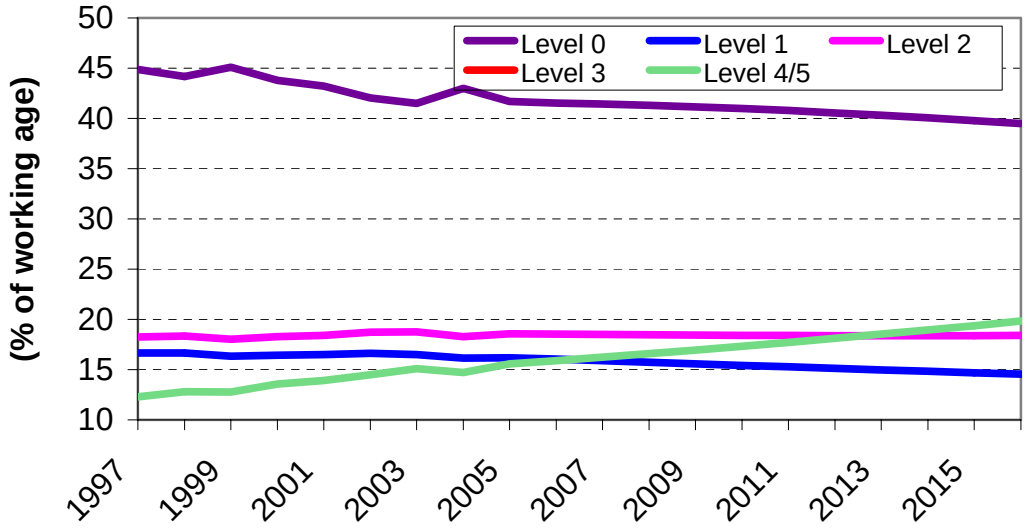


Chart 4.15 Percentage of Working age Population by Qualification Level, Salford



Although the percentage of resident graduates in Salford is also projected to rise rapidly, this is from a much lower base than in Manchester. As a result Salford's resident population is projected to remain predominantly low skilled for the foreseeable future.

Conclusion

The outlook for employment is favorable for Manchester although this conclusion is subject to the caveats about uncertainties on international migration. Both population and employment are expected to continue rising at the relatively rapid rates experienced in recent years. Moreover, our expectation is that the composition of employment will change with a rapidly growing proportion of graduates within the labour force.

The forecasts also suggest that graduates will be increasingly represented within the resident workforce. Although good data is lacking for the period since 2001, the coincidence of rising population and rising employment in the graduate employing sectors of finance and business services does suggest that the proportion of graduates has been rising. The boom in construction of high priced city centre apartments also supports the view that graduates increasingly wish to live in Manchester. There is some doubt about how many of the new apartment blocks have been fully occupied, and the extent to which they are speculative developments. However, it seems likely that the greatly increased supply does reflect a growing demand from those with highly paid jobs in Manchester.

The forecast population growth for Manchester also means an increase in numbers of those holding other levels of qualifications. Even though the *proportion* of people with no qualifications is projected to decline, growth in the population as a whole means the *number* of such people will rise. This in turn has implications for the demand for local authority housing.

In Salford, the same general trends in the skills composition of the workforce have very different results. Projected declines in population and a currently low proportion of graduates mean that even in ten years time numbers of graduates will not be large. Salford is projected to be a city in which manual and unskilled occupations predominate for many years.

In both cities the quality of new building and wider environmental improvement will be critical to the pace of change, including the attraction of highly skilled residents. In Manchester our expectation is that the underpinning for growing demand for up-market owner-occupied dwellings will be in place. Jobs in financial and business services in Central Manchester may grow slowly for a year or two as London's employment recovers and empty London offices are filled, but beyond that some 25,000 additional jobs are projected to be created by 2014. For many young graduate employees there is likely to be an attraction to living in Manchester as well as working there. The task is to create the conditions that also make Manchester attractive to older employees with

families. For Salford, the task is attract some of these people to live in those parts of Salford which are adjacent to Central Manchester.

Annex: Detailed Forecasts

ANNEX A: REFERENCE AREAS

TABLE A1 - EMPLOYMENT: TOTAL

TABLE A2 - EMPLOYMENT: MANUFACTURING

TABLE A3 - EMPLOYMENT: OTHER PRODUCTION

TABLE A4 - EMPLOYMENT: CONSTRUCTION

TABLE A5 - EMPLOYMENT: DISTRIBUTION AND HOTELS

TABLE A6 - EMPLOYMENT: TRANSPORT AND COMMUNICATIONS

TABLE A7 - EMPLOYMENT: FINANCIAL AND BUSINESS SERVICES

TABLE A8 - EMPLOYMENT: PUBLIC ADMIN, HEALTH AND EDUCATION

TABLE A9 - EMPLOYMENT: OTHER PERSONAL SERVICES

TABLE A10 - RESIDENCE BASED EMPLOYMENT BY QUALIFICATION: LEVEL 0

TABLE A11 - RESIDENCE BASED EMPLOYMENT BY QUALIFICATION: LEVEL 1

TABLE A12 - RESIDENCE BASED EMPLOYMENT BY QUALIFICATION: LEVEL 2

TABLE A13 - RESIDENCE BASED EMPLOYMENT BY QUALIFICATION: LEVEL 3

TABLE A14 - RESIDENCE BASED EMPLOYMENT BY QUALIFICATION: LEVEL 4/5

TABLE A15 - RESIDENCE BASED EMPLOYMENT BY QUALIFICATION: Other/Unknown

TABLE A16 - TOTAL GVA (Consistent with GVA Scenario)

ANNEX B: PRODUCTIVITY SCENARIOS

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TABLE B1: PRODUCTIVITY SCENARIO - SUMMARY RESULTS, GREATER MANCHESTER

TABLE B2: PRODUCTIVITY SCENARIO - SUMMARY RESULTS, MANCHESTER

TABLE B3: PRODUCTIVITY SCENARIO - SUMMARY RESULTS, SALFORD

TABLE B4: PRODUCTIVITY SCENARIO - SECTORAL EMPLOYMENT CHANGES, GREATER MANCHESTER

TABLE A1 - EMPLOYMENT1: TOTAL

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	(thousands)																					
Manchester	300	307	318	318	323	331	336	340	345	349	353	358	363	367	372	377	383	388	394	400	406	413
Salford	118	115	122	120	123	125	126	127	127	128	129	129	130	131	132	133	134	135	136	137	138	139
Bolton	118	118	115	121	121	123	123	123	122	122	122	122	123	123	123	123	123	124	124	124	125	125
Bury	67	67	68	72	71	72	72	72	72	73	73	73	73	73	74	74	74	74	74	74	74	74
Oldham	87	87	87	87	87	87	88	87	87	87	87	87	87	87	87	87	87	88	87	87	87	87
Rochdale	81	82	83	91	85	85	85	85	85	85	86	86	86	87	87	88	88	88	89	90	91	91
Stockport	130	129	130	132	133	133	134	134	134	135	136	136	137	137	138	139	139	140	141	141	142	143
Tameside	77	77	82	84	85	85	85	85	85	84	84	84	84	84	84	84	84	84	84	84	84	83
Trafford	129	136	135	139	142	146	148	149	150	152	154	155	157	159	161	164	166	168	170	172	175	177
Wigan	111	111	110	112	114	115	116	116	116	116	117	117	118	118	118	119	119	120	120	121	121	122
Greater Manchester	**1219**	**1229**	**1249**	**1276**	**1284**	**1302**	**1313**	**1318**	**1324**	**1332**	**1340**	**1348**	**1358**	**1366**	**1376**	**1387**	**1398**	**1408**	**1418**	**1430**	**1441**	**1454**
Warrington	111	117	123	116	122	128	130	132	134	136	138	140	142	144	146	149	151	154	157	159	162	165
Macclesfield	85	91	91	89	92	93	93	94	94	95	95	96	96	97	98	98	99	100	100	101	102	103
MSP Reference Area	**1415**	**1437**	**1463**	**1482**	**1499**	**1522**	**1536**	**1544**	**1552**	**1562**	**1572**	**1583**	**1596**	**1607**	**1620**	**1634**	**1649**	**1662**	**1675**	**1690**	**1705**	**1721**

[1] Employees plus the Self-employed

TABLE A2 - EMPLOYMENT1: MANUFACTURING

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	(thousands)																					
Manchester	24	21	19	17	17	16	16	15	14	13	13	12	12	11	11	10	10	10	9	9	9	8
Salford	16	14	14	13	13	13	12	12	11	11	11	10	10	10	9	9	9	8	8	8	8	7
Bolton	23	21	19	20	20	20	19	18	17	17	16	16	15	15	14	14	13	13	13	12	12	12
Bury	13	11	11	10	10	10	9	9	8	8	8	7	7	7	6	6	6	6	6	5	5	5
Oldham	24	21	18	18	17	17	17	16	15	15	14	14	13	13	12	12	12	12	12	11	11	11
Rochdale	20	19	17	17	17	16	16	15	14	14	13	13	12	12	12	11	11	10	10	10	9	9
Stockport	21	20	18	16	17	17	16	16	15	15	14	14	13	13	13	12	12	11	11	11	11	10
Tameside	22	21	20	20	19	18	18	17	16	15	15	14	14	13	13	13	12	12	11	11	11	10
Trafford	19	19	17	16	17	16	16	15	15	14	14	13	13	13	12	12	12	11	11	11	11	10
Wigan	23	21	20	19	19	19	18	18	17	16	16	15	15	14	14	13	13	13	12	12	12	11
Greater Manchester	**205**	**186**	**173**	**166**	**166**	**161**	**157**	**150**	**144**	**138**	**133**	**129**	**124**	**120**	**117**	**113**	**109**	**106**	**103**	**100**	**97**	**94**
Warrington	10	12	10	9	10	9	9	9	9	8	8	8	8	7	7	7	7	7	7	6	6	6
Macclesfield	13	16	15	15	15	14	14	13	13	12	12	12	11	11	11	10	10	10	9	9	9	9
MSP Reference Area	**228**	**214**	**198**	**190**	**190**	**184**	**180**	**172**	**165**	**159**	**153**	**148**	**143**	**139**	**134**	**130**	**126**	**123**	**119**	**116**	**112**	**109**

[1] Employees plus the Self-employed

TABLE A3 - EMPLOYMENT1: OTHER PRODUCTION2

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
									(thousands)													
Manchester	1	2	1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1
Salford	1	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
Bolton	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Bury	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oldham	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rochdale	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stockport	2	3	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
Tameside	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
Trafford	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
Wigan	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Greater Manchester	**10**	**11**	**6**	**5**	**5**	**7**	**7**	**7**	**7**	**7**	**7**	**6**	**6**	**6**	**6**	**6**	**6**	**5**	**5**	**5**	**5**	**5**
Warrington	4	4	3	2	2	4	4	4	4	4	4	4	4	3	3	3	3	3	3	3	3	3
Macclesfield	4	4	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2
MSP Reference Area	**18**	**18**	**13**	**10**	**10**	**14**	**14**	**14**	**13**	**13**	**13**	**12**	**12**	**12**	**12**	**11**	**11**	**11**	**10**	**10**	**10**	**10**

[1] Employees plus the Self-employed

2 Other production includes agriculture, extraction and utilities

TABLE A4 - EMPLOYMENT1: CONSTRUCTION

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
									(thousands)													
Manchester	9	9	11	12	12	13	14	14	14	14	15	15	15	15	15	16	16	16	16	16	17	17
Salford	10	7	8	8	8	9	9	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Bolton	6	8	7	7	8	8	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Bury	4	4	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Oldham	7	7	7	6	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Rochdale	5	6	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	8	8	8	8
Stockport	6	7	7	8	8	8	8	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Tameside	4	5	9	9	10	10	10	11	11	10	10	10	10	10	10	10	10	10	10	10	10	10
Trafford	6	9	9	9	9	9	10	10	10	10	10	11	11	11	11	11	11	11	11	12	12	12
Wigan	10	11	11	12	12	13	13	13	14	14	14	14	14	14	14	15	15	15	15	15	15	15
Greater Manchester	**67**	**73**	**78**	**82**	**84**	**88**	**92**	**93**	**94**	**94**	**95**	**95**	**96**	**97**	**97**	**98**	**98**	**99**	**100**	**100**	**101**	**101**
Warrington	8	10	9	10	9	10	11	11	11	11	11	12	12	12	12	12	13	13	13	13	13	14
Macclesfield	4	4	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	6	6
MSP Reference Area	**79**	**87**	**91**	**98**	**97**	**103**	**108**	**109**	**110**	**111**	**112**	**112**	**113**	**114**	**115**	**116**	**117**	**117**	**118**	**119**	**120**	**120**

[1] Employees plus the Self-employed

TABLE A5 - EMPLOYMENT1: DISTRIBUTION AND HOTELS2

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
							(thousands)															
Manchester	63	62	66	66	67	67	68	68	68	69	69	69	70	70	71	71	72	72	73	73	74	74
Salford	23	24	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Bolton	30	29	30	30	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
Bury	17	17	18	18	18	18	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
Oldham	24	25	24	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Rochdale	20	20	20	20	20	21	21	21	21	21	21	21	21	21	21	21	21	21	22	22	22	22
Stockport	32	32	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
Tameside	18	18	18	19	20	20	20	19	19	19	19	19	19	19	20	20	20	20	20	19	19	19
Trafford	32	33	34	33	35	35	35	35	36	36	36	36	36	37	37	37	37	37	38	38	38	38
Wigan	27	26	26	27	27	27	27	28	28	28	28	28	28	28	28	28	28	28	27	27	27	27
Greater Manchester	**286**	**287**	**295**	**296**	**301**	**302**	**303**	**303**	**304**	**304**	**305**	**306**	**307**	**307**	**308**	**309**	**310**	**310**	**311**	**312**	**313**	**314**
Warrington	29	29	30	28	31	31	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
Macclesfield	22	22	24	22	24	24	24	24	24	25	25	25	25	25	25	25	26	26	26	26	26	26
MSP Reference Area	**337**	**338**	**348**	**346**	**356**	**357**	**359**	**359**	**360**	**361**	**362**	**363**	**364**	**365**	**366**	**367**	**368**	**368**	**369**	**370**	**371**	**372**

[1] Employees plus the Self-employed
2 includes retail

TABLE A6 - EMPLOYMENT1: TRANSPORT AND COMMUNICATIONS

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	(thousands)																					
Manchester	29	30	35	36	35	35	35	35	35	35	35	36	36	36	36	37	37	37	37	38	38	38
Salford	7	7	8	7	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Bolton	6	6	6	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Bury	3	4	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Oldham	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Rochdale	6	6	9	15	7	7	7	7	7	7	7	8	8	8	8	8	8	8	8	9	9	9
Stockport	6	6	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Tameside	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Trafford	10	11	12	10	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Wigan	8	9	8	10	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Greater Manchester	**82**	**86**	**95**	**100**	**93**	**93**	**93**	**93**	**93**	**94**	**94**	**95**	**95**	**95**	**96**	**96**	**97**	**96**	**97**	**98**	**98**	**99**
Warrington	10	11	10	11	12	12	12	12	13	13	13	13	13	13	13	13	13	13	13	14	14	14
Macclesfield	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
MSP Reference Area	**96**	**100**	**108**	**113**	**109**	**109**	**109**	**109**	**109**	**109**	**110**	**110**	**111**	**112**	**112**	**113**	**113**	**113**	**114**	**114**	**115**	**115**

[1] Employees plus the Self-employed

TABLE A7 - EMPLOYMENT1: FINANCIAL AND BUSINESS SERVICES

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	(thousands)																					
Manchester	76	84	88	89	89	92	94	96	99	103	106	109	112	115	119	123	127	130	134	138	142	147
Salford	24	25	27	28	28	29	29	30	31	32	33	34	35	35	36	37	39	40	41	42	42	43
Bolton	17	17	17	23	21	21	22	22	22	23	23	24	24	25	25	26	26	27	28	28	29	29
Bury	8	8	8	8	9	9	9	9	9	9	10	10	10	10	11	11	11	11	11	11	11	11
Oldham	7	7	10	11	11	11	11	11	11	12	12	12	12	13	13	13	14	14	13	13	14	14
Rochdale	8	8	10	11	11	11	11	11	12	12	13	13	13	14	14	15	15	16	16	17	17	18
Stockport	25	25	27	28	27	28	28	29	30	30	31	32	33	33	34	35	36	37	38	38	39	40
Tameside	7	8	8	9	10	10	10	10	10	10	11	11	11	11	12	12	12	12	12	13	13	13
Trafford	33	36	37	43	42	44	45	46	48	49	51	53	55	56	58	60	62	64	66	68	71	73
Wigan	12	12	13	15	14	14	14	15	15	16	16	17	17	18	18	19	19	20	20	21	21	22
Greater Manchester	**215**	**230**	**245**	**264**	**261**	**269**	**273**	**280**	**288**	**296**	**305**	**313**	**323**	**331**	**341**	**351**	**361**	**371**	**380**	**390**	**400**	**410**
Warrington	25	29	37	30	32	34	36	37	39	41	43	44	46	48	50	52	55	57	59	62	64	67
Macclesfield	18	21	22	21	21	22	22	23	24	24	25	26	26	27	27	28	29	29	30	31	31	32
MSP Reference Area	**258**	**281**	**304**	**315**	**314**	**326**	**332**	**340**	**351**	**362**	**372**	**383**	**396**	**406**	**418**	**431**	**445**	**457**	**469**	**482**	**495**	**509**

[1] Employees plus the Self-employed

TABLE A8 - EMPLOYMENT1: PUBLIC ADMIN, HEALTH AND EDUCATION

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
									(thousands)													
Manchester	80	83	82	79	83	86	88	89	90	91	92	92	93	94	95	96	96	97	98	99	101	102
Salford	33	32	33	33	34	35	35	35	35	35	35	35	36	36	36	36	36	36	36	36	36	36
Bolton	28	28	27	28	28	29	29	29	29	29	29	29	29	29	29	29	29	30	30	30	30	30
Bury	19	19	19	21	21	21	22	22	22	23	23	23	23	23	24	24	24	24	24	24	24	25
Oldham	18	18	19	19	19	19	19	20	20	20	20	20	20	20	20	21	21	21	21	21	21	21
Rochdale	18	19	17	17	18	18	19	19	19	19	19	19	20	20	20	20	20	20	20	20	20	20
Stockport	29	28	28	29	29	30	30	30	31	31	31	31	31	31	31	32	32	32	32	32	32	32
Tameside	16	17	17	19	19	20	20	20	20	20	20	21	21	21	21	21	21	21	21	21	22	22
Trafford	21	21	20	20	21	22	22	22	22	23	23	23	23	23	23	23	23	24	24	24	24	24
Wigan	24	26	24	23	25	26	26	26	27	27	27	27	27	27	28	28	28	28	28	28	28	29
Greater Manchester	**285**	**291**	**287**	**287**	**299**	**305**	**310**	**313**	**315**	**317**	**319**	**321**	**323**	**325**	**327**	**328**	**330**	**332**	**334**	**337**	**339**	**341**
Warrington	20	19	19	21	21	22	22	22	22	22	22	23	23	23	23	23	23	23	24	24	24	24
Macclesfield	15	16	15	15	16	16	17	17	17	17	17	17	18	18	18	18	18	18	19	19	19	19
MSP Reference Area	**320**	**326**	**320**	**324**	**336**	**343**	**348**	**352**	**354**	**356**	**359**	**361**	**363**	**365**	**368**	**370**	**372**	**374**	**377**	**379**	**382**	**385**

[1] Employees plus the Self-employed

TABLE A9 - EMPLOYMENT1: OTHER PERSONAL SERVICES

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	(thousands)																					
Manchester	19	16	17	18	18	19	20	21	22	23	23	23	23	23	24	24	24	25	25	25	25	26
Salford	5	5	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	7	7	7	7
Bolton	7	6	6	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8	8	8	8	8
Bury	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5	5	5
Oldham	4	5	5	6	5	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6
Rochdale	4	4	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Stockport	8	8	11	12	11	10	11	11	11	11	11	11	11	11	11	11	11	11	11	12	12	12
Tameside	5	4	5	4	5	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Trafford	6	6	7	8	7	7	7	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8
Wigan	6	7	6	7	7	7	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8	8
Greater Manchester	**68**	**66**	**71**	**76**	**77**	**76**	**77**	**79**	**80**	**81**	**82**	**83**	**83**	**84**	**85**	**85**	**86**	**87**	**88**	**88**	**89**	**90**
Warrington	5	3	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	6
Macclesfield	5	5	5	5	5	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	6
MSP Reference Area	**79**	**74**	**81**	**86**	**86**	**85**	**87**	**89**	**90**	**91**	**92**	**93**	**94**	**95**	**95**	**96**	**97**	**98**	**99**	**100**	**100**	**101**

[1] Employees plus the Self-employed

TABLE A10 - RESIDENCE BASED EMPLOYMENT BY QUALIFICATION: LEVEL 0

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	(thousands)																					
Manchester	117	122	125	125	125	124	124	124	123	123	122	121	120	120	119	118	118	118	118	118	118	118
Salford	65	64	63	62	64	62	62	62	61	61	60	60	59	59	58	58	57	56	56	55	55	54
Bolton	71	71	70	70	71	70	71	71	71	71	70	70	70	69	69	68	68	67	67	66	66	65
Bury	45	44	44	45	43	44	45	45	45	45	45	45	44	44	44	44	43	43	43	42	42	42
Oldham	66	66	64	64	64	64	64	64	64	64	63	63	63	62	62	61	61	60	60	59	58	58
Rochdale	59	58	60	60	59	59	59	60	60	60	60	60	60	60	59	59	59	58	58	58	57	57
Stockport	64	62	60	60	59	59	59	59	59	58	58	58	57	57	56	55	55	54	53	52	52	51
Tameside	62	60	60	63	61	61	61	61	61	61	61	61	61	61	60	60	60	59	59	58	58	57
Trafford	44	43	44	46	46	44	44	44	44	44	43	43	43	43	42	42	42	41	41	41	40	40
Wigan	88	87	87	89	90	90	91	91	91	91	90	90	90	89	88	88	87	86	85	85	84	83
Greater Manchester	**682**	**678**	**675**	**683**	**682**	**678**	**679**	**679**	**678**	**677**	**674**	**672**	**667**	**663**	**658**	**653**	**648**	**643**	**639**	**634**	**630**	**625**
Warrington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macclesfield	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MSP Reference Area	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	(percent of working age)																					
Manchester	38	39	39	38	38	37	37	36	36	35	35	35	34	34	33	33	32	32	32	32	31	31
Salford	41	40	39	39	40	39	38	38	38	38	37	37	37	37	36	36	36	35	35	35	34	34
Bolton	38	38	37	36	36	36	36	36	36	36	36	36	35	35	35	35	34	34	34	34	33	33
Bury	34	33	33	33	32	33	33	33	33	32	32	32	32	32	32	31	31	31	31	31	30	30
Oldham	42	42	40	40	41	41	40	40	40	40	40	40	40	39	39	39	39	39	38	38	38	38
Rochdale	40	39	40	40	39	39	39	39	39	39	38	38	38	38	38	38	37	37	37	37	37	36
Stockport	31	30	29	29	28	28	28	28	28	28	27	27	27	27	27	26	26	26	25	25	25	25
Tameside	40	39	38	40	38	38	38	38	38	38	38	38	37	37	37	37	37	36	36	36	36	35
Trafford	28	28	28	29	29	28	28	28	27	27	27	27	27	27	26	26	26	26	26	25	25	25
Wigan	39	39	39	39	39	39	39	39	39	39	39	39	38	38	38	38	37	37	37	37	36	36
Greater Manchester	**371**	**366**	**362**	**364**	**361**	**357**	**356**	**355**	**353**	**352**	**350**	**348**	**346**	**343**	**341**	**338**	**336**	**333**	**331**	**328**	**326**	**323**
Warrington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macclesfield	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MSP Reference Area	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE A11 - RESIDENCE BASED EMPLOYMENT BY QUALIFICATION: LEVEL 1

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	(thousands)																					
Manchester	37	37	38	38	38	38	38	38	38	38	37	37	37	37	37	36	36	36	36	36	35	35
Salford	25	25	25	25	24	24	24	24	23	23	23	22	22	22	22	21	21	21	20	20	20	20
Bolton	30	31	31	31	30	30	30	29	29	29	28	28	28	27	27	26	26	26	25	25	25	24
Bury	22	22	22	21	21	21	21	21	21	20	20	20	20	19	19	19	18	18	18	18	17	17
Oldham	26	26	26	25	25	25	24	24	24	23	23	23	22	22	22	21	21	21	20	20	20	19
Rochdale	24	25	24	24	24	24	24	24	23	23	23	22	22	22	22	21	21	21	20	20	20	20
Stockport	35	35	35	34	34	33	33	33	32	32	31	31	31	30	30	29	29	28	28	27	27	26
Tameside	28	29	29	28	28	28	28	27	27	27	27	26	26	26	25	25	25	24	24	24	23	23
Trafford	25	24	24	24	24	24	24	23	23	23	23	22	22	22	21	21	21	21	20	20	20	19
Wigan	39	39	39	39	38	38	37	37	36	36	36	35	35	34	34	33	33	32	32	31	31	31
Greater Manchester	**290**	**291**	**292**	**289**	**287**	**285**	**283**	**280**	**277**	**274**	**271**	**268**	**264**	**261**	**257**	**254**	**251**	**247**	**244**	**241**	**238**	**235**
Warrington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macclesfield	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MSP Reference Area	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	(per cent of working age)																					
Manchester	12	12	12	12	12	11	11	11	11	11	11	11	11	10	10	10	10	10	10	10	9	9
Salford	15	15	16	15	15	15	15	15	14	14	14	14	14	14	13	13	13	13	13	13	13	12
Bolton	16	16	16	16	16	15	15	15	15	15	14	14	14	14	14	13	13	13	13	13	13	12
Bury	17	16	16	16	16	16	15	15	15	15	15	14	14	14	14	14	13	13	13	13	13	12
Oldham	16	16	16	16	16	16	15	15	15	15	15	14	14	14	14	14	13	13	13	13	13	13
Rochdale	16	16	16	16	16	16	15	15	15	15	15	14	14	14	14	14	13	13	13	13	13	13
Stockport	17	17	17	16	16	16	16	15	15	15	15	15	14	14	14	14	14	13	13	13	13	13
Tameside	18	18	18	18	18	17	17	17	17	17	16	16	16	16	15	15	15	15	15	14	14	14
Trafford	16	16	16	15	15	15	15	15	15	14	14	14	14	14	13	13	13	13	13	12	12	12
Wigan	17	17	17	17	17	16	16	16	16	15	15	15	15	15	14	14	14	14	14	14	13	13
Greater Manchester	**161**	**161**	**160**	**157**	**155**	**154**	**152**	**150**	**147**	**145**	**143**	**141**	**140**	**138**	**136**	**134**	**132**	**130**	**129**	**127**	**125**	**124**
Warrington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macclesfield	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MSP Reference Area	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE A12 - RESIDENCE BASED EMPLOYMENT BY QUALIFICATION: LEVEL 2

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	(thousands)																					
Manchester	42	42	43	44	44	44	44	44	45	45	45	45	45	45	45	45	45	45	45	46	46	46
Salford	27	27	28	28	27	28	28	28	27	27	27	27	27	27	27	27	27	26	26	26	26	26
Bolton	35	35	35	35	35	35	35	35	35	35	35	34	34	34	34	34	34	33	33	33	33	33
Bury	27	27	27	27	27	27	27	27	27	27	27	27	27	26	26	26	26	26	25	25	25	25
Oldham	27	27	27	27	27	27	27	27	26	26	26	26	26	25	25	25	25	25	25	25	24	24
Rochdale	27	27	27	27	27	27	27	27	27	27	27	27	27	27	26	26	26	26	26	26	26	26
Stockport	43	43	43	42	42	42	42	42	41	41	41	41	40	40	40	39	39	39	38	38	38	38
Tameside	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	29	29	29	29	29
Trafford	32	32	32	32	32	32	32	32	32	31	31	31	31	31	30	30	30	30	30	29	29	29
Wigan	42	43	43	43	42	42	42	42	42	42	41	41	41	41	41	41	40	40	40	40	40	40
Greater Manchester	**333**	**333**	**336**	**335**	**334**	**335**	**334**	**334**	**332**	**331**	**330**	**329**	**327**	**326**	**324**	**323**	**321**	**320**	**318**	**317**	**316**	**315**
Warrington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macclesfield	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MSP Reference Area	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	(per cent of working age)																					
Manchester	14	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	12	12	12	12	12	12
Salford	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
Bolton	18	18	19	18	18	18	18	18	18	18	18	17	17	17	17	17	17	17	17	17	17	17
Bury	21	21	21	20	20	20	20	20	20	20	19	19	19	19	19	19	19	18	18	18	18	18
Oldham	17	17	17	17	17	17	17	17	17	17	16	16	16	16	16	16	16	16	16	16	16	16
Rochdale	18	18	18	18	18	18	18	18	17	17	17	17	17	17	17	17	17	17	17	17	17	16
Stockport	21	21	20	20	20	20	20	20	20	19	19	19	19	19	19	19	19	18	18	18	18	18
Tameside	19	19	19	19	19	19	19	19	19	19	18	18	18	18	18	18	18	18	18	18	18	18
Trafford	21	21	21	20	20	20	20	20	20	20	20	19	19	19	19	19	19	19	18	18	18	18
Wigan	19	19	19	19	18	18	18	18	18	18	18	18	18	18	17	17	17	17	17	17	17	17
Greater Manchester	**185**	**185**	**185**	**183**	**182**	**181**	**180**	**179**	**178**	**176**	**175**	**174**	**174**	**173**	**172**	**171**	**170**	**169**	**169**	**168**	**167**	**167**
Warrington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macclesfield	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MSP Reference Area	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE A13 - RESIDENCE BASED EMPLOYMENT BY QUALIFICATION: LEVEL 3

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	(thousands)																					
Manchester	38	38	38	39	39	39	39	39	39	40	40	40	40	40	40	40	40	40	40	40	40	39
Salford	12	12	12	12	12	12	12	12	12	12	12	12	11	11	11	11	11	11	11	11	11	11
Bolton	12	12	13	13	13	13	13	12	12	12	12	12	12	12	12	12	12	12	12	12	11	11
Bury	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	8	8	8
Oldham	9	9	9	9	9	9	9	9	9	9	9	8	8	8	8	8	8	8	8	8	8	8
Rochdale	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	8	8	8	8
Stockport	14	15	15	15	14	14	14	14	14	14	14	14	14	14	14	14	13	13	13	13	13	13
Tameside	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	8	8	8	8	8
Trafford	11	11	11	11	11	11	11	11	11	11	11	11	11	11	10	10	10	10	10	10	10	10
Wigan	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	11	11	11	11	11	11	11
Greater Manchester	**135**	**136**	**138**	**137**	**137**	**137**	**137**	**137**	**136**	**136**	**135**	**135**	**134**	**133**	**133**	**132**	**132**	**131**	**130**	**130**	**129**	**129**
Warrington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macclesfield	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MSP Reference Area	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	(per cent of working age)																					
Manchester	12	12	12	12	12	12	12	12	12	11	11	11	11	11	11	11	11	11	11	11	11	10
Salford	7	7	8	8	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Bolton	7	7	7	7	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Bury	7	7	7	7	7	7	7	7	7	7	6	6	6	6	6	6	6	6	6	6	6	6
Oldham	6	6	6	6	6	6	6	6	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Rochdale	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	5	5	5	5	5	5
Stockport	7	7	7	7	7	7	7	7	7	7	7	7	7	6	6	6	6	6	6	6	6	6
Tameside	6	6	6	5	6	6	6	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Trafford	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	6	6	6	6	6	6	6
Wigan	5	6	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Greater Manchester	**70**	**70**	**70**	**69**	**69**	**69**	**68**	**68**	**67**	**67**	**66**	**66**	**65**	**65**	**64**	**64**	**64**	**63**	**63**	**63**	**62**	**62**
Warrington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macclesfield	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MSP Reference Area	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE A14 - RESIDENCE BASED EMPLOYMENT BY QUALIFICATION: LEVEL 4/5

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
									(thousands)													
Manchester	63	61	63	66	68	71	73	76	78	80	83	85	88	90	93	96	98	101	103	106	109	111
Salford	20	21	22	23	22	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	32
Bolton	27	27	28	29	30	31	31	32	32	33	34	34	35	35	36	37	37	38	39	39	40	41
Bury	20	21	21	22	23	23	24	24	25	25	26	26	27	27	28	28	29	29	30	30	31	31
Oldham	18	18	20	20	20	21	21	21	22	22	23	23	23	24	24	24	25	25	26	26	27	27
Rochdale	19	19	19	19	20	21	21	22	22	23	23	23	24	24	25	25	26	26	27	27	28	28
Stockport	39	41	43	43	44	45	46	47	48	49	49	50	51	52	53	53	54	55	56	57	58	59
Tameside	16	16	17	16	18	18	19	19	20	20	20	21	21	22	22	23	23	24	24	24	25	25
Trafford	34	34	34	33	34	36	37	38	38	39	39	40	41	41	42	43	43	44	45	45	46	47
Wigan	26	27	28	28	28	29	30	30	31	32	32	33	34	34	35	36	36	37	38	38	39	40
Greater Manchester	**281**	**286**	**293**	**299**	**308**	**318**	**326**	**333**	**340**	**347**	**355**	**362**	**370**	**377**	**385**	**393**	**401**	**408**	**416**	**424**	**432**	**441**
Warrington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macclesfield	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MSP Reference Area	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
									(per cent of working age)													
Manchester	20	20	20	20	21	21	22	22	23	23	24	24	25	25	26	27	27	28	28	29	29	29
Salford	13	13	14	14	14	14	15	15	15	16	16	16	16	17	17	18	18	18	19	19	19	20
Bolton	14	14	15	15	15	16	16	16	17	17	17	17	18	18	18	19	19	19	20	20	20	21
Bury	15	16	16	16	17	17	17	18	18	18	19	19	19	19	20	20	21	21	21	22	22	23
Oldham	11	12	13	13	13	13	13	14	14	14	14	14	15	15	15	16	16	16	17	17	17	18
Rochdale	32	32	32	31	31	31	30	30	30	30	29	29	29	28	28	28	28	27	27	27	27	26
Stockport	19	20	21	21	21	22	22	22	23	23	23	24	24	24	25	25	26	26	27	27	28	28
Tameside	10	11	11	10	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	15	16
Trafford	22	22	22	21	22	23	23	24	24	24	25	25	25	26	26	26	27	27	28	28	29	29
Wigan	12	12	12	12	12	13	13	13	13	14	14	14	14	15	15	15	16	16	16	17	17	17
Greater Manchester	**149**	**151**	**154**	**155**	**159**	**164**	**167**	**169**	**172**	**175**	**178**	**182**	**185**	**188**	**192**	**196**	**199**	**203**	**207**	**211**	**215**	**219**
Warrington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macclesfield	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MSP Reference Area	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE A15 - RESIDENCE BASED EMPLOYMENT BY QUALIFICATION: Other/Unknown

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	(thousands)																					
Manchester	15	15	15	17	17	18	19	19	20	21	21	22	23	23	24	25	25	26	27	27	28	28
Salford	10	10	11	11	11	12	12	13	13	13	14	14	14	15	15	15	16	16	16	16	17	17
Bolton	13	13	14	14	15	16	16	17	17	18	18	18	19	19	20	20	21	21	21	21	22	22
Bury	9	9	9	10	10	10	11	11	11	12	12	12	13	13	13	14	14	14	14	15	15	15
Oldham	11	11	12	12	13	13	13	14	14	14	15	15	16	16	16	17	17	17	17	17	18	18
Rochdale	10	11	11	11	12	12	13	13	14	14	14	15	15	15	16	16	17	17	17	17	18	18
Stockport	13	14	14	14	15	16	16	16	17	17	18	18	19	19	20	20	20	21	21	21	21	21
Tameside	11	11	12	12	13	13	14	14	15	15	16	16	17	17	17	18	18	18	19	19	19	19
Trafford	9	10	10	10	11	11	11	12	12	12	13	13	13	14	14	14	14	15	15	15	15	15
Wigan	16	16	17	18	18	19	20	20	21	21	22	22	23	24	24	24	25	25	26	26	26	26
Greater Manchester	**117**	**121**	**124**	**130**	**135**	**140**	**145**	**149**	**154**	**158**	**163**	**167**	**171**	**175**	**179**	**183**	**187**	**190**	**193**	**195**	**197**	**199**
Warrington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macclesfield	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MSP Reference Area	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	(per cent of working age)																					
Manchester	5	5	5	5	5	5	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7
Salford	6	7	7	7	7	7	8	8	8	8	9	9	9	9	9	10	10	10	10	10	10	11
Bolton	7	7	7	7	8	8	8	8	9	9	9	9	10	10	10	10	10	11	11	11	11	11
Bury	7	7	7	7	8	8	8	8	8	9	9	9	9	9	10	10	10	10	10	10	11	11
Oldham	7	7	7	8	8	8	8	9	9	9	9	10	10	10	10	11	11	11	11	11	11	12
Rochdale	7	7	7	8	8	8	8	9	9	9	9	9	10	10	10	10	11	11	11	11	11	11
Stockport	6	7	7	7	7	7	8	8	8	8	8	9	9	9	9	9	10	10	10	10	10	10
Tameside	7	7	8	8	8	8	9	9	9	9	10	10	10	10	11	11	11	11	11	12	12	12
Trafford	6	6	6	6	7	7	7	7	8	8	8	8	8	8	9	9	9	9	9	9	10	10
Wigan	7	7	7	8	8	8	8	9	9	9	9	10	10	10	10	11	11	11	11	11	11	11
Greater Manchester	**65**	**67**	**68**	**71**	**73**	**76**	**78**	**80**	**82**	**84**	**86**	**89**	**91**	**93**	**95**	**97**	**99**	**101**	**102**	**104**	**105**	**106**
Warrington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macclesfield	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MSP Reference Area	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE A16 - Total GVA (consistent with GVA scenario[1])

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	(thousands)																					
Manchester	8981	9293	9727	9836	10339	10835	11184	11644	12084	12514	12948	13399	13869	14363	14883	15428	16000	16589	17200	17844	18516	19215
Salford	3228	3146	3401	3422	3624	3762	3845	3964	4072	4183	4295	4410	4529	4653	4783	4917	5057	5200	5348	5503	5664	5831
Bolton	3008	3034	3058	3175	3277	3435	3497	3578	3655	3732	3810	3889	3971	4054	4142	4230	4324	4418	4514	4612	4714	4817
Bury	1678	1708	1767	1888	1922	1970	2021	2079	2133	2189	2242	2296	2352	2408	2469	2531	2594	2658	2723	2789	2858	2929
Oldham	2188	2226	2230	2273	2332	2394	2440	2498	2553	2608	2665	2721	2780	2840	2905	2972	3040	3164	3238	3310	3385	3461
Rochdale	2137	2185	2296	2578	2439	2489	2541	2613	2683	2755	2827	2902	2979	3058	3142	3228	3317	3406	3518	3615	3712	3812
Stockport	3671	3728	3651	3732	3884	4007	4097	4204	4304	4406	4509	4612	4718	4826	4937	5051	5167	5283	5402	5523	5648	5776
Tameside	2072	2154	2273	2334	2433	2517	2568	2624	2679	2736	2794	2852	2913	2974	3040	3105	3173	3240	3308	3377	3448	3519
Trafford	4118	4366	4399	4559	4840	5087	5213	5383	5551	5726	5905	6089	6281	6479	6684	6895	7113	7336	7563	7798	8039	8286
Wigan	2893	2932	2993	3108	3214	3321	3402	3497	3585	3673	3762	3852	3946	4041	4141	4243	4347	4452	4556	4663	4773	4885
Greater Manchester	**33973**	**34770**	**35797**	**36904**	**38306**	**39816**	**40809**	**42083**	**43300**	**44524**	**45757**	**47021**	**48338**	**49698**	**51126**	**52600**	**54132**	**55745**	**57369**	**59035**	**60755**	**62532**
Warrington	3279	3348	3545	3340	3634	3991	4111	4259	4401	4547	4694	4846	5005	5169	5338	5514	5695	5881	6072	6271	6479	6694
Macclesfield	3023	3381	3364	3407	3601	3700	3777	3884	3987	4093	4198	4305	4417	4532	4650	4771	4895	5021	5148	5279	5412	5547
MSP Reference Area	40276	41499	42706	43651	45541	47507	48697	50225	51689	53163	54650	56172	57760	59399	61114	62885	64722	66647	68589	70585	72646	74773

[1] A scenario was constructed whereby GVA growth in Greater Manchester was set to average 2.9% per annum. The results of this scenarion are reported in Annex B

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	(per cent of working age)																					
Manchester	4.5	3.5	4.7	1.1	5.1	4.8	3.2	4.1	3.8	3.6	3.5	3.5	3.5	3.6	3.6	3.7	3.7	3.7	3.7	3.7	3.8	3.8
Salford	4.3	-2.5	8.1	0.6	5.9	3.8	2.2	3.1	2.7	2.7	2.7	2.7	2.7	2.7	2.8	2.8	2.8	2.8	2.9	2.9	2.9	3.0
Bolton	-2.0	0.9	0.8	3.8	3.2	4.8	1.8	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2
Bury	-1.2	1.8	3.5	6.8	1.8	2.5	2.6	2.9	2.6	2.6	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.4	2.4	2.5	2.5
Oldham	-2.8	1.7	0.2	1.9	2.6	2.6	1.9	2.4	2.2	2.2	2.1	2.1	2.2	2.2	2.3	2.3	2.3	4.1	2.3	2.2	2.2	2.2
Rochdale	4.4	2.2	5.1	12.3	-5.4	2.0	2.1	2.8	2.7	2.7	2.6	2.6	2.7	2.7	2.7	2.7	2.7	2.7	3.3	2.8	2.7	2.7
Stockport	6.2	1.6	-2.0	2.2	4.1	3.2	2.2	2.6	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.3	2.3	2.3
Tameside	1.8	3.9	5.6	2.6	4.3	3.4	2.0	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1
Trafford	2.0	6.0	0.8	3.6	6.2	5.1	2.5	3.2	3.1	3.2	3.1	3.1	3.2	3.2	3.1	3.2	3.2	3.1	3.1	3.1	3.1	3.1
Wigan	4.6	1.3	2.1	3.8	3.4	3.3	2.4	2.8	2.5	2.5	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.4	2.3	2.3	2.4	2.4
Greater Manchester	2.8	2.3	3.0	3.1	3.8	3.9	2.5	3.1	2.9	2.8	2.8	2.8	2.8	2.8	2.9	2.9	2.9	3.0	2.9	2.9	2.9	2.9
Warrington	1.7	2.1	5.9	-5.8	8.8	9.8	3.0	3.6	3.3	3.3	3.3	3.2	3.3	3.3	3.3	3.3	3.3	3.3	3.2	3.3	3.3	3.3
Macclesfield	-4.1	11.8	-0.5	1.3	5.7	2.7	2.1	2.8	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5
MSP Reference Area	2.2	3.0	2.9	2.2	4.3	4.3	2.5	3.1	2.9	2.9	2.8	2.8	2.8	2.8	2.9	2.9	2.9	3.0	2.9	2.9	2.9	2.9

Annex B: Productivity Scenarios

We have been asked to construct scenarios to increase the growth of GVA in Greater Manchester from the levels contained in the latest (August 2005) OEF/RF forecasts to a target average of 2.9% per annum. The growth rate for GVA in Greater Manchester in the latest OEF/RF forecasts is close to 2.5% per annum. Hence the scenarios involve an increase in growth of GVA from 2.5% per annum to 2.9% per annum.

We have generated this increase by assuming faster increases in employment and output in sectors with higher than average levels of GVA per employee. Various combinations of sectors could have been selected, but we have chosen the following as sectors in which higher levels of investment in Greater Manchester might occur under favourable circumstances:

- Chemicals
- Electronics
- Transport and Communications
- Finance
- Business Services

In addition we have assumed a faster decline in one low productivity sector – textiles and clothing. This follows the logic that faster growth in new activity is likely to involve some displacement of labour and land from existing low paid sectors. However in the long term this makes little difference because existing forecasts suggest that employment in textiles and clothing will have declined to a very low level.

Technically, we assume that the UK economy remains unchanged but that the North West region increases its share of UK employment and hence output in the sectors listed above. We have also assumed that each local authority in Greater Manchester increases its share of the North West's employment in the growth sectors in order that the extra activity in the North West accrues mainly to Greater Manchester.

The following tables show the magnitude of change in employment in each sector needed to generate the target rate of growth in GVA. Employment would rise by 77,100 more jobs i 2021 than was the case in the latest (August) forecasts. Most of this occurs in the sectors listed above, but a small number of additional jobs are created in other service sectors as a result of changes in population and local demand induced by the direct changes.

We have not been specific about how the additional jobs and output are generated. In principle this might involve higher levels of inward investment into Greater Manchester or highe investment by existing firms within Greater Manchester. We make no judgement on whether this additional investment is in any way realistic within the parameters of existing policy. The additional productivity is purely the result of assuming that the additional activity does appear within Greater Manchester.

The additional employment and activity is generated across all local authorities in Greater Manchester, broadly although not precisely, in proportion to existing levels of activity in eacl sector. Because Manchester has a high proportion of its existing employment in high productivity sectors, Manchester receives a proportionately higher proportion of the additional jobs and output than other districts. Growth rates in GVA in Manchester were already at 2.9% in the existing forecasts. These have risen to over 3% per annum in the high productivit growth scenario.

Table B1: Productivity scenario - summary results, Greater Manchester

Greater Manchester - Base Scenario - consistent with figures released in August 2005

	2005	2015	2021
Population	2,540	2,584	2,613
Total Employment	1,302	1,387	1,454
Housholds	1,077	1,180	1,244

Greater Manchester - GVA growth of 2.9% Scenario

	2005		2015		2021	
	Number (000s)	Difference from base Scenario (000s)	Number (000s)	Difference from base Scenario (000s)	Number (000s)	Difference from base Scenario (000s)
Population	2,540	0	2,585	2	2,617	4
Total Employment	1,302	0	1,427	41	1,539	86
Housholds	1,077	0	1,181	1	1,246	2

Table B2: Productivity scenario - summary results, Manchester

Manchester - Base Scenario - consistent with figures released in August 2005

	2005	2015	2021
Population	437	462	484
Total Employment	331	377	413
Housholds	189	216	235

Manchester - GVA growth of 2.9% Scenario

	2005		2015		2021	
	Number (000s)	Difference from base Scenario (000s)	Number (000s)	Difference from base Scenario (000s)	Number (000s)	Difference from base Scenario (000s)
Population	437	0	462	0	485	1
Total Employment	331	0	396	19	449	36
Housholds	189	0	216	0	236	0

Table B3: Productivity scenario - summary results, Salford

Salford - Base Scenario - consistent with figures released in August 2005

	2005	2015	2021
Population	216	214	214
Total Employment	125	133	139
Housholds	95	100	104

Salford - GVA growth of 2.9% Scenario

	2005		2015		2021	
	Number (000s)	Difference from base Scenario (000s)	Number (000s)	Difference from base Scenario (000s)	Number (000s)	Difference from base Scenario (000s)
Population	216	0	214	0	215	0
Total Employment	125	0	137	4	149	10
Housholds	95	0	100	0	104	0

Table B4: Productivity scenario - Sectoral employment changes, Greater Manchester

Changes in employee jobs by Sector - Greater Manchester
Difference between GVA growth of 2.9% Scenario and base scenario

	2005 (000s)	2015 (000s)	2021 (000s)
Employees - Agriculture	0.0	0.0	0.0
Employees - Extraction	0.0	0.0	0.0
Employees - Food Products; Bev. & Tob.	0.0	0.0	0.0
Employees - Textiles & Leather	0.0	-0.9	-0.8
Employees - Wood & Wood Products	0.0	0.0	0.0
Employees - Pulp Paper & Printing	0.0	0.0	0.0
Employees - Coke, Oil Ref.& Nuc. Fuel	0.0	0.0	0.0
Employees - Chemicals & Man Made Fibres	0.0	1.2	1.7
Employees - Rubber & Plastic Products	0.0	0.0	0.0
Employees - Other Non-Metallic Mineral	0.0	0.0	0.0
Employees - Metals	0.0	0.0	0.0
Employees - Machinery & Equipment nec	0.0	0.0	0.0
Employees - Electrical & Optical Equip.	0.0	2.1	2.7
Employees - Transport Equipment	0.0	0.0	0.0
Employees - Manufacturing nec	0.0	0.0	0.0
Employees - Electricity, Gas & Water Sup.	0.0	0.0	0.0
Employees - Construction	0.0	1.7	3.6
Employees - Distribution	0.0	1.9	4.4
Employees - Hotels & Restaurants	0.0	0.7	1.5
Employees - Transport & Communications	0.0	8.6	12.5
Employees - Financial Intermediation	0.0	5.3	8.7
Employees - Real Estate, Rent.& Business	0.0	15.8	42.3
Employees - Public Admin. & Defence	0.0	0.0	0.1
Employees - Manufacturing	0.0	2.4	3.6
Employees - Education	0.0	0.1	0.2
Employees - Health & Social Work	0.0	0.1	0.2
Employees - Other Personal Services	0.0	0.0	0.1
Employees - Total	**0.0**	**36.7**	**77.1**