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Appendix E – Economic Activity Location Impact Report (EALI)

APPENDIX E EALI

E1 BACKGROUND

This appendix sets out the analysis undertaken as part of the Part 2 Economic Activity and Location Impact (EALI) study for the Forth Replacement Crossing. EALI analysis aims to describe the impacts of transport investment on the economy using measures of income or employment. EALI analysis is intended to identify how and under what circumstances transport projects might have impacts on the economic performance of different areas, and also capture those economic impacts which the standard Transport Economic Efficiency (TEE) approach may, in some circumstances, fail to capture.

EALIs are required to be reported in two ways:

- as a net impact at the Scotland level; and
- in terms of its gross components, which will distinguish impacts on particular areas and/or on particular groups in society.

The EALI analysis is divided into two parts - a Part 1 qualitative analysis and a Part 2 quantitative analysis with the latter dependent on the results of the Part 1 study. The Part 2 analysis should be undertaken on a case by case basis and the degree of quantification should be tailored to the project under consideration and the expected relative significance of the impacts. In both the scoping and detailed appraisals, it is necessary to consider:

- How the individual (gross) impacts arise;
- How these affect particular areas and/or groups; and
- How these combine to give the net impacts at “local” and national levels.

This report presents the results of the Part 2 EALI appraisal of the proposals for the Forth Replacement Crossing and is based on desk research.

E1.2 Study Area

The analysis has been undertaken for the following areas:

- national: Scotland
- regional: The South East Scotland Regional Transport Partnership (SEStran) area
- local: A local study area defined as south Fife (Dunfermline, Inverkeithing, Rosyth, Dalgety Bay and Cowdenbeath) and west and central Edinburgh and West Lothian.

E1.3 Structure of the Appendix

The remainder of this appendix is set out as follows:

- section 2 sets out the approach to the study;
- section 3 presents an overview of policies which are relevant to this study;
- section 4 sets out an overview of the economy;
- section 5 presents the EALI assessment ; and
- section 6 presents our conclusions.

Detailed appraisal summary tables are contained in Annex EA.

E2 APPROACH TO THE STUDY

E2.1 Introduction

This section sets out the four proposals which are taken forward for assessment, the scenarios for assessment and details of how the Forth Replacement Crossing may impact on the economy.

E2.2 Corridors and Scenarios

This EALI assessment is undertaken for the four corridor proposals which were retained from the STAG Part 1 appraisal and are:

- Corridor C – tunnel;
- Corridor D – bridge;
- Corridor D – tunnel; and
- Corridor E – tunnel.

The EALI assessment of the Forth Replacement Crossing is undertaken against the do-minimum scenario in which the existing Forth Bridge would close.

E2.3 Transport Investment and Economic Performance

Transport investment can affect the location and pattern of economic development through two main avenues. First, transport improvements can impact on existing businesses in terms of reducing transport costs and hence, lowering costs of production, widening labour markets and opening up new markets. Second, transport improvements can generate new business activity in the area through either new investing companies or new investment in existing businesses. The ways in which transport investment can affect economic activity are discussed below.

- **lowering the costs of production:** transport improvements can reduce business costs and lower the overall costs of production thereby allowing businesses to operate more efficiently. Firms in areas where transport costs have fallen may, therefore, be expected to expand output and employment. From the standpoint of the national economy, net output may be increased because overall national costs have been reduced. However it may also be the case that increases in output at a local level displace production elsewhere by improving the competitive position of firms in one location relative to firms elsewhere.
- **widening labour catchment areas:** access improvements and reductions in travel costs may improve the functioning of labour markets, resulting in gains for businesses. Improved transport might expand the labour force (if more people are willing to enter the labour market), improve productivity (if workers are willing to work longer hours) and reduce the costs of labour (if employment is relocated from a lower productivity area to a higher productivity area¹). These impacts are more likely to arise in more densely populated urban areas than rural areas. This type of impact is likely to benefit one area at the expense of another unless the transport improvement increases access to employment for people who were previously unable to secure employment at all.
- **stimulating inward investment:** enhancing transport infrastructure may increase the attractiveness of an area to new businesses which will lead to increased employment opportunities. These businesses may be new to the UK as a whole (e.g. foreign direct investment (FDI)) or new to the local / regional economy (e.g. they have relocated from elsewhere in the UK). The origin of the relocating business is important in economic development terms as its presence in one area may be at the expense of another area.
- **opening inaccessible sites for development.** New or enhanced transport infrastructure might enable some sites to be brought forward for development which would not otherwise have been possible. This will create employment opportunities at these new sites. These impacts will be local rather than national or regional in character.

It is anticipated that the proposals for the Forth Replacement Crossing would have the following impacts:

¹ DfT (2005) "Transport, Wider Economic Benefits and Impacts on GDP"

- **impacts on existing businesses:** the proposals for the Forth Replacement Crossing would impact on existing businesses through:
 - Cost impacts as consistent more reliable journeys would enable businesses to obtain goods/deliver goods more cost effectively.
 - Possible market expansion through quicker, more reliable access to new customers and potential suppliers.
 - Labour market impacts if the catchment area for staff is increased.
- **impacts on new businesses:** the proposals would enhance access and the “place competitiveness” of the regional economy. This could impact on company location decisions and encourage new investment.
- **impact on land use:** the proposals may influence the location of future development sites which may create employment opportunities. These impacts are anticipated to be local rather than regional or national.

E2.4 Approach to the Study

The approach to the study has been desk based and includes the following stages:

- review key policy documents for the local, regional and national economy;
- assess the current performance of the economy and forecast future performance; and
- assess the effect of the Forth Replacement Crossing on the impact mechanisms described in Section E2.3.

At the local level, the details of corridors and their junctions are important as each one may give rise to different land use development patterns and their contribution to the local economy. However, at the national and regional level, it is anticipated that there will no difference between the corridors in terms of their impact on economic performance.

E3 POLICY REVIEW

E3.1 Introduction

The purpose of this section is to provide a review of key policies as they relate to the three geographies defined in Section E1.2. Growing the Scottish economy is the Executive's top priority² and the Executive believes that a successful economy is the key to future prosperity and a pre-requisite for building first class public services, social justice and a Scotland of opportunity. The Partnership Agreement also acknowledges that an effective transport system is central to a thriving economy and strong communities.

E3.2 National Policy

Framework for Economic Development in Scotland

The vision of the Scottish Executive is that economic development should "raise the quality of life of the Scottish people through increasing the economic opportunities for all on a socially and environmentally sustainable basis". The Framework for Economic Development in Scotland (2004)³ (FEDS) provides an integrated and coherent approach within which the vision of the Executive can be achieved.

FEDS is focussed on achieving four key outcomes that are fundamental to Executive policy:

- economic growth: growth accelerated and sustained through greater competitiveness in the global economy;
- regional development: enabling all regions to enjoy the same economic opportunities and to contribute to national economic prosperity;
- closing the opportunity gap: to enable all regions to enjoy the same economic opportunities and to contribute to national economic prosperity; and
- sustainable development in economic, social and environmental terms.

FEDS notes that the outcomes must embrace both the economic and equity objectives.

To enable the achievement of the key outcomes there are four enabling objectives involving the creation of:

- a stable and supportive macroeconomic environment;

² "A Partnership for a Better Scotland: Partnership Agreement" May 2003

³ The Framework for Economic Development in Scotland, The Scottish Executive 2004

- a facilitating national economic context which encompasses the physical, human and electronic infrastructure;
- dynamic competitiveness in Scottish enterprises; and
- economic policies and programmes to secure the social, regional and environmental objectives.

FEDS acknowledges that increasing the economic growth rate will require a sustained increase in Scotland's competitiveness in international and domestic markets. This increase will be dependent on raising productivity which will be influenced by a range of factors including:

- basic education and skills must be enhanced to improve individual life choices, increase the flexibility of the labour force and maintain competitiveness;
- generation of knowledge; and
- physical infrastructure covers both transportation and electronic infrastructure and underpins the competitiveness of companies and is a pre-requisite for thriving and successful enterprise in Scotland.

An efficient transport infrastructure is an essential feature of a competitive economy. Located at the periphery of Europe, Scottish industry requires access to fast and efficient transport services in order to remain competitive. Individuals also need access to transport services in order to pursue job and leisure opportunities.

Improvements in the transport infrastructure have the potential to promote economic development and, through this route, to impact on the principal FEDS outcome objectives listed above.

The Forth Replacement Crossing should be assessed against the aims of FEDS which requires that the transport infrastructure is in place to achieve economic growth and deliver the productivity increases required.

The National Planning Framework for Scotland (NPFS)

The National Planning Framework⁴ is a guide to the spatial development of Scotland to 2025 and complements FEDS by highlighting the importance of place and identifying priorities for investment in strategic infrastructure to enable each part of Scotland to build a competitive, fair and sustainable country.

The key aims of the strategy for Scotland's spatial development to 2025 are:

- to increase economic growth and competitiveness;

⁴ National Planning Framework for Scotland (Scottish Executive, April 2004)

- to promote social and environmental justice; and
- to promote sustainable development and protect and enhance the quality of the natural and built environment.

Supporting the NPFS the *Partnership for a Better Scotland* identifies the Executive's top priority as raising the long-term sustainable growth rate for the Scottish economy. However, the Executive is also committed to social justice and equality of opportunity such that people who live in disadvantaged communities can have access to jobs and opportunities. Economic development must also be linked to the promotion of environmental quality.

The key elements of the NPFS to 2025 are:

- to support the development of Scotland's cities as the main drivers of the economy;
- to spread the benefits of economic activity by promoting environmental quality and connectivity;
- to enable the most disadvantaged communities to benefit from growth and opportunity;
- to strengthen external links;
- to promote economic diversification and environmental stewardship;
- to highlight long-term transport options and promote more sustainable patterns of transport and land use;
- to invest in water and drainage infrastructure to support development;
- to realise the potential of Scotland's renewable energy resources;
- to provide the facilities to meet waste recycling targets; and
- to extend broadband coverage to every area of Scotland.

The National Planning Framework recognises that the cities are the hubs of the wider regional economies and their surrounding towns and rural areas can offer attractive locations for a range of economic activities. Scottish Enterprise has identified eight business locations which have the potential to become the focus for key industries and these zones will require good links with the rest of Scotland and the wider world.

The document also relates the vision to 2025 to the four broad natural zones of Scotland:

- the Central Belt;

- the East Coast;
- Ayrshire and the South West; and
- rural Scotland.

The East Coast

The NPFS identifies the Aberdeen – Edinburgh – Newcastle corridor as having strategic development potential to develop the knowledge economy linked to the energy sector and the universities and states that “*investment in East Coast transport infrastructure to reduce road and rail journey times can help to unlock this potential*”. A Forth Replacement Crossing could play a key role in achieving these aims as part of wider transport strategy for cross-Forth journeys. The NPFS also acknowledges that Fife requires good connections with Edinburgh.

Smart Successful Scotland⁵

The policy document Smart Successful Scotland (SSS) takes forward some of the key priority areas in FEDS in the context of an enterprise strategy. The main objectives of SSS are:

- *growing businesses*: to deliver growth of new businesses and to enable existing businesses to grow to a scale where they can compete effectively on a world stage;
- *learning and skills*: developing skills to make best use of human capital and to prepare for tomorrow’s labour market; and
- *global connections*: taking forward aspects of physical and electronic infrastructure to create world class locations, part of Europe and connected to the global economy.

The document recognises that achieving a Smart Successful Scotland will require partnership working across the public and private sectors between, amongst others, business organisations, local authorities, skills organisations and infrastructure providers.

The Forth Replacement Crossing could contribute to the “growing businesses” objective, but the impact of its contribution may depend on the scenario under consideration i.e. whether the Crossing is operating as a replacement or in tandem with the existing Bridge.

E3.2 Regional Policy

Fife Matters (Finalised Fife Structure Plan 2006-2026)

⁵ Smart, Successful Scotland – Ambitions for the Enterprise Networks, (Scottish Executive, 2001)

The Fife structure plan is the major policy document concerning land use planning across Fife for the next 20 years. The plan sets out development strategies and strategic land use policies and identifies the general scale and location of development to take place across the region.

In terms of economic development the structure plan aims to help increase job opportunities in the region, particularly in areas of high unemployment. Suitable land for new employment is identified within the plan with the focus on helping growth in high value and knowledge based service sector industries alongside high value manufacturing. The plan also identifies opportunities for the region to emphasise its attractiveness and accessibility within East Central Scotland to help encourage new businesses to locate within Fife.

Support for the development of a new multi-modal Forth Replacement Crossing is seen as important to help improve the accessibility of the region and enhance the national, Edinburgh City and Fife regional economies. Overall, improvements to transport links in general are important to the development of the region, both in terms of enhancing links through the Edinburgh, Fife to Aberdeen corridor and improving links between regeneration areas and employment hubs within the region.

Over the next 20 years the population of Fife is forecast to grow by some 9.1 per cent according to 2004 based population projections produced by the General Register of Scotland (GROS). To accommodate such population expansion, the structure plan requires a total of 35,200 new homes to be built in Fife over the period to 2026.

Economic Development

Seven Strategic Development Areas are identified in the Structure Plan to contribute towards growth in the Fife economy during the lifetime of the plan. Within the Forth Replacement Crossing study area, Dunfermline is identified as one of these areas. Over the period to 2026 the plan allows for the town to be expanded to the South West, the West and the North around a revitalised town centre. Key proposals include:

- provision of 4,550 new houses
- 80Ha of employment land for business use
- provision of public transport rapid transit corridors and connection of a light rail network to Edinburgh City
- overall, infrastructure developments sufficient to allow the population of the city to grow by over 50,000 residents

In addition to new land allocations identified as part of the Strategic Development Area, the Structure Plan also allows for a further 175Ha of employment land for business use within the Dunfermline/South Fife area. Overall the area accounts for over a third of all strategic employment land identified within the Structure Plan across Fife as a whole.

Such land allocations includes the availability of 65Ha at the Rosyth Waterfront site. Rosyth is identified within the plan as a key national growth point for economic development in Fife. Over the lifetime of the plan it is envisaged that the Waterfront area will be promoted as Scotland's Continental Ferry Port and European Gateway for passengers and freight. Developments planned to meet this aim include the introduction of new continental ferry services alongside improved passenger facilities, the promotion of the Waterfront area as a strategic employment site and the development of the area for multi-modal freight handling and distribution facilities.

Housing

Fife is an important part of east central Scotland and the wider Edinburgh Housing Market Area. Key drivers such as economic growth and demographic change mean that there is a continuing need for new housing in the region, particularly in South and Mid Fife where demand from the Edinburgh and the Lothians exerts a strong influence on house building.

Key elements of the structure plan in response to these pressures include strategic land allocations to support the expected growth in Fife's population over the period to 2026 while preventing over development in rural East and West Fife. In general the plan aims to take account of expected in-migration patterns while diverting a larger proportion of population growth towards settlements in Mid, rather than South Fife.

Overall, the Structure plan identifies a requirement for 13,000 new houses within the South/West Fife area over the period 2006 to 2026. While existing supply for 4,850 is in place, the plan identifies additional new sites for 7,950 houses. These account for some 43 per cent of all new land allocations identified across Fife as a whole throughout the period of the plan.

Transport

In developing a 20 year land use policy for Fife, the Structure Plan takes account of long term needs for the development of the region's transport infrastructure. Key strategic transport development opportunities discussed in the plan include:

- development of a new multi-modal Forth Replacement Crossing . Such a development is described as vitally important in the context of growing the national economy as well as those of Edinburgh and Fife. A new crossing is also considered important for Fife's social inclusion and regeneration agendas;

- a new passenger ferry linking Kirkcaldy/Burrtisland with Granton/Leith
- economic development opportunities at RAF Leuchars
- re-opening of the Dunfermline-Kinross-Alloa-Stirling Rail link by 2010
- further development at the port of Rosyth including improved road access via the A90 and a future rail link in support of the port's development as a strategic inter modal freight terminal.

Edinburgh and Lothians Structure Plan 2015

The long-term vision for the development of land in Edinburgh and the Lothians is set out in the Edinburgh and the Lothians Structure Plan (ELSP) to 2015.

Edinburgh and the Lothians will continue to prosper as the capital's city-region and will remain the economic development hub of East Central Scotland. National planning policy requires the structure plan to provide for the demand for employment and housing created by the growing population. However, the wealth created within the capital city and surrounding towns will be spread throughout the neighbouring councils over the plan period and beyond. The sharing of that wealth will create firmer bonds between Edinburgh and the Lothians and its immediate neighbours of Fife, Falkirk, North and South Lanarkshire, the Scottish Borders and other councils in the Central Belt.

The overarching aim of this structure plan is to provide in full for the development needs of Edinburgh and the Lothians in accordance with the principle of sustainable development, whilst maintaining and enhancing the environmental heritage that underpins the area's quality of life.

The structure plan will encourage a more sustainable pattern of development by:

- maintaining and enhancing economic competitiveness;
- promoting a more inclusive society;
- protecting and enhancing the natural and built environment; and
- integrating land use and transport.

Housing

The forecast of housing need in the ELSP 2015 is based on GROS projections household change in the area throughout the period of the plan. To take account expected household growth the structure plan identified a need for 70,200 new homes in the region over the period 2001-2015, at a completion rate of some 5,000 homes per annum. Combined output from existing housing sites and windfall development was anticipated to be 57,800 dwellings, leaving a requirement for some 12,400 units still to be allocated. Of the existing housing land identified in the Structure Plan, almost three quarters are located in the City of Edinburgh and West Lothian.

Economic Development

The Edinburgh and Lothians economy is currently experiencing buoyant economic growth and is well placed for continued growth in the future. This reflects the bias of the region's economic structure towards high performing service sector activities. Key sectors driving growth in the region include financial services, electronics, biotechnology and tourism.

To help the region's economy to continue to grow over the period of the structure plan, the plan identifies a number of core development areas within which local plans should bring forward any land required for development. Key development areas identified which are of relevance to the Forth Replacement Crossing include:

- Edinburgh City Centre – particularly with reference to potential for development around Haymarket at West Exchange and the Waverley Valley;
- Waterfront Edinburgh – Significant brownfield development potential for business and housing development in Leith and Granton;
- Edinburgh Park/South Gyle/Sighthill – New business space is likely to come through mostly from redevelopment or refurbishment of existing space, with little new greenfield land available;
- Newbridge/Kirkliston/Ratho – potential for further economic development at Newbridge alongside further housing development across the area;
- Livingston and the Almond Valley – identified as a core development area for up to 5,000 new houses
- Winchburgh/East Broxburn/Uphall – identified as a core development area for up to 5,000 new houses;
- Armadale – identified as a core development area for up to 2,000 new houses.

The Lothian's labour force catchment extends far beyond the boundaries of each Local Authority. In Edinburgh, for instance, only 68 per cent of those working in the city also live there while 10 per cent of all jobs in the city filled by workers commuting in from outside the Lothian region. Workforce projections for the region indicate that the region's supply/demand mismatch will continue to grow in the period to 2015 with demand for labour expected to exceed local supply by some 18,500 jobs by the end of the period. Such a mismatch is likely to be met by additional in-commuting from outside the region.

The structure plan identified total economic land supply of 1,160Ha available across Edinburgh and the Lothians in 2002. Almost two thirds of this supply was located within West Lothian, with a further 20 per cent in the City of Edinburgh region. When compared against land take up rates observed over recent years (an estimated 30Ha per annum), such levels of supply are expected to be sufficient to meet demand for new land in the region.

E3.3 Local Policies

The West Edinburgh Planning Framework⁶

The West Edinburgh Planning Framework is of relevance to the Forth Replacement Crossing and acknowledges that the west Edinburgh area is nationally important in economic, transport and environmental terms. The existence of Edinburgh Airport and the road and rail routes that connect West Edinburgh to the rest of the country place the area in a strategically important location.

A number of factors combine to give West Edinburgh a competitive advantage of other UK investment locations and the area is one of the most important development zones in Scotland. There are currently 20,000 jobs located in the area and permitted developments could provide capacity for another 20,000 to 30,000.

The West Edinburgh Planning Framework indicates that greater levels of in-migration or in-commuting from outside the Lothians may be necessary to overcome labour supply issues in Edinburgh. Fife is specifically identified as a source of this Labour and hence it is unlikely that cross Forth movements will diminish in the future.

Community Regeneration Fund

In December 2004 the Scottish Executive established a £318 million Community Regeneration Fund (CRF) to run for three years to bring improvements to Scotland's most deprived areas and help individuals and families escape poverty. This fund replaces the Social Inclusion Partnerships and Better Neighbourhood Services (BNS) funds and builds on the lessons and good practice from these programmes.

⁶ Draft West Edinburgh Planning Framework 2006, (Scottish Executive, Nov. 2006)

The principal objectives of the CRF are to:

- “regenerate the most disadvantaged neighbourhoods, so that people living there can take advantage of job opportunities and improve their quality of life”; and
- “promote community regeneration of the most deprived neighbourhoods, through improvements by 2008 in employability, education, health, access to local services, and quality of the local environment”.

The CRF allocation to Scotland’s 32 Community Planning Partnerships for 2005/2008 is based on an analysis of the most deprived local areas. Community Planning Partnerships set out how they intend to use the funding, alongside their own resources, to deliver specific regeneration outcomes through three-year Regeneration Outcome Agreements (ROAs).

The ROAs for Edinburgh City, Fife and West Lothian include areas likely to be influenced by the Forth Replacement Crossing including

- Edinburgh:
 - North Edinburgh – covering Granton, Pilton and Muirhead/Drylaw; and
 - West Edinburgh – covering Parkhead, Murrayburn and Sighthill.

Together these areas are targeted to receive around 12 per cent of the total CRF budget allocated to Edinburgh City in 2005/6 (£7.2 million).

- Fife:
 - Dunfermline - focusing on the Abbeyview estate which is an area with a population of around 8,700 which is predominantly made up of public housing built in the 1950s and 1960s. In addition to this estate, additional activity in the Dunfermline area will include outreach work in Inverkeithing and Kingseathill
 - Central Fife – covering three ex-mining settlements, Benarty, Lochgelly (and some of the smaller villages connecting them) and Kelty. Each of these settlements has a core of data zones within the worst 15 per cent in Scotland under the Scottish Index of Multiple Deprivation, and around these core areas sit further data zones which exhibit the same characteristics of disadvantage and deprivation. ; and
 - West Fife – covering nine villages, many of them ex-mining villages, in a largely rural setting. A range of action is underway across these villages to address issues of disadvantage and isolation, and in particular to develop the potential and aspirations of young people. The area in general will be targeted under the rural element of CRF, but in addition to this there are particular concentrations of deprivation in two adjoining villages, Valleyfield and Oakley. Focusing on these two

villages together will provide the critical mass to develop effective local initiatives and these will be closely linked to activity covering the wider west Fife rural area.

- West Lothian:
 - Knightsridge;
 - Craighill; and
 - Deans.

All three of these areas in West Lothian are characterised in the ROA as having high proportions of children in lone parent families, high unemployment rates or high proportions of the population suffering from long term limiting illness.

E4 ECONOMIC PERFORMANCE

E4.1 Current Economic Performance

Population

National

In 2005 the total resident population of Scotland was estimated at almost 5.1 million people. Over the seven year period from 1998 to 2005, the number of people resident in Scotland showed very little net change, growing by only 17,730 people.

Regional (relates to SEStran region)

In 2005 the total resident population of the South East area was estimated at over 1,456,000 people, accounting for some 29 per cent of the total Scottish population. The City of Edinburgh is the largest local authority area within the region, accounting for over 457,800 residents (almost a third of the total regional population). Over 356,700 people live in Fife, making it the second largest local authority within the South East area.

Over the period 1998 to 2005, the region experienced steady population growth (3.1 per cent), against almost no change in population across Scotland as a whole. Indeed, the South East area was the fastest growing region over the period.

Local

In 2005 the total resident population of the Forth Replacement Crossing study area was estimated at 473,400 or 32 per cent of the total population of the SEStran area. Edinburgh West and Central is the largest sub area within the Forth Replacement Crossing study area, accounting for over two fifths of all residents. Over 163,000 people live in West Lothian, while South Fife accounts for some 107,000 residents (just over a fifth of the Forth Replacement Crossing study area population).

Over the period 2001 to 2005, the Forth Replacement Crossing study area experienced slightly higher population growth (2.5 per cent) than the South East area (1.9 per cent), against almost no change in population across Scotland as a whole (0.6 per cent).

There is variation within the Forth Replacement Crossing study area, with South Fife (4.1 per cent) and West Lothian (three per cent) experiencing steady population growth against almost no change in population in West and Central Edinburgh (1.2 per cent).

Employment

National

Over 2.3 million people were employed in Scotland in 2004 (see Table E1). Some 70 per cent of all jobs in Scotland are located in the Strathclyde and South East areas. In employment terms, the North East was the third largest RTP area, representing over 10 per cent of all jobs across Scotland.

Over the period 1998 to 2004 employment across Scotland as a whole grew by eight per cent (net growth of 168,900). This growth was most rapid in the Highlands and Islands, South East and North East areas, where the number of jobs expanded by 11 per cent, 10 per cent and 7 per cent respectively. More modest growth was recorded across most of the other areas with Shetland the only RTP area to experience a decline in employment over the period shown here.

Table E1 – Employment Change, 1998 – 2004

	1998	2004	Change	% Change
Tayside & Central	203,400	212,400	9,000	4.4
Highlands & Islands	159,000	175,700	16,800	10.5
North East	232,300	248,900	16,700	7.2
South East	622,100	684,900	62,900	10.1
Shetland	14,000	13,400	-600	-4.1

	1998	2004	Change	% Change
South West	52,200	55,800	3,600	6.9
Strathclyde	879,100	939,400	60,400	6.9
Scotland	2,161,900	2,330,900	168,900	7.8
Source: Annual Business Inquiry Employee Analysis from Nomis, www.nomisweb.co.uk , as at 10 November 2006 Please note: columns may not sum due to rounding				

An analysis of employment in Scotland by sector shows that some 80 per cent of all jobs are concentrated in service industries (Table E2). Two key sectors, public services and financial and business services, account for almost a half of total employment across the country in 2004. Financial and business services, for instance, employed almost 419,000 people, of which the South East area accounted for over a third. Other service sector activities (including wholesale and retail, hotels and catering, transport and communications and other services) accounted for a further 34 per cent of all jobs in Scotland.

Manufacturing and construction activities together employed around 360,000 people in 2004, some 16 per cent of total employment across Scotland. Of these jobs, almost half were concentrated in ‘traditional’ manufacturing sectors such as food and drink processing, timber and pulp processing and manufacture of metal goods.

The primary and utilities sector is relatively more important to Scotland than the UK, with employment in this sector accounting for three per cent of total employment compared to around one per cent across the UK. The North East region accounted for around a third of employment in primary and utilities activities in Scotland. This is driven by the concentration of oil industry related activities in Aberdeen City and fishing and agricultural activities in Aberdeenshire.

Employment growth in Scotland in recent years has been driven by rapid expansion in the service sector. This expansion has been most rapid in the business services and public sectors, where employment grew by over 210,000 jobs in the 6 year period 1998 to 2004. Over the same period, employment in other private sector service activities such as hotels and catering and transport and communications also showed steady expansion. By contrast, manufacturing industries across Scotland have experienced a continued sharp decline in recent years, with a net loss of 91,000 jobs in the six years prior to 2004.

Table E2 – Employment Structure and Change by Sector, 1998 – 2004

Scotland	2004		Net employment change 1998-2004	
Sector	Employment	% of total	Absolute change	% change
Primary and Utilities	73,800	3	-12,700	-15
Traditional Manufacturing	184,300	8	-61,500	-25
Advanced Manufacturing	51,700	2	-29,200	-36
Construction	126,500	5	-11,900	-9
Wholesale/Retail	371,100	16	22,900	7
Hotels and Catering	171,200	7	15,400	10
Transport & Communications	127,500	5	12,800	11
Financial & Business Svces.	418,900	18	92,100	28
Public services	680,200	29	122,400	22
Other service activities	125,700	5	18,600	17
TOTAL	2,330,900	100	168,900	8
Source: Annual Business Inquiry Employee Analysis from Nomis, www.nomisweb.co.uk , as at 10 November 2006 Please note: columns may not sum due to rounding				

Regional

A total of 684,900 people were employed in the South East area in 2004 (see Table E3). In employment terms, the South East region is the second largest RTP area, representing 29 per cent of total employment across Scotland as a whole. Over two fifths of these regional jobs were located in the City of Edinburgh, while Fife accounted for a fifth of total regional employment.

Over the period 1998 to 2004, employment in the South East area grew by 10 per cent (net growth of some 62,900 jobs) against a national average growth rate of 8 per cent. In terms of employment, the South East area is the second fastest growing economy across Scotland as a whole.

Within the region, the City of Edinburgh, Fife and West Lothian experienced employment growth rates above that of the region as a whole.

Table E3: Employment Change, 1998 – 2004

	1998	2004	Change	% change
Clackmannanshire	13,000	13,800	800	6.1
East Lothian	25,100	25,700	600	2.6
Edinburgh, City of	278,100	311,000	32,900	11.8
Falkirk	56,700	58,800	2,100	3.7
Fife	124,200	137,300	13,100	10.5
Midlothian	22,300	25,800	3,600	16.1
Scottish Borders	38,500	41,600	3,200	8.2
West Lothian	64,200	70,900	6,600	10.3
South East	622,100	684,900	62,900	10.1
Scotland	2,161,900	2,330,900	168,900	7.8
Source: Annual Business Inquiry Employee Analysis from Nomis, www.nomisweb.co.uk , as at 10 November 2006 Please note: columns may not sum due to rounding				

An analysis of employment in the South East region by sector shows that over 80 per cent of all jobs are concentrated in service industries (Table E4). Three sectors, public services, financial and business services and wholesale and retail, account for almost two thirds of total employment across the South East area in 2004, while other service sector activities (including hotels and catering, transport and communications and other services) account for a further 18 per cent of all jobs.

The South East area is significantly over-represented in the financial and business sector, with employment in this sector accounting for over 20 per cent (146,600 jobs) of total employment in the region. Almost 70 per cent of these jobs are concentrated in the City of Edinburgh. Overall, the region accounts for over a third of all jobs in Scotland in this key industry.

Outside the core financial centre in Edinburgh City, a higher than average proportion of jobs in the South East region is concentrated in manufacturing industries. Such activities account for almost 20 per cent of all employment in West Lothian for instance, compared to an average of only 10 per cent across Scotland.

The South East ranked as the fastest growing region in Scotland over the period 1998 to 2004, with this growth driven by rapid expansion in the business services and public sectors, balanced against a net drop in manufacturing employment. Employment in other services showed rapid growth in recent years in the South East region. This expansion was concentrated in recreational, cultural and sporting activities, with West Lothian experiencing particularly strong growth in this sub-sector (net growth of almost 3,500 jobs).

Table E4 – Employment Structure and Change by Sector, 1998 – 2004

South East	2004		Net employment change 1998-2004	
	Employment	% of total	Absolute change	% change
Primary and Utilities	12,100	2	-3,500	-22
Traditional Manufacturing	49,600	7	-21,100	-30
Advanced Manufacturing	21,500	3	-12,700	-37
Construction	35,500	5	3,400	11
Wholesale/Retail	103,600	15	8,700	9
Hotels and Catering	46,100	7	3,100	7
Transport & Communications	31,000	5	3,200	11
Financial & Business Svces.	146,600	21	32,200	28
Public services	195,100	28	37,900	24
Other service activities	43,700	6	11,700	37
TOTAL	684,900	100	62,900	10
Source: Annual Business Inquiry Employee Analysis from Nomis,				

South East	2004	Net employment change 1998-2004
www.nomisweb.co.uk , as at 10 November 2006 Please note: columns may not sum due to rounding		

Local

A total of 315,600 people were employed in the Forth Replacement Crossing study area in 2004, representing 46 per cent of total employment in the South East region (Table E5). Over 60 per cent of these jobs were located in West and Central Edinburgh, while South Fife and West Lothian accounted for 15 per cent and 22 per cent respectively, of total employment in the study area.

Over the period 1998 to 2004 employment in the Forth Replacement Crossing study area grew by six per cent (net growth of 17,400 jobs) against a national average growth rate of almost eight per cent. Within the Forth Replacement Crossing study area, the majority of growth has been concentrated in South Fife and West Lothian, with little net change in employment recorded in West and Central Edinburgh.

Table E5 – Employment Change, 1998 – 2004

	1998	2004	Change	% Change
South Fife	40,700	46,900	6,200	15.3
West & Central Edinburgh	193,200	197,800	4,600	2.4
West Lothian	64,200	70,900	6,600	10.3
Forth Crossing	298,100	315,600	17,400	5.9
South East	622,100	684,900	62,900	10.1
Scotland	2,161,900	2,330,900	168,900	7.8
Source: Annual Business Inquiry (NOMIS) Please note: columns may not sum due to rounding				

An analysis of employment in the Forth Replacement Crossing study area by sector shows that over 80 per cent of all jobs are concentrated in service industries (Table E6). Three sectors, public services, financial and business services and wholesale and retail, account for around two thirds of total employment across the Forth Replacement Crossing study area in 2004, while other service sector activities (including hotels and catering, transport and communications and other services) account for a further 19 per cent of all jobs.

The Forth Replacement Crossing study area is significantly over-represented in the financial and business sector, with employment in this sector accounting for some 30 per cent (95,400 jobs) of total employment in the area. Around four fifths of these jobs are concentrated in West and Central Edinburgh.

While the Forth Replacement Crossing study area exhibits a slightly lower than average proportion of jobs in manufacturing activities, South Fife and West Lothian exhibit a relatively large manufacturing sector: 17 per cent and 19 per cent respectively, compared to the average of 10 per cent across Scotland.

Employment growth in the Forth Replacement Crossing study area in recent years has been slightly below that of Scotland as a whole: net growth of six per cent compared to the national average eight per cent. This growth has been driven by expansion in the service sector, with other services and business services experiencing the most rapid growth over the period. The expansion in other services was concentrated in recreational, cultural and sporting activities, with employment in this sub-sector increasing almost four-fold in South Fife and West Lothian. Within the study area, West and Central Edinburgh accounted for almost three quarters of the jobs created in the business services sector, while the rate of growth was most rapid in South Fife.

Table E6 – Employment Structure and Change by Sector, 1998 – 2004

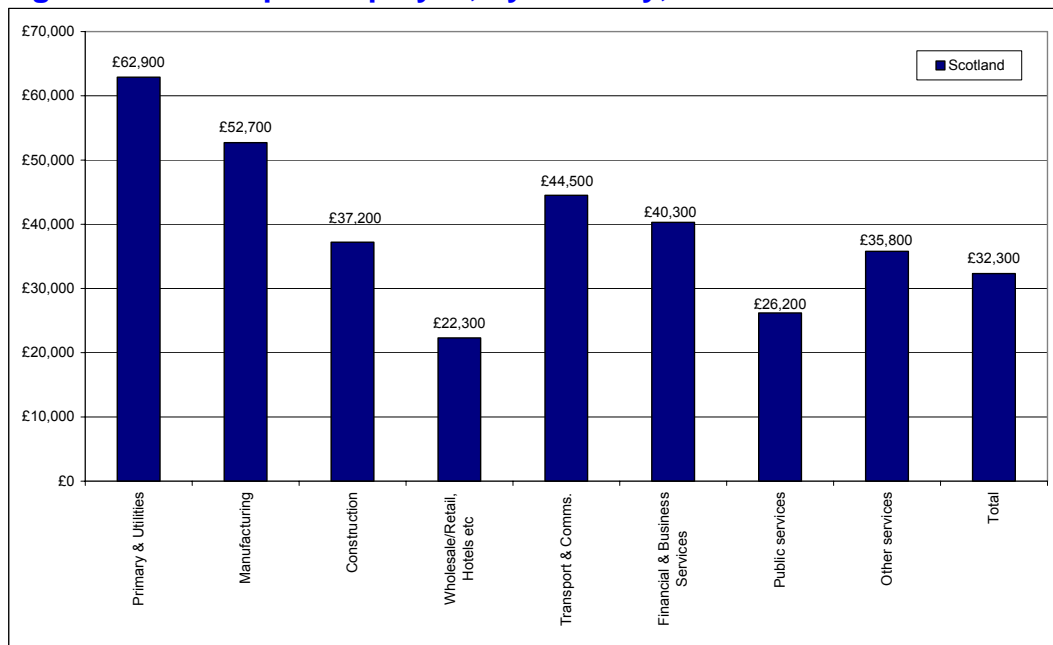
Forth Replacement Crossing study area	2004		Net employment change 1998-2004	
	Employment	% of total	Absolute change	% change
Primary and Utilities	2,400	1	-2,700	-52
Traditional Manufacturing	17,000	5	-10,200	-37
Advanced Manufacturing	13,000	4	-6,900	-35
Construction	13,200	4	0	0
Wholesale/Retail	44,300	14	4,600	12
Hotels and Catering	22,900	7	3,500	18
Transport & Communications	14,300	5	1,600	13
Financial & Business Svces.	95,400	30	16,900	22
Public services	71,400	23	3,600	5
Other service activities	21,500	7	7,000	48
TOTAL	315,600	100	17,400	6
Source: Annual Business Inquiry Employee Analysis from Nomis, www.nomisweb.co.uk , as at 10 November 2006 Please note: columns may not sum due to rounding				

Gross Value Added

National

Gross Value Added⁷ (GVA) per employee is often used as a measure of the productivity of an industry or area. Figure E1 illustrates GVA per employee, by industry, across Scotland as a whole in 2004. Overall, GVA per employee across Scotland as a whole was estimated at almost £32,300. High productivity sectors in the Scottish economy include primary and utilities, manufacturing, transport and communications, and financial and business services.

Figure E1 – GVA per employee, by Industry, 2004

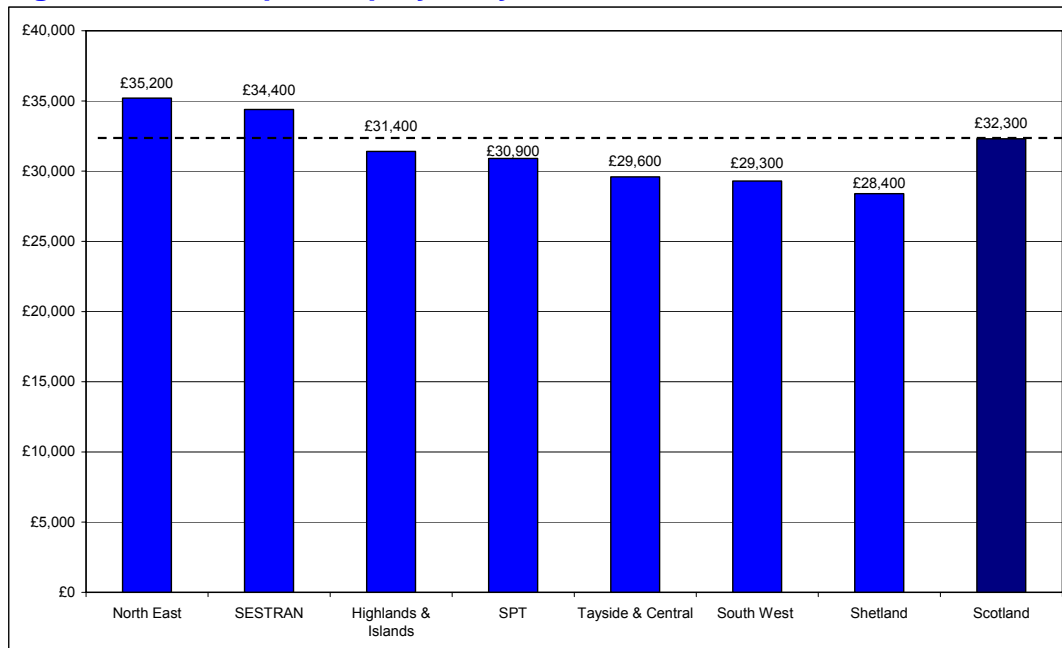


Source: Scottish Annual Business Statistics 2004, accessed from www.scotland.gov.uk/Topics/Statistics/16170/4363 on 10/11/06; Regional Trends 39, accessed from www.statistics.gov.uk on 09/11/06

Figure E2 illustrates GVA per employee across the seven RTP areas compared to Scotland as a whole. GVA per employee rates are highest in the North East and the South East areas, both of which record productivity rates above the Scottish average and where employment structure is dominated by high value added activities.

⁷ GVA is measured as the sum of income earned from the production of goods and services in the area and is built up from individual components including: compensation of employees, gross operating surplus, mixed income and taxes (less subsidies) on production.

Figure E2 – GVA per employee by RTP area, 2004



Source: Scottish Annual Business Statistics 2004, accessed from www.scotland.gov.uk/Topics/Statistics/16170/4363 on 10/11/06; Regional Trends 39, accessed from www.statistics.gov.uk on 09/11/06

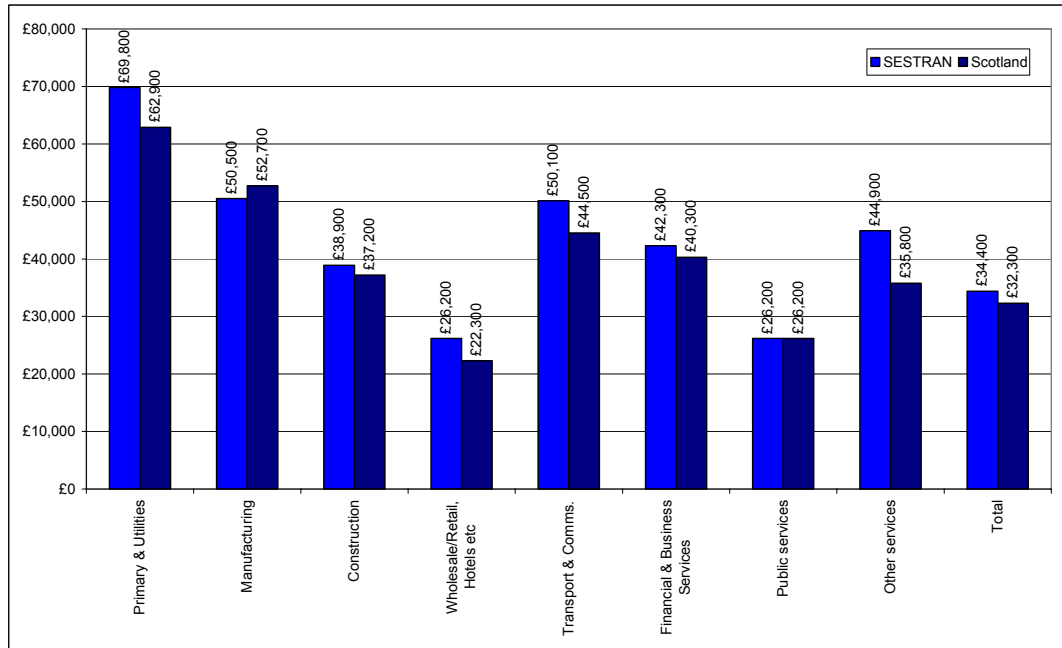
Regional

In 2004 GVA per employee in the South East area was estimated at almost £34,400 or six per cent higher than the Scottish average. Indeed, the SESTRAN region recorded the second highest productivity of the seven RTP areas across Scotland.

Within the SESTRAN region, West Lothian exhibited the highest productivity of all the local authorities across Scotland, with GVA per employee estimated at 68 per cent higher than the national average.

Figure E3 illustrates GVA per employee, by industry, in the South East area compared to the Scottish averages in 2004. The South East area exhibits similar or higher than average productivity in all sectors (with the exception of manufacturing activities) compared to Scotland as a whole. High productivity sectors in the South East economy include primary and utilities, manufacturing, transport and communications, other services and financial and business services.

Figure E3 – GVA per employee, by industry, 2004



Source: Scottish Annual Business Statistics 2004, accessed from www.scotland.gov.uk/Topics/Statistics/16170/4363 on 10/11/06; Regional Trends 39, accessed from www.statistics.gov.uk on 09/11/06

Local

As discussed above, GVA per employee in the South East area was estimated at almost £34,400 or six per cent higher than the Scottish average in 2004. Indeed, the SESTRAN region recorded the second highest productivity of the seven RTP areas across Scotland.

High productivity sectors in the South East economy include primary and utilities, manufacturing, transport and communications, other services and financial and business services.

E4.2 Future Economic Performance

Population Forecasts

National

Over the period 2004 to 2022, the resident population of Scotland as a whole is forecast to show very little change (net growth of 0.8 per cent or some 40,000 residents)⁸. Across Scotland as a whole, only two RTP areas are forecast to show population growth over the period - the South East area is forecast to show rapid population growth (net growth of 10.5 per cent), while the Highlands and Islands area is forecast to show more modest growth (net growth of 2.3 per cent).

Regional

Across the South East area, the majority of local authority areas are projected to show rapid population growth over the period. In particular, West Lothian (net growth of 25 per cent or over 35,000 residents) is forecast to experience the fastest rate of population growth within the region and across all the local authorities in Scotland as a whole.

Further analysis of forecast population change, by age group, across Scotland shows that only the South East area is forecast to experience an increase in the number of working age residents over the period (net growth of five per cent) against steady population decline in this age group across all other RTP areas. Within the region, West Lothian and the City of Edinburgh are projected to experience higher than average growth in this age group: 16 per cent and eight per cent respectively, compared to the regional average of five per cent.

Local

Population forecasts are not available for the Forth Replacement Crossing study area.

Employment and GVA Forecasts

National

Table E7 provides a summary of the total employment and GVA forecasts⁹ for the seven RTP areas and Scotland as a whole, for the key assessment dates of 2012, 2017 and 2022.

⁸ Source: Tribal estimates based on General Register Office for Scotland (GROS), 2004-based Population Projections for Scottish Areas, sourced from www.gro-scotland.gov.uk as at 09/11/06

⁹ Details on the methodology used to generate RTP area employment and GVA forecasts is provided in Appendix D.

Across Scotland as a whole total employment is forecast to increase by four per cent (net increase of some 96,300 jobs) over the period 2004 to 2022. Employment growth is forecast to be most rapid in the South East and Highlands and Islands areas, where the number of jobs is forecast to expand by 12.6 per cent and 10.1 per cent respectively.

In output terms, total GVA across Scotland as a whole is forecast to increase by 60 per cent (net increase of £45,300 million) over the same period driven by forecast growth in productivity of some 1.8% per annum. Growth in GVA is forecast to be highest in areas such as the South East and the Highlands and Islands.

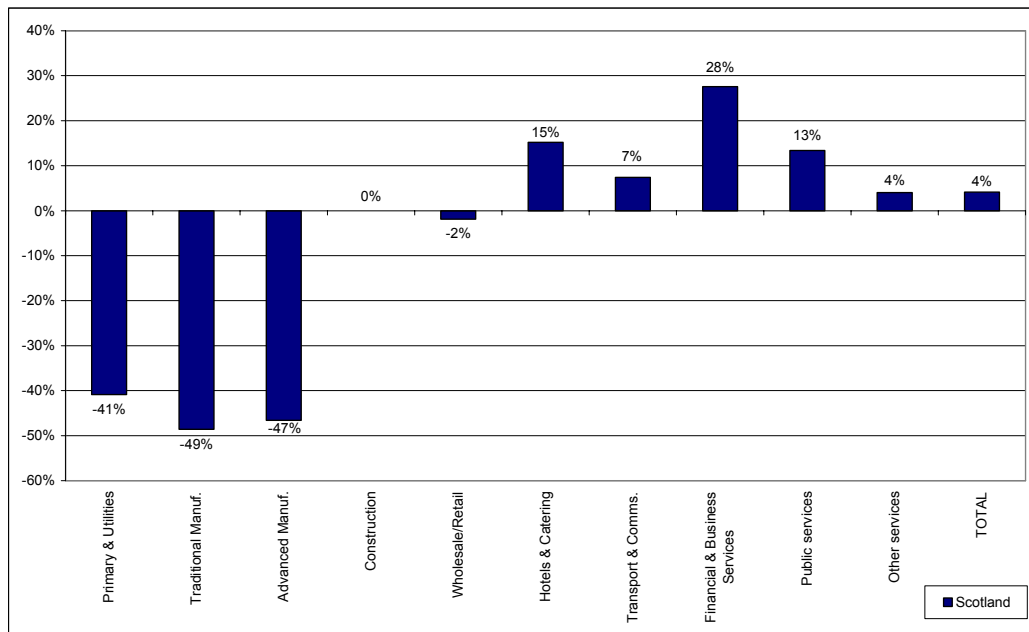
Table E7 – Total Forecast Employment and GVA

Total Employment	2004	2012	2017	2022	Change 2004-2022	% Change 2004-2022
Tayside and Central Scotland	212,400	205,100	199,000	195,700	-16,700	-7.9
Highlands and Islands	175,700	183,500	189,100	193,400	17,700	10.1
North East	248,900	248,800	247,800	247,900	-1,100	-0.4
South East	684,900	724,700	751,300	771,000	86,100	12.6
Shetland	13,400	11,300	10,000	9,200	-4,200	-31.6
South West	55,800	54,500	53,700	53,300	-2,500	-4.5
Strathclyde	939,400	952,800	957,200	962,300	22,800	2.4
Scotland	2,330,900	2,380,400	2,404,600	2,427,100	96,300	4.1
Total GVA (£ million)	2004	2012	2017	2022	Change 2004-2022	% Change 2004-2022
Tayside and Central Scotland	6,286	6,947	8,172	8,885	2,599	41
Highlands and Islands	5,527	6,579	8,251	9,349	3,823	69
North East	8,769	10,341	12,507	14,011	5,242	60
South East	23,532	28,809	35,835	40,783	17,250	73
Shetland	381	371	382	388	7	2
South West	1,633	1,829	2,177	2,400	767	47
Strathclyde	29,070	33,675	40,233	44,680	15,609	54
Scotland	75,199	88,550	107,557	120,496	45,297	60
Source: Tribal estimates based on Annual Business Inquiry sourced from NOMIS, www.nomisweb.co.uk as at 10/11/06; Regional Trends 39 sourced from the Office for National Statistics, www.statistics.gov.uk as at 09/11/06; and Oxford Economic Forecasting Regional Model sourced as at 16/11/06						

Much of the employment growth across Scotland as a whole over the period 2004 to 2022 is forecast to be concentrated in service sectors (see Figure E4). This expansion is forecast to be most rapid in the financial and business services, where employment is projected to grow by around 115,500 jobs over the period. The South East area is a key driver of employment growth in this sector: net growth of 36 per cent (or some 52,500 jobs) compared to the national average of 28 per cent.

Over the same period, employment in other private sector service activities, such as hotels and catering and transport and communications, and public sector service activities are forecast to show steady expansion. By contrast, manufacturing industries and the primary and utilities sector are forecast to experience a continued sharp decline over the period, with a net loss of 113,600 jobs and 30,100 jobs respectively.

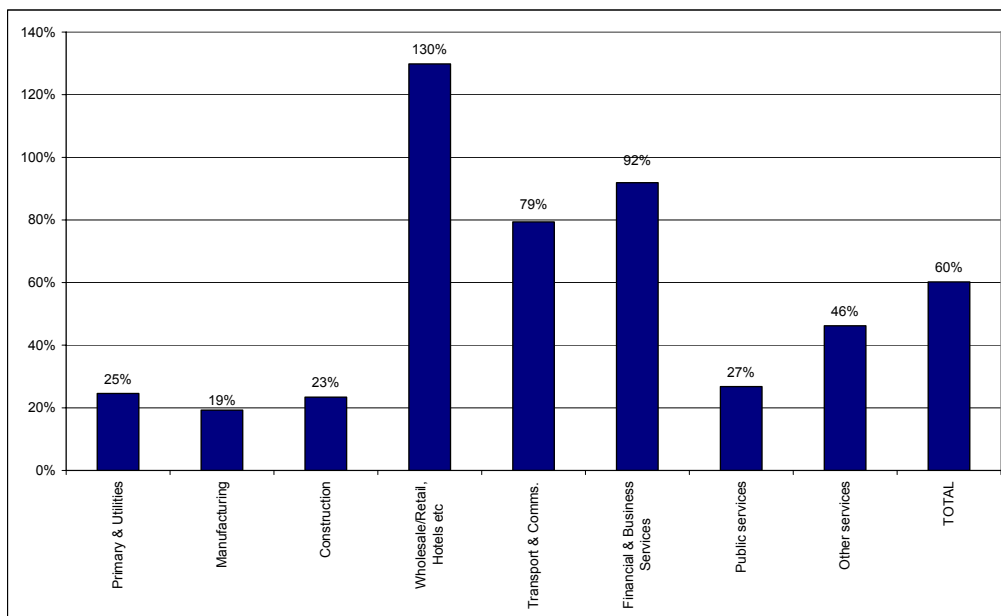
Figure E4 – Forecast Employment Change, 2004 – 2022



Source: Tribal estimates based on Annual Business Inquiry sourced from NOMIS, www.nomisweb.co.uk as at 10/11/06; Regional Trends 39 sourced from the Office for National Statistics, www.statistics.gov.uk as at 09/11/06; and Oxford Economic Forecasting Regional Model sourced as at 16/11/06

Figure E5 shows a breakdown of the forecast change in GVA across Scotland as a whole, by industry sector, over the period 2004 to 2022. Much of the growth in output is forecast to be concentrated in private sector services, with particularly strong growth apparent in wholesale and retailing, transport and communication and financial and business services. All of these sectors are forecast to record high or steady growth in productivity over the period forecast alongside above average growth in employment. GVA growth rates in primary, production and public service sector activities are forecast to be significantly less rapid over the same period. All of these sectors show net growth rates at less than half the national average as forecast gains in productivity are counterbalanced by forecast drop (or slower than average growth) in employment.

Figure E5 – Forecast Change in GVA, 2004 – 2022



Source: Tribal estimates based on Annual Business Inquiry sourced from NOMIS, www.nomisweb.co.uk as at 10/11/06; Regional Trends 39 sourced from the Office for National Statistics, www.statistics.gov.uk as at 09/11/06; and Oxford Economic Forecasting Regional Model sourced as at 16/11/06

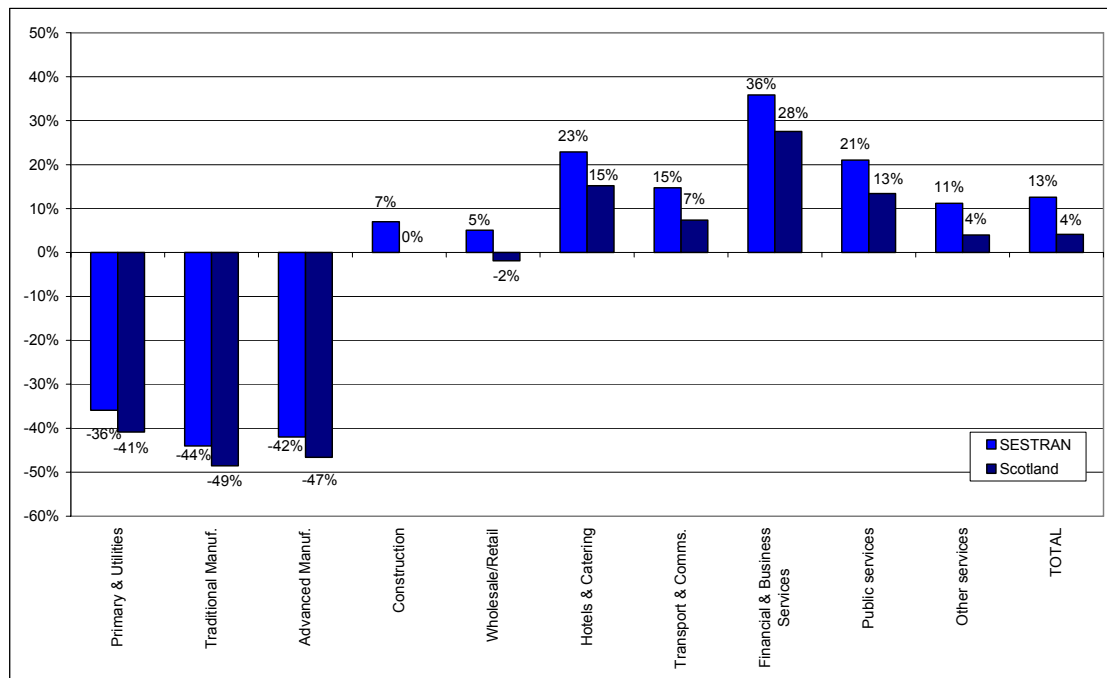
Regional

Table E8 includes the total employment¹⁰ and GVA forecasts for the South East area and Scotland as a whole, for the key assessment dates of 2012, 2017 and 2022. Across the South East area, total employment is forecast to show significantly higher than average growth over the period 2004 to 2022: net growth of 13 per cent (over 86,000 jobs) compared to the national average growth rate of four per cent. Further, the South East region is forecast to experience the highest employment growth rate of the seven RTP areas over the period.

Much of the employment growth across the South East area over the period 2004 to 2002 is forecast to be concentrated in service sectors (see Figure E6). This expansion is forecast to be most rapid in the financial and business services, at a rate above that of Scotland as a whole: net growth of 36 per cent (around 52,500 jobs) compared to the national average growth rate of 28 per cent in this sector. Over the same period, employment in other private sector service activities, such as hotels and catering and transport and communications, and public sector service activities are forecast to show steady expansion, again at rates above the Scottish averages. Further, the construction sector is forecast to show fairly steady employment growth in the South East area: net growth of seven per cent (almost 2,500 jobs) compared to almost no change in this sector across Scotland as a whole. In common with the rest of Scotland, the South East area is forecast to experience rapid employment decline in the manufacturing and primary and utilities sectors, though at a rate below that of Scotland as a whole.

¹⁰ Appendix C provides a definition of the employment sectors used in this analysis by activity and standard industrial classification (SIC).

Figure E6 – Forecast Employment Change, 2004 – 2022

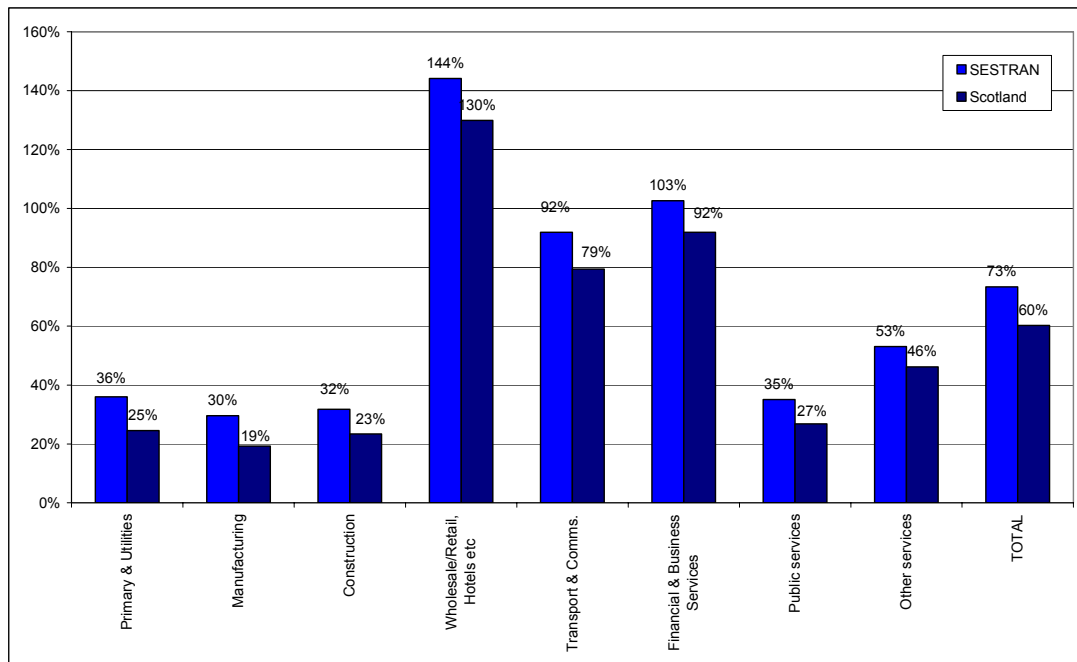


Source: Tribal estimates based on Annual Business Inquiry sourced from NOMIS, www.nomisweb.co.uk as at 10/11/06; Regional Trends 39 sourced from the Office for National Statistics, www.statistics.gov.uk as at 09/11/06; and Oxford Economic Forecasting Regional Model sourced as at 16/11/06

In output terms, total GVA across the South East area is forecast to increase by 73 per cent (net increase of around £17,250 million), a rate significantly above that of Scotland as a whole. Further, the South East area is projected to experience the highest growth rate in total GVA of the seven RTP areas over the period.

Figure E7 shows a breakdown of the forecast change in GVA across the South East area, by industry sector, over the period 2004 to 2022. The South East area is forecast to experience higher than average growth in output in all sectors compared to Scotland as a whole. Much of the growth in output is forecast to be concentrated in private sector services, with particularly strong growth apparent in wholesale and retailing, financial and business services and transport and communication. GVA growth rates in primary, production and public service sector activities are forecast to be significantly less rapid over the same period.

Figure E7 – Forecast Change in GVA, 2004 – 2022



Source: Tribal estimates based on Annual Business Inquiry sourced from NOMIS, www.nomisweb.co.uk as at 10/11/06; Regional Trends 39 sourced from the Office for National Statistics, www.statistics.gov.uk as at 09/11/06; and Oxford Economic Forecasting Regional Model sourced as at 16/11/06

Local

Table E8 provides a summary of the total employment and GVA forecasts for the Forth Replacement Crossing study area, the South East area and Scotland as a whole, for the key assessment dates of 2012, 2017 and 2022. Within the Forth Replacement Crossing study area, total employment is forecast to increase by 15 per cent (a net increase of 48,300 jobs) over the period 2004 to 2022, a rate similar to that of the South East region as a whole (net growth of 13 per cent or some 86,000 jobs), though significantly higher than average employment growth across Scotland as a whole. Employment growth in the Forth Replacement Crossing study area accounts for over a half of all forecast employment growth in the South East area.

In output terms, total GVA in the Forth Replacement Crossing study area is forecast to increase by 80 per cent (a net increase of over £8,800 million), a rate above that of the South East region as a whole (73 per cent) over the same period. Growth in GVA in the study area accounts for around a half of forecast growth in output in the South East area.

Table E8 – Total Forecast Employment and GVA

Total Employment	2004	2012	2017	2022	Change 2004-2022	% Change 2004-2022
Forth Crossing	315,600	338,200	353,000	363,900	48,300	15
South East	684,900	724,700	751,300	771,000	86,100	13
Scotland	2,330,900	2,380,400	2,404,600	2,427,100	96,300	4
Total GVA (£ million)	2004	2012	2017	2022	Change 2004-2022	% Change 2004-2022
Forth Crossing	11,075	13,868	17,347	19,883	8,808	80
South East	23,532	28,809	35,835	40,783	17,250	73
Scotland	75,199	88,550	107,557	120,496	45,297	60
Source: Tribal estimates based on Annual Business Inquiry, Regional Trends and Oxford Economic Forecasting						

In common with the South East region, much of the employment growth across the Forth Replacement Crossing study area, over the period 2004 to 2002, is forecast to be concentrated in service sectors. This expansion is forecast to be most rapid in the financial and business services, with the Forth Replacement Crossing study area forecast to show net employment growth of some 34,200 jobs, accounting for over 60% of the forecast employment growth in this sector in the South East area.

E4.3 Summary

The performance of the Scottish economy has been steady in recent years with the South East, North East and Highlands and Islands experiencing the largest growth. A modest increase in employment is forecast over the period to 2022, with a greater forecast increase in GVA. The latter being driven by productivity increases and moves into higher value activities.

The South East is a key driver of employment and GVA growth over the period to 2022 with employment growth rates approximately three times those of the Scottish economy as a whole. Hence, this region is a key driver of the future performance of the Scottish economy.

E5 EALI ASSESSMENT

E5.1 Introduction

This section sets out the EALI analysis using the impact mechanisms described in Section E2. The Appraisal Summary Tables (AST) to accompany this assessment is included in Appendix EA.

E5.2 Impacts on Existing Businesses

Introduction

The assessment of the impact on existing businesses is undertaken on sectoral basis with the economy divided into four sectors – primary and utilities, manufacturing and construction, primary services and public services. An overview is provided of each sector and an assessment made of the impacts at the Scotland, regional and local level (where appropriate) of the Forth Replacement Crossing.

The current Forth Road Bridge plays an important role in the strategic transport network of the Scottish economy. It provides a link between Edinburgh and Fife, but also from Edinburgh to Dundee, Aberdeen and the North East and to Perth and Inverness in the Highlands and Islands. As such, reliable journeys on the route will impact on businesses well beyond the immediate hinterland of the Bridge in Edinburgh and Fife. The do-minimum scenario against which the EALI assessment of the Forth Replacement Crossing is made assumes that the existing Bridge would be closed.

Primary and Utilities

Overview

The primary and utilities sector employed almost 73,800 people in Scotland in 2004, accounting for some three per cent of total employment across Scotland as a whole. This is higher than in the UK, which has an equivalent employment share of around one per cent. Of these jobs, some 36,400 were in primary activities, while some 37,300 were in the utilities sub-sector.

The North East region accounted for around a third of employment in the primary and utilities sector in Scotland. Further, employment in this sector accounts for 10 per cent of total regional employment in the North East compared to a national average of three per cent. Employment in this sector is driven by the concentration of oil industry related activities in Aberdeen City and fishing and agricultural activities in Aberdeenshire.

Indeed, the North East area remains the operations centre of the UK's offshore oil and gas industry and Aberdeen has long been recognised as the Offshore Energy Capital of Europe¹¹. Although the long term UK Continental Shelf oil production profile is in downturn, the sub-sector continues to make a significant contribution to the Scottish economy. High oil prices are assisting confidence in the local oil and gas industry and have also ensured that turnover in the sector has grown rapidly in recent years despite declining production¹². The increasing maturity of the North Sea brings significant challenges for diversification within the sub-sector and the decommissioning of older fields and facilities will become an increasingly important feature of the industry in future years. Further, there are significant opportunities for the development of renewable energy expertise and business in Scotland and Aberdeen is now being promoted as a Global Energy Capital.

The energy sector is experiencing skills shortages and difficulties in recruiting labour. A contributory factor to this is the aging workforce, with the average age of the workforce continuing to rise. It is expected that within the next five to ten years, there will be a major challenge to attract young people to employ and train within the sector.

The primary and utilities industries, particularly agriculture and fishing, are also significant in remote rural areas, for instance employment in this sector accounts for ten per cent and six per cent respectively, of total employment in the Shetland and Highlands and Islands areas. The agriculture sub-sector also has indirect linkages in the Scottish economy, such as in the food and drink industry. For example, over one third (36 per cent) of the total inputs to the Scottish food manufacturing sector are sourced from Scottish agriculture¹³.

Further, Scotland is one of Europe's most important fishing nations due to its location in the centre of some of the world's most productive fishing grounds. Fishing is especially important to many of Scotland's remote and fragile coastal communities. The Scottish fishing industry is well positioned to take advantage of a rising global demand for seafood, based on its reputation as a healthy, natural and renewable product. However, this depends on the ability of the industry to continue to get fresh fish to more distant markets¹⁴.

¹¹ Oil and Gas Prospects 2001 Update, Aberdeen City Council and Aberdeenshire Council

¹² Scottish Economic Report December 2006, Scottish Executive, December 2006

¹³ Scottish Economic Report December 2006, Scottish Executive, December 2006

¹⁴ A Strategic Framework for Scottish Sea Fisheries, 2005, The Scottish Executive

Potential Impacts

Scotland Impacts:

From the contextual information on the primary and utilities sector, the Forth Replacement Crossing would have an impact on the agriculture and fishing industry in particular. Many of the fish landed in Scotland travel south to Europe and the problems arising as a result of the do-minimum scenario will impact on this industry. Given that much of the output of the fishing industry is exported, it is anticipated that the replacement crossing will have a positive impact on this industry in Scotland, particularly the fishing industry. The displacement impacts are considered modest given the export market focus of the industry.

In terms of the energy sector, the Forth Replacement Crossing could impact on the movement of people from Aberdeen to Edinburgh, but it is not anticipated to a major impact.

Regional Impacts:

The primary and utilities sector is significantly under-represented in the South East relative to Scotland. Hence, the impact of the Forth Replacement Crossing on this sector at the regional level is neutral, as it is not a key sector in the South East economy.

Manufacturing and Construction

Overview

Manufacturing and construction activities together employed around 360,000 people in 2004, some 16 per cent of total employment across Scotland. Of these jobs, almost half were concentrated in ‘traditional’ manufacturing sectors such as food and drinks processing, textiles, timber and pulp processing and manufacture of metal goods; while ‘advanced’ manufacturing, such as electronics, accounted for less than a fifth of these jobs. Construction, with 126,500 jobs, accounted for around a third of total employment in this sector.

The South East area shows a higher than average proportion of employment concentrated in manufacturing industries. These activities account for almost 20 per cent of all employment in West Lothian, for instance, compared to an average of only ten per cent across Scotland.

As with other industrialised economies, manufacturing industries across Scotland have experienced a continued sharp decline in recent years, with a net loss of 91,000 jobs in the six years prior to 2004. This is largely due to the emergence of competition from relatively low-cost regions such as Eastern Europe and Asia and has resulted in many domestic manufacturing companies, particularly electrical and instrumental engineering companies, either outsourcing activity or completely closing their Scotland-based operations and relocating¹⁵. However, despite the recent difficulties, Scotland's manufacturing sector is still a significant sector of the Scottish economy, directly employing some 236,000 people.

Further, some regions have experienced growth in advanced manufacturing activities over the period 1998 to 2004. The Highlands and Islands and the North East areas, for instance, experienced a rapid expansion in this sub-sector: net growth of 1,900 and 650 jobs respectively.

Other sub-sectors experienced growth in output over the same period, including food and drink, chemicals and refined petroleum and nuclear fuel. This highlights that there are still many Scotland-based manufacturers who, through adopting new technologies, increasing labour productivity and moving into higher value sectors, have been able to demonstrate comparative and competitive advantage and expand their output. Further, business investment in manufacturing R&D increased by over 50 per cent in real terms between 1998 and 2003 to £440 million¹⁶ and the latest Community Innovation Survey showed that Scottish companies have some of the highest rates of innovation in the UK¹⁷.

Construction activities across Scotland have shown a more modest decline over the period 1998 to 2004, with a net loss of some 11,900 jobs. Meanwhile, the South East area experienced steady growth in construction activities over the same period: net growth of 11 per cent compared to a net decline of nine per cent across Scotland.

Transport infrastructure is important to manufacturing businesses in terms of getting goods to market on time and at reasonable cost. McCann (1998)¹⁸ notes that factors such as timing, reliability and perception of cost can be as important as cost itself. Increased focus on Just in Time (JIT) practices has increased demands on the logistics elements of the supply chain. JIT does not necessarily imply close geographical proximity between supply source and customer, but rather impacts on factors such as certainty and precise timing of delivery.

¹⁵ Scottish Economic Report June 2006, Scottish Executive, June 2006

¹⁶ Scottish Economic Report June 2006, Scottish Executive, June 2006

¹⁷ Scottish Economic Report December 2006, Scottish Executive, December 2006

¹⁸ The Economics of Industrial Location: A Logistics Cost Approach, McCann (1998)

Transport needs vary from one manufacturing business to another. Gills and Casavant (1994)¹⁹, highlight that investment in road infrastructure is especially important for light industrial and commercial businesses. In contrast high-tech manufacturing sectors (computing, software, R&D, biotechnology and certain food manufacturers) are heavily dependent on air freight and services. Heavy industry is likely to incur the highest relative transport cost and therefore be highly location-dependent (i.e. the heavier manufacturing businesses tend to locate closer to end-markets).

Traditional Manufacturing

The Scottish food and beverages industry is an important contributor to the health of the Scottish economy. “Scotland has already built an international image and reputation for the quality of its products and has a rich endowment of natural resources, established industries and world-class food-related research institutes”²⁰.

However, the industry does face a number of challenges. The food and beverages manufacturing industry is intensely competitive, with constraints including the price and availability of raw materials, regulation, EU restrictions on the fishing industry, public perception on the use of novel technology, and the need for environmental conservation and animal welfare²¹. In addition, there are increasing consumer pressures on the industry such as the demand for convenience, a growing interest in health and nutrition, clear and informative product labelling and keen pricing.

‘Scottish Food and Drink’²² an industry-led strategy launched in 1999, identifies the potential for the Scottish food and beverages industry to flourish in such a competitive environment and sets out ambitious targets for growth within the industry, to be achieved by 2010. A number of strategic goals to support the growth targets involve building on existing strengths and include: continuous innovation, developing technology, increasing value-added, developing an efficient supply chain, developing peoples’ capabilities and communicating the need for collaboration. There are also two key areas for focus: excellence in raw materials (especially meat and fish) and value-added meal components (retail and food service).

The impact of the transport system is felt in this industry through the delivery of raw materials and movement of the final goods to market. Across the majority of food and drinks manufacturing activities the majority of Scottish output is exported to either the rest of the UK or further a field. Hence, transport infrastructure has an important role to play.

¹⁹ Linking Transportation Improvements to new business development in eastern Washington, Gills and Casavant (1994)

²⁰ Scottish Food and Drink Strategy, www.scottishfoodanddrink.com

²¹ Scottish Food and Drink Federation www.sfdf.org.uk

²² Scottish Food and Drink Strategy, www.scottishfoodanddrink.com

The textile industry, including weaving, knitwear, apparel and technical textiles, is important to the Scottish economy. For instance, the textile industry is the seventh largest exporter within Scottish manufacturing and accounts for over three per cent of all Scottish manufactured exports²³.

Advanced Manufacturing

As a result of the global downturn in manufacturing industries, many companies have re-invented themselves from volume manufacturers to high value-add operations. For instance, Scotland's robust electronics industry has adapted, with more than 1,000 companies now operating in electronics and enabling technologies²⁴.

Construction

Historically, output and employment in the construction sector have tended to show greater fluctuations than the wider economy, reflecting greater sensitivity to changes in both consumer confidence and the wider economic cycle²⁵. Continued growth in the Scottish economy, rising house prices and historically low interest rates are some of the key factors behind the growth in output in this sector in recent years.

One of the most challenging issues facing the construction sector is skills shortages. In the Scottish Employers Skills Survey, Futureskills Scotland reports that the skills shortages reported are mostly in technical and practical skills.

Potential Impacts

Scotland Impacts:

From the contextual information on the manufacturing and construction sector, the Forth Replacement Crossing would have a positive impact on food and drink manufacturing in particular. Food processing is an important industry to the North East accounting for almost 30 per cent of Scotland's food exports. The majority of output of the food and drinks manufacturing sector is exported and problems of congestion and reliability that would exist in the do-minimum situation would impact on this industry. Hence, it is anticipated that the Forth Replacement Crossing would have a positive impact on manufacturing, but particularly food and drink manufacturing, in Scotland. The displacement impacts are considered modest given the export market focus of the industry.

In terms of construction, the Forth Replacement Crossing could impact on the movement of people, but given the relative mobility of construction workers it is not anticipated to a major impact.

²³ Scottish Development International, www.sdi.co.uk

²⁴ Scottish Development International, www.sdi.co.uk

²⁵ Scottish Economic Report June 2006, Scottish Executive, June 2006

Regional Impacts:

The manufacturing sector has a similar representation in the South East as Scotland as a whole, although West Lothian is an important location for advanced manufacturing activity. Hence, the impact of the Forth Replacement Crossing on this sector at the regional level is also positive.

The impact on the construction industry is considered neutral.

Private Services

Overview

The private services sector employed over 1.2 million people in 2004, over 50 per cent of total employment across Scotland. Of these jobs, just under a third were located in the South East area.

The service sector in Scotland continues to be the main driver of growth in the Scottish economy. Over the period 1998 to 2004, the private services sector experienced net growth of 15 per cent or almost 162,000 jobs. Across Scotland, employment growth in the private services sector was most rapid in the South East area (net growth of 19 per cent).

Employment growth has been most rapid in the financial and business services sub-sector, with the sub-sector playing a vital role in supporting some of Scotland's key industries. In addition other private sector service activities have shown steady expansion, such as transport and communications, hotels and catering activities and other services. Further details on key private sector service activities in Scotland are provided below.

Financial and Business Services

Scotland has a world-class financial services industry, with services including life and pensions, banking and insurance, investment management, shared service centre and contact centres. Financial and business services employed almost 419,000 employees in 2004, accounting for almost 20 per cent of total employment across the country making it the largest private services industry. The South East region accounted for over a third of all jobs in financial and business services in Scotland, with the City of Edinburgh being the UK's largest financial centre outside London.

The financial and business services sector continues to be the fastest growing sector of the Scottish economy, with growth of over 92,000 jobs over the period 1998 to 2004.

According to the 'Big City Survey: Edinburgh'²⁶, two of the key issues facing the financial services sub-sector are recruiting and retaining staff and ease of access via transport.

Wholesale and Retail

Employment in wholesale and retail activities accounted for 16 per cent of all jobs in Scotland in 2004, making it the second largest private services industry. This sub-sector is of significant importance to the Tayside and Central area, where employment in wholesale and retail activities represented 19 per cent of total employment in the area.

In general, transport infrastructure improvements can impact on retail businesses by reducing costs (i.e. delivery costs for both supplies and sales). Transport improvements can also lead to increased sales in certain locations where the accessibility of the retail outlets to local populations is increased, thus expanding the catchment of the outlets.

According to a report by the Scottish Executive²⁷, "Future Patterns of Retailing in Scotland", the development of transport infrastructure will continue to be a major factor influencing retail development and reinforcing the attractiveness to retailing of city centres and edge/out-of-town developments. Improvements in the accessibility of city centres are identified as being important, particularly by public transport, as consumers increasingly expect shopping to be made easier for them.

Hotels and Catering/Tourism

The hotels and catering sector employed over 170,000 people in Scotland in 2004, accounting for some seven per cent of total employment across Scotland as a whole. This sub-sector is of significant importance to the Highlands and Islands area, where employment in hotels and catering activities represented 10 per cent of total employment in the area. This reflects the importance of tourism to this economy.

Tourism is one of the fastest-growing industries in the 21st century and presents Scotland with significant opportunities. However, the decline in air transport costs has increased competition between growing numbers of destinations. Scotland has had to improve its product offering and marketing to remain competitive with world class tourism destinations around the world.

²⁶ Big City Survey, <http://news.scotsman.com>

²⁷ Future Patterns of Retailing in Scotland, The Scottish Executive Central Research Unit 2000, John Dawson, Professor of Marketing, The University of Edinburgh and Visiting Professor ESADE Barcelona

The importance of transport within a tourism context is set out in a number of reports and policy documents. OECD (2002) observes that “tourists expect quick access to and from destinations,” especially important for short breaks, and this requires an efficient transport system. SACTRA (1999)²⁸ notes that “good transport links are important in tourism because natural assets are fixed in their location” and goes on to say that “tourism is especially important to many peripheral and rural economies and transport costs are often a significant proportion of the total costs of taking a short break or holiday”. Anything which increases transport costs (either financial or non-financial) will therefore have a disproportionate impact on the propensity to take a trip.

Transport and Communications

Employment in the transport and communications sub-sector accounted for five per cent of total employment across Scotland in 2004. Over the six year period to 2004, employment in this sub-sector has shown steady growth across Scotland (net growth of 11 per cent).

The transport industry is essential to the success of the Scottish economy because the majority of Scottish businesses rely upon road transport to get their goods to market. Transport also plays a key role in facilitating economic growth in the wider economy. For instance, through business time savings (and/or agglomeration effects), companies can lower costs and take advantage of specialised labour and business services, which have a positive impact on productivity²⁹. Transport companies are under increasing pressure in the face of new regulations, high fuel prices and increasing labour costs.

Potential Impacts

Scotland Impacts:

From the contextual information on the private services sector, the Forth Replacement Crossing would have a positive impact on this sector. Financial and business services are key drivers of the Scottish economy and failure of this sector to grow in Edinburgh will have Scotland wide impacts. The do-minimum scenario could adversely impact on this sector is through restricting the ability of the Edinburgh labour market to secure the additional labour it requires from its neighbouring authorities including Fife. Hence, it is anticipated that the Forth Replacement Crossing would have a positive impact on financial and business services in Scotland. The displacement impacts are considered modest given that Edinburgh has an almost unique position in this sector in Scotland.

²⁸ Standing Advisory Committee on Trunk Road Assessments (1999)

²⁹ Scottish Economic Report December 2006, Scottish Executive, December 2006

Although the Forth Replacement Crossing could affect the tourism experience for visitors in Scotland, it is not considered that this would influence the decision of tourists to visit Scotland. Perceptions of reduced congestion or improved reliability may influence the route that they take while in Scotland rather than the decision to make the trip. In this situation, the Forth Replacement Crossing is anticipated to have a neutral impact on tourism.

The transport sector is key in getting Scottish goods to market and the Forth Replacement Crossing will positively impact on this sector by providing an alternative crossing of the Forth which should ultimately reduce costs as companies do not have to leave additional time to reach destinations or take alternative routes. While this industry will benefit from any cost reductions, these reduced costs are likely to be passed back to the industries for which the deliveries are being made.

Regional Impacts: Scenario 1 – Replacement Crossing

As discuss in Section E4.2, financial and business services is a key sector within the regional economy and one on which the future performance of the region and Scotland relies. There is also forecast to be an excess of labour demand over supply in the Edinburgh economy in future years such that the economy is dependent on neighbouring authorities for labour. The traffic conditions forecast in the do-minimum scenario are anticipated to adversely affect the performance of this industry in the regional economy. Hence, the Forth Replacement Crossing is anticipated to have a positive impact on the financial and business services sector.

The Forth Replacement Crossing could also have an impact on tourism within the region in terms of enhancing access to Fife for tourism. Not all tourism visits would be affected as international visitors who make the trip to Scotland are not likely to alter their itinerary as a result of congestion or reliability problems on the existing Forth Crossing, but local visitors who make day trips across the Firth of Forth may make trips to different destinations, some of which may be within the region and some may be outside the region. Hence, the overall impact is considered neutral, but there could be some distributional impacts for this sector.

The importance of the transport sector to the regional economy is similar to its importance to the Scottish economy. Transport companies in the region could be adversely affected in terms of increased costs as companies leave additional time to reach destinations or take alternative routes. While this industry will bear the additional costs, these additional costs are likely to be passed back to the industries for which the deliveries are being made. Companies in this sector in the region, may use the Forth Replacement Crossing more frequently than companies located outside the region such that they may experience a greater effect.

Regional Impacts: Scenario 2 – Operating in Tandem

To the extent that some of the traffic problems associated with the Forth Replacement Crossing operating as replacement only are relieved with the Replacement Crossing operating in tandem, there could be positive impacts on the financial and business services sector, and the transport sector. For the reason discussed under Scenario 1, the tourism impact remains neutral, although the distribution of tourism throughout the region may vary.

Public Services

Overview

The public services sector employed around 680,000 people in 2004, almost 30 per cent of total employment across Scotland. Of these jobs almost 30 per cent are located in the South East area. Shetland and the Highlands and Islands areas are characterised by high proportions of employment concentrated in public services: employment in public services activities accounted for a third of total employment in these areas.

“Transforming Public Services: The Next Phase of Reform”³⁰ highlights the importance of public services, “efficient public services help drive our economic performance by helping to equip people with the education and skills required in a competitive economy, and by providing the infrastructure for enterprise to flourish”.

Public sector services have shown rapid expansion across Scotland over the period 1998 to 2004 (net growth of some 122,400 jobs). The North East and South East areas experienced relatively high employment growth in this sector over the same period: 25 per cent and 24 per cent respectively, compared to the national average growth rate of 22 per cent.

Scotland Impacts

Public services are concerned primarily with the provision of local authority services and health such that the Forth Replacement Crossing is not anticipated to influence the performance of this sector. As a result, the impact of the Replacement Crossing is considered neutral.

Regional Impacts

While recruitment to the Edinburgh labour market could constrain some sectors (e.g. financial services), the Forth Replacement Crossing is not anticipated to influence the performance of this sector. As a result, the impact is considered neutral.

³⁰ Transforming Public Services: The Next Phase of Reform, Scottish Executive, June 2006

E5.3 Impact on New Business

Overview

Transport infrastructure improvements, where they have a significant impact on improving the accessibility of a region, will improve “place competitiveness” which will benefit companies in a range of sectors. This is recognised in a number of important strategy documents, including Scotland’s Transport White Paper (June 2004) which notes that transport infrastructure plays an important role in terms of improving the competitiveness of businesses within rural areas because of the significant potential for improving the accessibility of these areas.

“Travel Choices for Scotland: The Strategic Roads Review” acknowledges the significant role that transport provision plays in the economic well-being of Scotland: “Businesses depend on good transport infrastructure and services to give them access to labour, to their suppliers and to their customers”. In addition, “transport provision is important in local economies, not least because it can influence businesses in deciding where to invest”.

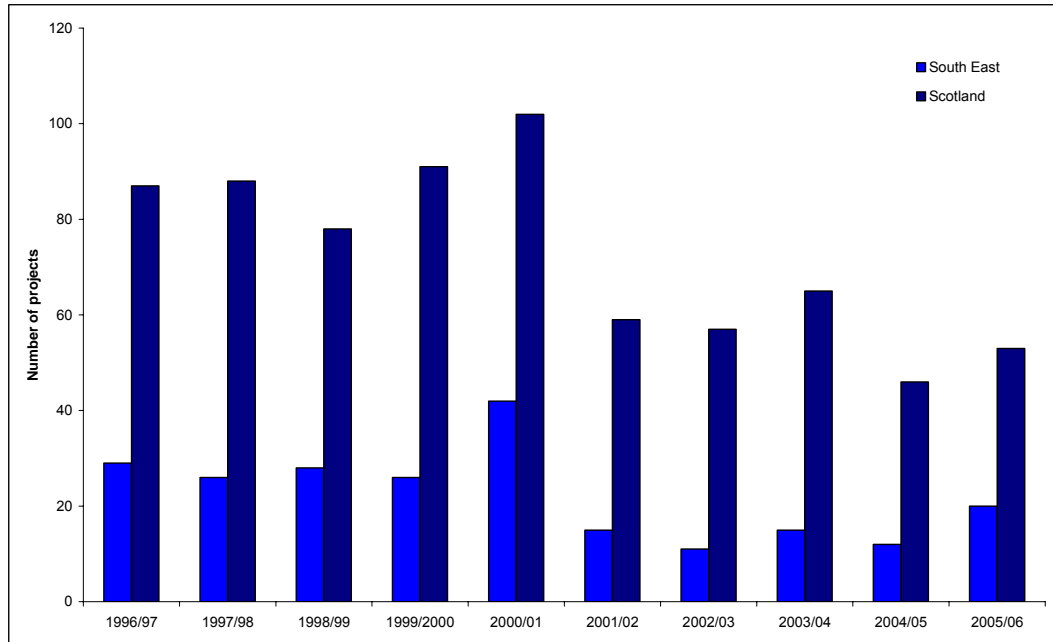
The Scottish Economic Report³¹ highlights the benefits of inward investment to the Scottish economy and the importance of inward investment for sustaining economic growth. These benefits include technology transfer, improved innovation, higher productivity levels and higher wages, suggesting jobs are higher skilled. Foreign owned companies also contribute a significant proportion of Scotland’s business expenditure on research and development (R&D).

Figure E8 shows the trend in the number of inward investment projects to the South East area and Scotland over the period 1996/97 to 2005/06. Inward investment projects to Scotland have fallen from a peak of 102 projects in 2000/01 (providing a total of 14,000 jobs), to 53 projects in 2005/06 (providing a total of 6,300 jobs). Inward investment flows have fallen largely due to international firms increasingly outsourcing activities, particularly in electronics and manufacturing, to low cost locations.

The South East area shows a similar trend to that of Scotland as a whole, with inward investment projects to the region falling from a peak of 42 projects in 2000/01 (providing a total of 5,200 jobs), to 20 projects in 2005/06 (providing a total of 2,000 jobs). Inward investment projects to the South East area represent (on average over the period) around a third of all inward investment projects to Scotland as a whole. Therefore, the South East is an important destination for inward investment to the Scottish economy.

³¹ Scottish Economic Report June 2006, Scottish Executive, June 2006

Figure E8 – Number of Inward Investment Projects to the South East area and Scotland, 1996/97 – 2005/06

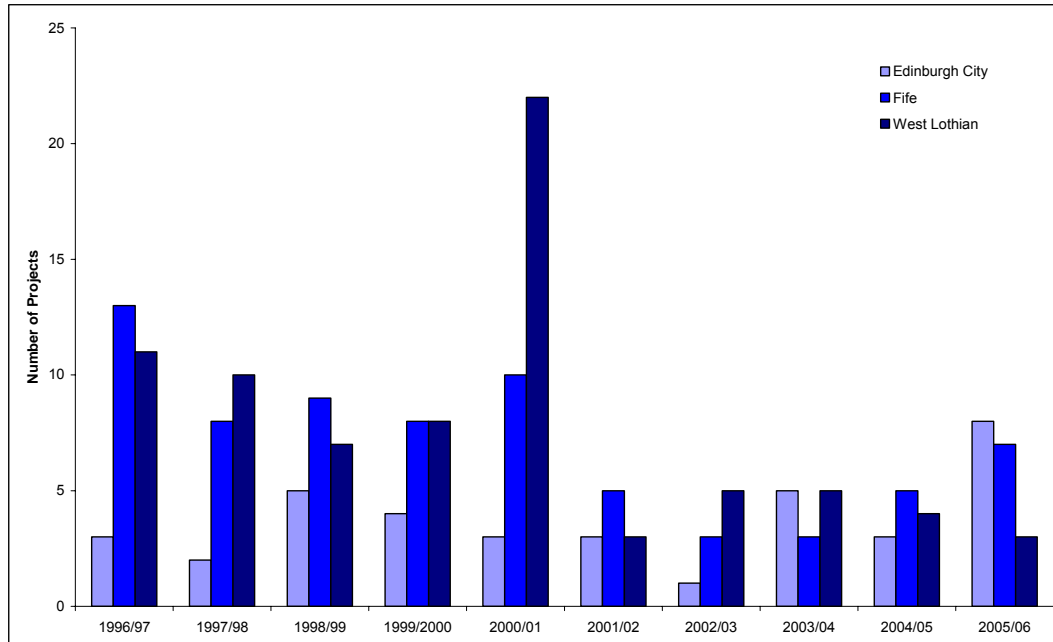


Source: Scottish Development International, www.scottish.parliament.uk, Written Answer S2W-28424 – Christine Grahame (South of Scotland) (SNP) (Date Lodged 18 September 2006), Answer by Nicol Stephen (6 October 2006) sourced as at 12/04/2007

Figure E9 shows the trend in the number of inward investment projects to the City of Edinburgh, Fife and West Lothian over the period 1996/97 to 2005/06. In general, the three authorities show a similar trend to that of Scotland as a whole, though there are some variations across the areas. In common with Scotland as a whole, inward investment projects to West Lothian peaked in 2000/01 with 22 projects (providing a total of 1,900 jobs and accounting for over a fifth of all inward investment projects in Scotland that year) followed by a period of downturn. Inward investments to Fife peaked in 1996/97 and 2000/2001 with 13 and 10 projects respectively, (providing 2,600 and 2,500 jobs respectively), while the City of Edinburgh peaked in the last year, with eight projects (providing a total of 700 jobs in 2005/06).

Together, these three local authorities account (on average over the period) for over four fifths of all inward investment projects to the South East area and around a quarter of all inward investment projects to Scotland as a whole. Therefore, the City of Edinburgh, Fife and West Lothian are key destinations for inward investment to the Scottish economy.

Figure E9 – Number of Inward Investment Projects to the South East area and Scotland, 1996/97 – 2005/06



Source: Scottish Development International, www.scottish.parliament.uk, Written Answer S2W-28424 – Christine Grahame (South of Scotland) (SNP) (Date Lodged 18 September 2006), Answer by Nicol Stephen (6 October 2006) sourced as at 12/04/2007

Table E9 shows the level of investment and the number of jobs associated with inward investment projects in the South East area and Scotland in 2005/2006. The level of inward investment to the Scottish economy was estimated at almost £258 million in 2005/2006, with the South East area accounting for around a fifth of this investment. Further, the South East area accounted for almost a third of all jobs (either new or safeguarded) in Scotland associated with inward investment. Within the South East region, West Lothian accounts for over two fifths of all jobs.

Combining the information on the number of projects and the number of jobs allows an estimate of the average employment per project to be made (as shown in Table E9). The average number of jobs per project across Scotland as a whole is 120, while the number of jobs per project in the South East area is slightly lower at 98 jobs per project. Within the region, the number of jobs per project in West Lothian (286 jobs per project) is significantly above the regional and national averages.

Table E9 – Inward Investment to the South East area and Scotland in 2005/06

	No. of Projects	Investment (£ m)	New Jobs	Safeguarded Jobs	Total Jobs	Jobs per Project
Clackmannan-shire	2	1.5	35	2	37	19
East Lothian	0	0	0	0	0	N/A
Edinburgh, City of	8	11.6	609	104	713	89
Falkirk	0	0	0	0	0	N/A
Fife	7	5.5	274	82	356	51
Midlothian	0	0	0	0	0	N/A
Scottish Borders	0	0	0	0	0	N/A
West Lothian	3	31.7	591	268	859	286
South East	20	50.3	1,509	456	1965	98
Scotland	53	257.7	4,547	1,790	6,337	120

Source: Source: Scottish Development International, www.scottish.parliament.uk, Written Answer S2W-28424 – Christine Grahame (South of Scotland) (SNP) (Date Lodged 18 September 2006), Answer by Nicol Stephen (6 October 2006) sourced as at 12/04/2007

The Transport Research Institute and Employment Research Institute at Napier University were commissioned by the Department for Transport (DfT) to review currently available evidence on the issues considered by businesses in choosing where they locate or relocate. The study was published in 2004³². The aim of the study was to focus in particular on the significance and importance of transport issues as a factor within that decision-making process. The study examined a wide range of studies into business location decisions, drawing from a number of disciplines including transport policy, economics, planning and management. Most literature reviewed concentrated on findings from the UK, but available evidence from countries around the world was also examined.

³² “The Importance of Transport in Business’ Location Decision” R McQuaid, M Grieg, A Smyth, J Cooper for the DfT, 2004

Evidence gathered from academic literature and a range of business surveys emphasise the complex nature of the decision processes gone through by businesses when choosing a new location. Overall, the study highlights a number of key factors which are commonly cited as important in influencing location decisions. The most attractive locations are likely to be those which score highly on a number of these measures. Key factors include:

- Quality and scope of physical and business infrastructures;
- Factor cost and supply, especially labour;
- Market demand and links to international markets;
- Institutional infrastructure and networks;
- Local cultural factors which support entrepreneurship;
- Evidence of indigenous company growth;
- Opportunities for agglomeration economies;
- Technological development; and
- Social factors influencing quality of life in general such as climate, lifestyle, image and crime rates.

Clearly, while none of these factors directly cite transport issues specifically, many have an element of transport within them. The study provides a number of examples of the way in which transport issues in general may interact with these factors to influence business location decisions. For instance, transport factors may affect the characteristics of a location in terms of:

- Cost of transporting goods to and from customers and suppliers;
- Risk and uncertainty (particularly with relation to the reliability of logistics systems);
- Travel costs for staff and customers;
- Ease of liaison between supplier and customer; and
- Ease of access to business information and innovation.

Overall, the study emphasises the difficulty and complexity of drawing a general conclusion as to the relative importance of each of these individual factors across the business community as a whole.

For most businesses, McQuaid *et al* conclude that adequate transport infrastructure in general can be considered a *necessary* but not a *sufficient* condition when choosing a new location. For individual firms the importance of transport considerations is likely to vary considerably depending on the characteristics of the business and market environment, particularly in relation to industry sector and the spatial scale of the business.

Potential Impacts

Scotland Impacts

The Forth Replacement Crossing is anticipated to have a neutral impact on the Scottish economy. In the do-minimum situation, the traffic conditions across the Forth may result in other areas of Scotland becoming more attractive to new business investment at the expense of the East of Scotland area. This would result in a neutral impact on the Scottish economy. However, given the importance of the South East to Scotland and the dominance of the financial services sector it is possible that some companies may only be interested in locating in the South East/Edinburgh area such that they may choose another location outside Scotland in the do-minimum situation. In these circumstances there could be to a minor positive effect on the Scottish economy.

Regional Impacts

The Forth Replacement Crossing would have a positive impact on the South East in terms of attracting new investment into the area. One of the aims of the Fife Structure Plan is to attract high value activities (including manufacturing activities) into the area. The reduced congestion and increased reliability in moving goods and people across the Forth with the Forth Replacement Crossing could assist Fife to develop these activities. The forecast conditions under the do-minimum situation in terms of increased congestion and reduced reliability could adversely affect the Edinburgh economy, if investing businesses felt that recruitment of suitably skilled staff was an issue. The Forth Replacement Crossing would address this concern and add to the attractiveness of the West Edinburgh area which is one of the most important development zones in Scotland.

At the regional level, there is no difference in the performance of the corridors.

E5.4 Impacts on Land Use and Development

While the Forth Replacement Crossing could affect land use in the general area of the crossings, the impacts on land use and development will be primarily felt around the landfall areas of the replacement bridge/tunnel. In this situation, the key issue relates to the performance of the individual corridors.

Corridor C

Overview

Corridor C has potential impacts on either side of the Firth of Forth. The Corridor C tunnel proposal would connect well with development areas in Rosyth and Dunfermline, as identified within the Fife Structure Plan.

Dunfermline is identified in the Fife Structure Plan as one of seven Strategic Development Areas to contribute towards growth in the Fife economy during the lifetime of the plan. Over the period to 2026 the plan allows for the town to be expanded to the South West, the West and the North around a revitalised town centre. Key developments include: the provision of 4,550 new houses; 80Ha of employment land for business use; and overall, infrastructure developments sufficient to allow the population of the city to grow by over 50,000 residents.

In addition to new land allocations identified as part of the Strategic Development Area, the Structure Plan also allows for a further 175Ha of employment land for business use within the Dunfermline/South Fife area. Overall the area accounts for over a third of all strategic employment land identified within the Structure Plan across Fife as a whole.

Such land allocations includes the availability of 65Ha at the Rosyth Waterfront site. Rosyth is identified within the plan as a key national growth point for economic development in Fife. Over the lifetime of the plan it is envisaged that the Waterfront area will be promoted as Scotland's Continental Ferry Port and European Gateway for passengers and freight. Developments planned to meet this aim include the introduction of new continental ferry services alongside improved passenger facilities, the promotion of the Waterfront area as a strategic employment site and the development of the area for multi-modal freight handling and distribution facilities.

The Corridor C tunnel proposal would also provide easier access to employment and development areas along the M9, as identified in the Edinburgh and Lothians Structure Plan. These key development areas include:

- Livingston and the Almond Valley – identified as a core development area for up to 5,000 new houses
- Winchburgh/East Broxburn/Uphall – identified as a core development area for up to 5,000 new houses; and
- Armadale – identified as a core development area for up to 2,000 new houses.

Corridor C will have the potential to integrate with community regeneration activity areas in Dunfermline, such as the Abbeyview Estate. This is an area with a population of around 8,700 which is predominantly made up of public housing built in the 1950s and 1960s. In addition to this estate, community regeneration activity in the Dunfermline area includes outreach work in Inverkeithing and Kingseathill.

Potential Impact

In terms of the potential impact in the immediate vicinity of the landfall areas, this corridor would have a positive contribution to local economic development, particularly benefiting those areas to the west of the study area e.g. West Lothian and on the northern side of the Forth around Dunfermline and Rosyth.

Corridor D

Overview

The close proximity of the Corridor D bridge and tunnel proposals landfall sites to the existing crossing North of the Forth limits its impact on potential local economic development. However, relative to the do-minimum situation this corridor could have the potential to integrate with community regeneration areas in Dunfermline and Inverkeithing.

However, this corridor would provide easier access to development areas along the M9 and development areas in West Edinburgh, as identified in the Edinburgh and Lothians Structure Plan. These key development areas include:

- Edinburgh Park/South Gyle/Sighthill – New business space is likely to come through mostly from redevelopment or refurbishment of existing space, with little new greenfield land available;
- Newbridge/Kirkliston/Ratho – potential for further economic development at Newbridge alongside further housing development across the area;
- Livingston and the Almond Valley – identified as a core development area for up to 5,000 new houses
- Winchburgh/East Broxburn/Uphall – identified as a core development area for up to 5,000 new houses; and
- Armadale – identified as a core development area for up to 2,000 new houses.

Corridor D has the potential to integrate with community regeneration activity in Inverkeithing and West Edinburgh, covering Parkhead, Murrayburn and Sighthill.

Potential Impact

This corridor would also have a positive contribution to local economic development, particularly benefiting those areas to the west of the study area e.g. West Lothian and west Edinburgh.

Corridor E

Overview

In terms of the potential impact in the immediate vicinity of the landfall areas, the close proximity of the Corridor E tunnel proposal to the existing Bridge North of the Forth limits its impact on potential local economic development. However, relative to the do-minimum situation this corridor has the potential to integrate with community regeneration areas in Dunfermline and Inverkeithing.

However, these proposals connect with development areas in West Edinburgh, as identified in the Edinburgh and Lothians Structure Plan. These key development areas include:

- Edinburgh Park/South Gyle/Sighthill – New business space is likely to come through mostly from redevelopment or refurbishment of existing space, with little new greenfield land available; and
- Newbridge/Kirkliston/Ratho – potential for further economic development at Newbridge alongside further housing development across the area.

Corridor E has the potential to integrate with community regeneration activity in Inverkeithing and North and West Edinburgh, covering Muirhead/Drylaw and Parkhead, Murrayburn and Sighthill respectively.

Potential Impact

This corridor would also have a positive contribution to local economic development, particularly west Edinburgh. This corridor does not offer quite the same level of connectivity with West Lothian as Corridors C and D.

E6 Conclusions

Table E10 provides a summary of the main economic and locational impacts of the Forth Replacement Crossing using a seven point scale. At the national level, the main positive impacts are to be felt on existing businesses. At the regional level, existing businesses and new businesses are forecast to experience positive impacts. At the local level, all the corridors are anticipated to have positive economic development effects with Corridors C and D tending to favour West Lothian while Corridor E tends to favour north Edinburgh.



Table E10 – Summary of Potential Impacts

Economy	Corridor C	Corridor D		Corridor E
	Tunnel	Bridge	Tunnel	Tunnel
	Replacement	Replacement	Replacement	Replacement
Impact on Existing Business				
National Impacts	√√	√√	√√	√√
Regional Impacts	√√√	√√√	√√√	√√√
Impact on New Business				
National Impacts	-	-	-	-
Regional Impacts	√√	√√	√√	√√
Impact on Land Use				
Local Impacts	√√	√√	√√	√
√√√	Major Beneficial Impact			
√√	Moderate Beneficial Impact			
√	Minor Beneficial Impact			
-	Negligible Impact			
x	Minor Adverse Impact			
xx	Moderate Adverse Impact			
xxx	Major Adverse Impact			

Annex EA – STAG APPRAISAL SUMMARY TABLES

Table EA1 – Qualitative and Quantitative Analysis of First Round Impacts – Primary and Utilities

Sector	Primary and Utilities	
Sources / Types of Impact	Qualitative	Quantitative
Market / Competitiveness Context	<p>The North East area remains supreme as the operations centre of the UK's offshore oil and gas industry and Aberdeen has long been recognised as the Offshore Energy Capital of Europe. Although the long term UK Continental Shelf oil production profile is in downturn, the sub-sector continues to make a significant contribution to the Scottish economy.</p> <p>There are significant opportunities for the development of renewable energy enterprise and business in Scotland and Aberdeen is now being promoted as a Global Energy Capital.</p> <p>Agriculture and fishing activities are important to remote rural and coastal areas in Scotland and Scotland is one of Europe's most important fishing nations due to its location in the centre of some of the world's most productive fishing grounds.</p>	<p>The primary and utilities sector employed almost 73,800 people in Scotland in 2004.</p> <p>The North East region accounts for around a third of employment in this sector in Scotland.</p> <p>Employment in primary and utilities activities accounts for 10 per cent of total regional employment in the North East compared to three per cent across Scotland as a whole. Employment in this sector is driven by the concentration of oil industry related activities in Aberdeen City and fishing and agricultural activities in Aberdeenshire.</p> <p>The primary and utilities sector is also important to the Shetland and the Highlands and Islands areas, with employment representing 10 per cent and six per cent respectively, of total employment in these</p>

Sector		Primary and Utilities	
Sources / Types of Impact		Qualitative	Quantitative
			<p>areas.</p> <p>The primary and utilities sector across Scotland has experienced a steady decline in recent years, with a net loss of almost 12,700 jobs.</p>
Labour Market Impacts		<p>The energy sector is experiencing skills shortages and difficulties in recruiting labour. A contributory factor to this is the aging workforce, with the average age of the workforce continuing to rise.</p>	<p>The primary and utilities sector is forecast to experience a continued sharp decline over the period 2004 to 2022.</p> <p>In common with the rest of Scotland, the South East region and the Forth Replacement Crossing study area are forecast to experience rapid employment decline in the primary and utilities sector, though at a rate below that of Scotland as a whole.</p>
Land / Property Impacts			
Product Market Impacts	Local		
	Regional	The sector is significantly under-represented in the region, so no regional impact	
	National	Scenario 1: Fishing industry dependent on exports and movement of goods, such that there could be positive effects	

Sector		Primary and Utilities	
Sources / Types of Impact		Qualitative	Quantitative
Overall Impacts	Local Gainers		
	Local Losers		
	Regional Gainers		
	Regional Losers		
	National Gainers	Fishing industry	
	National Losers		
Source: Analysed by Tribal Consulting			

Table EA2 – Qualitative and Quantitative Analysis of First Round Impacts – Manufacturing and Construction

Sector	Manufacturing and Construction	
Sources / Types of Impact	Qualitative	Quantitative
Market / Competitiveness Context	<p>Manufacturing industries across Scotland have experienced a continued sharp decline in recent years, largely due to the emergence of competition from relatively low-cost regions such as Eastern Europe and Asia. This has resulted in many domestic manufacturing companies, particularly electrical and instrumental engineering companies either outsourcing activity or completely closing their Scottish based operations and relocating. However, despite the recent difficulties, Scotland's manufacturing sector is still a significant sector of the Scottish economy.</p> <p>Key sub-sectors have experienced growth over the period 1998 to 2004, including food and drink, chemicals and refined petroleum and nuclear fuel. This highlights that there are still many Scotland-based manufacturers, who through adopting new technologies, increasing labour productivity and moving into higher value sectors, have been able to</p>	<p>Manufacturing and construction activities together employed around 360,000 people in 2004, some 16 per cent of total employment across Scotland.</p> <p>Of these jobs, almost half were concentrated in 'traditional' manufacturing sectors such as food and drink processing, textiles, timber and pulp processing and manufacture of metal goods.</p> <p>'Advanced' manufacturing accounted for less than a fifth of these jobs, while construction activities accounted for around a third of total employment in this sector.</p> <p>The South East region shows a higher than average proportion of employment concentrated in manufacturing industries. Such activities account for</p>

Sector	Manufacturing and Construction	
Sources / Types of Impact	Qualitative	Quantitative
	<p>demonstrate comparative and competitive advantage and expand their output.</p> <p>Business investment in manufacturing R&D has increased significantly in recent years and the latest Community Innovation Survey showed that Scottish companies have some of the highest rates of innovation in the UK.</p> <p>Historically, output and employment in the construction sector have tended to show greater fluctuations than the wider economy, reflecting greater sensitivity to changes in both consumer confidence and the wider economic cycle. Continued growth in the Scottish economy, rising house prices and historically low interest rates are some of the key factors behind the growth in output in this sector in recent years.</p>	<p>almost 20 per cent of all employment in West Lothian, for instance, compared to an average of only 10 per cent across Scotland.</p> <p>Over the period 1998 to 2004, the Highlands and Islands and North East areas experienced a rapid expansion in advanced manufacturing activities.</p> <p>Over the same period, the South East area experienced steady employment growth in construction activities: net growth of 11 per cent compared to a net decline of nine per cent across Scotland.</p> <p>Manufacturing industries across Scotland have experienced a continued sharp decline in recent years, with a net loss of 91,000 jobs in the six years prior to 2004.</p> <p>Construction activities across Scotland have shown a more modest decline over the same period, with a net loss of some 11,900 jobs.</p>

Sector	Manufacturing and Construction	
Sources / Types of Impact	Qualitative	Quantitative
Labour Market Impacts	<p>One of the most challenging issues facing the construction industry is skills shortages, particularly in technical and practical skills.</p>	<p>Manufacturing industries in Scotland are forecast to experience a continued sharp decline over the period 2004 to 2022.</p> <p>In common with the rest of Scotland, the South East area and the Forth Replacement Crossing study area are forecast to experience rapid employment decline in manufacturing activities, though at a rate below that of Scotland as a whole.</p> <p>The South East area and the Forth Replacement Crossing study area are forecast to show steady employment growth in construction activities, compared to almost no change in this sector across Scotland.</p>
Land / Property Impacts	<p>Potential impact on the attractiveness of sites for advanced manufacturing in West Lothian and Fife</p>	

Sector		Manufacturing and Construction	
Sources / Types of Impact		Qualitative	Quantitative
Product Market Impacts	Local		
	Regional	A positive effect on advanced manufacturing already in region and enhancement of potential sites.	
	National	Scenario 1: Food and drink manufacturers are highly dependent on export markets and need to move raw materials to production plants and final goods to market. The North East is a key location for this sector which could be positively affected by the Forth Replacement Crossing.	
Overall Impacts	Local Gainers		
	Local Losers		
	Regional Gainers	Advanced manufacturing	
	Regional Losers		
	National Gainers	Food and drink manufacturing	
	National Losers		
Source: Analysed by Tribal Consulting			

Table EA3 – Qualitative and Quantitative Analysis of First Round Impacts – Private Services

Sector	Private Services	
Sources / Types of Impact	Qualitative	Quantitative
Market / Competitiveness Context	<p>The service sector continues to be the main driver of growth in the Scottish economy, with employment growth most rapid in the financial and business services sub-sector.</p> <p>Scotland has a world-class financial services industry, with the City of Edinburgh being the UK's largest financial centre outside London.</p> <p>The second largest private services industry in Scotland is wholesale and retail activities. According to "Future Patterns of Retailing in Scotland", the development of transport infrastructure will continue to be a major factor influencing retail development and reinforcing the attractiveness to retailing of city centres and edge/out-of-town developments.</p> <p>Tourism is one of the fastest-growing industries in the 21st century and presents Scotland with significant opportunities. However, the decline in air transport costs has increased competition between growing numbers of destinations and Scotland has had to improve its product offering and marketing to remain competitive with world class tourism destinations around the world. The</p>	<p>The private services sector employed over 1.2 million people in 2004, over 50 per cent of total employment across Scotland.</p> <p>Of these jobs, just under a third are located in the South East area.</p> <p>Financial and business services accounted for almost 20 per cent of total employment across the country in 2004, making it the largest private services industry, followed by wholesale and retail activities which accounted for 16 per cent of total employment across Scotland.</p> <p>Other private service sector activities (including hotels and catering, transport and communications and other services) accounted for a further 18 per cent off all jobs in Scotland.</p> <p>Over 20 per cent of all jobs in the South East area are concentrated in financial and business</p>

Sector	Private Services	
Sources / Types of Impact	Qualitative	Quantitative
	<p>importance of transport within a tourism context is set out in a number of reports and policy documents.</p> <p>The transport industry is essential to the success of the Scottish economy because the majority of Scottish businesses rely upon road transport to get their goods to market. Transport also plays a key role in facilitating economic growth in the wider economy. For instance, through business time savings (and/or agglomeration effects), companies can lower costs and take advantage of specialised labour and business services, which have a positive impact on productivity. Transport companies are under increasing pressure in the face of new regulations, high fuel prices and increasing labour costs.</p>	<p>service activities. Overall, the region accounts for over a third of all jobs in Scotland in this key industry.</p> <p>Wholesale and retail activities and hotels and catering activities are of significant importance to the Tayside and Central and Highlands and Islands area, with employment in these industries representing 26 per cent of total employment in both areas, compared to 23 per cent across Scotland as a whole.</p> <p>Employment growth in Scotland in recent years has been driven by rapid expansion in the service sector. This expansion has been most rapid in the financial and business services, where employment grew by over 92,000 jobs over the period 1998 to 2004. The South East region accounted for over a third of the employment growth in this sector.</p> <p>Over the same period, employment in other private sector service activities, such as</p>

Sector	Private Services	
Sources / Types of Impact	Qualitative	Quantitative
		transport and communication and hotels and catering activities, also showed steady expansion.
Labour Market Impacts	Two of the key issues facing the financial services sub-sector are recruiting and retaining staff and ease of access via transport.	<p>Much of the employment growth across Scotland is forecast to be concentrated in services sectors over the period 2004 to 2022.</p> <p>This expansion is forecast to be most rapid in financial and business services, where employment is projected to grow by around 115,500 jobs over the period. The South East area is a key driver of employment growth in this sector: net growth of 36 per cent (or some 52,500 jobs) compared to the national average of 28 per cent. Further, the Forth Replacement Crossing study area is forecast to account for over 60 per cent of the forecast employment growth in this sector in the South East area.</p> <p>Over the same period, employment in other private sector service activities, such as hotels and catering, transport</p>

Sector		Private Services	
Sources / Types of Impact		Qualitative	Quantitative
			and communications and other services are forecast to show steady expansion. Again, employment growth in these sectors in the South East area and the Forth Replacement Crossing Study area is forecast to be above that of Scotland as a whole. This highlights the importance of the South East area as a key driver of economic growth.
Land / Property Impacts		<p>May influence the location of financial and business services companies.</p> <p>May increase attractiveness of sites in west Edinburgh.</p>	
Product Market Impacts	Local		
	Regional	Potential positive impact on financial and business services. Transport businesses may face reduced costs and a greater impact as they could be more dependent on cross Forth movements.	
	National	Potential positive impact on financial and business services. Transport businesses may face reduced costs.	
Overall Impacts	Local Gainers		
	Local Losers		

Sector		Private Services	
Sources / Types of Impact		Qualitative	Quantitative
	Regional Gainers	Financial and business services	
	Regional Losers		
	National Gainers	Financial and business services	
	National Losers		
Source: Analysed by Tribal Consulting			

Table EA4 – Qualitative and Quantitative Analysis of First Round Impacts – Public Services

Sector	Public Services	
Sources / Types of Impact	Qualitative	Quantitative
Market / Competitiveness Context	<p>“Transforming Public Services: The Next Phase of Reform” highlights the importance of public services, “efficient public services help drive our economic performance by helping to equip people with the education and skills required in a competitive economy, and by providing the infrastructure for enterprise to flourish”.</p>	<p>The public services sector employed around 680,000 people in 2004, almost 30 per cent of total employment across Scotland.</p> <p>Of these jobs, almost 30 per cent are located in the South East area.</p> <p>Shetland and the Highlands and Islands areas are characterised by high proportions of employment concentrated in public services: employment in public sector activities accounts for a third of total employment in these areas.</p> <p>Public sector services have shown rapid expansion in the six year period 1998 to 2004, where employment grew by almost 122,400 jobs.</p>
Labour Market Impacts		<p>Employment growth in public sector service activities is forecast to show steady employment growth across Scotland over the period 2004 to 2022. Total</p>

Sector		Public Services	
Sources / Types of Impact		Qualitative	Quantitative
			employment in this sector is forecast to increase by 13 per cent or over 90,000 jobs across Scotland.
Land / Property Impacts		Neutral	
Product Market Impacts	Local		
	Regional	Neutral	
	National	Neutral	
Overall Impacts	Local Gainers		
	Local Losers		
	Regional Gainers	Neutral	
	Regional Losers	Neutral	
	National Gainers	Neutral	
	National Losers	Neutral	
Source: Analysed by Tribal Consulting			