



A Performance Assessment of the Knowledge Economy in Bournemouth, Dorset and Poole Sub-Region

A report for Bournemouth Borough Council

July 2008



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About Geoeconomics

Geoeconomics is a research and strategy consultancy which works on innovative approaches to economic development for governments, businesses and third sector organisations. We assess the impacts of policy and business decisions on local, regional and national economies. Our research and consultancy activities address the knowledge economy, the inclusive economy and the interdependent economy. Please visit our web site www.geoeconomics.com.

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Executive Summary

Bournemouth, Dorset and Poole (BDP) Economic Partnership aim to “build a successful knowledge-based economy which can retain business and compete effectively in Europe and the rest of the world”. The Multi Area Agreement is expected to be a powerful new vehicle for achieving this goal. This baseline assessment of the BDP knowledge economy will inform the Partnership’s evidence-based policy work.

The analysis distinguishes between the Bournemouth and Poole Travel Area (BPTA: Bournemouth, Poole, Christchurch, East Dorset and Purbeck) and the Rest of Dorset (ROD: Weymouth and Portland, West Dorset and North Dorset).

Chapter 3 presents the results of our assessment of the structural performance of the BDP knowledge economy:

- The BDP sub-region is a ‘two-tier’ knowledge economy – a high performance BPTA, a low performance ROD. The ‘east-west divide’ that runs through the South West regional knowledge economy cuts across the Sub-Region.
- The BPTA has a knowledge-intensive sector profile that is close to the national average however its earnings performance is well below what we would expect to find. This is probably due to the occupational profile of the BPTA workforce in large companies and the great weight of the tourism-related sectors. The ROD area lags well behind the national average.
- By 2006 one in two jobs in the BDP Sub-Region were generated by private and public knowledge-intensive sectors, and this figure is gradually moving upwards. The implication of this finding is that the BDP learning and skills infrastructure – schools and FE/HE, training provision and workplace development – will need to continually improve and keep pace with employer demands.
- Counter to national and regional trends the job-generating power of the BPTA business knowledge economy was maintained between 1998 and 2006, with large and micro firms in financial and business services leading the way – the other significant driver was transport equipment manufacturing. The ROD knowledge economy also had a dynamic, small-scale business services sector, but otherwise was extremely dependent on public services. Consumer services, including tourism, made up the rest of the ROD economy, and in the BPTA outweighed knowledge-intensive sectors as employers.
- In line with the national and regional averages about 35 per cent of the BDP business stock was concentrated in knowledge-intensive sectors. However on closer analysis it appears that enterprise development was narrowly concentrated on business services and construction-related activities. The current recession and slump in construction could seriously threaten the Sub-Region’s enterprise performance.
- Every local authority area within the BDP Sub-Region has climbed up the ‘knowledge economy ladder’ of competitiveness within the South West region, thus confirming the strategic priority status which is accorded in the regional economic and spatial strategies and the successful drive to establish an MAA



Chapter 4 presents the results of our assessment of the outcome performance of the BDP knowledge economy:

- BDP resident and workplace earnings lag behind the rest of the country. Recent trends show the BPTA strongly catching up with the national average workplace earnings (a sign of a strengthening knowledge economy), but falling further behind on resident earnings. The ROD area is falling further behind the rest of the country and the region on both indicators.
- The BDP labour market is generally healthy in terms of its overall qualifications profiles and employability performance. However the area's low earnings performance show that the issue facing the Sub-Region is not the quantity of jobs but the quality of jobs – at all levels. Further the graduate labour pool needs to be scaled up in order to support higher levels of knowledge-intensive economic development. Income and employment deprivation problems exist as they do in prosperous and lagging sub-regions of Britain, but it should be recognised that these problems will be exacerbated by a recession and a knowledge economy future of dwindling unskilled job opportunities.
- The enterprise performance of the BDP Sub-Region is mixed. Further there is evidence of strong local economic dynamism which enterprise development thrives on. However the exceptional overall picture of enterprise growth in the BPTA is clouded by a lagging performance in knowledge-intensive sectors. This tends to exacerbate the low job quality problem. More fundamentally the lower knowledge-intensity of business growth could threaten the overall BDP target of building a high value economy which is environmentally sustainable.

Chapter 5 addresses issues to do with performance management which we hope will be useful to the BDP Economic Partnership and to the delivery of the new MAA:

- With a recession in prospect, we recommend keeping a close watch on the BDP economy – shortening MAA time frames in monitoring the performance of key sectors and businesses. The role of the proposed sector partnerships in aligning business and local economic interests is now extremely important.
- We recommend using separate performance indicators for the BPTA, ROD and whole BDP Sub-Region to maximise transparency and shape strategic priorities for a long-term growth strategy. We also recommend adding resident-based earnings to the workplace-based earnings and GVA per head target indicators to more directly reflect the 'place-making' agenda of BDP local strategic partnerships.
- We recommend undertaking a place benchmarking exercise to identify similar sub-regions of the UK and the EU (perhaps North America) against which the BDP Sub-Region could sensibly measure its current and future economic profile. Place-based benchmarking will help to bring the MAA vision and long-term action plan to life.
- We recommend using a model of 'knowledge-intensive businesses' to design and deliver the MAA/economic development strategy. A more integrated, business-centric and dynamic approach is needed given the idiosyncratic nature of intellectual capital assets and the way they shape business strategies. We recommend developing a matrix framework – business by sector – to identify and evaluate the support, accommodation and infrastructure (ICT) needs



of knowledge-intensive businesses. Up-to-date and comprehensive business intelligence is essential to knowledge-intensive business support policies. The silo-less culture and structure of knowledge-intensive businesses has to be matched by the BDP partnership and its various delivery agencies.

Finally, as a simple but powerful frame of reference, we recommend drawing on the forward-looking ideas of Charles Handy as set out in his book *The Elephant and the Flea*. Handy's 'elephants' are large companies and large public sector organisations; his 'fleas' are micro and agile knowledge-intensive businesses. The BDP Sub-Region economy depends on the business performance of its 'elephants and fleas'. The new *Innovation Nation* white paper contains a variety of proposals which could reinforce and sharpen the innovation-enterprise strands of the MAA, with the proposed sector-based partnerships possibly taking the lead:

- The new sector development partnerships could create a baseline picture of the level and composition of business linkages between BDP private sector 'elephants' and BDP knowledge-intensive 'fleas' – and also the university-college knowledge infrastructure. How much scope is there for raising levels of local outsourcing and contracting-out, developing more extensive supply chains and networking to help with knowledge and skills transfer? Can academic entrepreneurship become a cornerstone of a new BDP local innovation system?
- A parallel set of sector development partnership should do the same work across the public services. The BDP Economic Partnership could develop its own response to the "Innovation Nation" white paper. To a large extent the 'ball is in the court' of BDP public sector employers – what is the current baseline for their commercial transactions with local BDP businesses? Are BDP public service organisations ready and willing to play a more proactive role in the area's knowledge economy?



1 Introduction

The mission of Bournemouth, Dorset and Poole (BDP) Economic Partnership is to “build a successful knowledge-based economy able to retain business and compete effectively in Europe and the rest of the world” (*Draft Economic Strategy Action Plan, 2008-2026*, June 2008). The new Multi Area Agreement (MAA) for the BDP Sub-Region is seen as a powerful vehicle for achieving this goal. By 2026 the Partnership aims to overtake the national average on productivity and earnings. Success for the BDP Sub-Region has wider significance for the South West regional economy, given the strategic status accorded to its cities and towns in the SWRDA economic strategy and draft Regional Spatial Strategy.

The Partnership believes that the Sub-Region already possesses “many of the key ingredients to build a successful knowledge-based and higher-value economy” (MAA) – for example, its financial services and advanced engineering companies, higher and further education institutions and its natural environment. However, it has identified strategic priorities for action (MAA) in five areas: Business Growth and Employment Land; Skills; Transport and Connectivity; Housing and Environment. The analysis in this report mainly covers the business and skills components of the MAA economic strategy.

1.1 Aims and Objectives

The purpose of this assessment of the BDP knowledge economy is to inform the Partnership's ongoing process of evidence-based policy development. Its main objectives are:

- To provide a performance framework for assessing the BDP knowledge economy
- To produce a baseline analysis of the BDP knowledge economy
- To identify any significant issues for consideration by the BDP Economic Partnership

As required, our economic analysis of the BDP Sub-Region distinguishes between the Bournemouth and Poole Travel Area (Bournemouth, Poole, Christchurch, East Dorset and Purbeck) and the Rest of Dorset (Weymouth and Portland, West Dorset and North Dorset). The geographical boundaries are shown in Chart 1.

The report's quantitative data analysis was enriched with the proceedings of a stakeholder workshop held on 9th July 2008. However a separate programme of key informant interviews was not carried out as part of the study.

1.2 Plan of the Report

The report is organised into the following chapters:

Chapter 2 sets out our methodology for assessing the performance of the BDP knowledge economy. This chapter should ideally be read together with the technical discussion reserved for the Annex.

Chapter 3 presents the results of our *structural performance* analysis of the BDP knowledge economy. Here we highlight the national position of the BDP Sub-Region in the national knowledge economy, and provide a rough estimate of its performance 'gap' that the Partnership

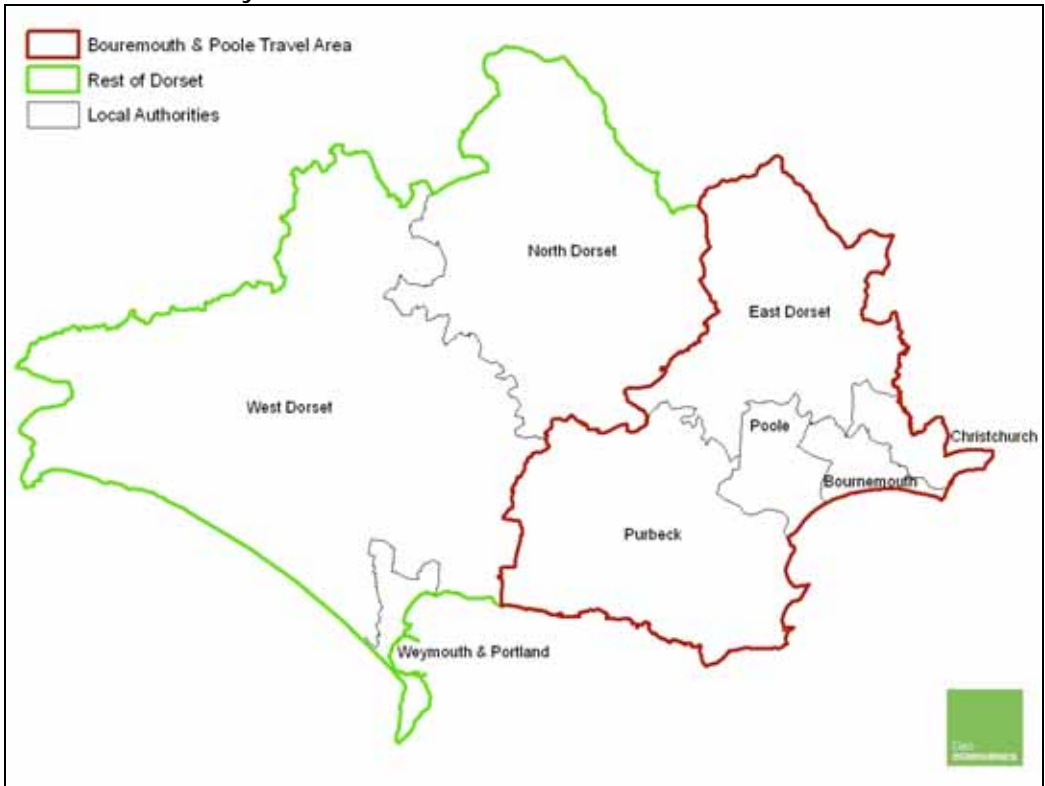


is seeking to close. Performance is benchmarked against the South West regional average and the national average for Great Britain.

Chapter 4 presents the results of our *outcome performance* analysis, focusing on indicators such as earnings, learning and skills and enterprise. Again the performance of the BDP Sub-Region is benchmarked against the regional and national averages.

Chapter 5 synthesises the study’s key findings and suggests what they mean for the BDP Economic Partnership. We present these as issues to consider, rather than an agenda of action points.

Chart 1.1: The Study Area





2 The Geoeconomics Performance Framework

This chapter explains the methodology used to assess the BDP Sub-Region’s performance as a knowledge-intensive economy. It concentrates on measurement and indicators. The conceptual element of the Geoeconomics performance framework can be found in the Annex. We strongly recommend reading both the conceptual and measurement elements of the methodology in order to understand the framework.

2.1 Structures and Outcomes

The Geoeconomics approach distinguishes between *structures and outcomes* in analysing local economic performance. The DCLG national list of LAA indicators concentrates on outcomes – the symptoms rather than the causes of economic change. However, it is structures – industrial, occupational, demographic, political, spatial and so on – which shape economies and determine outcomes at all levels. The BDP Economic Action Plan and MAA has adopted two high level *outcome* indicators – higher GVA per head (and per worker) and higher average weekly earnings. Trends in *structural* performance are expressed in general terms as a successful a ‘transition to a high value knowledge driven economy’ – as measured by key sectors, skills, innovation, enterprise and other metrics. Therefore, our approach is broadly consistent with the BDP approach to performance management.

- **The knowledge economy agenda is about understanding and improving structures to bring about better outcomes.**

Chart 2.1 illustrates the structure-outcome format of the Geoeconomics framework. For this baseline economic assessment, we will concentrate on economic development outcomes and indicators, rather than all three aspects of sustainable development – including social and environmental development. Thus, the assessment is relevant to the shared economic objectives of the new MAA for the BDP Sub-Region.

Chart 2.1: The Geoeconomics Performance Framework

| Economic Base 'Structures' | Knowledge Economy 'Structures' | Sustainable Development 'Outcomes' |
|--|-----------------------------------|---------------------------------------|
| Knowledge >>>>>>>> Public Sector Consumption | Knowledge-intensive Sectors | Economic Social Environmental |
| National Data Sets | National Data Sets | National Data Sets |

Source: Geoeconomics

We look at three dimensions of structural change in the BDP economy in terms of three broadly defined sector groupings:

- *Private knowledge-intensive sectors* – see below for our definition and classification – which are highly-endowed in intangible or intellectual capital, and driven by globalisation, technological change and industrial restructuring (please see Annex)



- *Public services sectors* – which fall within our knowledge-intensive sector classification – but which are driven by government policies and modernisation agendas, demographics and cultural attitudes
- *Consumer services sectors* – which are generally low-intensity knowledge, low value sectors, driven by household spending (the dominant component of GVA) and a variety of demographic and cultural factors, as well as new technology (internet shopping)

Thus, our approach to performance assessment is more comprehensive than approaches that only measure trends in ‘knowledge-intensive sectors’. We also look at parallel trends in lower-value consumer services, as well as the relative weights of the private and public sectors of the knowledge economy. This gives a more rounded picture of structural performance and its associated outcomes.

2.2 Classifying Knowledge-Intensive Sectors (KIS)

Knowledge-intensive economies, sectors and businesses are rich in intangible capital, intellectual capital and human capital – please see Annex. Economists agree that human capital – the knowledge, skills and other competences of the workforce – is the main driver of economic growth and competitiveness in advanced economies – and hence in the BDP economy.

We use the proportion of the workforce with a degree and the proportion engaged in professional, managerial and scientific and technical occupations as a proxy measure of knowledge-intensive economic activity. Using this dual threshold criterion (which will change over time) we created a classification of ‘knowledge-intensive sectors’ using published occupation-by-industry employment data – see Chart 2.2.

- **Knowledge-intensive sectors are industries that satisfy two basic criteria: at least 25 per cent of the workforce must be qualified to degree level and at least 30 per cent must be employed in professional, managerial and scientific and technical occupations.**

This definition combines two basic indicators for measuring the knowledge-intensity of economic activity. The occupational criterion enables us to cover the entire range of knowledge-based functions in organisations, such as management, marketing, logistics and human resources - rather than simply R&D and technology related functions, which do not properly reflect the knowledge-base functions of local businesses. The degree criterion captures the centrality of generic analytical and cognitive capabilities, and the codification of knowledge in businesses, public services and other sectors. It is a proxy measure of “competence intensity” .

Chart 2.2: The Geoeconomics Classification of Knowledge-Intensive Sectors, Great Britain, 2005

| Markets | Manufacturing Production Oil & gas extraction Tobacco products Printing, & publishing Coke, petrol, nuclear Chemicals/products Office machinery, computer manufacture Electrical machinery Radio, TV, & communication equip. Medical, precision & optical equip. Motor vehicles Other transport (incl. aerospace) | Private Services <i>Financial & Business:</i> Finance Real estate Computer-related R&D Professional <i>Cultural:</i> Travel agencies Radio, TV Other entertainment News agencies Museums, libraries, archives Motion picture, video | Public Services <i>Education:</i> Higher Secondary Primary Adult other <i>Health & Social Work:</i> Human Veterinary Social Work |
|---------|---|---|--|
| | | | |



| | | | | |
|-----------------------|---|---|------------------|---|
| Infrastructure | Utilities Electricity, gas, etc Water | Transport Railways Sea/inland | Pipelines Air | Telecommunications Telecommunications |
| | Government Public Administration Defence, law, fire, etc Compulsory social security | Non-Governmental Organisations Business, employers & professional organisations Trade unions Other membership and non-profit bodies | | |

Source: Geoeconomics, ONS

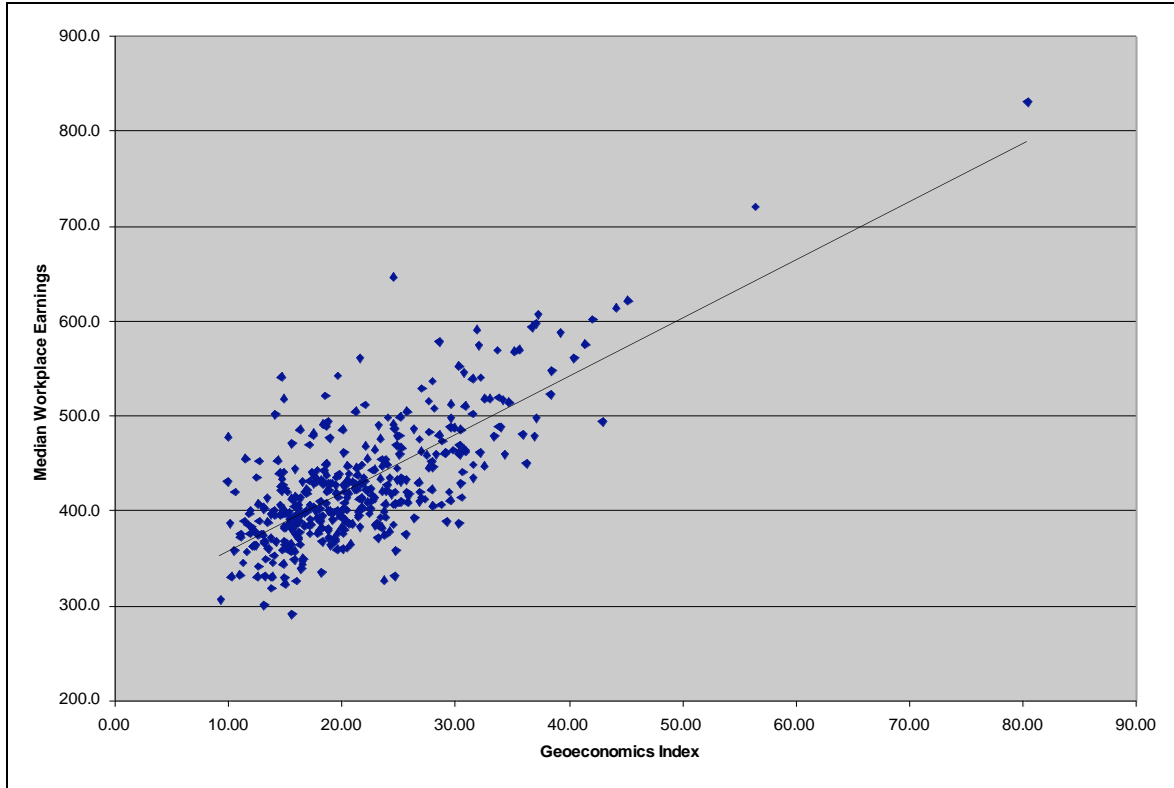
The Geoeconomics classification is broadly similar to the ‘knowledge industries’ taxonomy used by the OECD and the European Commission (see Annex). In Chart 2.2 the yellow and grey boxes crudely represent the public and private sectors respectively. We have included various parts of public services as ‘knowledge intensive’ sectors because they meet the threshold criteria underlying classification. In fact, universities and colleges are actually counted as part of the private sector in the national economic accounts, because all institutions with charity status are treated in this way. Privatisation has, of course, created businesses out of former public services – such as care homes. Several sectors included in the above Geoeconomics ‘grid’ are prioritised by the BDP strategy, such as aerospace and marine engineering, air transport, financial and business services. Tourism does not appear in the ‘grid’ – note however that the objective is to build a higher value (knowledge-intensive) tourism sector. Treating the public sector as an integral part of the BDP knowledge economy is essential to understanding the Sub-Region’s future growth and development. It is notable that the MAA refers to “a strong public sector as an important generator of economic activity across the sub-region”.

At a high level of aggregation, the BDP economic strategy should aim to grow the private sector components of the knowledge-intensive sector grid. The rationale for this strategic objective is evident from Chart 2.3, which shows that the Geoeconomics Index – the total employment share of all private knowledge-intensive sectors (the grey cells) – predicts nearly two-thirds of local variation in workplace earnings across Great Britain. Hence, relatively more business and job creation within the ‘knowledge economy grid’ will probably lead to higher earnings and productivity overall (about 60-65 per cent of value added is accounted for by earnings). This argument is at the heart of the BDP economic development strategy.

It is essential to understand that this type of sector-based classification does not measure the complete scale and composition of the knowledge economy. Many of the BDP Sub-Region’s knowledge-intensive businesses operate in sectors other than those shown in the ‘grid’ (Chart 2.2). Further some businesses in the BDP area may be categorised as being part of a knowledge-intensive sector, when in fact their local business activities are of low-knowledge intensity. Large multi-site companies in ICT or logistics may have their knowledge-intensive headquarters and technical functions inside or outside the BDP area – ditto for their component assembly and distribution functions. Therefore, the sector and the business may share the same knowledge profile, or they may not – BDP strategists need excellent business intelligence to back up a case-by-case approach.

Chart 2.3: Geoeconomics Index and Workplace Earnings, All Local Authorities, 2006

The ‘best fit’ equation is Median Earnings = 305 + 5.44* Geoeconomics Index + 75.9* London Effect (Dummy Variable). R2 = 0.64 (64% of variation in earnings is explained by variation in the Index).



Source: Geoeconomics, ONS

2.3 Performance Indicators

The **structural indicators** used in the Geoeconomics Framework are shown in Chart 2.4. They are based on the grid of knowledge-intensive sectors (Chart 2.2). This family of indices provides a sector-based perspective on the BDP knowledge economy.

Chart 2.4: List of Structural Indicators

| INDICATOR | MEASURE | INTERPRETATION |
|-----------------------------|---|--|
| Geoeconomics Index | Combined employment share of private knowledge intensive sectors (as listed in Chart 2.2) and the following additional high productivity sectors: Fishing, mining, clothes manufacture, leather goods, pulp and paper products, manufacture of other mineral products, renting, and sewerage / refuse disposal. | The Geoeconomics Index score measures the value-creation power of a local economy. Trends in the GI show whether this economic power is increasing or decreasing. A high and rising GI score can lead to higher levels of net in-commuting if local residents do not have competitive skills. A low and declining GI ratio could be a sign of more out-commuting to more competitive centres such as central London. |
| GI-Consumption Index | A ratio of employment shares: Private knowledge intensive and high productivity sectors (GI) / Consumer services | This index indicates whether a place is becoming more global business and office based, rather than more local town-centre and services based. Low scores can indicate specialisation in tourism and major shopping malls, as well as 'suburbia'. A downward trend can be a sign that an area's traditional industrial base is eroding, or that an area is evolving a prosperous commuter zone near a big city. |
| GI-Public Index | A ratio of employment shares: Private knowledge intensive and high productivity sectors (GI) / Public services | This index enables policy makers to evaluate the respective economic roles of the private and public sectors. A targeted |



| | | |
|---|--|--|
| | productivity sectors (GI) / Public services | strategy may aim to increase the tradable services potential of health and education. Areas with low score will tend to be more localised economies on the whole, with high female economic rates and more part-time working. |
| Geoeconomics Knowledge Economy Index | Employment share of all knowledge-intensive sectors shown in Chart 2.2, including private and public sectors | This index measures the overall knowledge-intensity of the local economy. A high and rising score indicates that an area is highly specialised in knowledge-intensive sectors, however the decisive performance factor is the degree to which the knowledge economy is private or public sector led. |
| Business Knowledge Economy Index | Employment share of the private knowledge-intensive sectors – as shown in the grey boxes in Chart 2.2 | A high and rising score on this index indicates a strong or strengthening of the local economy’s high value business drivers and underlying globalisation trends. This demands higher level of skills and innovation, particularly in extremely specialised economies. |
| Public Knowledge Economy Index | Employment share of the public sector knowledge-intensive sectors – as shown in the yellow boxes in Chart 2.2 | A high and rising score on this index indicates a dependence on public services, and weak business drivers. This situation prevails in older urban industrial areas and much of the countryside. The threat to these local economies comes from a downward shift in government spending. These areas have highly localised economies with low earnings levels. |
| Other knowledge economy indices | Employment shares of the ‘Production’ and ‘Private Services’ components of the Knowledge-Intensive Sector Classification – see Chart 2.2 | These indices enable policy makers to identify the shifting importance of the knowledge economy’s business drivers. There is a universal trend towards knowledge-intensive services, manifest by the sector-based growth of business services and the rising competence intensity of manufacturing, transport and utilities (innovation and skills profiles) |

Source: Geoeconomics

The **outcome indicators** used in the Geoeconomics framework are shown in Chart 2.5. They will be familiar to BDP policy makers and some appear in the MAA.

- **Earnings** indicators distinguish between workplace and residence-based earnings. The ‘economy’ segment of the national list of LAA indicators includes the former but not the latter measure, although workplace earnings is the key benchmark of how well a local economy is performing in terms of job and enterprise quality. In a relatively open local economy a high level of resident earnings can be sustained by commuting to more competitive knowledge economy centres outside the area. In an economy with only a small proportion of its residents commuting across its boundaries to work resident and workplace earnings will be similar. If a high resident earnings level is the singular objective, this is achievable by building more high-end homes for ‘knowledge worker’ migrants and facilitating out-commuting.
- **Learning and Skills** indicators are clearly relevant to both ends of the labour market. The relative size of the graduate labour force can be treated as a double-edged structure and outcome indicator (like all skills measures). Low qualifications and skills are the root cause of worklessness and exclusion. The balance of high-to-low skills can be obtained by weighted averages and the ratio of graduates to less qualified groups in the working age population.
- **Employability** indicators are more straightforward, with perhaps the most interesting one being the propensity to work or worklessness measure, because it may point to deep-seated exclusion issues in the local labour market.
- **Enterprise** indicators are measures of economic dynamism and entrepreneurial culture. We measure VAT registered businesses per head, broken down by knowledge-intensive sectors, as well as local economies as dynamic market environments that favour enterprise.



- *Income and employment deprivation* indicators are measures of labour market exclusion in a modern knowledge economy, where employers place a higher value on human capital. A major concern, recognised by the UK Government and European Parliament, is that current patterns of knowledge-intensive development will lead to a shrinking number of jobs for a significant minority of people with low-to-no skills.
- *Housing* indicators measure the affordability and quality of homes for a range of workers, including professional, managerial and scientific and technical workers, new graduates and key workers in public services, all of whom are needed to meet the rising skills requirements of a modern knowledge economy.
- *Commuting* indicators measure the degree of interdependence between the local economy and its hinterland, and the relative competitiveness of employment centres. Focusing on 'knowledge worker' commuting gives a geographical picture of the human capital base of a given knowledge economy.

Chart 2.5: List of Outcome Indicators

| DOMAIN | INDICATOR | MEASURE |
|--|--|---|
| Earnings | Resident based earnings Workplace based earnings Resident versus workplace earnings | 1. Median earnings of people living in the area, 2007 2. Change 2002-07 3. Median earnings of people working in the area, 2007 4. Change 2002-2007 5. Ratio between residence and workplace earnings, 2002 to 2007 |
| Learning and Skills | Graduate labour force Low skilled workforce Balance and range of skills Average skills picture | 1. Proportion of working age population with level 4 qualifications, 2006 2. Proportion of working age population with less than level 2 qualifications, 2006 3. Ratio of level 4/level 2 workforce, 2006 4. Weighted average qualifications (NVQ) of resident working age population, 2006 |
| Employability | Overall employment picture Worklessness problem Participation of elderly workers | 1. Total employment rate, July 2006/June 2007 2. Change 1998-2007 3. Proportion of working age population who are economically inactive but want a job, 2006/7 4. Economically inactive rate for people over retirement age, 2006 |
| Enterprise & Local Economic Environment | Propensity to start-up and run business Dynamism of micro and small knowledge-intensive businesses Buoyancy and dynamism of the local economy and its markets Vitality of local labour market as generator of consumer spending | 1. VAT businesses/10,000 working age population: 24-59 age group only, 2006 2. Change, 1998-2006 3. Proportion of businesses in knowledge intensive sectors, 2006 4. Change 1998-2006 5. Change in local GVA compared against national average, 1995-2006 6. Change in local employment compared against national average, 1998-2006 |
| Income and Employment Deprivation | Incidence of marginalisation in the knowledge economy era Labour market exclusion in a high skill economy | 1. Income Domain of Index of Multiple Deprivation score, 2007 2. Employment Domain of Index of Multiple Deprivation score, 2007 |
| Housing | Affordability is relevant to key workers and young talented people | 1. House price to income ratio, 2007/8 2. Average house price, 2007/8 3. Average price of flats, 2007/8 |



| | | |
|------------------|--|---|
| Commuting | 'Knowledge worker' travel to work patterns | 1. Commuting flows for professional, managerial, scientific and technical workers, 2001 |
|------------------|--|---|

2.4 Summary

The 'knowledge economy' is an economy in which intangible capital – such as management and leadership, organisational structure, brands, customer and supplier relationships, innovation and work practices, etc – is the main source of growth and competitiveness, compared against tangible capital, such as physical plant and equipment, land and other infrastructure. By the 1920s, advanced industrialised countries such as the UK were already 'knowledge economies. However intangible capital is hard to measure accurately and is routinely left off the balance sheets of firms and hence the national economic accounts. In the 1990s, US economists already claimed that no more than 30 per cent of the productivity data was reliable as a basis for policy-making. The above points are discussed in Annex.

Here we have explained our approach to measurement. The Geoeconomics Performance Framework analyses structural change in terms of trends in market-based knowledge-intensive sectors, public services and consumer services. We have also differentiated between structural and outcome indicators, the latter being the 'triggers' and the former the 'levers' of economic development strategy. LAA indicators are outcome-focused and in the public domain. Structural indicators need to be theoretically supported and methodologically robust.

The following two chapters present the results of applying the Geoeconomics Performance Framework to the BDP Sub-Region, differentiating between the Bournemouth and Poole Travel Area and the Rest of Dorset.



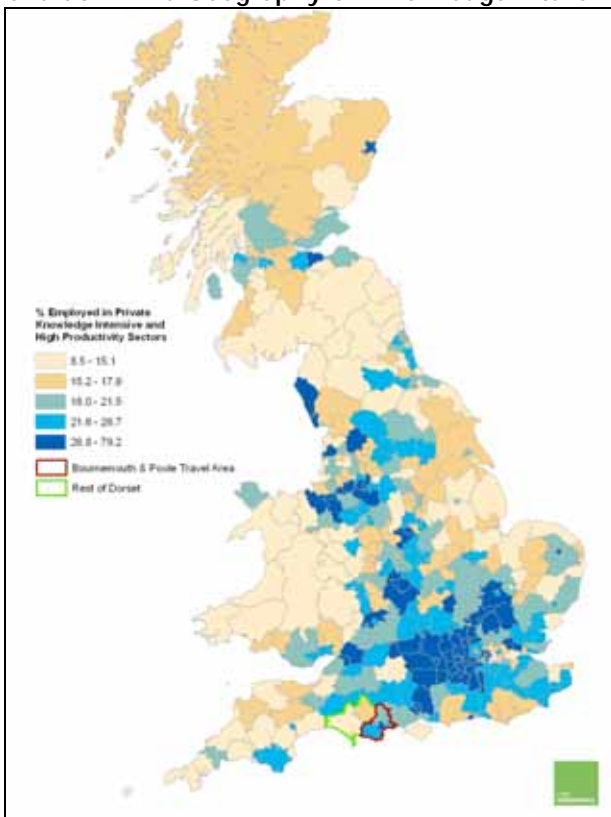
3 Results for Structural Performance

This chapter presents the results of assessing the BDP Sub-region’s structural performance using the Geoeconomics Indices listed in Chart 2.5. BDP’s performance is compared against the averages for the South West region and Great Britain. The trend analysis covers the period 1998 to 2006. In addition to employment, we look at recent changes in BDP’s business stock, again using the knowledge-intensive sector classification system.

3.1 The National Context

Chart 3.1 shows where the BDP Sub-region is positioned on Britain’s knowledge economy landscape. The colour scheme indicates the degree to which a given local (authority) economy is specialised in high productivity/knowledge intensive sectors. The darker blue and cream colours indicate high and low levels of specialisation in GI sectors.

Chart 3.1: The Geography of Knowledge-Intensive Economic Activity in Great Britain, 2006



Source: Geoeconomics, 2008, ONS data

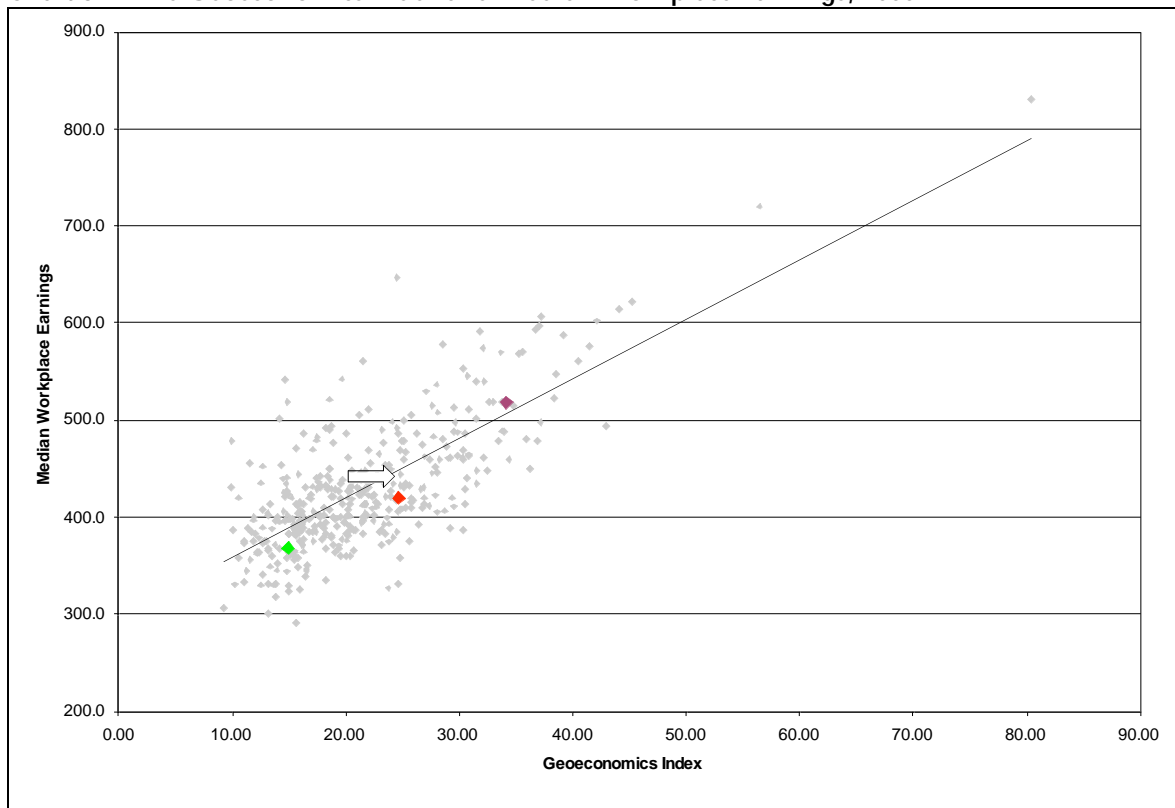
The BDP Sub-Region is located on the ‘edge’ of the powerful London and Greater South East knowledge economy, and has a significant east-west divide which mirrors the same geographical bias in the South West region as a whole. At the scale of individual local authorities, Bournemouth, Poole and Purbeck all fall within the second national quintile (the second tier of five) of knowledge-intensive economies as measured by the Geoeconomics Index. Christchurch and



East Dorset, the remaining members of the Bournemouth and Poole Travel Area fall in the third quintile. In contrast, within the Rest of Dorset Weymouth falls in the fourth quintile while both North and West Dorset fall in the lowest national quintile, emphasising the sharp east-west decline in knowledge intensity within the Sub-Region.

Another view of BDP’s competitive position and its implications for workplace earnings (which makes up 60 per cent of GVA/productivity) is given in Chart 3.2. Here the positions of BPTA (red) and the Rest of Dorset (green) are added together with the overall score for Great Britain shown as an arrow. BPTA has a GI score that is very close to the national average but a level of workplace earnings that is somewhat lower than would be expected. There are two plausible explanations for this earnings gap. First, the Sub-Region may be relatively more specialised in low-to-middle order functions (as indicated by occupational profiles) within certain knowledge-intensive sectors (the classic example is ‘back office’ work in financial services. Second it may be due to the relatively large number of relatively low paid service jobs in the BPTA tourism sector, which has the effect of pulling down the overall profile of earnings. Local earnings in the Rest of Dorset (ROD) are slightly below what might be expected from its GI score. This effect is, however, far outweighed by its short fall of knowledge intensive private sector activities.

Chart 3.2: The Geoeconomics Index and Median Workplace Earnings, 2006



Source: Geoeconomics, ONS

From a benchmarking perspective, it is clear that ROD should aim to improve its competitive position ‘rightwards and upwards’ on the graph, given that a higher GI score will lead directly to higher workplace earnings.

- In round numbers, for the Rest of Dorset to reach the position of the national average within Chart 3.2 would require the presence of about 7,500 more jobs in knowledge intensive private services within its local economy.



The short term priority for BPTA is to raise the level of local earnings towards the national average by supporting the development of as many high quality knowledge-intensive job opportunities as possible. In the longer term a possible strategy is to aim to increase its GI score to a level that is more comparable with some of the local economies in the core areas of London and the greater South East.

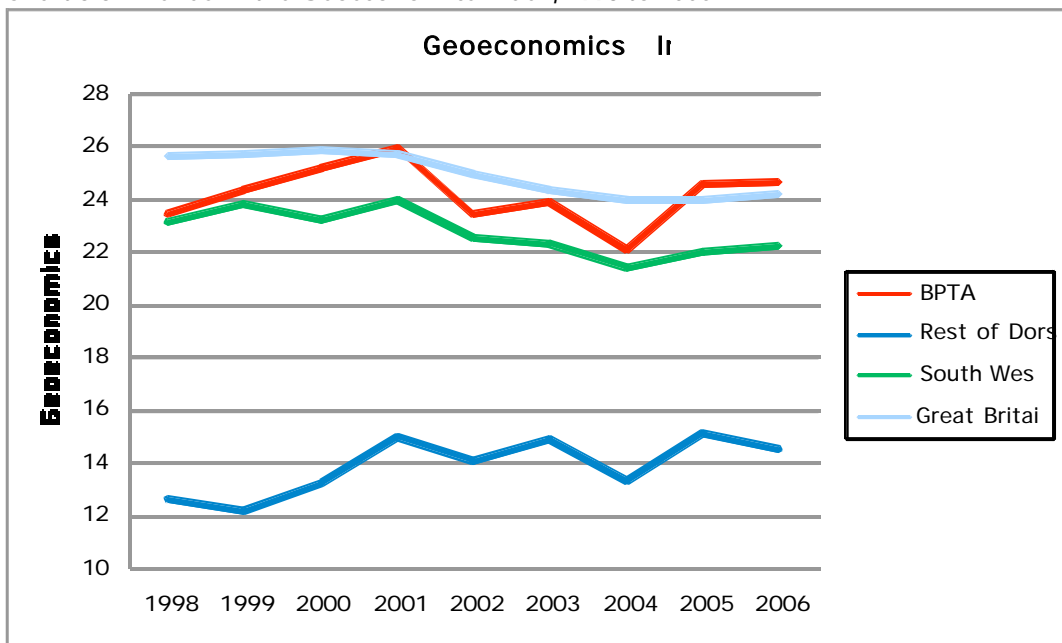
- For example, BPTA could be benchmarked against Basingstoke and Deane (marked in purple in Chart 3.2). The level of earnings in Basingstoke is very close to what would be expected from its GI score, with a median level that is approximately £100/week higher than that in BPTA. To achieve this position on the graph BPTA would require about 20,000 more private sector knowledge intensive jobs within its local economy.

3.2 Recent Trends in the Geoeconomics Indices

The Geoeconomics Index (GI) – Chart 3.3

The chart below is encouraging in showing that the BPTA has a more competitive knowledge-intensive sector profile than the South West and Britain as a whole. Importantly, this favourable profile has improved since 1998 at a time when national and regional trends were downward. We can also clearly see that ROD has a very weak base of private sector knowledge-intensive sectors, although again there has been some improvement since 1998.

Chart 3.3: Trends in the Geoeconomics Index, 1998 to 2006



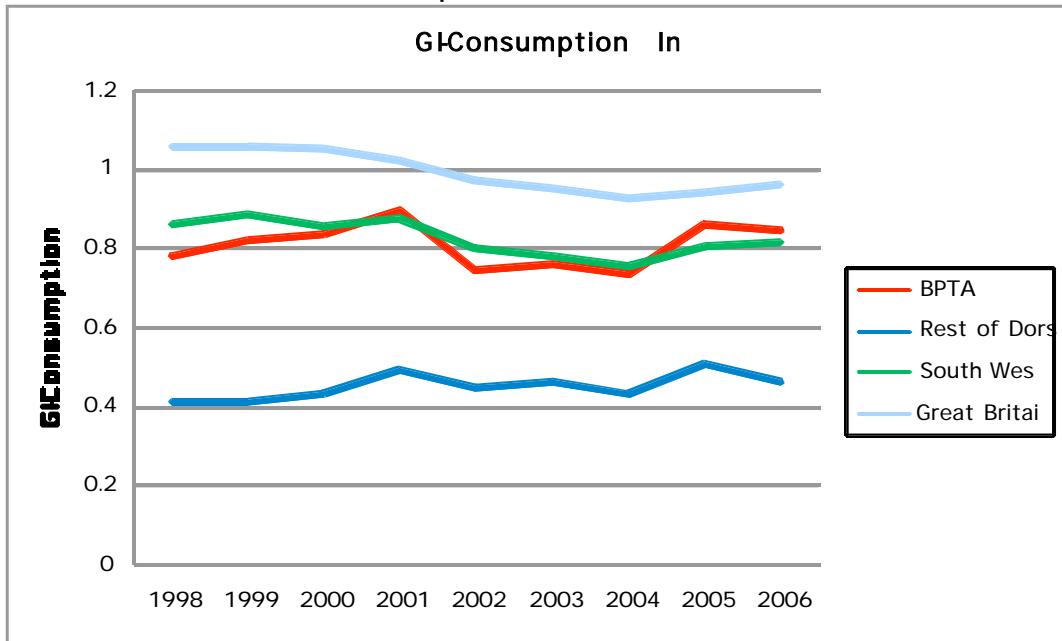
Source: Geoeconomics, ONS

The GI-Consumption Index (GICI) – Chart 3.4

Perhaps more negatively, in light of our earlier remarks on relatively low earnings – despite of a nationally competitive GI score – consumer services employment far outweighs knowledge-intensive sector employment in the BPTA. However the Index showing this net balance slightly improved in favour of high value sectors slightly since 1998 – a direction of change which the MAA is seeking to reinforce. The private sector of the ROD economy is extremely dependent on consumer services.



Chart 3.4: Trends in the GI-Consumption Index, 1998 to 2006

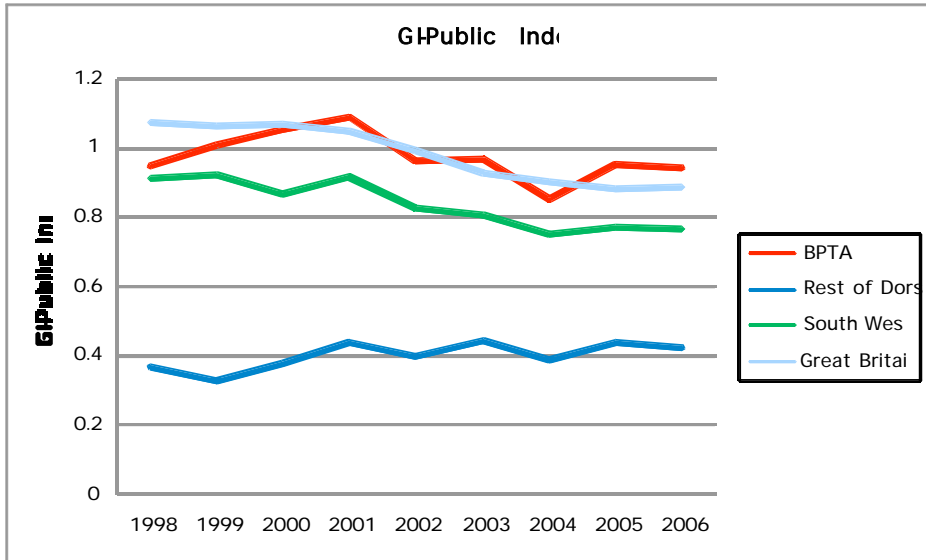


Source: Geoeconomics, ONS

The GI-Public Index (GIPI) – Chart 3.5

Employment in the BPTA knowledge economy is finely balanced between the private and public sectors, the latter having expanded during the Blair Administration – but the future job outlook is uncertain to weak. Chart 3.5 shows that the BPTA is much less dependent on the public service employment than the South West as a whole, where the Index is on a downward trend. Clearly the second ‘big leg’ of the ROD economy is public services, the first being consumer services – which is why its workplace-based earnings performance is so poor.

Chart 3.5: Trends in the GI-Public Index, 1998 to 2006

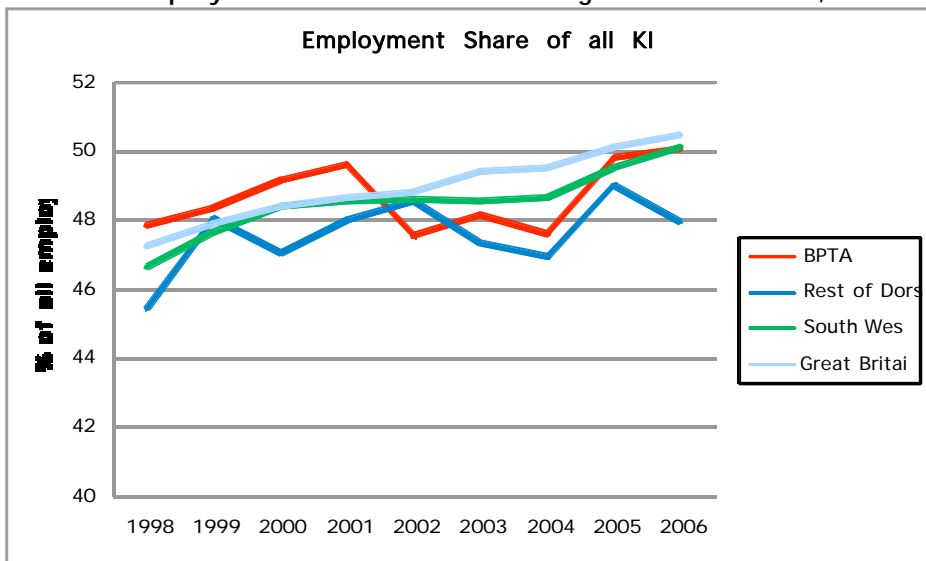


Source: Geoeconomics, 2007, ONS

The Geoeconomics Knowledge Economy Index – Chart 3.6

The BDP economy is becoming more knowledge intensive at all levels. By 2006, public and private knowledge-intensive sectors jointly accounted for around 1 in 2 jobs in the BPTA and ROD areas, the same ratio as the South West and Great Britain. We saw above that an equal balance of public and private sectors supports this 50% job share indicator in BPTA, but in ROD this is shored up by public services. The basic implication of these employment share trends is that the BDP Sub-Region will need a highly skilled workforce, including graduates, to meet replacement and new demand for knowledge-based jobs in both the private and public sectors. This is recognised in the skills component of the MAA and sub-regional economic development strategy.

Chart 3.6: Employment Trends in All Knowledge Intensive Sectors, 1998 to 2006



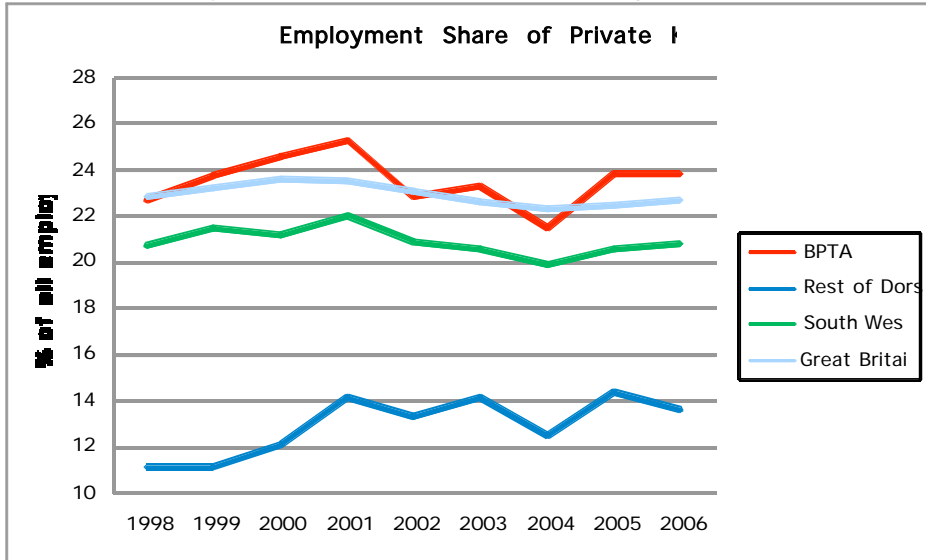
Source: Geoeconomics, ONS

Private and Public Knowledge-Intensive Sectors Indices – Chart 3.7 and 3.8



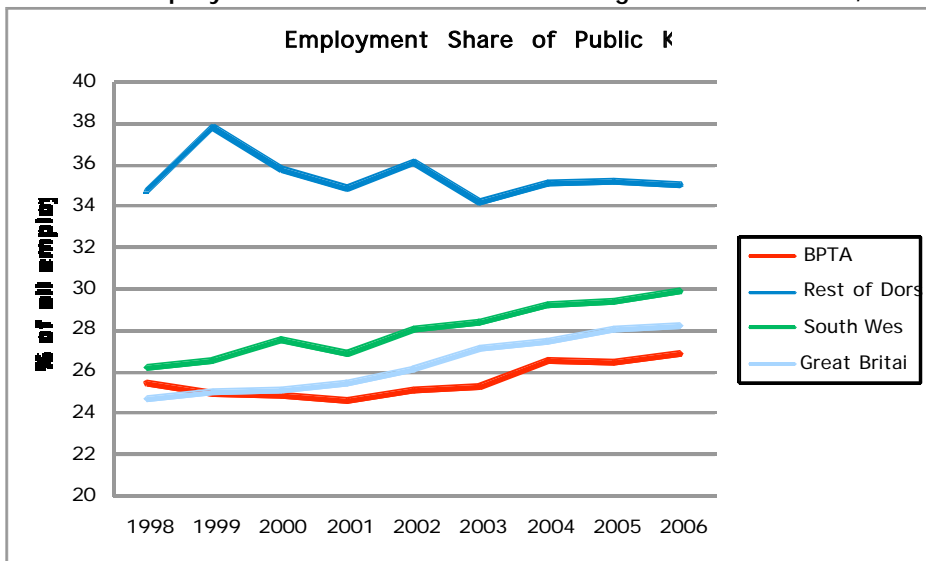
Public and private sector employment trends are shown separately in Charts 3.7 and 3.8. As highlighted earlier ROD and BPTA differ considerably as knowledge economies, and the BPTA's competitiveness is encouraging for the South West region as a whole. Public services, as knowledge economy employers (and investors), are clearly important across the whole of the Sub-Region. Therefore, their future development and the economic and job impacts of any major changes should be a major focus of the MAA strategy and performance monitoring activity.

Chart 3.7: Employment Trends in *Private* Knowledge-Intensive Sectors, 1998 to 2006



Source: Geoeconomics, ONS

Chart 3.8: Employment Trends in *Public* Knowledge-Intensive Sectors, 1998 to 2006



Source: Geoeconomics, ONS

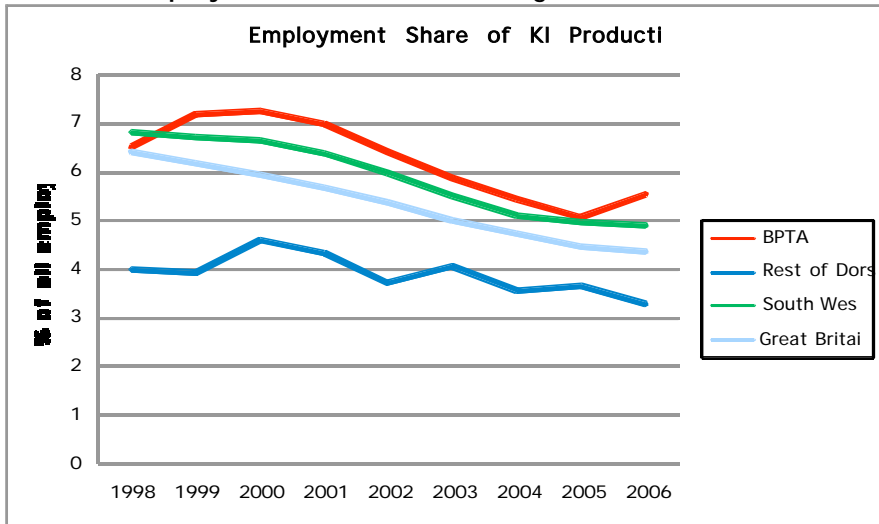
Knowledge-Intensive Production and Services – Chart 3.9 and 3.10

Following national and regional trends, the job creation role of knowledge-intensive production sectors is declining in the BDP Sub-Region, and across the South West and Britain (Chart 3.9). Between 1998 and 2006 these sectors generated less than 6 per cent of employment in all of the



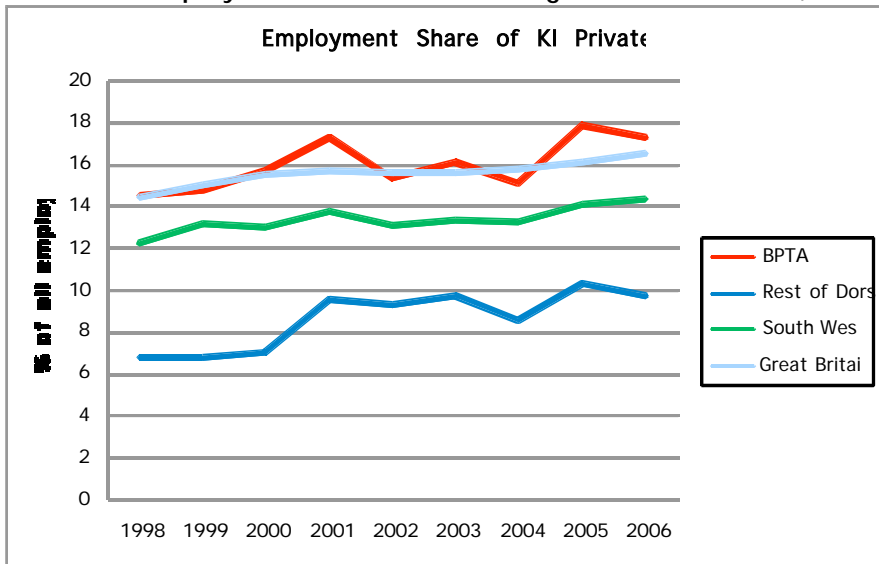
areas. However, employment decline is partly linked to rising productivity and workplace earnings, as manufacturing firms become more ‘knowledge-intensive’ through innovation, technology and a higher order skills profile. Employment has grown in knowledge-intensive services, again reflecting wider national and regional trends. Quality job creation in the knowledge economy era is biased towards service sectors, however manufacturing sectors are important to diversity (and hence stability), productivity and export-led growth.

Chart 3.9: Employment Trends in Knowledge-Intensive Production, 1998 to 2006



Source: Geoeconomics, ONS

Chart 3.10: Employment Trends in Knowledge-Intensive Services, 1998 to 2006



Source: Geoeconomics, ONS

Chart 3.11 provides a more detailed picture of the employment trends under discussion. Private and public knowledge-intensive sectors are shaded grey and yellow respectively. Within the BPTA private sector, financial and business services stand out in terms of size and growth, the former dominated by several large companies (e.g. JP Morgan Chase and Liverpool Victoria Friendly Society), and the latter by smaller businesses involved in law, accounting and other professional services – as well as employment agencies (which though counted as knowledge-intensive are more of a retail high street activity). The other BPTA key sector is clearly



transport equipment manufacturing, dominated by marine engineering company Sunseeker International and Siemens Traffic Controls, both located in Poole. Human health and higher education also stand out as key sectors with large employers, such as the big hospitals and elderly care home and Bournemouth University. Although we have lumped all employers in these sectors together under 'public services', these growth sectors are rapidly evolving tradable industries in their own right – technically universities and FE colleges are counted as part of the private sector given their special charitable status. The development of markets for public services – through contracting out and other forms of privatisation – is likely to continue, having the effect of displacing rather than newly creating a wide range of knowledge-intensive health, community care (another growth area) and educational services. The Government's recent white paper "Innovation Nation" (Department of Innovation, Universities and Skills, 2008) contains proposals that would accelerate these public-to-private sector shifts in service delivery.

Chart 3.11: Employment change in BPTA and ROD by largest sectors, 1998-2006

| Sector | Bournemouth & Poole Travel Area | | | GB |
|--|---------------------------------|-------------------|---------------------|---------------------|
| | Employees 2006 | Change 1998 -2006 | % Change 1998 -2006 | % Change 1998 -2006 |
| 851 : Human health activities | 18976 | 3709 | 24.3 | 29.2 |
| 521 : Retail sale in non-specialised stores | 12593 | 1176 | 10.3 | 5.2 |
| 524 : Other retail sale of new goods in specialised stores | 10622 | 897 | 9.2 | 14.7 |
| 651 : Monetary intermediation | 8924 | 2371 | 36.2 | -6.2 |
| 853 : Social work activities | 8467 | 152 | 1.8 | 24.8 |
| 801 : Primary education | 6985 | 260 | 3.9 | 37.7 |
| 553 : Restaurants | 6445 | 1040 | 19.2 | 34.9 |
| 741 : Legal, accounting, book-keeping and auditing activities | 6180 | 2825 | 84.2 | 53.2 |
| 745 : Labour recruitment and provision of personnel | 5782 | 1545 | 36.5 | 26.1 |
| 452 : Building of complete construction; civil engineering | 5206 | 440 | 9.2 | -1.3 |
| 802 : Secondary Education | 5053 | 834 | 19.8 | 25.8 |
| 551 : Hotels | 5000 | -1269 | -20.2 | 9.5 |
| 803 : Higher education | 4614 | 1619 | 54.1 | 22.3 |
| 35 : Manufacture of transport equipment | 4145 | 1485 | 55.8 | -14.5 |
| 747 : Industrial cleaning | 4142 | 2218 | 115.3 | -2.0 |
| 554 : Bars | 4137 | -260 | -5.9 | 2.3 |
| 751 : Administration of the State | 3744 | -531 | -12.4 | 13.4 |
| 752 : Provision of services to the community as a whole | 3569 | 1750 | 96.2 | 1.4 |
| 28 : Manufacture of fabricated metal products | 3413 | -622 | -15.4 | -24.2 |
| 748 : Miscellaneous business activities not elsewhere classified | 3237 | 1716 | 112.8 | 59.5 |
| 926 : Sporting activities | 3187 | 1135 | 55.3 | 33.5 |
| 930 : Other service activities | 3180 | 52 | 1.7 | 14.2 |
| 29 : Manufacture of machinery and equipment not elsewhere classified | 2921 | -1513 | -34.1 | -31.0 |
| 602 : Other land transport | 2593 | 557 | 27.4 | 3.8 |
| 22 : Publishing, printing and reproduction of recorded media | 2552 | -292 | -10.3 | -15.7 |
| | Rest of Dorset | | | GB |
| Sector | Employees 2006 | Change 1998 -2006 | % Change 1998 -2006 | % Change 1998 -2006 |
| 851 : Human health activities | 7055 | 2448 | 53.1 | 29.2 |
| 853 : Social work activities | 5662 | 1535 | 37.2 | 24.8 |
| 521 : Retail sale in non-specialised stores | 4836 | 654 | 15.6 | 5.2 |
| 802 : Secondary Education | 4350 | 736 | 20.4 | 25.8 |
| 524 : Other retail sale of new goods in specialised stores | 4076 | 632 | 18.4 | 14.7 |
| 801 : Primary education | 3903 | -718 | -15.5 | 37.7 |
| 752 : Provision of services to the community as a whole | 2952 | -1178 | -28.5 | 1.4 |
| 751 : Administration of the State | 2910 | 219 | 8.1 | 13.4 |
| 741 : Legal, accounting, book-keeping and auditing activities | 2710 | 1661 | 158.3 | 53.2 |
| 554 : Bars | 2645 | -437 | -14.2 | 2.3 |



| | | | | |
|---|------|------|-------|-------|
| 452 : Building of complete construction or parts; civil engineering | 2442 | 637 | 35.3 | -1.3 |
| 930 : Other service activities | 2140 | 924 | 76.0 | 14.2 |
| 553 : Restaurants | 1982 | 260 | 15.1 | 34.9 |
| 01 : Agriculture, hunting and related service activities | 1947 | -468 | -19.4 | -18.2 |
| 551 : Hotels | 1765 | 63 | 3.7 | 9.5 |
| 15 : Manufacturing of food and beverages | 1719 | -604 | -26.0 | -17.3 |
| 552 : Camping sites and other short-stay accommodation | 1221 | 37 | 3.1 | 43.6 |
| 453 : Building installation | 1204 | 492 | 69.1 | 46.5 |
| 602 : Other land transport | 1141 | 35 | 3.2 | 3.8 |
| 28 : Manufacture of fabricated metal products | 1137 | 75 | 7.1 | -24.2 |
| 748 : Miscellaneous business activities not elsewhere classified | 979 | 441 | 82.0 | 59.5 |
| 742 : Architectural and engineering activities | 978 | 324 | 49.5 | 17.2 |
| 745 : Labour recruitment and provision of personnel | 903 | 410 | 83.2 | 26.1 |
| 515 : Wholesale of non-agricultural intermediate products, etc | 869 | 201 | 30.1 | -3.8 |
| 926 : Sporting activities | 842 | 298 | 54.8 | 33.5 |

Source: Geoeconomics, Annual Business Inquiry

Looking at the bottom half of the table, we can see that the Rest of Dorset is dominated by public knowledge-intensive sectors, the only other large employment sector being retail trades. Business services are the only significant growth component in the private sector, many of these knowledge-intensive businesses being micro enterprises. This pattern can be seen in neighbouring Somerset, where Geoeconomics has recently completed a similar knowledge economy assessment.

3.3 The Enterprise Profile of the BDP Knowledge-Intensive Economy

About 35 per cent of all BPTA businesses (technically 'business units') are concentrated in private knowledge-intensive sectors – equal to the regional average, but slightly below the national average. The figures for ROD are lower as expected. These findings taken together with recent growth in business services suggests that the BDP Sub-Region has *potential* for further knowledge-intensive business development.

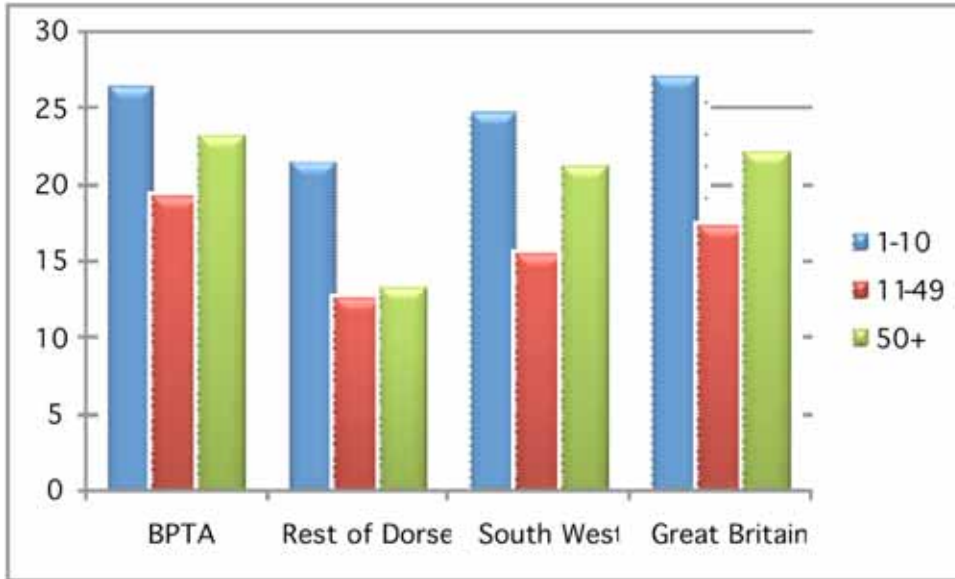
Chart 3.12: Proportion of Businesses in All Knowledge- Intensive Sectors, 2006

| | Percent |
|---------------------------------|---------|
| Bournemouth & Poole Travel Area | 34.6 |
| Rest of Dorset | 31.5 |
| South West Region | 34.5 |
| Great Britain | 36.3 |

Source: Geoeconomics, Annual Business Inquiry

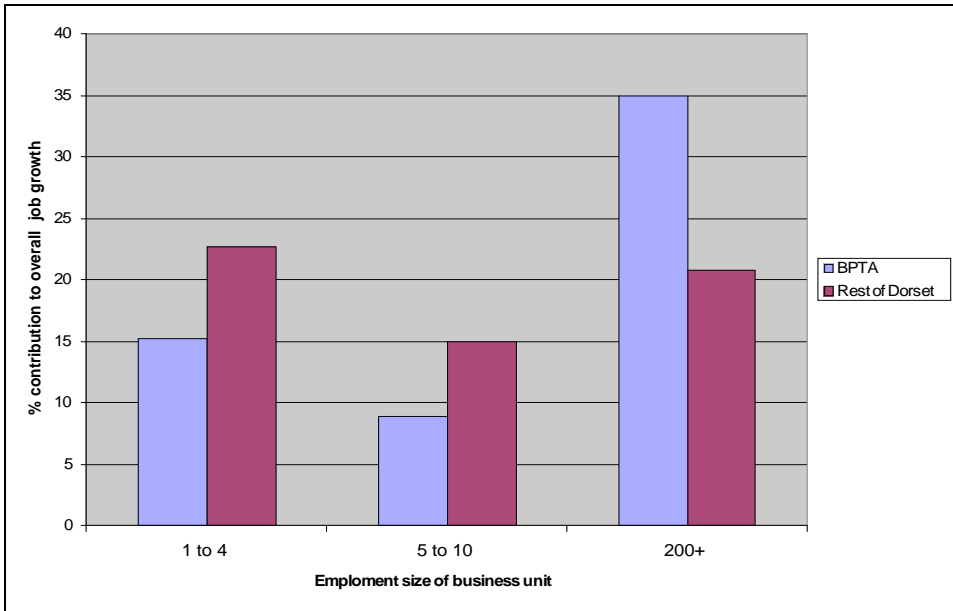
The private sector of the BPTA knowledge economy is relatively large-firm driven by regional or national standards (Chart 3.13). There is potential for more enterprise development. The ROD knowledge economy has weak business drivers and depends on micro businesses. Again these figures reinforce the core argument – the BDP knowledge economy needs a proactive enterprise growth strategy, aimed at start-ups and micro businesses. As Chart 3.14 a strategy should aim to exploit the dynamism that is already evident in the knowledge-intensive service sectors (business services and creative and cultural industries), where micro firm job creation has been encouraging.

Chart 3.13: Proportion of Businesses in Knowledge-Intensive Sectors, by Size Band, 2006



Source: Geoeconomics, Annual Business Inquiry

Chart 3.14: Share of Job Growth in Knowledge-Intensive Services by large and micro firms, 1998-2006



Source: Geoeconomics, Annual Business Inquiry

The business stock trends shown in Chart 3.15 reinforces the above argument – a variety of knowledge-intensive business services are the dominant growth sector in the BPTA, with only construction-related activities (low knowledge-intensity sectors) showing up positively. The current slump in construction – with a recession in prospect – is likely then to have major implications for the BPTA business base, and its overall enterprise performance.

Chart 3.15: Business stock change in BPTA and ROD by largest sectors, 1998-2006.

Knowledge-intensive sectors are marked in grey

| Sector | Bournemouth & Poole Travel Area | | | GB |
|------------------------------------|---------------------------------|-------------------|---------------------|---------------------|
| | Business Units 2006 | Change 1998 -2006 | % Change 1998 -2006 | % Change 1998 -2006 |
| Knowledge-intensive sectors (grey) | | | | |
| Other sectors (white) | | | | |

| | | | | |
|---|------|------|-------|-------|
| 524 : Other retail sale of new goods in specialised stores | 1500 | -21 | -1.4 | 5.5 |
| 741 : Legal, accounting, book-keeping and auditing activities | 1427 | 628 | 78.6 | 65.2 |
| 748 : Miscellaneous business activities not elsewhere classified | 1161 | 615 | 112.6 | 93.5 |
| 452 : Building of complete construction or parts thereof | 1142 | 119 | 11.6 | 4.5 |
| 930 : Other service activities | 749 | 32 | 4.5 | -11.2 |
| 454 : Building completion | 733 | 314 | 74.9 | 53.1 |
| 553 : Restaurants | 722 | 190 | 35.7 | 31.5 |
| 453 : Building installation | 714 | 251 | 54.2 | 41.6 |
| 722 : Software consultancy and supply | 605 | 103 | 20.5 | 19.8 |
| 742 : Architectural and engineering activities, related consultancy | 529 | 53 | 11.1 | 11.8 |
| 701 : Real estate activities with own property | 461 | 181 | 64.6 | 38.2 |
| 703 : Real estate activities on a fee or contract basis | 436 | 130 | 42.5 | 56.1 |
| 521 : Retail sale in non-specialised stores | 404 | -8 | -1.9 | -2.2 |
| 554 : Bars | 368 | 19 | 5.4 | -1.1 |
| 702 : Letting of own property | 353 | 182 | 106.4 | 120.2 |
| 726 : Other computer related activities | 342 | -62 | -15.3 | -19.5 |
| 28 : Manufacture of fabricated metal products | 337 | -34 | -9.2 | -8.4 |
| 602 : Other land transport | 335 | 22 | 7.0 | -2.5 |
| 502 : Maintenance and repair of motor vehicles | 322 | 60 | 22.9 | 26.6 |
| 22 : Publishing, printing and reproduction of recorded media | 311 | 50 | 19.2 | -6.3 |
| 501 : Sale of motor vehicles | 282 | -64 | -18.5 | -20.9 |
| 522 : Retail sale of food, beverages and tobacco etc | 245 | -176 | -41.8 | -36.7 |
| 747 : Industrial cleaning | 242 | 6 | 2.5 | 3.7 |
| 514 : Wholesale of household goods | 240 | -12 | -4.8 | -3.3 |
| 745 : Labour recruitment and provision of personnel | 223 | 103 | 85.8 | 21.6 |

| Sector | Rest of Dorset | | | GB |
|--|---------------------|-------------------|---------------------|---------------------|
| | Business Units 2006 | Change 1998 -2006 | % Change 1998 -2006 | % Change 1998 -2006 |
| 524 : Other retail sale of new goods in specialised stores | 746 | 85 | 12.9 | 5.5 |
| 452 : Building of complete construction or parts thereof | 606 | 113 | 22.9 | 4.5 |
| 741 : Legal, accounting, book-keeping and auditing activities | 538 | 240 | 80.5 | 65.2 |
| 748 : Miscellaneous business activities not elsewhere classified | 465 | 270 | 138.5 | 93.5 |
| 930 : Other service activities | 337 | 22 | 7.0 | -11.2 |
| 453 : Building installation | 326 | 118 | 56.7 | 41.6 |
| 554 : Bars | 326 | -8 | -2.4 | -1.1 |
| 553 : Restaurants | 305 | 100 | 48.8 | 31.5 |
| 454 : Building completion | 264 | 144 | 120.0 | 53.1 |
| 742 : Architectural and engineering activities | 237 | 69 | 41.1 | 11.8 |
| 521 : Retail sale in non-specialised stores | 209 | -23 | -9.9 | -2.2 |
| 602 : Other land transport | 185 | 10 | 5.7 | -2.5 |
| 722 : Software consultancy and supply | 167 | 52 | 45.2 | 19.8 |
| 502 : Maintenance and repair of motor vehicles | 164 | 33 | 25.2 | 26.6 |
| 702 : Letting of own property | 155 | 82 | 112.3 | 120.2 |
| 701 : Real estate activities with own property | 149 | 70 | 88.6 | 38.2 |
| 522 : Retail sale of food, beverages and tobacco etc | 139 | -32 | -18.7 | -36.7 |
| 703 : Real estate activities on a fee or contract basis | 139 | 31 | 28.7 | 56.1 |
| 926 : Sporting activities | 139 | 25 | 21.9 | 9.7 |
| 923 : Other entertainment activities | 137 | 27 | 24.5 | -7.6 |
| 501 : Sale of motor vehicles | 125 | -55 | -30.6 | -20.9 |
| 551 : Hotels | 117 | 4 | 3.5 | -6.9 |
| 28 : Manufacture of fabricated metal products | 104 | -18 | -14.8 | -8.4 |
| 726 : Other computer related activities | 102 | 7 | 7.4 | -19.5 |
| 22 : Publishing, printing and reproduction of recorded media | 101 | -13 | -11.4 | -6.3 |

Source: Geoeconomics, Annual Business Inquiry



The bottom half of the table shows a similar pattern of enterprise development in the ROD area, at a lower scale. Retail and tourism-related enterprise development has relatively more importance here.

3.4 Local Variation in Structural Performance

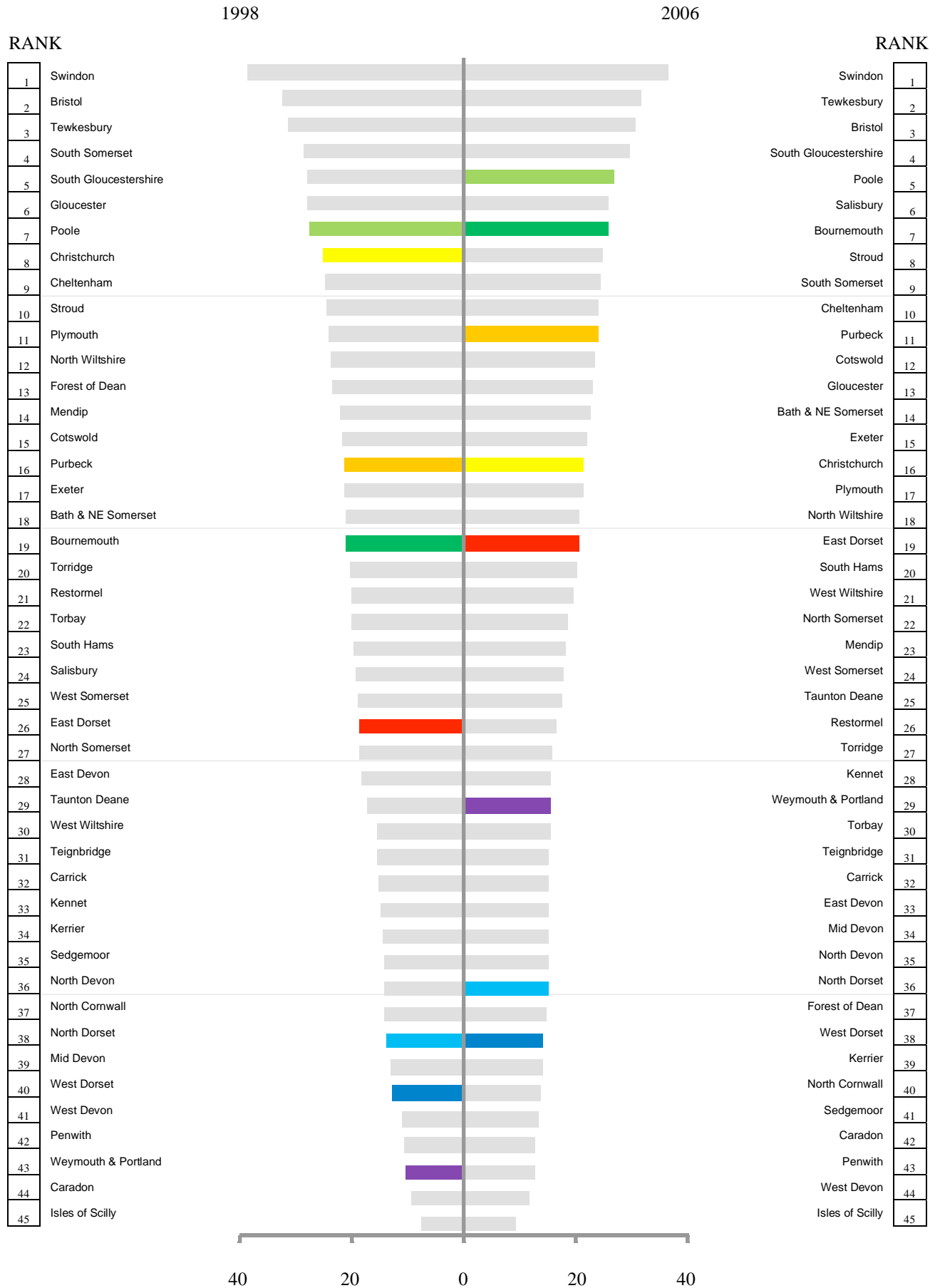
We were not required to look in detail at the BDP knowledge economy's footprint at the local authority level. However, there is some value in doing this given the significant differences that exist at this level and the place-making economic development work of the Local Strategic partnerships.

The 'ladder' of South West local authorities shown in Chart 3.16 provides a view of the relative competitiveness of the BDP local economies, and how this changed between 1998 and 2006. It clearly explains why SWRDA has accorded the urban area of the BDP Sub-Region strategic/priority status in the South West economic and spatial planning strategies. It is extremely significant, from the point of view of balanced economic development, that all of the BDP local authority areas rose up the GI knowledge economy 'ladder' between 1998 and 2006, even from very different starting points. The obvious exception is Christchurch.

We recommend undertaking a more detailed assessment of the knowledge economies in each of the BDP local authority areas. This would provide a more finely-grained spatial framework for understanding and monitoring the performance of the BDP knowledge economy – and the sub-regional economy as a whole.



Chart 3.16: GI Scores for local authorities in the South West Region, 1998 – 2006





3.5 Summary

This chapter has assessed the structural performance of the BDP knowledge economy. Its key findings can be summarised as follows:

- The BDP sub-region is a 'two-tier' knowledge economy – a high performance BPTA, a low performance ROD. The 'east-west divide' that runs through the South West regional knowledge economy cuts across the Sub-Region.
- The BPTA has a knowledge-intensive sector profile that is close to the national average however its earnings performance is well below what we would expect to find. This is probably due to the occupational profile of the BPTA workforce in large companies and the great weight of the tourism-related sectors. The ROD area lags well behind the national average.
- By 2006 one in two jobs in the BDP Sub-Region were generated by private and public knowledge-intensive sectors, and this figure is gradually moving upwards. The implication of this finding is that the BDP learning and skills infrastructure – schools and FE/HE, training provision and workplace development – will need to continually improve and keep pace with employer demands.
- Counter to national and regional trends the job-generating power of the BPTA business knowledge economy was maintained between 1998 and 2006, with large and micro firms in financial and business services leading the way – the other significant driver was transport equipment manufacturing. The ROD knowledge economy also had a dynamic, small-scale business services sector, but otherwise was extremely dependent on public services. Consumer services, including tourism, made up the rest of the ROD economy, and in the BPTA outweighed knowledge-intensive sectors as employers.
- In line with the national and regional averages about 35 per cent of the BDP business stock was concentrated in knowledge-intensive sectors. However on closer analysis it appears that enterprise development was narrowly concentrated on business services and construction-related activities. The current recession and slump in construction could seriously threaten the Sub-Region's enterprise performance.
- Every local authority area within the BDP Sub-Region has climbed up the 'knowledge economy ladder' of competitiveness within the South West region, thus confirming the strategic priority status which is accorded in the regional economic and spatial strategies and the successful drive to establish an MAA

The next chapter moves on to outcome performance. We saw in this chapter that a strong knowledge economy structure – measured by the Geoeconomics Index – should lead to better earnings outcomes. However, in the BDP case we found that other factors appear to weaken this relationship between structures and outcomes.



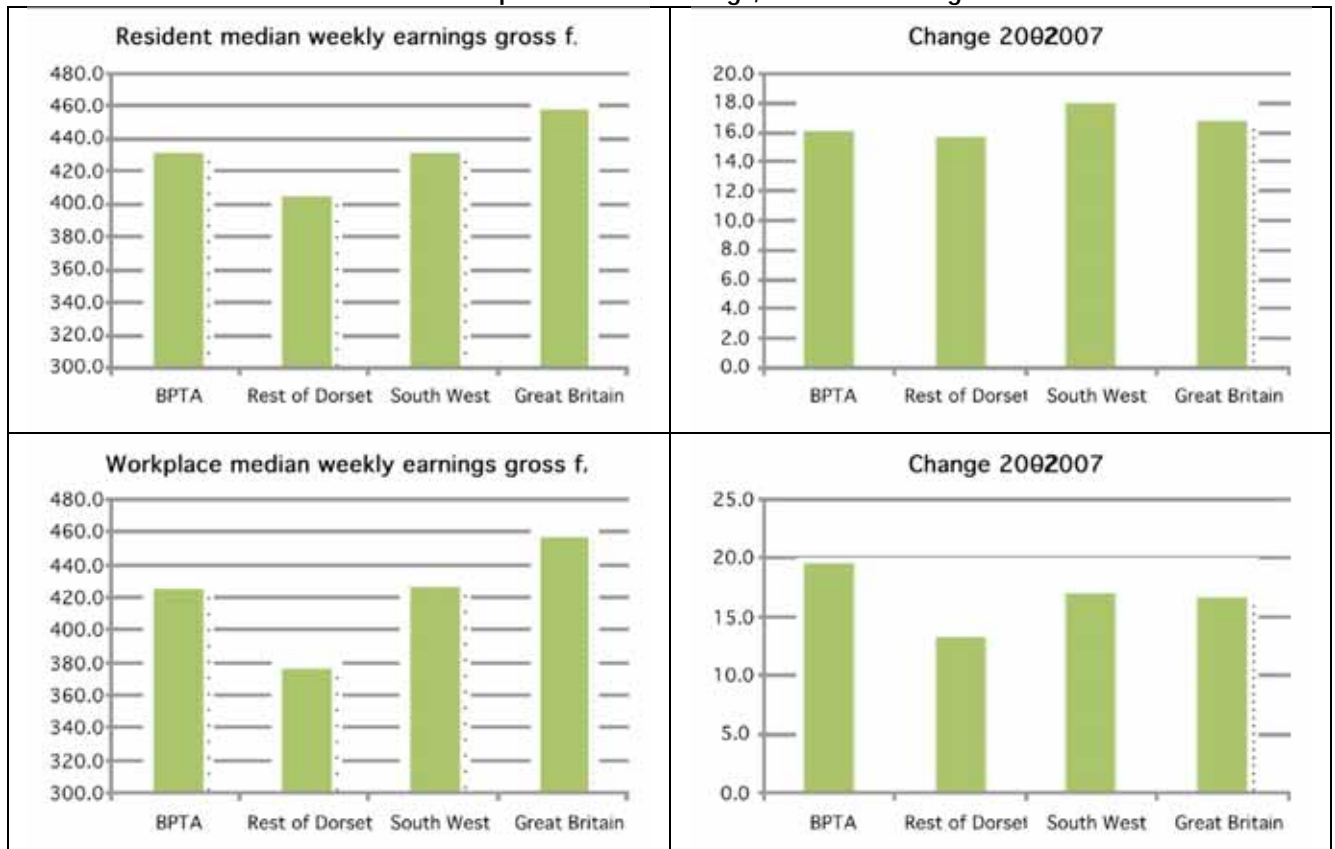
4 Results for Outcome Performance

This chapter assesses the outcome performance of the BDP economy. The assessment is based on the selected indicators listed in Chart 2.5. Again, comparisons are made between the BPTA and ROD areas of the Sub-region and the average performance of the South West region and Great Britain.

4.1 Earnings

As shown in Chart 4.1 a major outcome of an under-performing private sector knowledge economy – indicated by a poor GI score – is low workplace earnings – as well as low resident earnings, if a large proportion of the resident labour force works locally rather than commutes out of the area. We found that the Rest of Dorset has a poor-modest GI score, suggesting that earnings would be relatively low and well below the national average. This is particularly clear in the case of workplace earnings where the Rest of Dorset has earnings that are below both regional and national averages and which have shown a rate of growth since 2002 that is also below the regional and national benchmarks.

Chart 4.1: Residence-based and Workplace-based Earnings, 2007 and Change 2002-2007



Source: Geoeconomics, ONS data

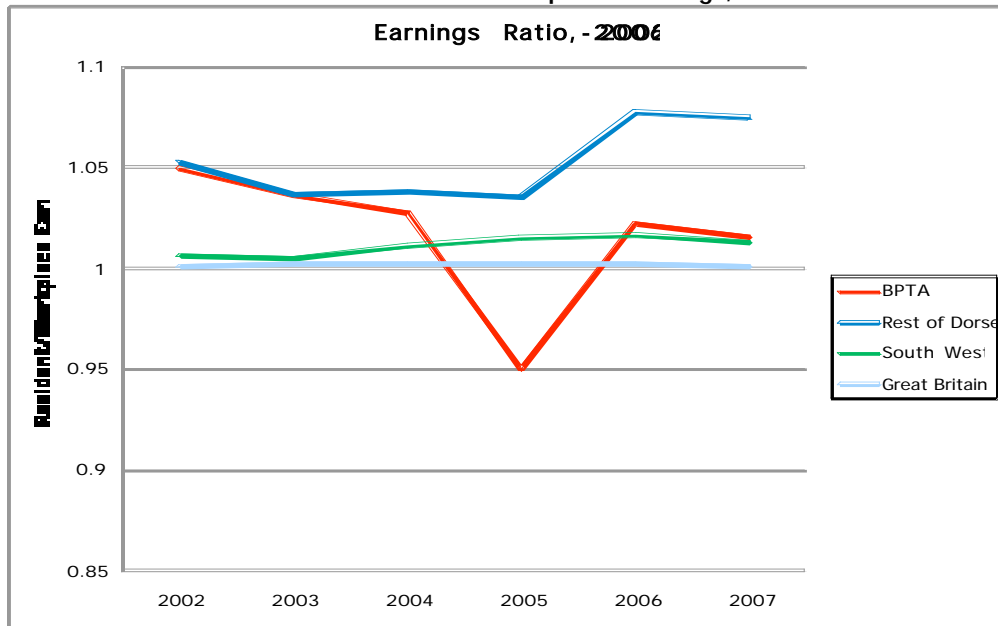
The position of BPTA is better. Here, workplace earnings are about the same as the regional average but a little below the national average. Their rate of change, however, suggests that the gap between the Sub-Region and the national average has closed since 2002 suggesting that the



MAA objective of closing the gap between local earnings and the national average is a realistic one. This is less true, however, for resident earnings where the gap between BPTA and the national average has, if anything, increase a little in recent years.

One possible explanation for this is that the more positive trajectory of workplace earnings is linked to an increase in relatively well paid in-commuters into BPTA in a national context of generally increasing commuting distances over the last decade. If this is the case, it is still at a fairly limited scale. The ratio between resident and workplace earnings for the BPTA is close to one in 2006 suggesting a relatively self-contained local labour market (Chart 4.2). For the Rest of Dorset this value is higher, suggesting a higher (and rising) level of out-commuting from this area, but in comparison with many local authorities its ratio value of between 1.05 and 1.1 is still quite low.

Chart 4.2: Ratio between Resident and Workplace Earnings, 2002 to 2006



Source: Geoeconomics, ONS

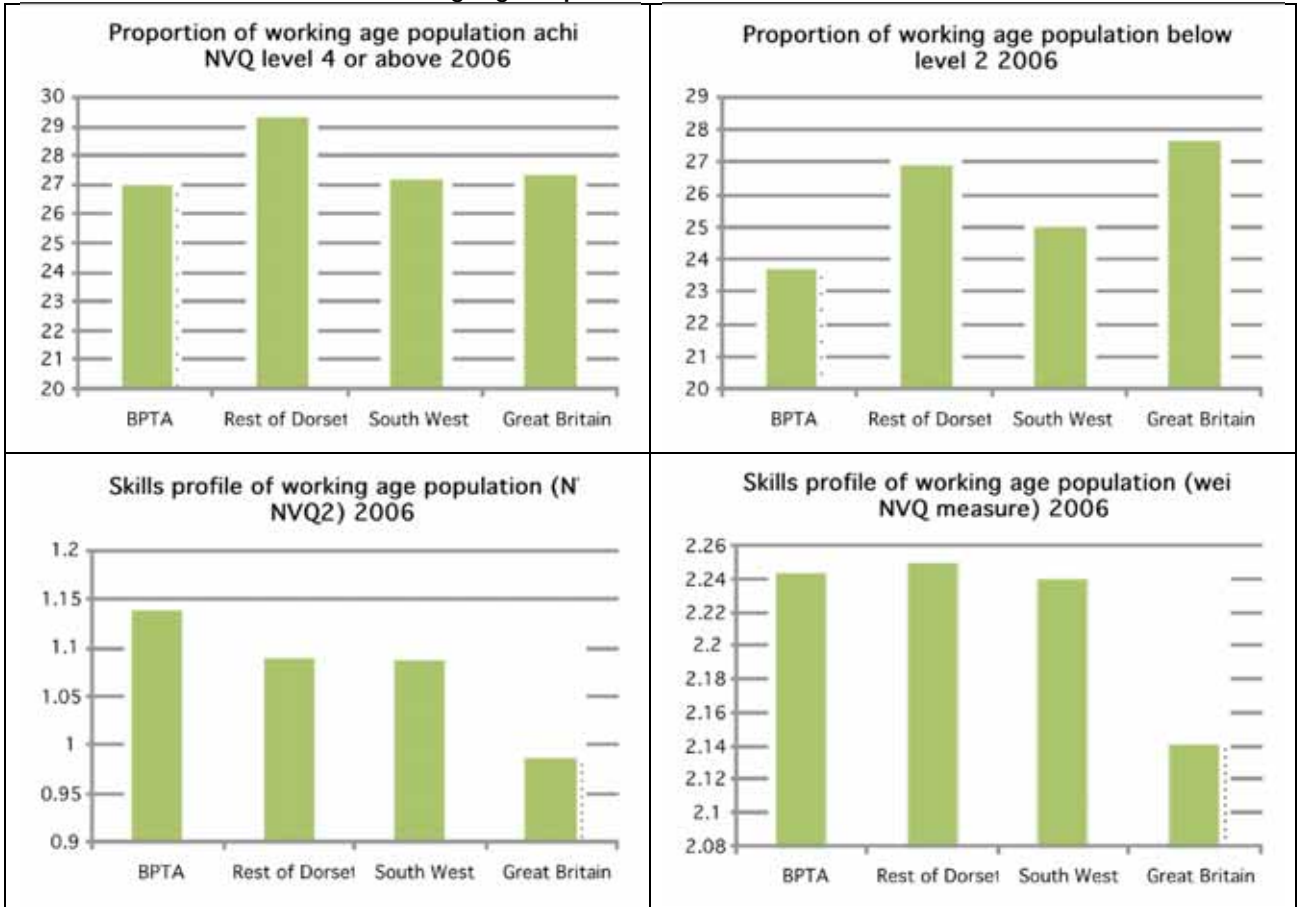
4.2 Learning and Skills

A key MAA objective is to provide a skilled and adaptable workforce which can support ‘the transition to a high value knowledge-driven economy’. The two right-hand graphs in Chart 4.3 are very encouraging, because they show that the BDP Sub-Region has a favourable average skills picture and low skills problems are relatively less serious, compared to national standards and (to a lesser degree) regional standards. The BPTA graduate population profile is similar to the national and regional average. The MAA contains proposals for employer-led strategies to boost the graduate labour market, and further measures to increase the availability of affordable and intermediate homes in the housing market. Both sets of proposals are well-targeted and should help to increase levels of graduate retention and attraction (people graduating from Bournemouth University, residents returning after graduating elsewhere). We assume that appropriate baseline figures exist for measuring progress and success. Geoeconomics’ report on “Graduate Economies in Britain” for Yorkshire universities used the knowledge-intensive sector analysis to develop a high level baseline picture, as well as primary graduate destination data collected through surveys by the lead agency Graduates Yorkshire. The BPTA has a high degree of ‘bi-polarity’ in its local labour market, a picture which is typical of rural areas which attract large numbers of highly educated semi-retired or retired people. There is also a possibility that



intermediate workers – NVQ level 3 qualifications – are less represented in the BPTA particularly, these being skilled technical workers and also ‘key workers’ in public services. The above comments on the role of affordable housing are relevant. A further issue may be low levels of employer uptake of the Train to Gain and Modern Apprenticeship workforce development programmes. The LSC is in a position to evaluate this issue.

Chart 4.3: Qualifications of Working Age Population, 2006

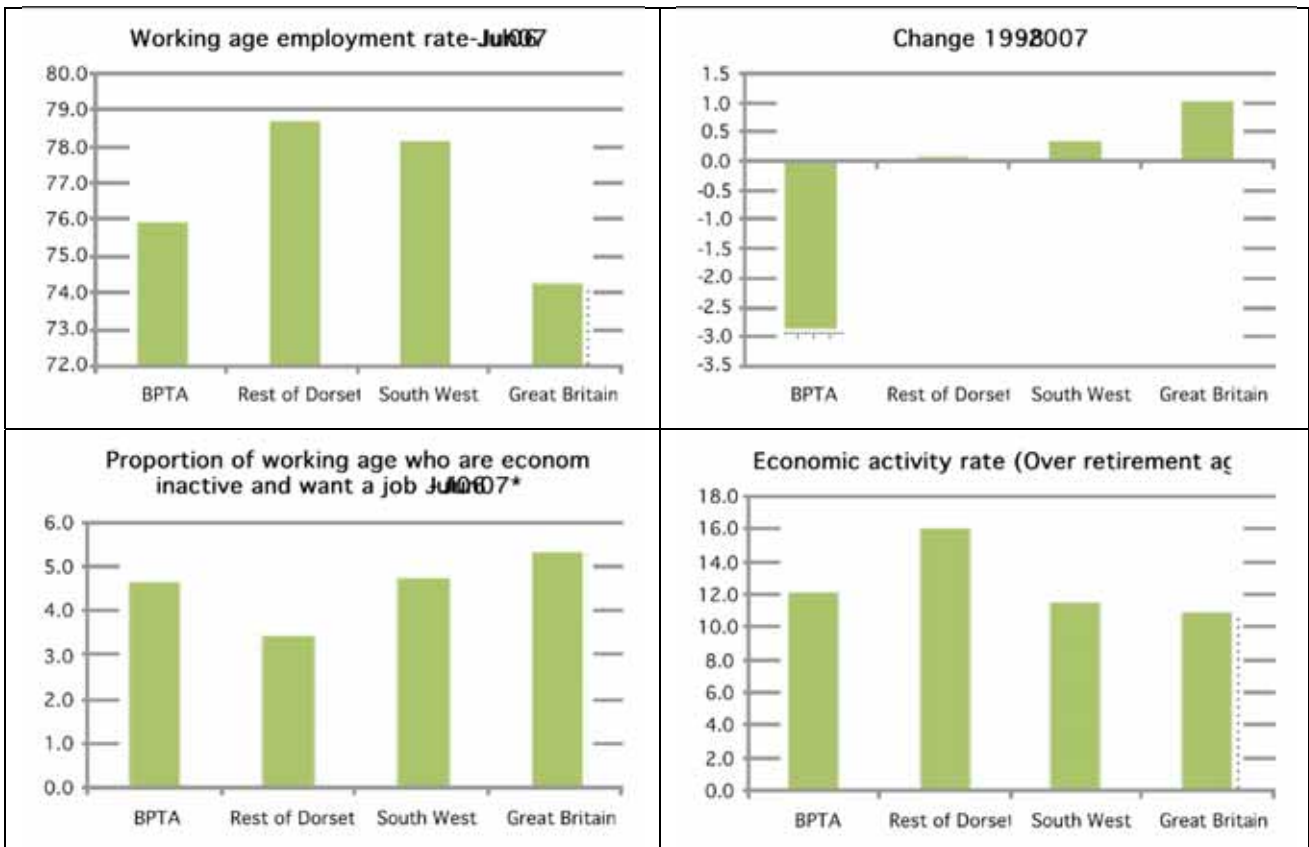


Source: Geoeconomics, ONS data

4.3 Employability

The overall health of the BDP labour market is relatively good, as measured by employment rates and the extent of worklessness problems – especially if these figures are combined with the skills outcomes. The main negative feature is the decline in BPTA's employment rate in recent years. Even this needs to be interpreted with caution. Some of the most affluent areas in the core South East have low employment rates, often linked to low levels of female economic activity amongst their residents. More detailed local research would be needed before any firm conclusions could be reached. If this more positive picture of the supply-side of the BDP labour market is compared against the more negative picture of the demand-side - relatively low earnings (Chart 4.1) - the issue that obviously emerges is job quality. Improving the quality not quantity of job opportunities is the priority.

Chart 4.4: Employment Rate, 2007 for All, Elderly and Non-White Groups and Overall Change 1998-2007; Economically Inactive Job Seekers, 2007

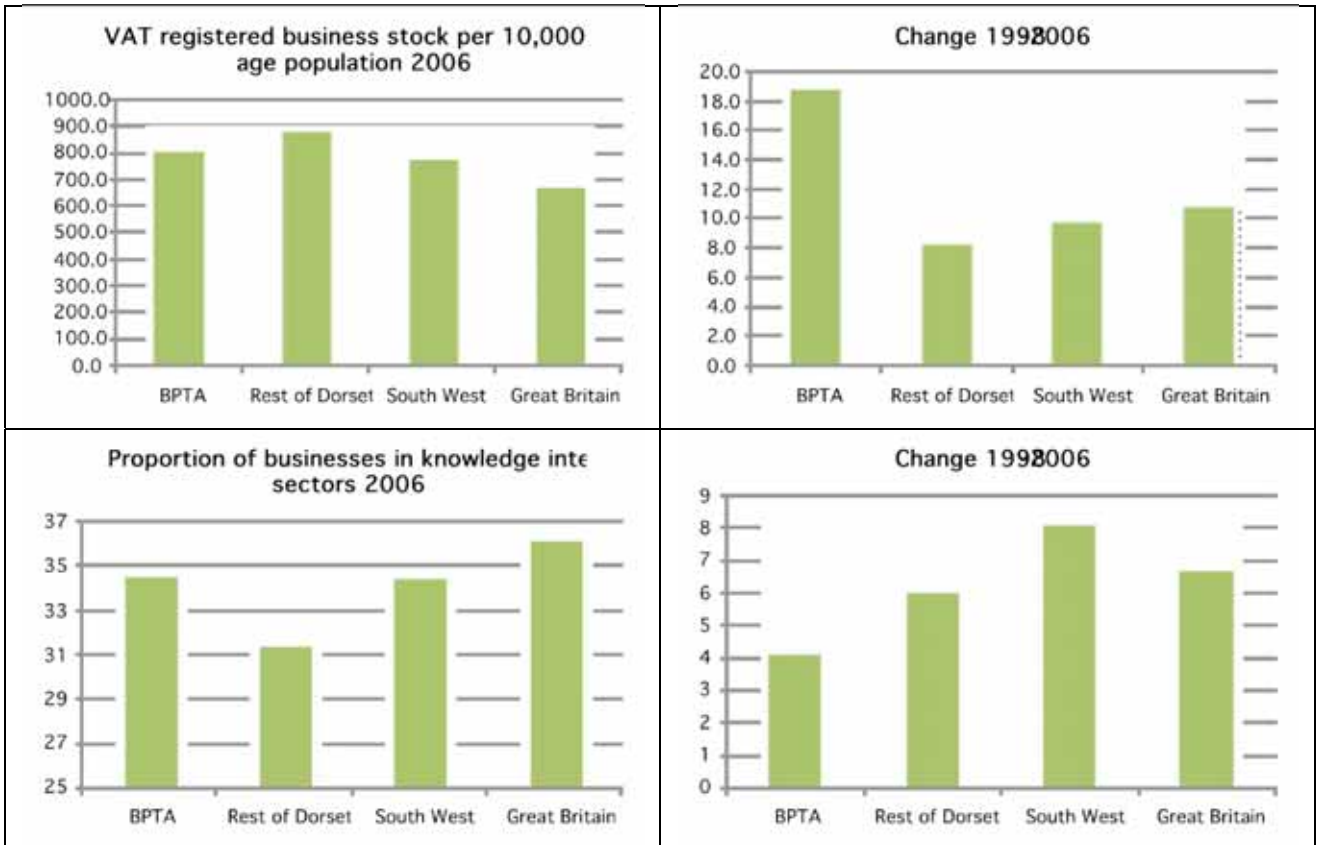


Source: Geoeconomics, ONS (* BPTA on this chart excludes Christchurch and Purbeck authorities)

4.4 Enterprise and the Business Environment

The MAA includes proposals and targets for increasing business formation and growth rates in the Sub-Region, compared against regional standards. Chart 4.5 shows up a mixed baseline picture, with the BPTA's exceptionally good overall business stock growth rate contrasting with a disappointing performance in knowledge-intensive sectors. We saw in Chapter 3 that much of the growth was concentrated in construction-related and retail activities, both of which are relatively less-well paid and highly sensitive to economic downturns – the like of which has now ravaged the construction industry. The ROD area lags behind on new enterprise growth, although due to micro knowledge-intensive business services it has nearly kept pace with national standards. This is consistent with differences in the sizes of local employers in these sectors. BPTA has more large employers – particularly in the key growth areas of private sector services. Chart 3.14 showed that, since 1998, nearly 40% of employment growth in these services in the Rest of Dorset was generated by businesses with less than 10 employees. In contrast, within the BPTA a broadly similar proportion was generated by businesses with more than 200 employees. The challenge for BPTA is to extend the momentum of its larger employers to stimulate further growth in its stock of small knowledge intensive businesses.

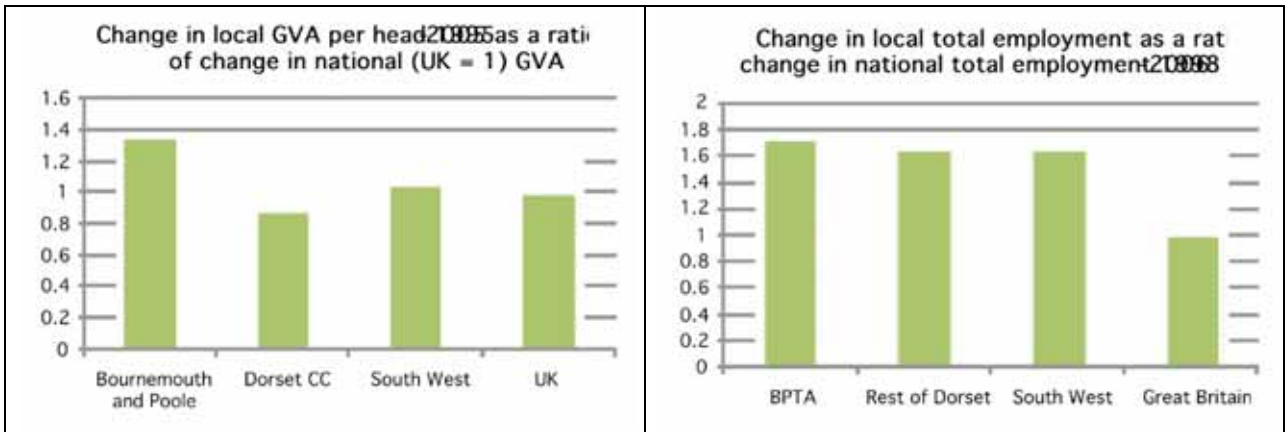
Chart 4.5: Propensity to Start Own Business 2006 and Change 1998-2006; Proportion of Businesses in Knowledge-intensive Sectors, 2006 and Change 1998-2006



Source: Geoeconomics, ONS

The improving picture of productivity and employment change in Bournemouth and Poole should create a dynamic environment for enterprise and SME growth. Economic and market expansion obviously creates more opportunities for small business growth and a more fertile environment for business start ups. As stated earlier, if the BPTA area is to achieve higher levels of economic performance within environmental constraints (the vision), then expansion must go hand in hand with a rising knowledge-intensity in land use – that is, more knowledge-intensive businesses per unit of land/floor area. Again this qualitative issue – cutting across the labour, housing and land markets – is the big challenge which is written into the MAA. Planning strategies, the local development frameworks, therefore have to be closely aligned with the economic strategy, so that achieving higher levels of knowledge intensity becomes a consistent and common purpose in implementing not only the MAA but also the LAAs.

Chart 4.6: Business Environment: Change in Productivity 1995-2005 and Change in Employment 1998-2006



Source: Geoeconomics, ONS (GVA data refers to the Bournemouth and Poole NUTS3 area)

4.5 Deprivation and inequality

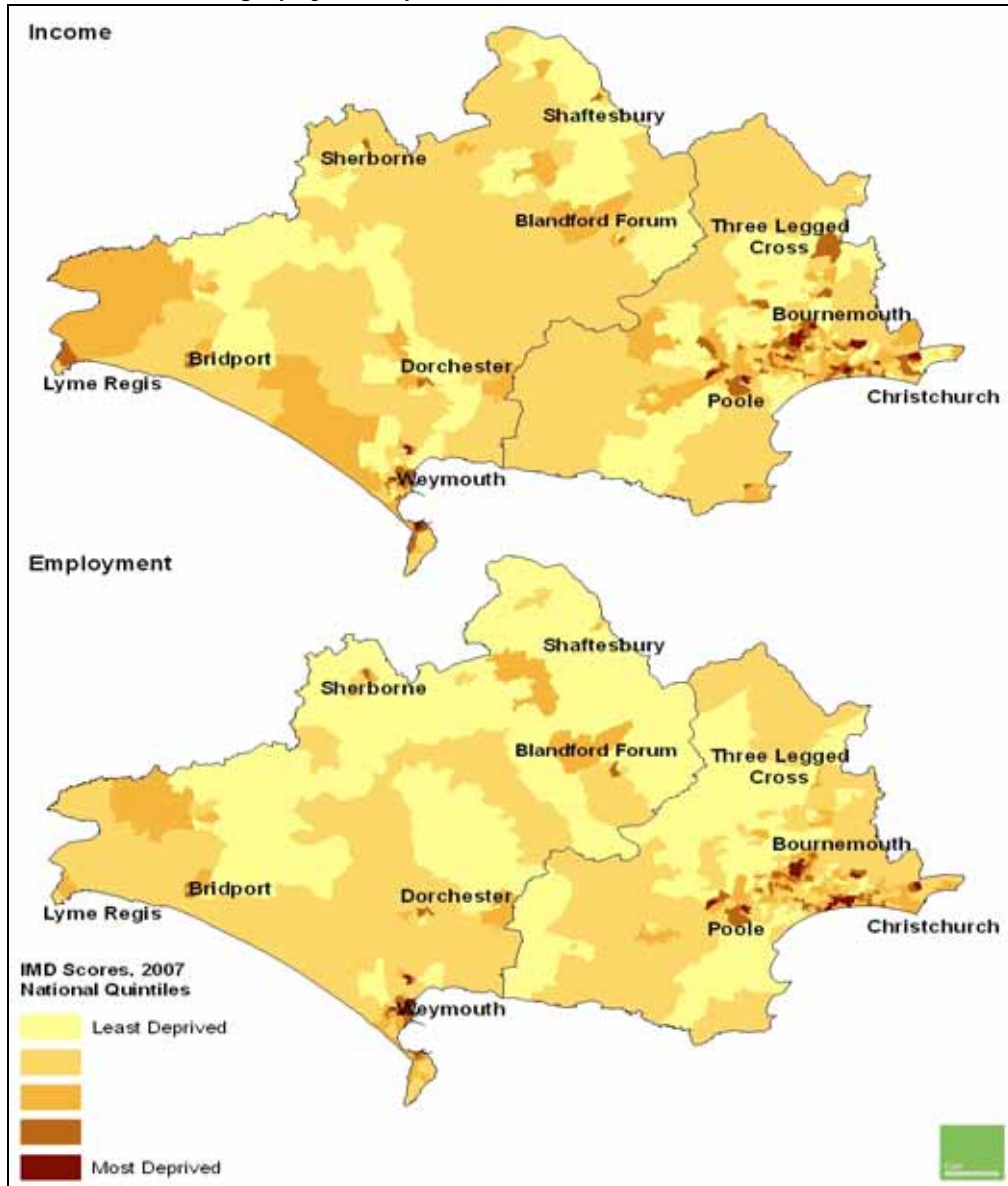
The problems of both income and employment deprivation are highly concentrated within both BPTA and the Rest of Dorset (Chart 4.7). Taken together, they contain areas that fall in all five national quintiles – from the least to the most deprived – but the most deprived areas are found in parts of the urban settlements. Overall, BPTA contains more local concentrations of deprivation which reflects its higher level of urban development. The maps demonstrate that, in common with most places in the country, any problems of unemployment or deprivation generated by slow economic growth and development will be concentrated strongly into a relatively small number of neighbourhoods – often those with relatively high concentrations of social housing and long-standing economic and social difficulties.

This familiar picture of ‘pockets of deprivation’ can be seen across the South West and the South East regions. The Government (DWP) has introduced a plethora of welfare-to-work policies in order to shift more people from incapacity benefit into the labour market. But recent data on Britain’s NEET problems have been discouraging, and illustrate the broader economic and cultural issue of people taking up training courses, undertaking a short ‘stint’ of paid employment and then returning to benefit – or joining the informal economy, or withdrawing from the labour market altogether. The recession or downturn is likely to exacerbate these income and employment deprivation problems, given that low-skilled and unskilled workers are most vulnerable to redundancy programmes, and also the sectors that tend to employ relatively more of these groups – that is construction and retail – will be hardest hit by a prolonged economic slowdown.

Taking the long view, the Government assumes that by 2026 (the MAA horizon) no more than 10 per cent of jobs will be available for unskilled workers – the ‘skills barrier’ to work will continue to rise. If this assumption proves to be right – and given that labour market experts believe that Britain’s large unskilled minority (30 per cent) will persist for the next ten years at least – what is the most realistic scenario for the BDP Sub-Region? The starting position in the BDP labour market is much better than the national picture, but we should bear in mind that the latter is riddled with employment, skills and education problems. The Sub-Region should take a more refined and wide-ranging approach to labour market benchmarking.



Chart 4.7: The Geography of Deprivation, 2007



Source: Geoeconomics, ONS

4.6 Housing

Housing diversity and affordability can be a source of comparative advantage to areas with long-term knowledge economy ambitions. It is important to talent retention and attraction – including younger families – and for making a local university with its student/staff accommodation needs feasible. Overall house prices in both the BPTA and ROD areas are higher than both regional and national averages and this difference increases when prices are expressed as a ratio of resident earnings. In relation to many other areas of the South West housing affordability is not a relative advantage for either BPTA or the Rest of Dorset. However, both areas are close to the boundary with the South East where house prices are often higher. It is relevant to note that, in neighbouring local authorities that fall within the South East, house price income ratios (calculated as average house prices over estimated annual earnings) are often higher. In both Test



Valley and New Forest they are close to thirteen to one in comparison with the BPTA score of approximately eleven to one. By South East standards both BPTA and the Rest of Dorset are relatively affordable locations.

Chart 4.8: House price and house affordability, 2007/8



Source: Geoeconomics, The Land Registry, Registers of Scotland Executive Agency, Annual Survey of Hours and Earnings

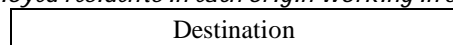
The prices of flats are included in Chart 4.8 as these are particularly relevant to the housing needs of young people. Here, both BPTA and the Rest of Dorset have some advantage over the national average, but the price of flats in BPTA remains above the regional average.

4.7 Commuting Patterns

The flow of knowledge workers (defined as Professional, Managerial and Technical employees and employees) between BPTA and the Rest of Dorset provides a guide as to how interdependent the two distinctive local economies have become. It has already been noted that the ratios of resident to workplace earnings suggests that outward commuting is stronger in ROD than it is for BPTA. The commuting patterns shown in Chart 4.9 allow a test of whether this stronger outward commuting is linked to residents in ROD commuting towards the employment centres of BPTA.

Chart 4.9: Knowledge worker commuting patterns

Proportion of employed residents in each origin working in specified destinations





| | | BPTA | ROD | Rest of GB |
|--------|------------|------|------|------------|
| Origin | BPTA | 91.0 | 1.4 | 7.5 |
| | ROD | 5.3 | 83.9 | 10.7 |
| | Rest of GB | 0.1 | 0.0 | 99.9 |

Proportion of jobs in each destination filled by residents from specified origins

| | | Destination | | |
|--------|------------|-------------|------|------------|
| | | BPTA | ROD | Rest of GB |
| Origin | BPTA | 86.4 | 5.9 | 0.1 |
| | ROD | 4.8 | 84.1 | 0.1 |
| | Rest of GB | 8.8 | 10.0 | 99.8 |

Source: Geoeconomics, Census of Population, 2001

The results show that the BPTA labour market has high levels of self containment. About 91% of BPTA knowledge workers are employed within the area while 86% of knowledge intensive jobs within BPTA are filled by local residents. Only about 5% of these workers living in the Rest of Dorset commute across the boundary between the two areas – almost twice as many commute out from the Rest of Dorset to other areas of the country. All of the analyses presented in this report show that the economies of BPTA and the Rest of Dorset are significantly different from one another. The commuting data shows that, in addition to being structurally different, they have, in labour market terms, a high level of independence. In other words, the geography of the MAA and Sub-Region are economically coherent, in terms of human capital flows.

4.8 Summary

The outcome performance indicators emphasise again the degree to which the BDP area is made up of two quite different local knowledge economies. This suggests the need to monitor the performance of the BPTA and ROD areas separately, as well as in combination as a single MAA Sub-Region (the current approach). The following key issues were raised by the outcomes performance analysis:

- BDP resident and workplace earnings lag behind the rest of the country. Recent trends show the BPTA strongly catching up with the national average workplace earnings (a sign of a strengthening knowledge economy), but falling further behind on resident earnings. The ROD area is falling further behind the rest of the country and the region on both indicators.
- The BDP labour market is generally healthy in terms of its overall qualifications profiles and employability performance. However the area's low earnings performance show that the issue facing the Sub-Region is not the quantity of jobs but the quality of jobs – at all levels. Further the graduate labour pool needs to be scaled up in order to support higher levels of knowledge-intensive economic development. Income and employment deprivation problems exist as they do in prosperous and lagging sub-regions of Britain, but it should be recognised that these problems will be exacerbated by a recession and a knowledge economy future of dwindling unskilled job opportunities.



- The enterprise performance of the BDP Sub-Region is mixed. Further there is evidence of strong local economic dynamism which enterprise development thrives on. However the exceptional overall picture of enterprise growth in the BPTA is clouded by a lagging performance in knowledge-intensive sectors. This tends to exacerbate the low job quality problem. More fundamentally the lower knowledge-intensity of business growth could threaten the overall BDP target of building a high value economy which is environmentally sustainable.

We should emphasise that our assessment is based only on an analysis of secondary (government) data. It would be advisable to enrich the data analysis by up-to-date, qualitative data collected through stakeholder interviews. This is normally part of what Geoeconomics does as part of an overall assessment of the local knowledge economy.



5 Conclusions

We have provided summaries of key findings at the end of each chapter. Rather than repeating these findings, this concluding discussion will concentrate on more specific issues to do with performance management which we hope will be useful to the BDP Economic Partnership and to the delivery of the new MAA. Therefore the focus here is on practical matters.

5.1 Weathering the storm

This baseline assessment uses data for 1998 to 2006, a period which saw a record-breaking 'run' of high economic growth in the UK. However the economic and business climate has radically changed and there is a widespread view that the UK will enter a prolonged period of recession – the weather vanes in the construction industry, housing market, labour market and financial market all point towards a hostile and uncertain future. Therefore, the MAA is being launched at a time of heightened economic uncertainty.

The basic and somewhat obvious message is that performance management will need to be highly rigorous and at the very heart of the MAA activity.

- Creating a close watch on the BDP economy – that is, shortening time frames in monitoring the economy and its businesses are performing – we suggest panel surveys, because the ONS data are too out-of-date for real-time economic monitoring, which is what BDP policy makers really need now.
- Keep a close watch on specific areas of the BDP economy given their importance and sensitivity to recession. The two main areas of BDP enterprise growth are business services and construction, the two most recession-sensitive sectors of the UK economy. The other sector is financial services – how will the big flagship financial sector companies react to the recession and crisis in global financial markets?

We welcome the sector-based partnerships that the MAA proposes – the importance of their role in aligning business and local economic interests has now become far more significant. To the existing list of key sectors we would add the construction industry.

5.2 Measuring success - and for whom?

The success of the BDP MAA will be measured by increased GVA (and GVA per worker) per head and increased average weekly earnings. In terms of benchmarking the Delivery Plan mentions two benchmarking objectives:

- To ensure that sub-regional GVA growth continues to increase relative to national levels so that by 2026 GVA growth per annum is 0.5% above the national average
- To increase weekly pay rates so that the current relative decline in average weekly earnings when compared to the national average is reversed by 2015 and then the gap closes by 1.5% by 2026

We saw that the BPTA area is already out-performing the national average on GVA and workplace-based earnings growth. The challenge is then to ensure that this continues. But the other part of the BDP Sub-Region is lagging well behind on these success indicators, leading us to suggest the following refinement:



- Use separate performance indicators for the BPTA, ROD and whole BDP Sub-Region to maximise transparency and shape strategic priorities for a long-term growth strategy
- There is some logic to building a performance framework which also takes in the County of Dorset area on the one hand, and all of the local authorities within the BDP area on the other.

A second area which the MAA success measures should cover is residence-based earnings. The mission of the RDA is to improve regional productivity performance as an integral part of the Government's national economic strategy. However, the mission of local authorities – the leading actors in the MAA – is to build 'strong and prosperous communities'. Success in the latter case has to be measured by resident-based earnings explicitly. Note that productivity can increase but employment can fall due to technological changes that increase total factor productivity – resident earnings can fall, although GVA per head rises. Recessionary conditions encourage firms to rationalise their workforces to maintain profitability and productivity – but employment rates and average resident earnings can fall.

- Add resident-based earnings to the workplace-based earnings and GVA per head target indicators – also consider the use of median rather than mean measures as additional indicators, given the former are more representative in a bi-polar economy (again a recessionary characteristic).

5.3 A place for benchmarking

Which other places in the UK or the EU should the BDP Sub-Region benchmark itself against in assessing its economic performance, and its credentials as a knowledge-intensive economy? There is no mention of this in the MAA but there should be. National and regional averages are too opaque and hide more than they reveal if we are interested in what the BDP wants to look like in the long term. If Bournemouth does not want to be described as a 'resort town in Dorset' (see The Guardian article on the idea of building an artificial reef, 17th July 2008), then how does it want to be perceived? The answer to this question matters considerably to the BDP inward investment and marketing strategies.

- Undertake a place benchmarking exercise to identify similar sub-regions of the UK and the EU (perhaps North America) against which the BDP Sub-Region could sensibly measure its current and future economic profile.

Place-based benchmarking will help to bring the MAA vision and long-term action plan to life. There are of course plenty of these types of studies – which tend to focus on cities rather than sub-regional configurations such as the BDP area. Geoeconomics carried out this type of benchmarking exercise for the Humberside Sub-Region as part of a European Commission project. Our work on local economy typologies interestingly found that Bournemouth is extremely atypical by UK local economy standards, and has no obvious UK comparators. In other words, the BDP partnership may need to look abroad.

5.4 Getting down to business

The private sector drivers of the knowledge economy are hundreds of 'knowledge-intensive businesses' – from large companies to micro enterprises – that are distributed across all market sectors of the BDP sub-regional economy. As explained in the Annex, these types of model businesses place a relatively high value on intellectual and human capital, assets that do not appear in balance sheets and hence the national accounts – from which GVA data are extracted for local and regional economic policy-making and target-setting.



Knowledge-intensive sector analysis is a broad-brushed approach to identifying these knowledge-intensive businesses, because their individual profiles may not correspond to the aggregate profiles of the sector under which they are classified in the ONS data. For example, a highly innovative, highly skilled SME may belong to a tourism sector or the construction sector however it will not appear in the knowledge-intensive sector 'grid'. Similarly large multi-site companies in financial services or ICT are counted as part of the knowledge-intensive sector grouping, but the local operations of these firms in the BDP Sub-Region may be specialised in functions that are relatively low down on the intellectual/human capital scale. Examples of this are branch offices and call centres in financial services, and assembly operations in a large ICT company. As a result the true contours of the business knowledge economy are unknown.

- Use a matrix approach – business by sector – to identify and evaluate the support, accommodation and infrastructure (ICT) needs of knowledge-intensive businesses. A more integrated, business-centric and dynamic approach is needed given the idiosyncratic nature of intellectual capital assets and the way they shape business strategies.
- Up-to-date and comprehensive business intelligence is essential to knowledge-intensive business support policies. The silo-less culture and structure of knowledge-intensive businesses has to be matched by the BDP partnership and its various delivery agencies. How agile are the delivery arms of the BDP Economic Development Partnership? How good is its business intelligence?

These are questions that relate to the infrastructure of economic performance management, rather than strategy documents and long lists of targets and indicators.

5.5 Elephants and Fleas

In designing and delivering strategies to support small knowledge-intensive businesses the BDP economic partnership could draw on Charles Handy's ideas on the nature of 21st century capitalism, as set out in *The Elephant and the Flea* (Random House, 2002). Handy's 'elephants' are large companies and large public sector organisations; his 'fleas' are micro and agile knowledge-intensive businesses. The BDP Sub-Region economy has its share of 'elephants and fleas', as we saw in Chapter 3.

'Fleas need elephants' – big companies and big public sector employers. How strong are the linkages between small knowledge-intensive businesses and the big BDP companies, and what potential exists to increase levels of commercial transactions. The 'eco systems' of knowledge-intensive manufacturing firms – particularly supply chains in advanced engineering – are fertile areas for 'flea population growth'.

- The new sector development partnerships could create a baseline picture of the level and composition of business linkages between BDP's private sector 'elephants' and knowledge-intensive 'fleas'. How much scope is there for raising levels of local outsourcing and contracting-out, developing more extensive supply chains and networking to help with knowledge and skills transfer (e.g. mentoring)?

The MAA agendas for 'increasing the innovation base' and 'building entrepreneurship' are consistent with this 'elephant-flea model' of the BDP knowledge economy. But the 'ball is in the court' of the other type of 'elephants' which have a very strong presence in the sub-regional economy - public sector employers. An important framework for developing the knowledge-intensive business potential of the BDP public sector, including its colleges is the Department for Innovation, Universities and Skills (DIUS) white paper "Innovation Nation" (March 2008). The



white paper contains a variety of proposals and plans for improving the innovation performance of not only businesses but also public sector organisations – with social enterprises ‘thrown in’. A significant proposal is to greatly increase competitive access to public sector contracts for SMEs by helping them to innovate – technology, management and networks (intellectual capital). Other proposals involve transferring more public services delivery to social enterprises, again through innovation, skills and financial support.

- The BDP Economic Partnership could develop its own response to “Innovation Nation”, working to create new knowledge, skills and technology linkages between the colleges and local businesses. As emphasised above, to some extent the ‘ball is in the court’ of BDP public sector employers – what is the current baseline for their commercial transactions with local BDP businesses?

This is a thorny political question which raises fundamental issues about the role of the public sector of the BDP knowledge economy. It is a central plank of the “Innovation Nation” white paper, but given that public services out-sourcing and privatisation has been monopolised by large firms and is organised centrally, how much potential really exists to make ‘innovation towns and cities’ a reality? We think that the BDP Economic Partnership should be highly proactive in this area, particularly with the aim of creating a more diversified base of knowledge-intensive businesses.



Annex: Understanding the Knowledge Economy

Introduction

The term 'knowledge economy' is used as a description of modern capitalism as well as an 'umbrella' concept for framing specific policy arguments – for example, the case for higher levels of government spending on university research and teaching. Similarly academics use the term to frame their research on innovation, skills and enterprise. The 'knowledge economy' is nevertheless an esoteric term, and for many a 'slippery concept'.

Most business people possess an intuitive understanding of the knowledge economy through the value they place on the 'intangible assets' of their companies – workplace learning and management practices, marketing and sales intelligence, software and database development, relationships with suppliers and informal networking with customers. All of these types of assets are knowledge-based in one way or another. From the 1920s onward, in advanced industrialised countries, they have eclipsed tangible assets (physical plant and equipment, buildings and truck and car fleets, etc) as the main sources of economic competitiveness, growth and employment. This is why economists explain the growth of the knowledge economy in terms of the increasing prevalence of intangible assets.

Knowledge-based Industries and Occupations

Researchers tend to measure structural change in economies by long-term trends in their industrial and occupational profiles. In the post-war period, accelerating in the 1970s, the UK has seen shifts from manufacturing to services, and from 'blue collar' production jobs to 'white collar' office jobs. To measure trends in the 'knowledge economy' researchers have to get behind these industrial and occupational shifts, because knowledge enters the economy as an *intermediate input* in the production of final goods and services.

The first attempt to measure long-term trends in the 'knowledge economy' was made by US economist Fritz Machlup nearly half a century ago (*The Production and Distribution of Knowledge in the United States*). Machlup's methodology involved re-classifying the traditional system of US national economic and labour force survey data according to inductive definitions of 'knowledge industries' and 'knowledge workers'. (What constitutes a 'knowledge industry' or a 'knowledge job' is a matter of degree, given that all forms of economic activity or work are based on the application of theoretical and practical knowledge.). The two benchmark indicators used by Machlup to demonstrate the growth of the US knowledge economy between 1900 and 1960 were:

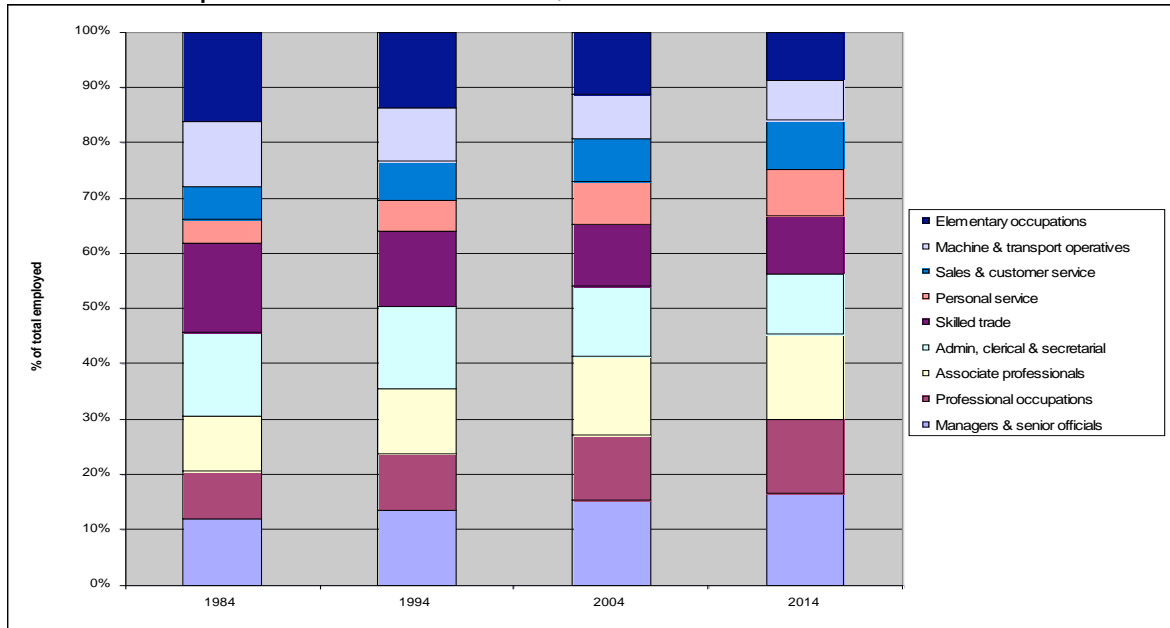
- *The share of Gross Domestic Product (GDP) generated by 'knowledge industries'* – defined as industries whose outputs are intrinsically knowledge-based or knowledge intensive. These sectors included high-technology manufacturing, printing and publishing, financial and business services, research and development (R&D), health and education and cultural industries.
- *The share of Gross National Income (GNI) generated by 'knowledge occupations'* – defined as occupations that primarily involve intellectual labour as opposed to manual labour. These occupations included professional, managerial and scientific and technical jobs, and other more routine information processing jobs such as clerical and secretarial work.

The 'industry approach' pioneered by Machlup also features in the influential knowledge economy studies of the Organisation for Economic Cooperation and Development (OECD). The OECD classifies 'knowledge industries' according to their R&D and technological intensities to



Source: Census of Population

Chart A.3: Occupational Forecasts for the UK, 1984 to 2104



Source: Working Futures, 2005

Intangible Capital: the ‘Hidden’ Driver of the Knowledge Economy

Research on economic growth indicates that through the 19th century technological progress was biased towards improvements in tangible capital – that is, physical infrastructure and equipment, inventories and natural resources – and general technological improvements which acted in favour of labour saving. However, technological change since the 1920s has been mainly driven by rises in the productivity of intangible capital constituted in the form of education and training of the workforce, practical skills acquired through R&D, and organisational structures (managerial structures, systems of innovation, control, marketing and user services).

Jonathan Haskell and his colleagues at Queen Mary College, University of London have demonstrated that today’s UK economy is more based on intangible capital than tangible capital, and that growth and productivity performance is now determined by investments in intangible capital (the sum of intangible assets in the country’s millions of firms). Headline results were press released by the Economic & Social Research Council.

ESRC Press Release, December 2007: Intangible Assets in the UK Economy

The way productivity performance is calculated in official statistics may be selling UK businesses seriously short. The true impact of today’s ‘knowledge economy’ is hidden by out-dated forms of measurement, argues a study led by Professor Jonathan Haskel of Queen Mary. It is good news for Britain’s managers accused of failing when productivity falls. When the ‘intangible’ assets of modern business activity are factored in, productivity is shown to rise.

According to official statistics, the UK’s productivity performance declined after 1995, despite major investment in information and communication technology. And US productivity growth has accelerated recently, leaving the EU behind, particularly in retailing. The study highlights that whilst investment in ‘knowledge’ type activities is increasingly important, innovations such as the use of iPods and the way software has revolutionised supply chains, customer analysis and staff organisation, have hardly affected UK



economic performance indicators.

The project, supported also by HM Treasury and the Office for National Statistics, found that in 2004, business investment of £120 billion - or about 15 per cent of gross value added in the market sector of the economy – went on intangible assets such as software, research and development, design, training and branding. This sum equalled UK companies' total investment in 'tangible' assets such as machinery. When intangibles are brought into the equation, the level of nominal market sector gross value added in 2004 rises by about 13 per cent, and the share of nominal investment in GDP rises from 22 per cent in 1970 to 25 per cent in 2004, rather than remaining constant at about 16 per cent.

Researchers found that about half of intangible investment went on advertising and market research to support brands, training employees and boosting management expertise, and 32 per cent on design. The other 18 per cent was spent on computerised information.

Professor Haskel said: "When the British economy was based mainly on investments in tangible assets such as machinery, the methods used for calculating Gross Domestic Product (GDP) were broadly fit for purpose. "But in an economy increasingly investing in intangibles, we could be missing some key aspects of economic activity. We set out to research their contribution to productivity and its growth – and the results were striking. Our findings suggest that, in recent years, traditional measurement techniques may have considerably underestimated the importance of science, innovation and knowledge-based industries to the UK economy."

Local economic development players need to be aware of these serious shortcomings in Government economic data. Fortunately, the 'economy' segment of the DCLG's standardised national list of 1998 Local Area Agreement indicators does not include outcome indicators expressed in terms of value added (and value added per head or worker – productivity indicators). Regional Development Agencies do have to use value added and productivity data to measure regional economic performance and their own contribution to any improvements in regional performance. Indeed, RDAs view the knowledge economy as a route to increasing regional productivity. National Bureau of Economic Research and Haskell and other UK economists believe that productivity is under-estimated by as much as 10-15 per cent owing to the absence of intangibles from the national economic accounts. Local businesses and their business managers are more productive than government economic data indicates. Therefore local and sub-regional GVA and GVA per worker are most probably under-estimated, and perhaps ironically will become less accurate and meaningful the more knowledge-intensive the economy becomes!

Indeed, even the Haskell research underestimates the value of intangible capital assets in the economy, because it had to work with existing Government data (made available on a confidential basis by the Treasury). The reality is that widely-used measures of intangible capital used by the OECD and EC are incomplete: the proportion of the working population with degrees (the EC higher education definition of 'knowledge intensive economic activities) does not measure the whole human capital stock of the UK economy or that of its local economies, because most knowledge, skills and competences are accumulated 'on the job'; R&D spending is an input to innovation, but it does not capture how much businesses innovate or invest in innovation (R&D spend is no more than 1 per cent of total business spend in the UK); and, software does not summarise the knowledge base of the economy. Finally, organisational capital – such as business processes, work practices and managerial innovations – are not measured as part of the economy's intangible assets. And, neither is social capital, the networks and relationships that firms exploit for mutual gain through the exchange of tacit knowledge – such as sales leads, advice on technology, favourable trading terms and so on. This type of goodwill is valued very highly by all businesses, but it is not formally acknowledged in economic accounting.

Knowledge-intensive Businesses – the Micro Level



Historically ‘intangible assets’ were equated to the catch-all concept of ‘goodwill’ – the favourable and preferential terms upon which businesses might trade with suppliers and customers. Today, accountants and business economists identify a more extended and refined classification of these types of assets. New classifications are emerging in the fields of knowledge and intellectual capital management practices, often linked to ICT consultancy and accountancy and general management consultancy. Reflecting these links, innovative approaches to managing intangible assets in firms – mostly large firms, rather than smaller firms - emanate mainly from high-technology industries (telecoms and aerospace, for example) and financial and business services – market leaders include the Big Four management consultancies and global companies such as IBM, Microsoft and others. SMEs rely more on public support agencies such as Business Links and possibly university business and management schools.

Most approaches are centred on building value around specific components of intangible capital, such as those shown in Chart A.4 below. Firms and accountants are developing a dual accounting approach made up of the traditional financial report and an intellectual capital supplement.

From an economic development policy perspective, the challenge is to identify how local firms combine these types of intangible assets in a dynamic way in order to improve their competitiveness. What are the critical intangible resources at any point in time, and how can economic development units help firms to exploit these resources more effectively through their interventions? A new Geoeconomics study for the London Borough of Bexley provides some possible answers to this question. Only by working closely and dynamically with local businesses can policy be effectively designed and targeted.

Chart A.4: Intellectual Capital in the Business Enterprise

| | |
|---|--|
| <p>Human Capital: Know-how, education, vocational qualifications, work-related knowledge, occupational assessments, psychometric assessments, work-related competences, entrepreneurial élan, innovativeness, proactive and reactive abilities and changeability</p> | <p>Customer (relational) Capital Brands, customers, customers loyalty, company names, backlog orders, distribution channels, business collaborations, licensing agreements, favourable contacts, franchising agreements</p> |
| <p>Organisational Capital A Intellectual Property, patents, copyrights, design rights, trade secrets, trademarks and service marks</p> | <p>Organisational Capital B Infrastructure Assets, management philosophy, corporate culture, management processes, information systems, networking systems, financial relations</p> |

Source: International Federation of Accountants, *The Measurement and Management of Intellectual Capital, an Induction*, New York, 1998.

The importance of different intangibles will vary by the SME’s growth trajectory and industry sector. For example, customer relationships are highly valued by service industries – such as professional practices, retailers and restaurants. This will be reflected in the importance of locations and the costs of re-locating a SME’s main business operations. A strong customer relationship can survive a change in location, such that SMEs with a local or regional market orientation and start-up businesses are likely to be least mobile. A powerful geographical influence is where the firm’s intellectual capital assets are concentrated – more simply where its workforce, especially owner-managers live.

Knowledge-intensive firms can be found in any and every sector of Bexley’s economy. US management professor William Starbuck’s original use of the term related to the increasing centrality of knowledge and learning in business structure, organisation and strategy across all sectors. ‘Knowledge workers’ are agents of change in these types of business models. Most



importantly, technology and high technology businesses are only sub-set of the total stock of resources and sectors that define the knowledge economy – in fact, they are a small element of economic activity, and certainly employment when we look at the universe of intangible capital deployed by firms and industries. Therefore, it is best to think of ‘knowledge-intensive firms’ as innovative, networked, abundant in intellectual capital, dynamic and modern and global in outlook. They may be innovative users of technology and hence knowledge-intensive, but being technology-intensive does not necessarily make them innovative and knowledge-intensive.

In the Geoeconomics classification of ‘knowledge-intensive’ sectors, we include industries that are intangibles-intensive, but which are not necessarily stereotypical ‘high technology’ sectors, such as aerospace, ICT, nuclear or biotechnology and materials technology. As Chart 2.2 shows, the Geoeconomics grid of ‘knowledge-intensive sectors’ include marketing and brand-led manufacturing industries, such as tobacco, reputation and intellectual capital-led services industries, such as financial and business services, as well as creativity-led manufacturing and service industries, such as printing and publishing, media content and theatre/TV.

The important point to bear in mind is that there are likely to be a large number of ‘knowledge intensive firms’ – businesses that are successful exploiters of intangible assets, innovative and employers of high skilled workers – that are classified in sectors that in aggregate are not ‘knowledge intensive’. For example, a local clothing manufacturer may be knowledge-intensive through its innovative designs and niche marketing strategy. However, other firms in the clothing and textile sector would also have to share this strong knowledge/intangible profile and they would need to constitute a critical mass of business employers in order for the sector as a whole to appear in the Geoeconomics classification of ‘knowledge-intensive sectors’.

Geoeconomics has composed the following definition of a ‘knowledge-intensive business’, which we would recommend using for local economic development strategy, and to inform planning decisions which aim to take account of the wider economic benefits of business developments.

- **A knowledge-intensive business is a firm (or social enterprise) which combines its tangible and intangible assets in a dynamic way to achieve competitive advantage. This is reflected in the high value it places on intellectual capital, as indicated by its spending on a range of intangibles, its formal or informal use of intellectual capital accounts (as a supplement to its standard company accounts), the objective assessments of external experts and the scale and composition of its ‘knowledge communities’ (networks of people and organisations that it collaborates with to innovate, develop and change).**

A simple but useful method of assessing the importance of intellectual capital in an individual business and hence judging the degree to which it is ‘knowledge-intensive’ is suggested by the US-based consultancy Trek Consulting (info@icrating.com):

Ask the business to rate each of the following resources as to their importance to their organisation’s future competitive position (on a scale from 1 for least important to 5 for most important):

| Physical Capital | | Intellectual Capital | |
|----------------------|-----|----------------------|-----|
| Inventory | --- | People | --- |
| Production Equipment | --- | Processes | --- |
| Buildings | --- | Relationships | --- |
| Land | --- | Strategy | --- |
| Total | --- | Total | --- |



A comparison of the two sums offers a first-cut understanding of the relative importance of intellectual capital in the development of competitive advantage. Most companies today, according to Trek Consulting, have a higher total in the right hand column and view their future success to be dependent upon the strength of their intellectual capital.

In sum, local economic growth and competitiveness is increasingly determined by knowledge-intensive firms that are investing in intangible assets in the form of knowledge and intellectual capital. Where the collective presence of these firms is large enough, they then constitute 'knowledge-intensive sectors' under our threshold definitions which apply to the total business population of a given sector. The point is that our classifications of knowledge-intensive firms and knowledge intensive sectors need to be used in combination, at the strategic level of policy making and the operation level of case-by-case decision making. These intangibles-intensive firms are driving and shaping the local knowledge economy, and their business behaviour is critical to the future prosperity of the communities that depend on how the local economy performs.

Social Capital as Intangible Capital – Networks and Localisation

An important part of the rationale for devolving UK economic policy to the local, sub-regional and regional levels is that geography matters. Face-to-face contacts and real meetings are thought to have a definite advantage when it comes to exchanging knowledge between businesses, and also between businesses and a range of public agencies. These interactions are decisive in the early stages of business-to-business dealings – pre-contract and first contract stages – when managers need to 'get to know each other', and/or when an innovative new product is being 'co-produced'. Less established SMEs, particularly in knowledge-intensive and creative services, are less able to use their brands and reputations to mitigate the high transaction and organisational costs of face-to-face interactions and maintaining a global presence. The point is that local economies are characterised by unique and dynamic network structures, formal and informal, that connect businesses with each other, with household consumers and also with public sector agencies. While supplier and customer relationships even for SMEs are becoming more global in scope, the high value that knowledge-intensive firms place on the intellectual capital of their workforces and the social capital of their communities – including any help they receive through economic development, transport, training etc programmes, but also the quality of life and services they receive as local residents, employers and workers.

Public agencies are external but integral members of these business networks. Government policies have resulted in their multiplication over the years to the extent that firms have complained about inaccessible 'jungles and mazes' of business support services. Institutions include business support agencies (e.g. the Business Link network), education and training providers (colleges and Learning and Skills Councils), knowledge and technology transfer bodies (universities and research institutes) and of course, policy actors involved in economic development such as regional development agencies, sub-regional agencies and local agencies. The Government is currently in the process of consulting on how this network infrastructure for economic development and regeneration can be configured more efficiently and made more effective for service delivery (The Sub National Review of Economic Development & Regeneration, 2007). Curiously, only five pages in the Review document is dedicated to what businesses can think and do – perhaps reflecting the supply-side emphasis of so much government policy.

In theory, these various networks of public agencies and networks of businesses should mesh to create localised intangible assets which can be shared by firms located within an area. This is the thinking behind the new white paper "Innovation Nation" (Department of Innovation, Universities and Skills, 2008), which argues that local authorities can and should play a more proactive role in promoting innovation among local businesses, SMEs in particular. The



Government calls for the creation of 'innovation towns and cities', the building blocks of an 'innovation nation'. How can academic entrepreneurship in its various forms – university spin outs, knowledge transfer partnerships and so on – be effectively harnessed to the needs of local businesses? The white paper's inclusion of FE colleges is a new step, given that the Government's approach to the knowledge economy was previously based on university-led research and science and technology strategies.

The potential of ICT to reduce spatial proximity constraints has to be seriously considered. Proximity itself is irrelevant. Instead what matters is the way in which professional communities use it to combine their tangible and intangible assets. For example, powerful knowledge economies such as Baden Wurttemberg and Silicon Valley stand out for the quality of collaboration between its SMEs and public institutions. The reality, confirmed by our previous research in the London Borough of Bexley, is that knowledge-intensive firms are global-local in the way they think and act. Mainly customers and suppliers are non-local in the sense they are located outside the boundaries of the local authority area – in the rest of the region, the UK, Europe and the world. This is typical to knowledge-intensive firms.

However knowledge-intensive firms are 'localised' or locally embedded for at least one very important reason: their workplaces are near to where their owners, directors, senior managers and core skilled staff live. Research on the location behaviour of knowledge-intensive SMEs in the EU and the US clearly shows that the following factors are most important to their decisions to locate or remain in a place:

- **Founder-director's home**
- **Convenience to existing employees**
- Affordable low-cost-space
- Availability of suitable facilities
- Good transport links
- Quality & availability of workforce
- Quality of residential environment, social and cultural amenities
- Parking
- Good communications infrastructure
- Local contacts and networks

Looking at this list, it is clear that 'the hearts and minds' of local knowledge-intensive business owners, directors and skilled staff are particularly critical factors in the future development of the local knowledge economy. Their decisions to remain in the area will, therefore, be effected by a combination of two assessments: is this area a good place to do business and work and is it a good place to live, in terms of quality of life, amenities, schools and ambience? Therefore, in a knowledge economy where businesses compete to attract and retain skilled people and professional and entrepreneurial talent, the role of 'place-making' has a powerful economic value. Equally, successful economic policies will help to make a place. This each-way relationship in 'place-making' shows that economic development and community development strategies are inseparable and should be approached holistically