

Glasgow City Region Summary Report 2008



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1 Introduction

Glasgow City Region's challenge

The economic development of Glasgow has been subject to periods of immense prosperity, economic success, growth and innovation yet also phases weakness and decline. Over the last 15 years, Glasgow has been economically successful and thus the question can be asked: Is Glasgow capable of regaining its position as one of the leading economies in Europe? There is potential, yet there is still much work to be done.

In 2005, BAK's Glasgow Economic Analysis and Benchmark Report clearly highlighted the turn around signs of Glasgow's economy in a national and an international context¹.

Glasgow City Region Summary Report 2008

The purpose of the Glasgow City Region Report 2008 is to provide a brief commentary on the comparative economic position and recent performance (2000-2006) of Glasgow as well as key information of its position with respect to the most important location factors. The analysis positions the Glasgow City Region in the framework of international competitors based on most recent data sources². The report highlights key strategic issues and implications for the City Region's economy.

The structure of the reports suits a continuous monitoring process: Each year, the economic performance data is updated and presented in an easily comparable manner, including key sector and location factor indicators. In addition, each report includes an in depth analysis of one sector/special topic.

Glasgow City Region's geography

The Glasgow City Region is not a homogeneous entity. Instead, the structures differ between the individual parts of the City Region. The diverse parts can take on different roles in the City Region's development. In addition to the international benchmarking, the Glasgow City Region Report 2008 sheds some light on the different structures within the City Region.

¹ See BAK 2005, an analysis and report on behalf of Scottish Enterprise Glasgow.

² The Glasgow City Region Report 2008 is based on the BAK International Benchmarking Database 2007, which includes annual data up to 2006.

For this purpose, the following regional entities are used (see as well fig. 1):

- 1) **Glasgow City:** The core of the City Region (the administrative unit City of Glasgow; UKM34 (NUTS3) according to EUROSTAT nomenclature)
- 2) **Metropolitan Glasgow:** Area closely connected to the core (Aggregation of five NUTS 3 regions³ including Glasgow City)
- 3) **Glasgow City Region:** The complete functional region, corresponding to territorial responsibility of Scottish Enterprise West (see footnote 2)

Fig. 1 The Glasgow City Region



Source: BAK Basel Economics

Structure of the Glasgow City Region Report 2008

The second chapter of this report provides a separate economic analysis of Glasgow City, Metropolitan Glasgow outside the City, and the remaining parts of the

³ See Appendix for the precise definitions. Please notice that this definition was used in the 2005 Glasgow Economic Analysis and Benchmark Report, named as 'Glasgow City Region' (see BAK 2005). In this report, 'Glasgow City Region' refers to a differently defined region.

Glasgow City Region outside Metropolitan Glasgow. It particularly highlights differences in the sectorial structure between these areas.

The international benchmarking in chapter 3 focuses on economic differences between Glasgow City Region and the benchmarking regions, in structural perspective as well as with respect to recent developments (2000-2006). Special attention is given to the strengths and weaknesses identified in the 2005 Glasgow Economic Analysis and Benchmark Report and the achievements since then⁴.

Chapter 4 concentrates on one particular sector: Financial and Business Services. It is one of the driving sectors of city region economies. The report analyses the position and the future opportunities for Glasgow City Region in this important sector.

A summary of the findings, strategic issues for Glasgow and the conclusion derived from it are presented in chapter 5.

⁴ Compare BAK 2005.

2 Glasgow's economy

This chapter of the report provides a brief overview on the current economic situation in Glasgow City Region (2006) and the economic development in recent years (2000-2006). The main focus of the chapter is an overview on the three different parts of the Glasgow City Region (see above).

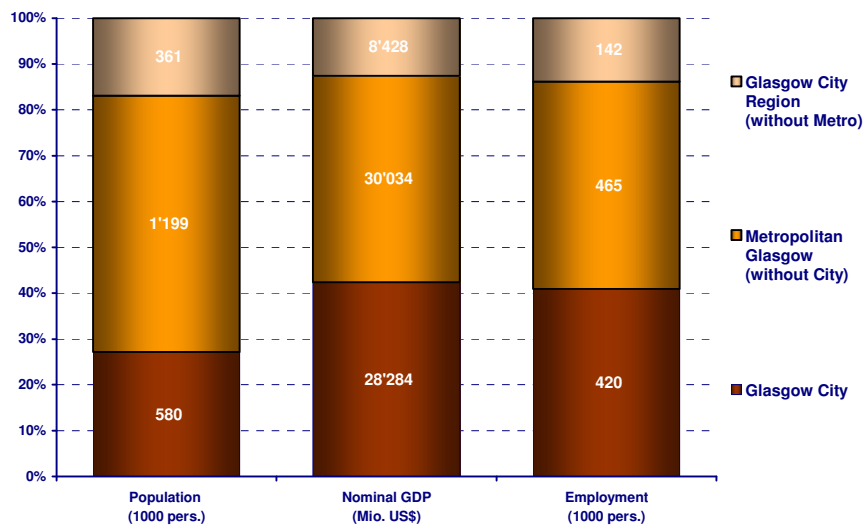
What are the contributions of the different parts to the City Region? How does their economic character differ? Are their perspectives for future developments different? In which way can they contribute to Glasgow's overall success? What is their role within the functional region?

2.1 Macroeconomic indicators

In 2006, Glasgow City Region's population was about 2.14 million. This is more than 40 percent of the Scottish population. Of this, nearly 580,000 people lived in Glasgow City itself. Additional 1.2 million people lived within Metropolitan Glasgow but outside the City. The remaining areas are the smallest part of the Glasgow City Region with only 360,000 people living there.

Fig. 2 Glasgow City Region's population, GDP and employment, 2006

Share in % of Glasgow City Region (absolute value in numbers)



Source: BAK Basel Economics

The City's share of employment (41%) is significantly higher than the population share (27%). This is typical for metropolitan regions where many people live in a wider hinterland but commute to work to the core city. But other parts of the City Region are important employment centres as well. Actually, Metropolitan Glasgow outside the City contributes more workplaces (45%) than the City. But here as well as in the remaining part of the City Region outside the Metropolitan Area the share of population is significantly above the employment shares.

An unusual pattern in Glasgow City Region is observed when comparing shares of employment and GDP of the different parts. Usually, a metropolitan core profits from density, good accessibility and positive spill over effects. This makes scarce resources, particularly land, expensive. Only high value added activities which profit heavily from density and accessibility settle in the core of a metropolitan region. Therefore, GDP is usually even more concentrated towards the core of a metropolitan region than employment is.

For Glasgow, this is not the case: Shares of employment and GDP are nearly equal in the three areas of the City Region distinguished here. This could be a sign of a not successful or not yet completed transition, when too many 'old' and low value added activities remain within the core. These 'old' activities can even block new activities; thereby hinder the efficient exploitation of the positive spill over effects and a successful transition into a modern metropolitan economy. But it could as well be part of the transition process: less value added activities (often production industries) moved out of the core to other parts of the metropolitan area, increasing growth there. At the same time, new activities with higher value added – the typical metropolitan services – grow in the core but need time to build up. It could well be that the observed structure is 'just' a part of a transition process in Glasgow – a process already far more advanced in many other metropolitan regions.

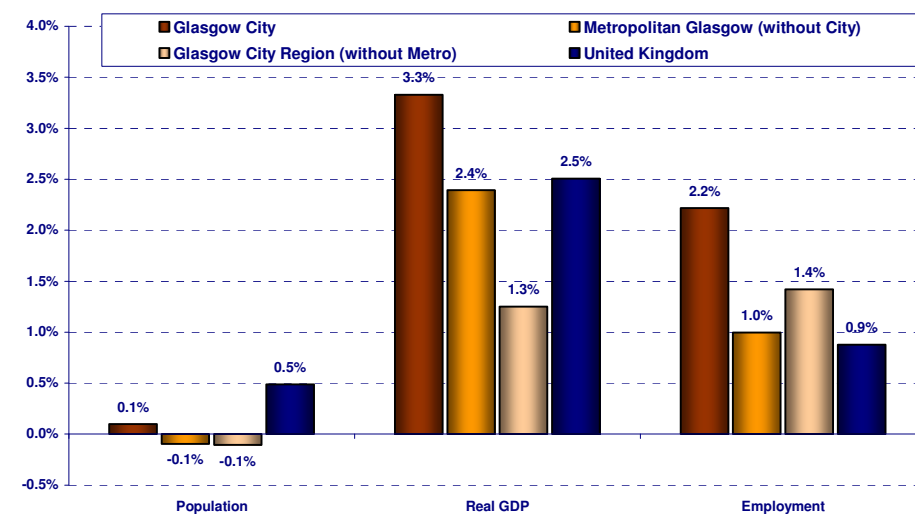
Turning to the dynamics in recent years (2000-2006) will reveal more about the nature of the observed pattern. On average, Glasgow City Region achieved a substantial economic growth since 2000 (2.8% annually). UK's growth rate was lower (2.5%). As Fig. 3 reveals, this growth is unevenly distributed within the City Region: Glasgow City reported by far the strongest growth. The Metropolitan Region outside the City expanded less than but close to the average growth of the City Region, with the areas outside metropolitan Glasgow growing only slowly. This pattern of growth distribution would be expected in a metropolitan region. The strong overall growth and the large growth differentials are hints of an ongoing transition process in Glasgow.

Turning to employment a different pattern is observed. Again overall growth in Glasgow City Region was strong (1.6% annually against e.g. 0.9% in UK). But growth in both areas outside the City was about equal, and only the City recorded

a stronger growth. On the other hand, productivity increased at about the same rate in all Metropolitan Glasgow, regardless if inside or outside the City. In contrary, outside the Metropolitan Area productivity stagnated. Ignoring the small part outside the Metro Area we do not observe a move of higher productive activities towards the core. As was argued above, a productive core is usually the power house of a metropolitan region.

Fig. 3 Population, GDP and employment growth in Glasgow, 2000-2006

Annual average growth rates (real GDP based on US\$ at 2000 prices and 1997 PPP)



Source: BAK Basel Economics

Although we do observe strong growth in Glasgow's power house, the City of Glasgow, we do not see a movement to higher productivity levels as a sign of sufficient use of its advantages. The transition process, which is observed in the data and shows potential to improve Glasgow's position substantially, seems to need even more focus: using the advantages of the core is often best achieved with typical urban services, while the surrounding Metropolitan regions focuses more on the responsibility for production activities, support of the core and last not least an attractive housing and living environment.

The stagnating population shows that the last issue – an attractive housing and living environment – needs to be addressed as well.⁵ Apart from economic success, Glasgow must be attractive for people to work and live there to achieve sustainable success.

⁵ Although a stagnating population is already a success for Glasgow which lost population before, sometimes dramatically. For example, from 1980 to 2000 Glasgow City Region's population decreased by 8.0 %, whilst UK's population increase by 4.1 %.

2.2 Industry structure

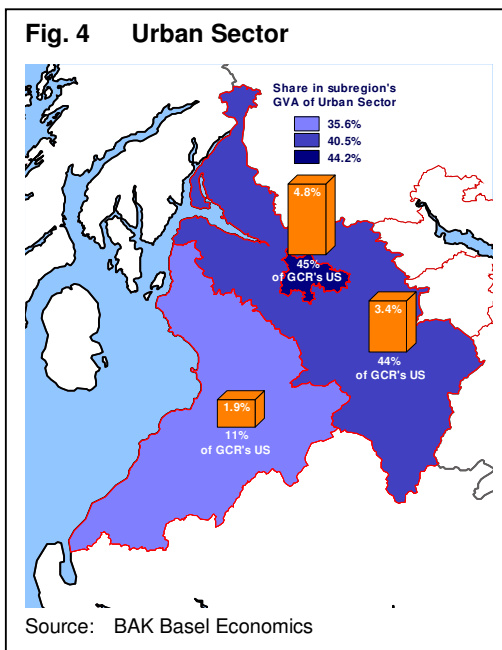
This section will help to shed more light on the questions about Glasgow's position in the transition process and the roles the individual parts play within the City Region. The analysis will focus on the Gross Value Added (GVA⁶) of the three larger of the five Driver Sectors of the economy (see box): The Urban Sector, the Political Sector and the Traditional Industries.

What the maps show

The maps contain three different types of information:

- 1) The orange bars show the average annual growth rate 2000-2006. An example in Fig. 4: Between 2000 and 2006, the Urban Sector in Glasgow City has grown at an average of 3.3 % per annum.
- 2) The percentage values given under the bar show the subregion's share of this sector's total GVA in Glasgow City Region 2006. An example in Fig.4: The City produced 45 % of Glasgow City Region's Urban Sector.
- 3) The blue colours of the region in the map show the importance of the sector in the corresponding subregion (share of the sector on the subregion's GVA 2006). An example in Fig. 4: The Glasgow City's Urban Sector has a share 44.2 % of Glasgow City's GVA

All growth rates are annual average real growth rates in % (based on US\$, 2000 prices, 1997 PPP); all shares are in %, calculated using GVA (based on US\$, current prices, PPP).



The Urban Sector is the largest one of the Drivers Sectors in Glasgow City Region. It is as well the sector which includes the typical metropolitan services like Financial and Business Services, Trade, Transport and Tourism. The Urban Sector is the driving force behind the success of many metropolitan regions. Furthermore, it is the part of the economy often profiting most from density, good accessibility and the function of cities as knots in the global economy, the typical advantages of a core of a metropolitan region. The Urban Sector is therefore central for Glasgow's future perspectives.

⁶ For all industry analyses the Gross Value Added (GVA) is used. The Gross Domestic Product (GDP) only applies to the aggregate economy; GVA is the comparable concept on the industry's level.

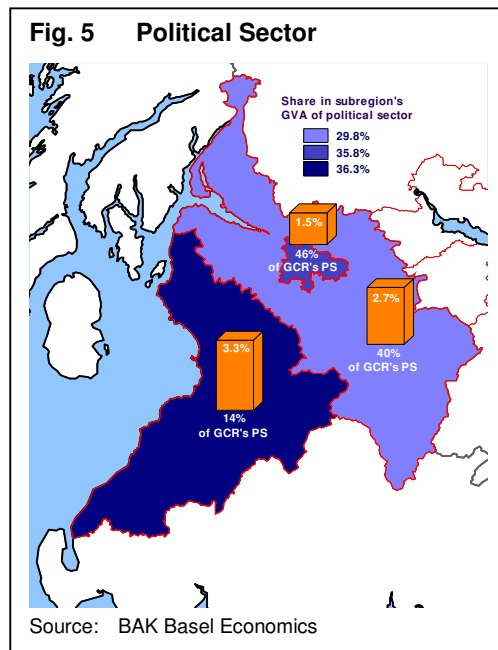
For Glasgow, a concentration of the Urban Sector in the core can be observed: The share of the Urban Sector in the City is 44 %, higher than in the other parts of the City Region. Furthermore, growth since 2000 was much higher in the City than outside, a sign of the ongoing concentration process of the Urban Sector in the core. Most probably, some of the substantial growth in the Metropolitan Region outside the City is also geographically closely connected to the core. This is a welcome development, as a high local density (cluster) in these businesses supports dynamic developments and increases the innovation potential. Within the Urban Sector, Real Estate, Provision of Services to Companies and Trade (Retail and Wholesale Trade) were the strongest industries.

The Drivers of Economic Growth

In analysing an economy, it often provides helpful insights to analyse specific industries or sectors separately. But dividing the economy into too many different industries can also be confusing and might hide the actual structures of interest. Therefore, a concept to collect the individual industries into 'sector aggregates' with common properties is used. The most important property is productivity (level and growth potential). These aggregates –called the five 'Drivers' or 'Driver Sectors' – are:

- (1) **New Economy (8%)**
- (2) **Old Economy (3%)**
- (3) **Urban Sector (41%)**
- (4) **Traditional Industries (15%)**
- (5) **Political Sector (33%)**

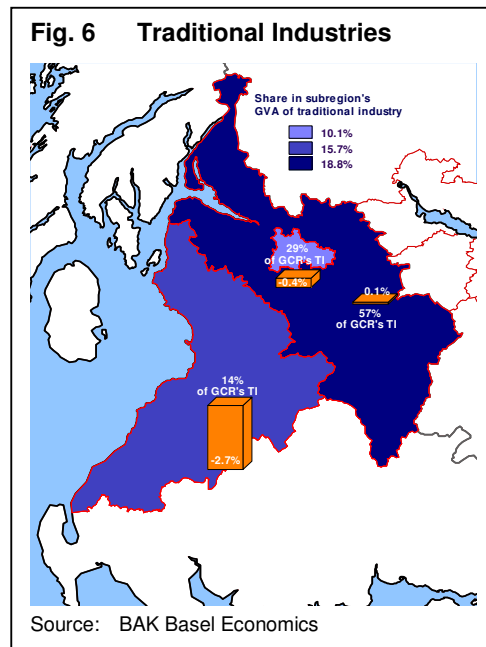
In brackets: share of GVA in Glasgow City Region's economy 2006. For more information see appendix.



The second largest Driver Sector in Glasgow is the Political Sector, including among others Health and Social Services, Public Administration and Education. The concentration as well as the growth since 2000 is highest in the parts of the Glasgow City Region outside the Metropolitan Area. The strongest contributions to these figures originate from Health and Social Services and Agriculture. Not surprisingly, the second highest share of the Political Sector is found in the City. The City typically provides services like central administration or higher education for the complete region. Indeed, in Glasgow City the

share of Education is quite significantly above the City Region's average. Additional, growth of Education in the City was higher. But in total the growth in the City of the Political Sector was rather weak, which is not necessarily bad: Often the long term growth potential of large parts of the Political Sector are believed to be rather low, and it is a good signal from the transition process in Glasgow if more room at the core is given to other parts of the economy. In contrast, outside the core the Political Sector can help overcome local difficulties and to smooth the transition process. Finally, it should be noted that much of the dynamics in the Political Sector come from Education and Research & Development: Both are future oriented investments and can help to build the foundation for a long term sustainable growth of the Glasgow City Region.

In the late 19th and far into the 20th century the Traditional Industries were the most important part of the economy in many European economies. This is also true for



Glasgow City Region, which kept a strong share of Traditional Industries longer than many other regions⁷. Today, the share dropped to 15% of the economy. Beside Construction the Production of Food and Beverages and the Production of Metals and Metals Products are important parts of the Traditional Industries in Glasgow. Most of it is located in the wider Metropolitan Region but clearly outside the City. This is also the area in a metropolitan region where such industries can develop successfully⁸ – if it can at all. Prospects of the Traditional Industries for Western Europe metropolitan regions are not very good: Cost competition from

Eastern Europe and Asia is rough, and only niche strategies combined with tough cost controls combined with high (process) innovation intensities are promising. The wider metropolitan areas outside the core but within a functional metropolitan region offer the necessary mix of resources: Accessibility (for workers and goods) is high enough for a producing industry, without the high prices and congestion problems of the core. Research institutions are within reach and a highly educated workforce are further pros of a metropolitan region.

⁷ For example, in 1980 the share was 23 %. For further information see chapter 3 and BAK 2005.

⁸ Except for Construction: This is limited to the location of demand and cannot move.

The industry analysis again reveals signs of the ongoing transition process in the Glasgow City Region. Urban services move more into the City. Producing industries do have better chances in the wider metropolitan region (at least they do not decline there). The structure moves towards the typical metropolitan pattern with a highly concentrated and productive core. Where Glasgow stands in the process compared to other metropolitan regions is subject of the next chapter, the international benchmarking.

3 Benchmarking Glasgow City Region

This chapter provides a benchmarking of Glasgow City Region against a sample of other Western Europe metropolitan regions⁹. The analysis of key economic indicators for the economy is followed by a section focusing more on industry specific developments. The analysis applies the concept of Driver Sectors and focuses on the three most important sectors (by GVA share). The analysis is completed by the discussion of location factors.

Where is Glasgow positioned in international competition? Does Glasgow's economy gains ground vis-à-vis its competitors, or are the competitors advancing faster? The benchmarking will help to answer these questions. It will also identify strengths and weaknesses in Glasgow's development in recent years – the focus is on development from 2000 to 2006. Including location factors in the analysis will allow a more detailed assessment and reveal the strategic opportunities for Glasgow in a global economy.

3.1 Glasgow's economic performance

The level of GDP per capita in the Glasgow City Region is low in comparison with other European metropolitan regions, a fact well established by earlier analyses. As one of the central economic indicator, GDP (Gross Domestic Product) is based on the total production or the value produced in a region. For most regions, GDP per capita is an indicator of income and wealth in the region as well. Data for the year 2006 confirms the disadvantageous position of Glasgow. The gap with the UK amounts to 11 % and to more than 23 % with the Metro Average. In the benchmarking sample, especially the Scandinavian regions (Helsinki, Øresund) and Dublin have clearly higher GDP per capita¹⁰. This is a clear weakness for Glasgow.

One of the main economic goals for Glasgow City Region is to reach a place in the 1st quartile of the GDP per capita ranking within a decade¹¹. As Fig. 8 shows, Glasgow is actually moving in the right direction. Between 2000 and 2006, the annual

⁹ All regions used in the analysis of this chapter are City Regions. Correspondingly, in this chapter 'Glasgow' always refers to Glasgow City Region. 'Metro Average' does not refer to the average of the benchmarking regions used here but the average of 34 metropolitan regions available in the IBD. Notice that the list of regions in the benchmarking sample is different vis-à-vis BAK 2005. The selection of benchmarking regions was driven by the desire to benchmark Glasgow with regions with similar conditions and challenges as Glasgow. See appendix for details and definitions.

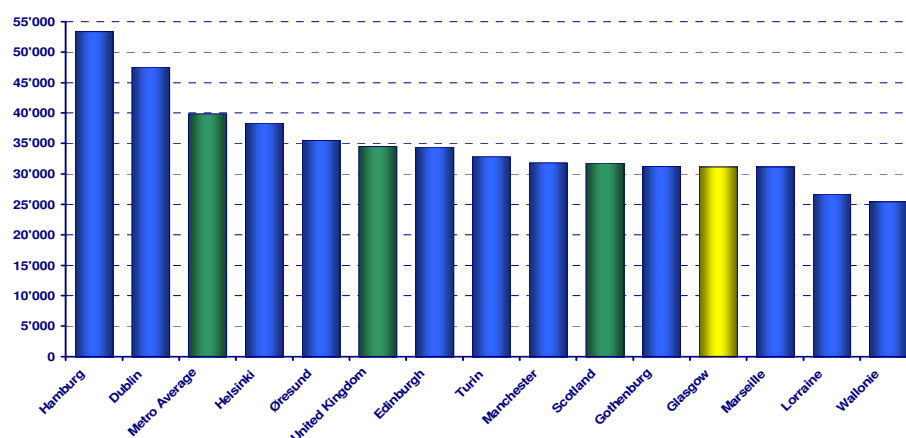
¹⁰ Hamburg is a special case. The boundaries of Hamburg are too narrowly defined. Large commuting flows bias the GDP per capita data.

¹¹ The announced place in ranking (see Glasgow Economic Forum, 2006) refers to the 2005 benchmarking sample (BAK 2005). The sample in this report is not identical.

average growth of Glasgow's GDP per capita (2.6%) was clearly higher than for the UK (2.0%) and for the Metro Average (1.3%). Only Dublin and Manchester achieved higher growth rates. The stable GDP per capita growth over the recent years is a promising sign for ongoing economic catch-up of Glasgow towards its challenging goals.

Fig. 7 GDP per capita, 2006

in Mio. US\$ (current prices, PPP)

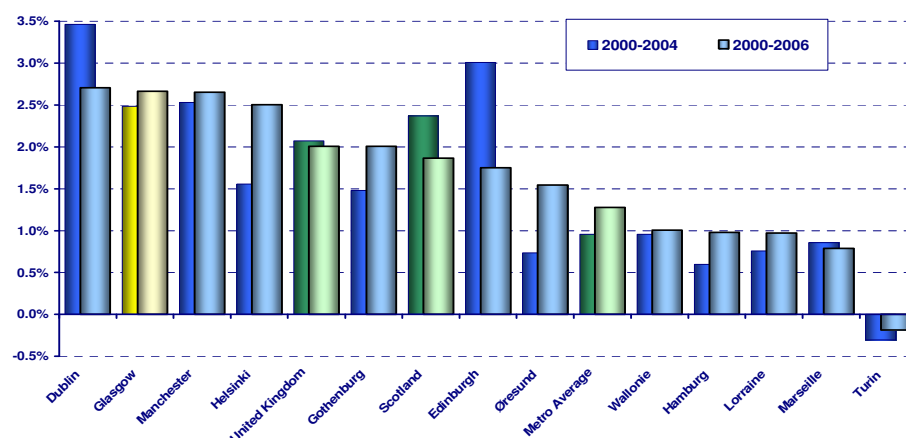


Note: All regions in this figure including Glasgow are City Regions.

Source: BAK Basel Economics

Fig. 8 GDP per capita growth, 2000-2004 and 2000-2006

Annual average real growth rates in % (based on US\$, 2000 prices, 1997 PPP)



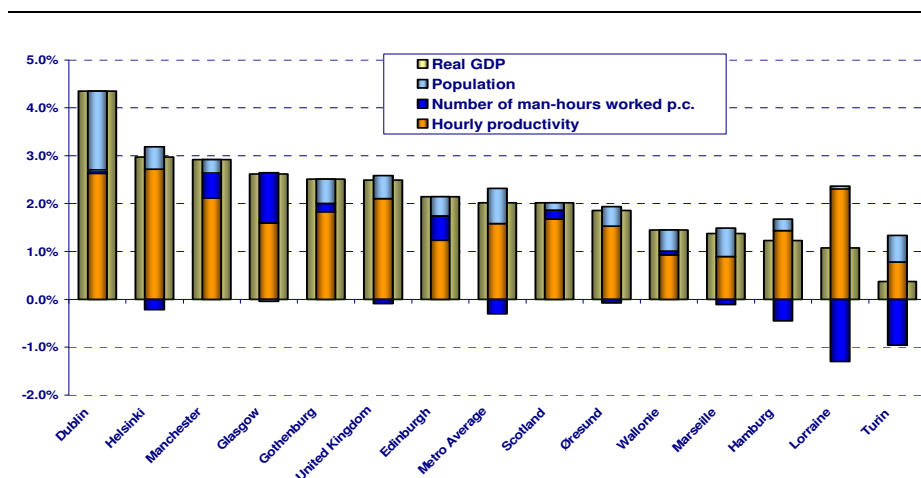
Note: All regions in this figure including Glasgow are City Regions.

Source: BAK Basel Economics

Within the chosen benchmarking sample, there are substantial differences between the components leading to GDP growth (Fig. 9)¹². In the recent years, of the four strongest growing regions Helsinki and Dublin have been very successful in increasing productivity. In addition, both regions were by and large able to provide jobs for their increasing populations, but not to increase participation rates. Particularly Dublin, in contrast to other successful regions, had a pronounced population growth as one source of GDP growth. Manchester achieved substantial growth of productivity as well, although lower than the other two. Additionally, the hours worked per capita increased, adding to the GDP growth and pushing Manchester in the top group. Glasgow, the fourth region in the top group, is the only region clearly more successful than Manchester in providing more jobs for a given population. Then again, productivity gains were weaker than in the other leading regions.

Fig. 9 GDP growth and its components, 2000-2006

Annual average (real) growth rates in % (based on US\$, 2000 prices, 1997 PPP)



Note: All regions in this figure including Glasgow are City Regions.

Source: BAK Basel Economics

Glasgow's leading position in the international benchmarking sample with respect to GDP growth – and for that matter, in GDP per capita growth – within the last six years is based on providing additional jobs for the people living in Glasgow and the wider region. This is also visible in employment data: Between 2000 and 2006 employment increased by nearly 1.5 percent annually. In the benchmarking sample, only Dublin was more successful in creating new jobs. But this was combined with the strong populations growth as already mentioned. In contrast, Glasgow's employment success was not based on population growth. Glasgow succeeded bringing more of its resident population into the labour market. This is even more

¹² Fig. 9 shows the real GDP growth and not GDP per capita growth (as in Fig. 8).

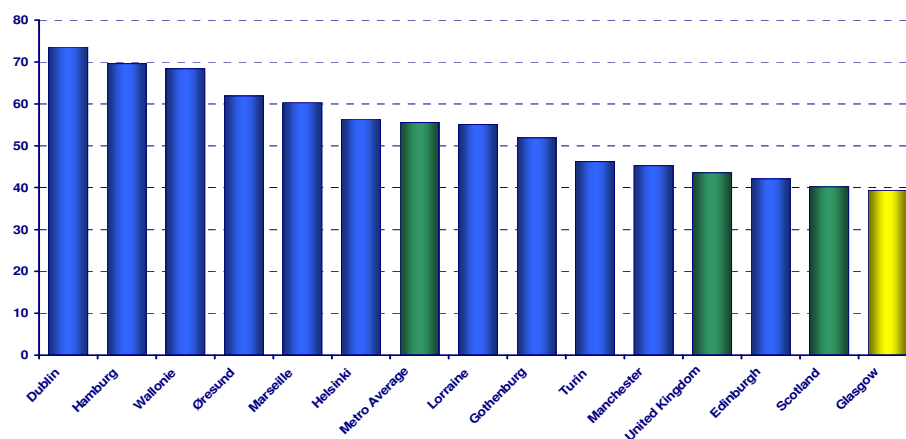
important as un- and underdevelopment of the population was one of the most serious challenges for Glasgow in the last decades.

On the contrary, Glasgow's achievements are fairly weak with respect to productivity growth. Glasgow clearly ranks in the second half of the benchmarking sample. As productivity growth is strongly related to improving competitiveness, this leaves Glasgow to some extent vulnerable in the future.

However, productivity growth is no guarantee for success, as the interesting case of the French region Lorraine reveals. The region is still heavily in a transformation stage. Many jobs were lost in the recent past, mainly low-productivity industry workplaces. The loss of low productivity jobs increased the average productivity in the region, leading to the observed strong productivity growth. At the same time employment per capita shrank, revealing that it was not possible to replace all the lost jobs with new ones. As a result, GDP as well as GDP per capita growth were slow, regardless of the productivity increases.

Fig. 10 Hourly productivity level, 2006

in US\$ per hour (PPP, current prices)



Note: All regions in this figure including Glasgow are City Regions.

Source: BAK Basel Economics

How serious the issue productivity is for Glasgow can be seen in Fig. 10. Productivity was the lowest in Glasgow of all benchmarked regions in 2006. UK regions do in general face a productivity challenge compared to Continental and Nordic regions, but it is most serious in Glasgow. More achievement in increasing productivity is necessary if Glasgow's "catch-up" is to be sustainable. At the same time, job creation is not to be dropped from the goals list: the challenge for sustainable success is more productive jobs, not just increasing average productivity.

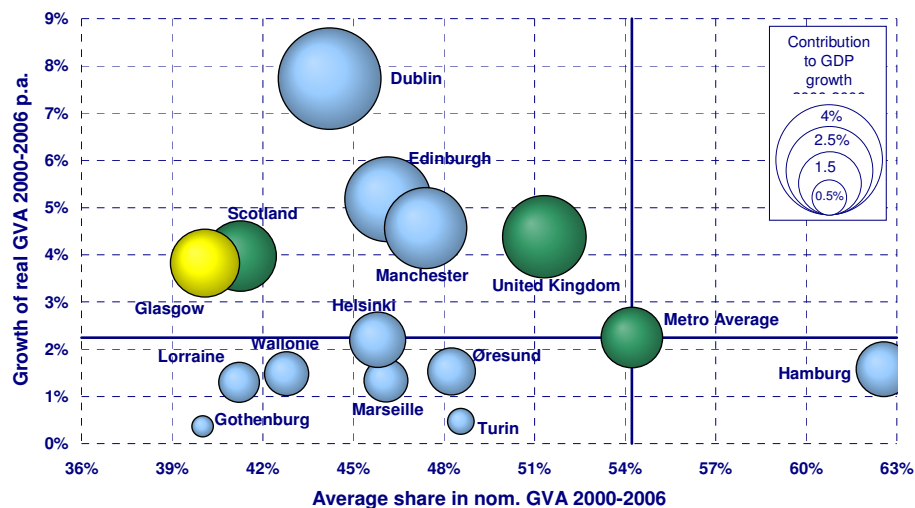
3.2 Driver Sectors

The Urban Sector is the largest industry sector for most metropolitan regions. It is a dynamic sector as well. Therefore, the growth contribution to the whole economy is usually the highest of all Driver Sectors in metropolitan regions.

In the chosen benchmarking sample, Glasgow City Region is the region with the smallest share of the Urban Sector in 2006 (38%). Glasgow's Urban Sector is underdeveloped compared to other metropolitan regions! Yet, growth 2000 to 2006 (3.7% p.a.) was above the Metro Average (2.3%). But it was clearly below other Anglo-Saxon-Celtic metropolitan regions. The Urban Sector's of Dublin, Edinburgh and Manchester did grown faster. Both, the average share and the annual growth combined define the contribution of the Urban Sector to regional growth. From 2000 to 2006, the average annual contribution of Glasgow's Urban Sector was 1.4 percentage points. This was somewhat above Metro Average (1.2%) but clearly below UK (2.2%). The transition from an industrial focused economy to a metropolitan (service) economy seem not be as far advanced in Glasgow as in other metropolitan regions. Furthermore, although Glasgow was catching up slowly vis-à-vis the Metropolitan Average, Glasgow still lost ground against its peer group of Anglo-Saxon-Celtic regions. It seems that the economic potential in Glasgow's Urban Sector is not fully utilised currently.

Fig. 11 Growth contribution of Urban Sector, 2000 to 2006

Growth in % (based on US\$, 2000 prices, 1997 PPP); share in % (based on US\$, current prices, PPP)



Note: All regions in this figure including Glasgow are City Regions.

Source: BAK Basel Economics

Especially in Hotels and Restaurants, Insurance and Transport Glasgow's GVA growth was below the Metro Average. Most successful regions in Transport and Wholesale Trade were regions with important harbours (e.g. Hamburg, Helsinki or Marseille). Although Glasgow provides harbour facilities as well, it did not manage to join this group. One success story is Glasgow's Retail Trade. Since 2000, the annual growth was about 3.3 %. This high growth is surprising, given population stagnation. Also clearly above Metro Average was the GVA development in the Entertainment, Culture and Sport. This is a good sign for an increasing attractiveness of the city for inhabitants as well as for visitors. These are the signs of an attractive consumer city, which could help Glasgow to further develop its Urban Sector.

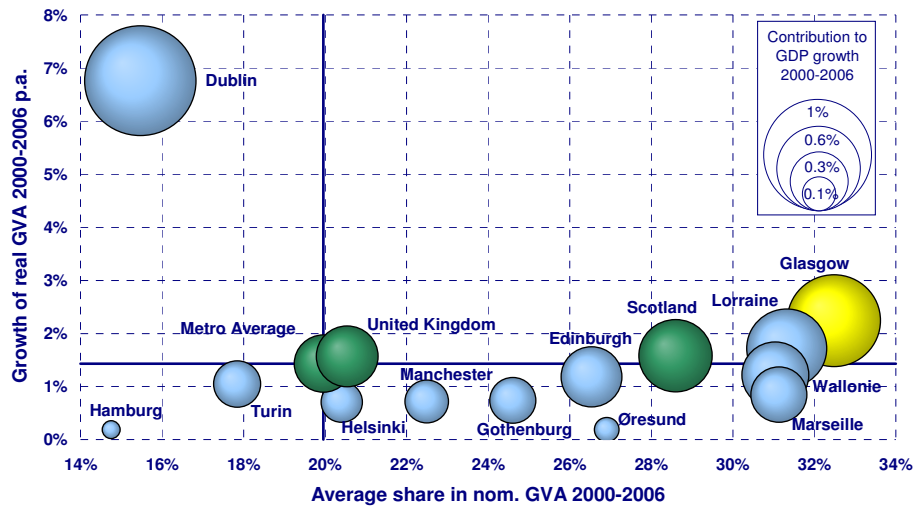
Another important part of the Urban Sector is business directed services, an area the success of many metropolitan regions is based on. Due to its significance, chapter 4 of this report analyses Financial and Business Services in particular.

Compared internationally, the Political Sector has a pronounced importance in Glasgow. The share (2006: 31%) is significantly above Metro Average (20%) and UK (21%). In general, it seems that this high importance of the Political Sector is a special Scottish and French case. In Glasgow, this is due to an above average weight of most individual parts of the Political Sector: The highest variation is observed in the Health and Social Services, followed by Education, Utilities and Agriculture. In contrast, in the French regions the high weight of the Public Sector is primarily due to the Public Administration, Defence and Social Insurance.

With respect to growth in recent years, Glasgow's Health and Social Services stick out positively. This is somewhat surprising given population stagnation. Another particularly strong growing part of Glasgow's Political Sector is Research & Development, although its share is quite small.

Fig. 12 Growth contribution of Political Sector, 2000 to 2006

Growth in % (based on US\$, 2000 prices, 1997 PPP); share in % (based on US\$, current prices, PPP)



Note: All regions in this figure including Glasgow are City Regions.

Source: BAK Basel Economics

In general, a high share and an above average growth of the Political Sector is an outcome with two sides. On the one hand, success in any sector is good news for a regional economy of course. On the other hand, the Public Sector is often thought to have a limited future growth potential and has regularly a low productivity potential. Although parts of the Political Sector – Education as well as Research & Development – do represent investments in the future as well, a growth strategy for Glasgow should not focus on more growth in this already overrepresented sector.

Traditional Industries had a small negative growth contribution in Glasgow in recent years (Fig. 13). In general, the future prospects of this sector are not very positive for Western European metropolitan regions. Problems in Traditional Industries are low productivity and strong international cost-competition. Production of such goods is sourced out to Eastern Europe and Asia, where wage costs are much lower than in regions like Glasgow. Only a few selected regions in Europe with a strong and specific cluster in a particular industry within the Traditional Industries do have the option to base a future growth strategy on this part of the economy¹³. Glasgow is not amongst these regions. Neither can we observe an existing strong

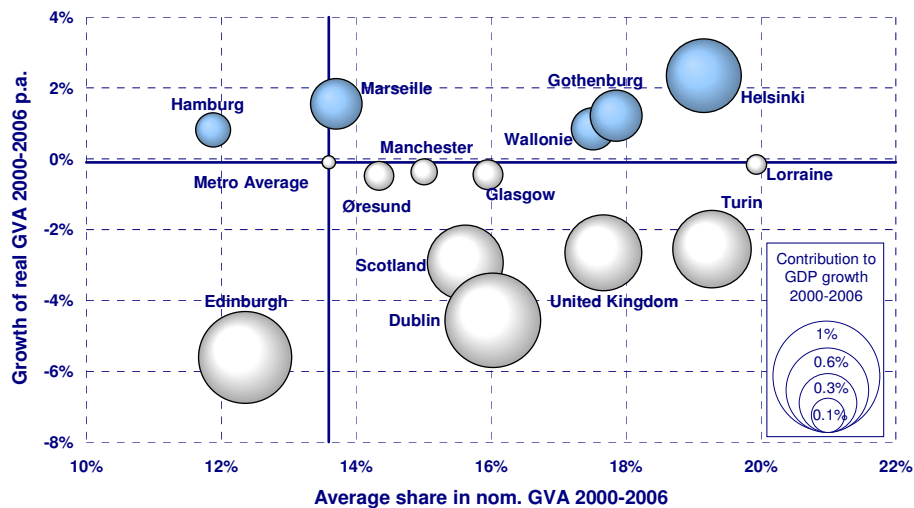
¹³ No such region is in the current benchmarking sample. Examples could be found in some Austrian regions and in Northern Italy. In the regions in the benchmarking sample doing better than Glasgow (Helsinki, Wallonia, and Gothenburg) often the construction sector, based on high regional demand, is a driving force. But even their growth potential seems to be limited. Helsinki and Gothenburg also have a strong and dynamic cluster in manufacture of machinery and equipment.

cluster of a particular part of the Traditional Industry, nor do we see a strong growth trend.

Again the development of Traditional Industries could a sign that the transition process in Glasgow is not yet completed. The above average share combined with the stagnation of the sector could be the product of an ongoing transition process. In Glasgow, Traditional Industries have the potential to occupy some attractive niches as well as to satisfy some local demand. But this is not the key for a growth strategy, as potential seems limited. Glasgow has no well-established large cluster within the Traditional Industries.

Fig. 13 Growth contribution of Traditional Industries, 2000 to 2006

Growth in % (based on US\$, 2000 prices, 1997 PPP); share in % (based on US\$, current prices, PPP)



Note: All regions in this figure including Glasgow are City Regions.

Source: BAK Basel Economics

A growth strategy for Glasgow should focus on more productive activities, which exploit the advantages of a metropolitan region like urbanity and density. The focus of a growth strategy should concentrate on activities with a high productivity growth potential, often activities which belong to the Urban Sector. For Traditional Industries, as well as other less productive activities, the focus is more on niche strategies and specific local demand. Furthermore, within the Glasgow City Region these activities should shift more towards the wider metropolitan region, while the core nurtures the high productive activities.

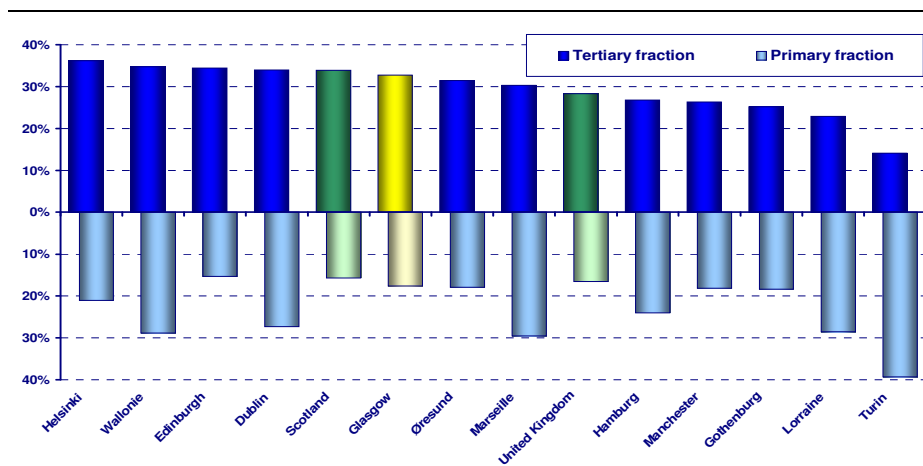
3.3 Location factors

To understand the reasons behind economic performance and to assess strength and weaknesses for further development this section provides a short comparison of important location factors.

Innovation

Most important for successful innovation are the humans who innovate. One way to measure (future) innovation potential in a region is the qualification level of the labour force in the region, measured here as educational achievements¹⁴. In Glasgow, the fraction of highly qualified persons with a tertiary degree is in the middle of the benchmarking sample. However, the gaps to the «top» regions as Helsinki or Wallonia are small: their share is only about 3 percent-points higher.

Fig. 14 Education level of the labour force, 2006

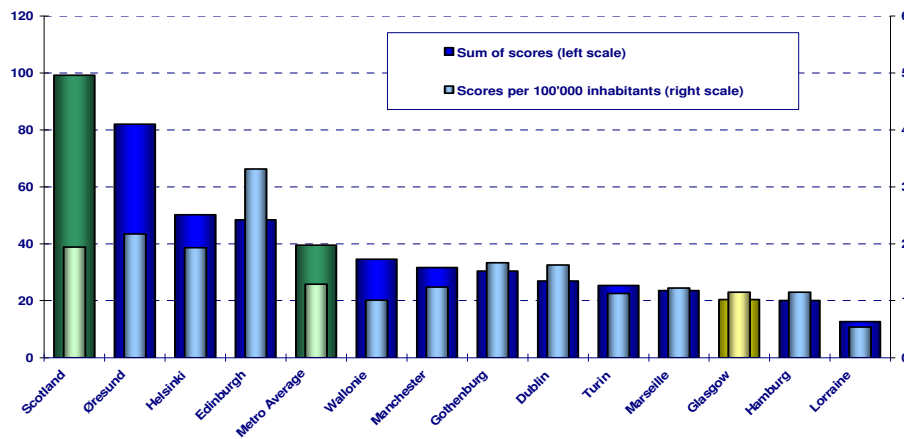


Note: All regions in this figure including Glasgow are City Regions.
 „Highly qualified“ have a tertiary degree, „low qualified“ no more than a primary degree.
 Source: BAK Basel Economics

At the other end of the distribution of qualifications, Glasgow is again in a middle position with respect to low qualified persons in employment (not more than a primary degree). Although Glasgow has a higher share of low qualified than other UK regions in the benchmarking sample, the differences are marginal. Furthermore, a strong growth of the education sector in Glasgow (see 3.2 above) could be a sign for further improvements, although changes through education take a substantial amount of time to be recognizable.

¹⁴ See annex for definition and calculation of the education level.

Fig. 15 Research quality of University, 2006



Note: All regions in this figure including Glasgow are City Regions.

Source: BAK Basel Economics, Shanghai-Index

Apart from people who innovate innovation also needs the initial ideas, the invention. One source for inventions is academia. Regional spill-over notwithstanding, the availability of top level academic research supports a region's innovation capacity. Glasgow lies in the last third of the sample¹⁵.

Taxation and Regulation

In UK taxation is UK level issue. There are no differences between the UK regions¹⁶. In an international comparison, UK taxation levels are moderate which provides Glasgow with an advantageous position compared to its international competitors. Particularly, everything else being equal Glasgow is more attractive for highly paid jobs: The tax wedge, the difference between employment cost for a company and the available income for an employee, is smaller in Glasgow than in any of the benchmarking regions from the continent. Employer and employees share the cost of the tax wedge between each other, the individual share depending on the bargaining power. Therefore, the low UK taxation level helps Glasgow to be more attractive for employers in need of highly qualified labour as well as for highly qualified persons.

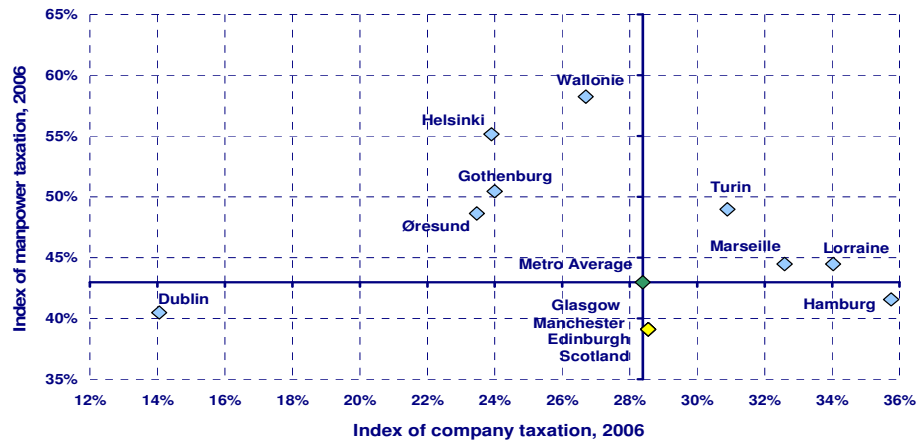
With respect to company taxation Glasgow's position is less favourable but far from bad. However, the development over time should be noted. The BAK Taxation Index shows a significant decline of tax levels in the UK from 2000 to 2006. But the decline observed in the benchmarking regions is on average larger. The relative

¹⁵ Measured with the Shanghai-Index. See annex for definition and calculation.

¹⁶ See annex for definition and calculation of BAK Taxation Index Manpower and Companies. Existing small local and regional tax differences in UK do not influence the BAK Taxation Index.

position of UK regions deteriorated. Even though not yet dramatic, this is an observation to be kept in mind and monitored for future developments.

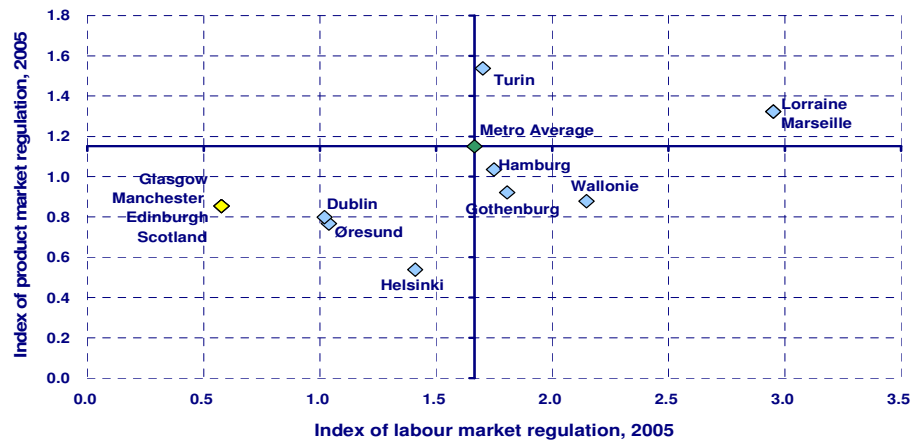
Fig. 16 BAK Taxation Index, 2006



Note: All regions in this figure including Glasgow are City Regions.

Source: BAK Basel Economics, ZEW

Fig. 17 Regulation levels, 2005



Note: All regions in this figure including Glasgow are City Regions.

Source: BAK Basel Economics, OECD

In terms of regulation¹⁷, Glasgow is in good position in international comparison. Again, this is due to decision taken on UK level. The UK labour market is one of the most liberal, an important condition for a flexible and dynamic economy. Addi-

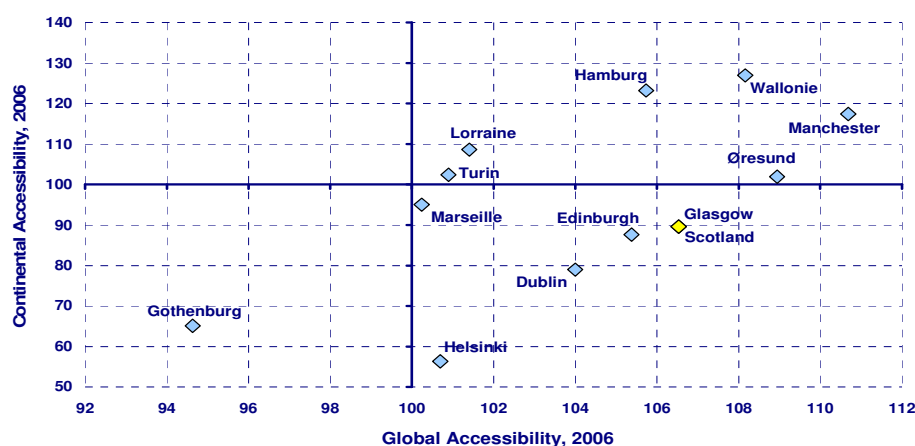
¹⁷ See annex for definition and calculation of labour and product market regulation index

tionally, product market regulation is clearly below the Metro Average. However, similar to taxation UK has lost some of its relative advantage in the last 10 years, particularly in the product market. Other regions deregulated their markets faster, some of the Nordic countries to an extent that today their regulation level is lower than UK's.

Accessibility

In a global economy, the connections of a region to the rest of the world play a important role for a region's attractiveness as business location. The accessibility¹⁸ of a metropolitan region depends on its geographical location and on the infrastructure (transport system). Glasgow's geographic position in the north of the continent is a disadvantage for travel within Europe and explains the below average Continental Accessibility of Glasgow. A better position of Glasgow is shown in the index of Global Accessibility. The position in the global index is less influenced by geography. Instead, apart from direct intercontinental connections from the region it is the access to one of Europe's large hubs which is important. For Glasgow, London Heathrow plays this part.

Fig. 18 Accessibility, 2006



Note: All regions in this figure including Glasgow are City Regions.
 Index, average of (continental Western European) regions available in 2002 = 100
 Source: BAK Basel Economics

Given its geographic disadvantage Glasgow's overall accessibility to other regions is rather good. Although Glasgow should not rely on businesses which are very travel intensive, the connections with other regions seem sufficient for a lively participation of Glasgow in the global economy.

¹⁸ See Annex for definition and calculation of the Accessibility Index.

4 Financial and Business Services

Financial and Business Services (FBS) are an important part of a metropolitan economy and often a key driver of economic growth¹⁹. In Glasgow City Region, the FBS contributed heavily to regional growth in recent years: For the period 2000 to 2006 it did grow by nearly 6.5 percent annually, while the economy grew about 2.5 percent. Taking the weight of the sector in the economy into account, this strong growth leads to a contribution of about 1.5 percentage points annually of FBS to overall GDP growth in Glasgow.

What is the role of Financial and Business Services in Glasgow's economy? Does the current situation allow an assessment of future opportunities? Is Glasgow's position in the FBS internationally competitive? This chapter will focus on Financial and Business Services in Glasgow and try to answer the above questions which are critical for Glasgow's future development.

4.1 Financial and Business Services in Glasgow

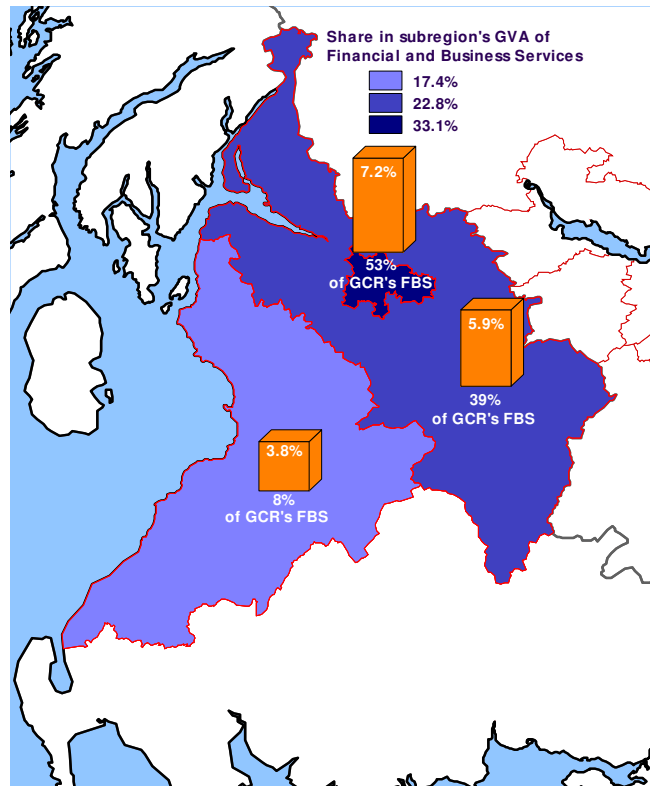
The Financial and Business Services (FBS) are heavily concentrated in Glasgow City²⁰. More than half the GVA produced in the Glasgow City Region's FBS is located in the City (see Fig. 19). The dominance of the City can also be seen by the share of FBS in the economy: in the City FBS makes up a third of the economy, while in the other parts of Glasgow City Region it is only about 20 %. Finally, growth is also strongest in the City.

A more detailed look at Business Services shows some differences within Glasgow City Region. On the one hand, Real Estate, IT Services and Research & Development grew strongest in the City in recent years. On the other hand, Provision of Services to Companies recorded the highest growth outside the City, but within Metropolitan Glasgow – notably in the area with the strongest industrial base remaining. Interestingly, IT Services in Glasgow City Region grew strongest outside Metropolitan Glasgow, in the more rural areas. But the share of the sector has to be taken into account: it is only 0.5 % (within Metropolitan Glasgow: 2.5 %). IT Services are used more frequently in all kind of activities and therefore spread now more equally over the region.

¹⁹ According to NACE-Industry-Code, Business Services include Real Estate, Leasing of Movables without Operation Personnel, IT Services, Research and Development and Provision of Services to Companies. Financial Services include Banking, Insurances and Related Activities. In the concept of five Driver Sectors, they are part of the Urban Sector.

²⁰ See chapter 1 for the definition of the regions.

Fig. 19 Financial and Business Services in the Glasgow City Region



Note: Shares in 2006, growth annual average 2000-2006. See maps and box in chapter 2.2.
Source: BAK Basel Economics

4.2 Benchmarking the Financial and Business Services

In this section, the Glasgow City Region's Financial and Business Services is compared to other metropolitan regions²¹. It provides some answers about the importance of these services within the region and about their development in the recent years. An important issue are the productivity levels of these services. As already seen, Glasgow's productivity level is low in comparison with other Western European regions²². In many metropolitan regions FBS provides a strong contribution to economic as well as productivity growth. Is there potential the Glasgow's FBS helps overcoming the weakness in productivity?

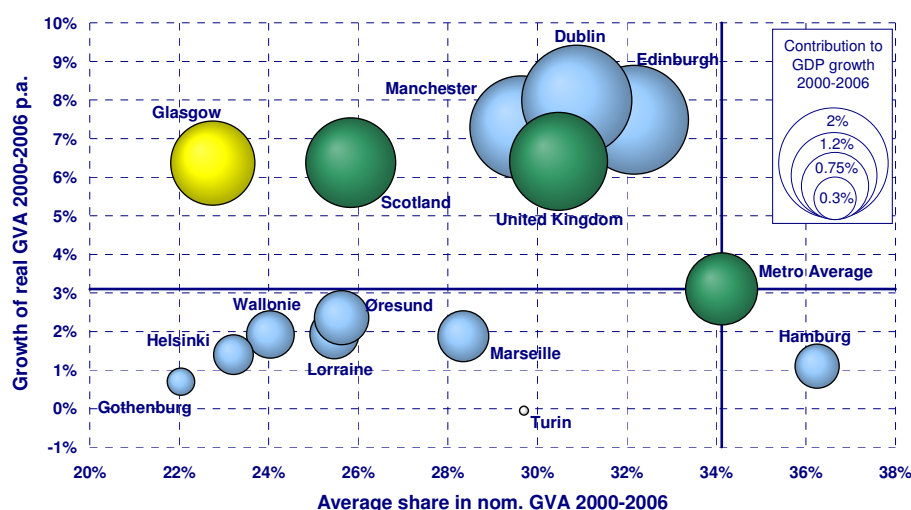
²¹ Again, the complete section refers to Glasgow City Region; 'Glasgow' is used as a short form.

²² See above and BAK 2005.

In international terms, Glasgow's Financial and Business Services has a small share in the regional economy for a metropolitan region. The average share 2000 to 2006 was 22 %. This is clearly below other Anglo-Saxon-Celtic regions such as Dublin (31%), Manchester (30%) or Edinburgh (32%) as well as below most of the other benchmarking regions. The Anglo-Saxon-Celtic group (Glasgow, Manchester, Dublin, and Edinburgh) is evidently distinct from the rest of the sample: Growth of FBS was much stronger than in the Continental and Nordic regions. Compared to Continental and Nordic regions, Glasgow's FBS performance was outstanding. However, within its peer group of Anglo-Saxon-Celtic regions Glasgow's FBS shows the weakest performance, although by a small margin.

Fig. 20 Growth contribution of Financial and Business Services, 2000-2006

Growth in % (based on US\$, 2000 prices, 1997 PPP); share in % (based on US\$, current prices, PPP)



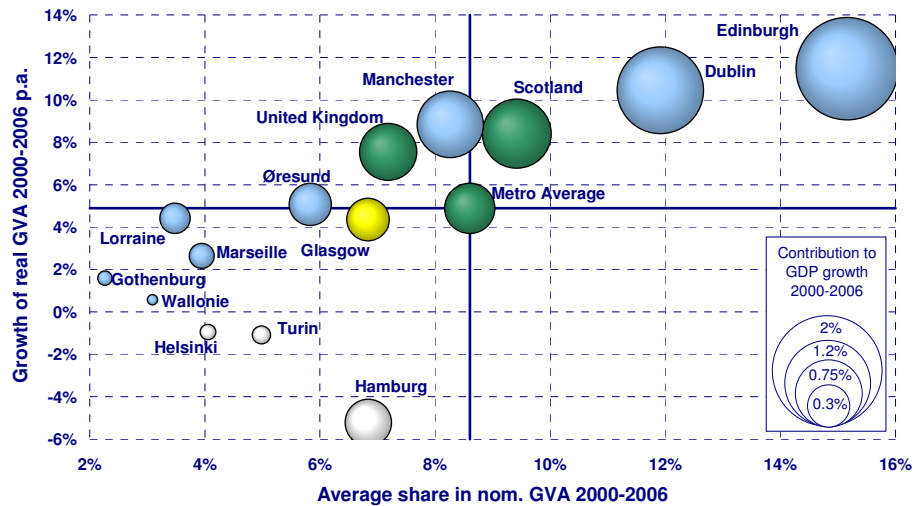
Note: All regions in this figure including Glasgow are City Regions.

Source: BAK Basel Economics

Within the FBS, the Financial Services can be quite different from the Business Services. A separate analysis provides further insights in future opportunities. Glasgow's Financial Services is less dynamic than the other Anglo-Saxon-Celtic regions, although it passed most of the international competitors in the benchmarking sample. Within the «doing well» group in Financial Services, Glasgow is in the weakest position, with a relative small share of the sector in the economy and a less dynamic development.

Fig. 21 Growth contribution of Financial Services, 2000-2006

Growth in % (based on US\$, 2000 prices, 1997 PPP); share in % (based on US\$, current prices, PPP)



Note: All regions in this figure including Glasgow are City Regions.

Source: BAK Basel Economics

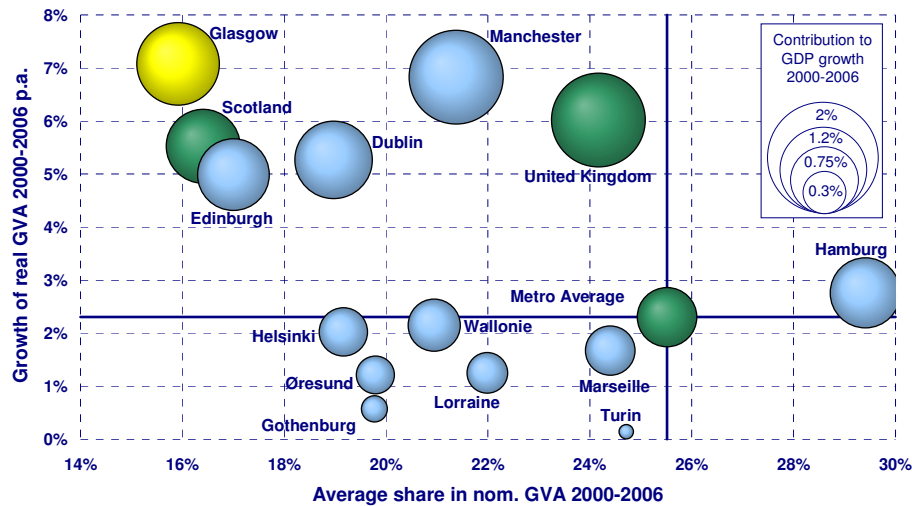
In contrast Edinburgh's Financial Services grew tremendous (more than 10 percent annually from 2000 to 2006). Edinburgh is the undisputed Scottish «capital» of finance, a situation with historical roots. But recent year's success of Edinburgh goes much beyond Scotland. This success of neighbouring Edinburgh creates an opportunity for Glasgow. In the near future, the chance for Glasgow will be in co-operation with Edinburgh. A cooperation with and positive spill over effects from Edinburgh could allow Glasgow to improve the Financial Services performance and catch up with the regions in the Anglo-Saxon-Celtic peer group.

Of course, there are risks to such a strategy as well. Apart from generally volatile financial markets, a threat Edinburgh is not immune against, Glasgow could face tough competition in the future. Taking over the low-productive parts of Financial Services (e.g. back-office functions) from Edinburgh could bring Glasgow in an international cost competition situation which will be getting always more difficult to win as time is passing.

Fig. 23 shows the hourly productivity differences between Glasgow and Edinburgh as well as the other benchmarking regions. Glasgow has about the lowest productivity. Only if Glasgow is able to increase productivity in the Financial Services it will stay competitive and be able to enjoy the fruits from cooperating in the long run.

Fig. 22 Growth contribution of Business Services, 2000-2006

Growth in % (based on US\$, 2000 prices, 1997 PPP); share in % (based on US\$, current prices, PPP)



Note: All regions in this figure including Glasgow are City Regions.

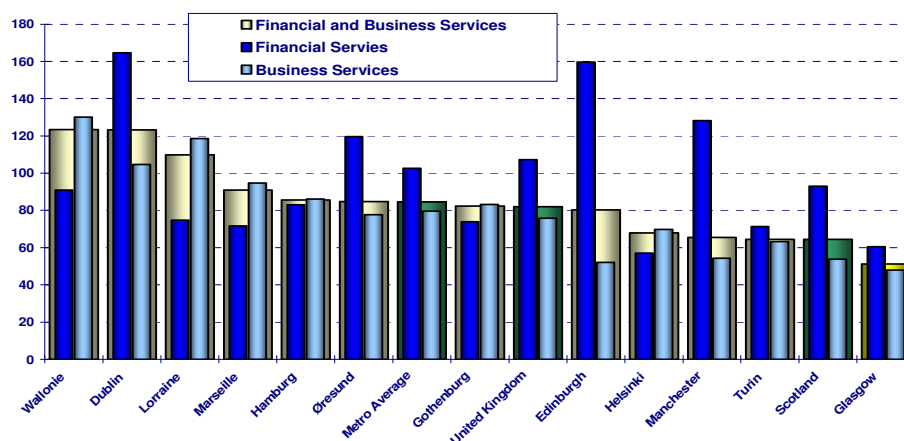
Source: BAK Basel Economics

Completely different is the situation in the Business Services. On the one hand, Glasgow was one of the most dynamic regions in Business Service (almost 7 % annual growth 2000 to 2006). In the benchmarking sample, only Manchester recorded a similar high growth rate. On the other hand, the share Business Services in the Glasgow is small, actually the smallest in the complete benchmarking sample. It is not a priori clear if the success of Glasgow's Business Services is only the result of a kind of adjustment process. It seems more likely that Glasgow holds some niches in Business Services with high growth potential. Particularly strong are IT services and provision of services to companies.

Again, the productivity analysis raises an issue about the sustainability of the success in Business Services. Productivity in Glasgow is amongst the lowest in the benchmarking sample, making it vulnerable to international competition. For a sustainable growth productivity should rise, either by moving up the value chain to more productive parts of the Business Services or by producing the services more efficiently. For the later one, exploiting economies of scale and the advantages of density and positive spill over effects are possible sources to increase productivity. All these topics were already raised as issues Glasgow should consider for future economic advances. Furthermore, Glasgow seems in a position to exploit them as the ongoing redevelopment process leaves the necessary room and flexibility to do so.

Fig. 23 Hourly productivity level in Financial and Business Services, 2006

in US\$ per hour (PPP, current prices)



Note: All regions in this figure including Glasgow are City Regions.

Source: BAK Basel Economics

The Financial and Business Services do have a large potential for the Glasgow City Region. Already in recent years the contribution to economic success of Glasgow was quite high. But it could be even greater in future as the benchmarking analysis shows. Although differentiated strategies for different parts of the industry are necessary, increasing the productivity is a joined issue. Without increasing productivity, the pressure from international competition will increase and any success could be short-lived.

5 Strategic Issues and Conclusion

The economic development of Glasgow has been subject to periods of immense prosperity, economic success, growth and innovation yet also phases weakness and decline. On average, the second half of the nineteenth century was on the worse side for Glasgow, but the last 15 years saw a more economically successful Glasgow again. This report analysis the current economic position and performance of Glasgow and helps to answer the questions: Is Glasgow on a promising development path? Where are the strength to build on in future, and which weakness should be taken into account? What are the issues to be considered to bring Glasgow back into the position of one of the leading economies in Europe?

The analysis is based on the tools provided by benchmarking. The Glasgow City Region, an area economically closely interwoven with Glasgow City but reaching far beyond it, is compared to a number of international peers. Apart for the overall economic performance particularly industry specific benchmarks allow a more detailed insight. Furthermore, an analysis of the different parts of the Glasgow City Region helps understanding the process leading to the performance of Glasgow.

Indeed, the analysis confirms the finding of earlier studies: The Glasgow City Region is in an economically disadvantageous position when compared internationally with peers in the UK and Western Europe. GDP per capita is amongst the lowest in the sample of benchmarking regions, 11 % below the UK level and to more than 23 % below the average of European metropolitan regions. This is a clear weakness for Glasgow.

But the analysis also confirms that Glasgow left the valley floor behind: Glasgow City Region is significantly catching up to the other metropolitan regions. This was already observed for the last five to ten years of last century²³. The positive development continued in more recent years: Between 2000 and 2006, the Glasgow City Region was amongst the fastest growing regions in the benchmarking sample, particularly with respect to GDP per capita growth (2.6 % annually, UK 2.0 %, Metro Average 1.3 %). If Glasgow keeps on growing faster by the same difference, it will catch up to the UK as well as the metropolitan average between 2020 and 2025.

Glasgow's success story in recent years is clearly a success on the labour market. Of all benchmarking regions, Glasgow was by far the most successful region in providing more employment opportunities for the people living in Glasgow and the wider region. This is even more important as un- and underdevelopment of the population was one of the most serious challenges for Glasgow in the last decades

²³ See for example BAK (2005).

which led to a large loss of population as well. Indeed, since 2000 the population in the Glasgow City Region increased again, although just slightly – another sign that Glasgow did overcome the weakness in the last few years.

How are the chances for Glasgow to continue this process? To keep an above average growth rate and to further catch up to other European regions, Glasgow must at some point shift the focus of its growth strategy. For a highly developed economy with a high wage environment, the level and the growth of productivity is a key issue to achieve long term sustainable economic growth. Increased labour participation has a high potential to support growth and increase the average income of the population for a limited time, particularly in a transition process. But in the long term productivity growth is the driving force for increasing the income and wealth of a region's population. Furthermore, in an ever-increased globalising world with numerous new competitors innovation and productivity are the critical ingredients to stay competitive for highly developed regions like Glasgow.

Clearly, productivity is the major issue and should be the focus for Glasgow's economic policy in the near future. Regardless of the economic success of the Glasgow City Region in recent years productivity growth was quite low by international standards: Glasgow clearly ranks in the second half of the benchmarking sample. This is even more critical, as the productivity levels in Glasgow is amongst the lowest in the benchmarking sample. Glasgow is to some extent vulnerable in the future with such a weak productivity performance.

Where in Glasgow's economy could future productivity growth come from? An industry specific analysis provides some answers. Glasgow's industrial structure shows some signs of an ongoing transition process. A shift from more traditional producing industries towards the typically more labour intensive urban services is observed. This is an important step towards the future for Glasgow and should be further enhanced. As the comparison with other European metropolitan regions shows, the share of urban services is still relatively low in the Glasgow economy. While the transition process is ongoing, it is not as far advanced in Glasgow as in many of the benchmarking regions.

Signs of the ongoing transition are also visible in the industrial structure within the Glasgow City Region. Urban services move more into the City. Producing industries do have better chances in the wider metropolitan region. The structure moves towards the typical metropolitan pattern with a highly concentrated and productive core. But this process is not yet finished. Glasgow should and could rely more on the core, strengthen the core function and profit from density and urbanity. Making use of these typical metropolitan advantages would also help closing the productivity gap, as a strong core is usually very productive as well.

Within such a process, the Financial and Business Services do have a large potential for the Glasgow City Region. Financial and Business Services (FBS) are an important part of a metropolitan economy and a key driver of economic growth for many metropolitan regions. They are strong in Glasgow as well, but not as good as could be possible given the favourable location conditions. Particularly, they are still underrepresented in Glasgow's economy. There seem to be substantial development prospects.

On the one hand, in Financial Services the success of neighbouring Edinburgh creates an opportunity for Glasgow. In the near future, the chance for Glasgow will be in cooperation with Edinburgh. A cooperation with and positive spill over effects from Edinburgh could allow Glasgow to improve the Financial Services performance. On the other hand there seems potential to develop Business Services further in Glasgow as well. They developed very dynamic since 2000, a trend which should be used for future development. Glasgow should strengthen Business Services operating in successful niches, particularly developing the core of the metropolitan region further. Although differentiated strategies for different parts of the industry are necessary, increasing the productivity is a joined issue: The productivity is low in Financial and Business Services by international standards. Without increasing productivity, the pressure from international competition will increase and any success could be short-lived.

The most important issues for Glasgow are:

- Move overall economic productivity in the focus of economic policy to ensure continuance and sustainability of the success in recent years
- Continue the transformation process
- Strengthen the core of the metropolitan region to profit from density and urbanity
- Strengthen urban services for consumers and businesses as the key of a metropolitan economy ...
- ... with differentiated strategies fitting the individual industries ...
- ... but with the common issue of strengthening sustainability and competitiveness by increasing productivity within the industries

6 References

BAK (2005): Glasgow Economic Analysis and Benchmark Report, special report on behalf of Scottish Enterprise Glasgow, BAK Basel Economics, November 2005.

Glasgow Economic Forum (2006): A step change for Glasgow, Glasgow's ten-year economic development strategy.

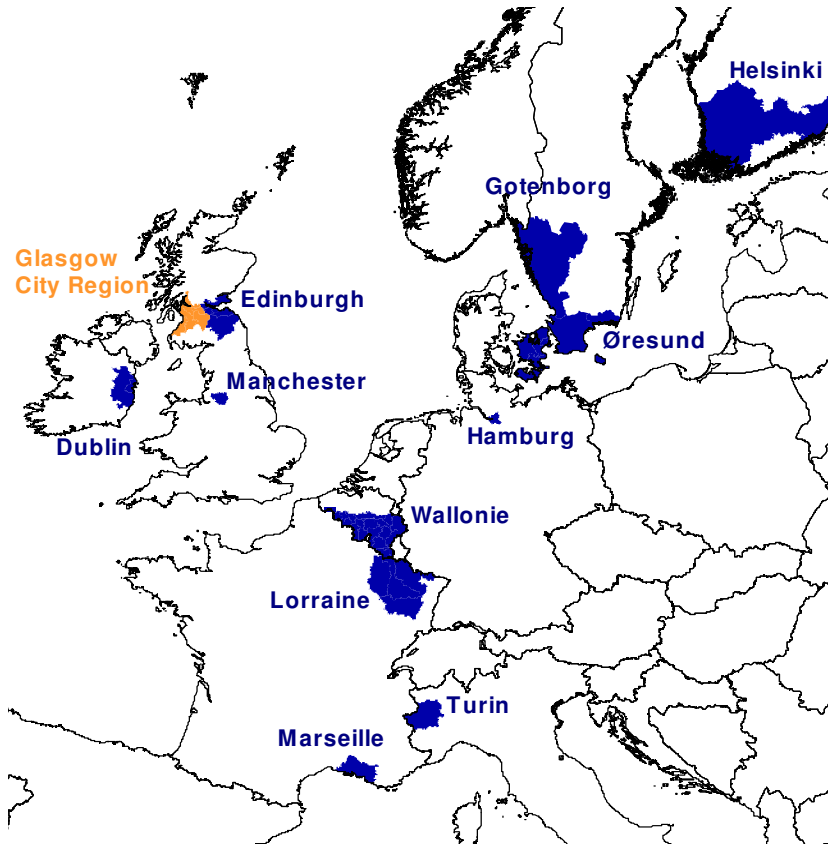
7 Annex

7.1 Glasgow City Region's geography

- Glasgow City: A NUTS3 region:
 - (1) City of Glasgow
- Metropolitan Glasgow: An aggregation of the 5 NUTS3 areas:
 - (1) East Dunbartonshire and West Dunbartonshire
 - (2) City of Glasgow
 - (3) Inverclyde and East Renfrewshire and Renfrewshire
 - (4) North Lanarkshire
 - (5) South Lanarkshire
- Glasgow City Region: An aggregation of the 7 NUTS3 areas:
 - (1) East Dunbartonshire and West Dunbartonshire
 - (2) City of Glasgow
 - (3) Inverclyde and East Renfrewshire and Renfrewshire
 - (4) North Lanarkshire
 - (5) South Lanarkshire
 - (6) East Ayrshire and North Ayrshire mainland
 - (7) South Ayrshire

7.2 Regions Selected for Benchmarking

Fig. 24 Regions in the Benchmarking Sample



Source: BAK Basel Economics

The choice of the regions for the benchmarking followed several criteria with the aim of comparing Glasgow City Region with the most relevant regions. These criteria can be described as follows:

1. Best performing regions. These regions achieved the highest growth rates of real GDP in the last 6 years. They are examples of economic successful regions to look at and learn from.
2. Regions with a similar sector focus to Glasgow. These regions are potential competitor regions to look at and to measure with.
3. Regions with a similar economic-geographical situation to Glasgow (geographical position, bigness of the metropolitan area, density of population).

4. Some regions that guarantee the diversity with respect of economic systems (Anglo-Saxon, Continental and Nordic) and the variety of countries.

Detailed definition of the benchmark regions

Notation	Exact definition
Glasgow City Region	See Annex 6.1
Dublin	Greater Dublin Area, aggregate of Dublin (Nuts 3) and Mid-East Ireland (Nuts 3)
Edinburgh	Aggregate of Nuts 3: City of Edinburgh, Clackmannanshire and Fife, East Lothian and Midlothian, West Lothian, Scottish Borders and Falkirk
Gotenborg	Västsverige (Nuts 2)
Hamburg	Bundesland Hamburg (Nuts 1)
Helsinki	Etelä-Suomi (Nuts 2)
Lorraine	Région Lorraine (Nuts 2)
Manchester	Greater Manchester (Nuts 2)
Marseille	Département Bouches-du-Rhône (Nuts 3)
Øresund	Border Region, aggregate of København (DK, Nuts 2), Danish Islands (DK, Nuts 2) and Sydsverige (SE, Nuts 2)
Turin	Provincia Torino (Nuts 3)
Wallonie	Région Wallonne (Nuts 1)

The **Metro Average** is defined as the average of the following 34 European metropolitan regions:

Bruxelles/Brussels, København, Region Stuttgart, Region München, Berlin, FrankfurtRheinMain, IHK Köln, Barcelona, Comunidad de Madrid, Ile de France, Bas-Rhin, Rhône, Bouches-du-Rhône, Torino, Milano, Venezia, Lazio, Randstad, Oslo og Akershus, Ostösterreich, Bassin Lémanique, Basel (BS,BL), Zürich, Espace Mittelland, Uusimaa, Stokholm, Greater London, Greater Manchester, West Midlands of England (Nuts2), Metropolitan Glasgow, Metropolitan Edinburgh, Greater Dublin Area, Lisboa, Attiki.

7.3 Structure of Sectors and Industries

The Drivers of Economic Growth:

In analysing an economy, it often provides helpful insights to analyse specific industries or sectors separately. But dividing the economy into too many different industries can also be confusing and might hide the actual structures of interest under a bulk of information (currently, the IBC International Benchmark Club database regularly provides data for 46 different industries, in some cases even more detailed). Therefore, the IBC applies a concept to collect the individual industries into 'sector aggregates' with common properties. One common property is productivity. The industries within an aggregate are more or less in the same situation regarding productivity, especially the productivity level.

These 5 aggregates – called the five 'drivers' – are:

(1) New Economy:

The industries in the New Economy Sector are characterised by very dynamic development and are closely related to the area of communication, information processing and the internet. They are technology as well as demand driven.

Productivity level and productivity growth are clearly above average.

It basically subsumes the IT (hardware, software and services) and telecommunication sector.

(2) Old Economy:

The Old Economy Sector subsumes producing industries with very high levels of value added as well as usually high levels of productivity. Either the product itself or the production process, or both, are High-Technology. Productivity level and productivity growth are above average.

The Old Economy Sector comprises, in particular, industries such as the chemical-pharmaceutical industry, transport equipment, medical engineering, and the production of precision instruments.

(3) Urban Sector:

The Urban Sector includes all the services which are typically concentrated in an urban setting. Within a geographical unit, they are most concentrated in the centre (e.g. for France in Paris, for a metropolitan area in the city, within a rural setting in the village centre).

Productivity level is around the average, productivity growth is mostly above the average.

The Urban Sector consists of services that meet everyday needs such as

commerce, hotels and restaurants, personal services, real estate, transport as well as financial and corporate services.

(4) Traditional Industries:

The Traditional Sector aggregates the remaining producing industries. Typically, these industries have a lower value added level and lower productivity. Labour costs are more important in their cost structure than in the other producing industries, and technology plays a smaller role. In industrialised economies often they are either very specialised in a niche or they face strong competition from the developing world.

Productivity level and productivity growth are below average.

The Traditional Sector includes especially production of consumption and intermediate goods as well as construction.

(5) Political Sector:

The Political Sector summarises all industries which are strongly influenced by politics. That does not necessarily mean that politics directly determines this industry in all regions, but it is a political question how much the industry is based on private rather than public decisions and the answers to these questions differ between industrial countries and times. Productivity level is below average, productivity growth is somewhat awry. The Political Sector covers basically public administration, healthcare, education, the primary sector and utilities.

NACE-Code	Official name of industry	Driver Sector
	PRIMARY SECTOR	
01-05	Agriculture, forestry and fishing	Political Sector
	SECONDARY SECTOR	
10-14	Mining and quarrying	Traditional Sector
15-16	Food, beverage, tobacco products	Traditional Sector
17-19	Textiles, garments, leather goods and shoes	Traditional Sector
20	Processing of wood	Traditional Sector
21	Paper- and board making	Traditional Sector
22	Printing a. publishing, reproduction of recorded media	Traditional Sector
23	Coke, refined petroleum products, nuclear fuels	Traditional Sector
24	Chemicals and chemical products	Old Economy Sector
25	Rubber and plastics products	Traditional Sector
26	Other products from non-metallic minerals	Traditional Sector
27-28	Metals and metal products	Traditional Sector
29	Mechanical engineering	Traditional Sector
30	Computers and office equipment	New Economy Sector
31-32	Electrical engineering	New Economy Sector
33	Precision and optical equipment, watches	Old Economy Sector
34-35	Motor vehicles and parts, other means of transport	Old Economy Sector
36-37	Manufacturing not elsewhere classified	Traditional Sector
40-41	Utilities (energy and water supply)	Political Sector
45	Construction	Traditional Sector
	TERTIARY SECTOR	
50-52	Trade and repair	Urban Sector
55	Hotels and restaurants	Urban Sector
60-63	Transport	Urban Sector
64	Postal service and telecommunications	New Economy Sector
65	Banking	Urban Sector
66	Insurance	Urban Sector
67	Banking and insurance related services	Urban Sector
70	Real estate	Urban Sector
71	Leasing of movables without operating personnel	Urban Sector
72	IT services	New Economy Sector
73	Research & Development	Political Sector
74	Provision of services to companies	Urban Sector
75	Public administration, defence, social insurance	Political Sector
80	Education	Political Sector
85	Health and social services	Political Sector
90	Sewage treatment, refuse disposal	Political Sector
91	Interest groups and other associations	Urban Sector
92	Entertainment, culture and sport	Urban Sector
93	Personal services	Urban Sector
95	Private households	Urban Sector

7.4 International Benchmarking Database

The «IBC BAK International Benchmark Programme» established in 1998, advises governments, administrations, trade associations, foundations and companies at the national and regional level on matters of business location quality and economic policy. The unique benchmarking database currently (IBC Database) covers about 700 regions and up to 46 industry and business sectors and is regularly extended and updated. This database allows the Clubs' members to assess in detail strengths and weaknesses of their region and to benefit from the experiences of other regions.

Globalisation and decentralisation are challenging the region's capacity to adapt and improve their competitiveness. It is at the regional level that the pressure to maintain economic growth and social development is felt most. This is why the research undertaken within the framework of the «IBC BAK International Benchmark Programme» focuses increasingly on the regional level. Benchmarking is a means to compare and assess the multitude of regional location factors and the success of national and regional policy strategies to use their potential. Since regions tend to be more specialised than countries, the «right» set of location factors that satisfies the needs of firms and people is particularly difficult to find. Benchmarking can therefore contribute to develop policy strategies that lead to sustainable economic growth.

The IBC Database is unmatched in Europe in terms of both regional and sector-specific differentiation and data actuality. The database includes indicators of economic performance as well as quantitative measurement of several location factors and framework conditions. In the remainder of this Chapter we will provide a rather quick overview on the data available and used in this research and its definitions. For a more comprehensive explanation the reader is referred to the International Benchmark Report 2005, especially Part III: Sources & Methodology.

7.4.1 The Performance Indicators of the IB Database

Gross Domestic Product and Value Added

Gross domestic product at market prices is the final result of the production activity of resident producer units. It can be defined in three ways:

- GDP is the sum of gross value added of the various institutional sectors or the various industries plus taxes but minus subsidies towards products (which are not allocated according to sectors and industries). It is also the balancing item in the total economy production account.
- GDP is the sum of final uses of goods and services by resident institutional units (actual final consumption and gross capital formation), plus exports but minus imports of goods and services.
- GDP is the sum of uses in the total economy generation of income account (compensation of employees, taxes on production and imports minus subsidies, gross operating surplus and mixed income of the total economy).

Value added is defined as the difference between the value of output (= sales plus net increase in stocks of finished goods and work in progress) and the value of intermediate consumption (= the goods and services consumed in the production process). Value added may be calculated in gross or net terms. The data in the IBC database are gross, meaning before deduction of consumption of fixed capital.

Value added may be calculated at basic prices, factor costs, producers' prices or market prices. The 1995 European system of accounts (ESA 1995) recommends valuing output at basic prices or producers' prices. In the IBC database valuation is at basic prices, whenever possible. The only exceptions are data referring to the USA and the American regions. They are valued at market prices.

Basic Prices

The basic price is the price producers can obtain from the purchaser for a unit of a goods or services produced as output minus any tax payable on that unit as a consequence of its production or sale (i.e. taxes on products) plus any subsidy receivable on that unit as a consequence of production or sale (i.e. subsidies of products). It excludes any transport charges invoiced separately by the producer. It includes any transport margins charged by the producer on the same invoice, even when they are itemized on the invoice.

Factor Costs

Factor costs may be derived from basic prices by subtracting any other taxes on and adding any other subsidies towards production that are not related to the number of units produced.

Market Prices

Market prices are those paid by purchasers for the goods and services they acquire, excluding deductible value added tax (VAT).

Constant Prices

Valuation at constant prices means valuation of flows and stocks in an accounting period at the prices of a previous period. The purpose of valuation at constant prices is to break down changes over time in values of flows and stocks into changes in price and changes in volumes. Flows and stocks at constant prices are said to be in volume terms. In the IBC Database, the basic year is 2000.

Purchasing Power Parities for Industry Comparisons

The use of exchange rates for international comparisons of output and productivity is not adequate for several reasons. One of the major drawbacks of exchange rates is that differences in price levels between countries are not reflected. Moreover exchange rates only deal with prices of tradable goods, and are subject to the impact of capital mobility and speculative movements.

Other than exchange rates, «Purchasing Power Parities » (PPPs) rely on relative prices. Purchasing power parities represent the amount of currency units for a country needed to buy a basket of goods that costs one unit of the currency of the 'base' country. For example, if the purchasing power parity for food products in Switzerland equals 2.1 relative to the United States, then a basket of food products purchased in Switzerland for CHF 2.1 costs \$1 in the United States. When the exchange rate is 1.4 francs to the dollar, this means that the relative price level of food products in Switzerland is 50 per cent above the level of the USA.

There are two methods to obtain PPPs. The first method is the «expenditure approach», which is based on prices for final consumer and investment products. One of the weaknesses of this concept is that there are no PPPs for products, which are only used as intermediate inputs in the production process. Another drawback of the expenditure approach arises with international industry comparisons, because the prices used to calculate the PPPs do not reflect producer prices²⁴.

The alternative method is the «industry-of-origin approach», which develops PPPs by industry and sector. The main advantage of industry-specific PPPs are that they

²⁴ First, expenditure PPPs include wholesale and retail margins and transportation costs. When these margins differ between countries they affect the expenditure PPP but not the producer price PPP. Second, expenditure PPPs include indirect taxes and subsidies, which also vary between countries, and are not part of producer prices either. Third, expenditure PPPs include prices of imports, which do not affect producer prices, but exclude export prices, which are part of producer prices.

correct for the price of intermediate inputs («double deflation») as well as for indirect taxes, subsidies, transport costs and trade margins, so that they are based on ex-factory prices (producer prices). Therefore, in contrast to expenditure approach-PPPs, industry-of-origin-PPPs refer to the concept of value added.

This approach is followed in the IBC database, which contains industry-specific PPPs for the conversion of value added data. The IBC Database considers purchasing power parities (PPPs) for 29 sectors and 10 countries for the year 1997. The PPPs can be used to compare relative price levels across countries and to convert value added and GDP from national currencies to a common currency in order to compare levels of output and productivity by sector. Industry-specific PPPs are constructed for each sector and each country vis-à-vis the United States. The countries include Austria, France, Germany, Ireland, Italy, the Netherlands, Spain, Switzerland, and the United Kingdom. All PPPs are expressed in terms of national currencies to the US dollar. For international comparisons of output and productivity, PPPs are preferable over exchange rates.

Labour / Employment

The European System of Accounts (ESA 1995) introduced a number of measurements of employment in particular:

- employment (= employees and self-employed)
- the number of jobs
- the full-time equivalence
- the total hours worked

The rationale is to find measurements of employment which match output data and hence allow analysis of productivity. The recommended measurement is the total number of hours worked. The IBC-Database contains two measurements of employment:

- total hours worked in order to analyse productivity
- employment for analysing labour participation
- The concept of employment is generally used by OECD countries. One exception is the USA: employment data by industry are not available. Therefore the concept of jobs has to be used.

Employment

Employment covers all persons, both employees and self-employed, engaged in some productive activity that falls within the production boundary of the system.

Employees (in paid employment)

Employees are all persons who work under contract for another resident institutional unit and receive remuneration. They fall into the following categories:

- persons (manual and non-manual workers, management personnel, domestic staff, people carrying out remunerated productive activity under employment programmes) engaged by an employer under an employment contract
- civil servants and other government employees whose terms and conditions of employment are laid down by public law
- armed forces, consisting of those who have enlisted for both long and short engagements and also conscripts (including conscripts working for civil defence)
- ministers of religion, if they are paid directly by a general government or a non-profit institution
- owners of corporations and quasi-corporations if they work there
- students formally committed to contributing some of their own labour to an enterprise's production process in return for remuneration and (or) education services
- outworkers if there is an explicit agreement that the outworker should be paid on the basis of work done. That is to say, the amount of labour contributed to some production process
- persons employed by temporary employment agencies, who are to be included in the industry of the agency which employs them, and not in the industry of the enterprise they actually work for

Self-employed Persons

Self-employed persons are defined as persons who are the sole or joint owners of the unincorporated enterprises in which they work, excluding unincorporated enterprises classified as quasi-corporations.

Self-employed persons include:

- unpaid family members, including those working in unincorporated enterprises engaged wholly or partly in market production

- outworkers whose income is a function of the value of the output of some production process for which they are responsible, however much or little work they put in
- Workers engaged in production undertaken entirely for their own final consumption or own capital formation, either individually or collectively

Jobs

A job is defined as an explicit or implicit contractual relationship between a person and a resident institutional unit to perform work in return for compensation for a specified period or until further notice. That definition covers both employed and self-employed persons.

Full-time Equivalence

Full-time equivalent employment, which equals the number of full-time equivalent jobs, is defined as total hours worked divided by the average annual number of hours worked in full-time jobs within the economic territory.

Total Hours Worked (= Work Volume)

Total hours worked represent the aggregate number of hours actually worked by an employed or self-employed person during the accounting period, when their output is within the production boundary.

Total hours actually worked include:

- hours actually worked during normal working times
- hours worked in addition to those worked during normal working times, and generally paid at higher than normal rates (overtime)
- time spent at the place of work on tasks such as site preparation, repair and maintenance work, preparation and cleaning of tools, and making-out receipts and invoices, keeping time sheets and writing-up other reports
- time corresponding to short rest periods at the work place, including refreshment breaks
- Hours actually worked do not include:
 - hours which are paid but not worked, such as paid annual leave, public holidays, or sick-leave
 - meal breaks
 - time spent travelling between home and the work place when paid for (construction workers)

Hours Worked per Person in Employment

Average annual hours actually worked per person in employment is defined as the total number of hours worked over the year divided by the average number of people in employment.

Productivity

Hourly Productivity (Output per Hour Worked or Man-hour Productivity). In the IBC Report hourly productivity is calculated as real value added divided by the total number of hours worked over the year. Hourly productivity therefore is a measurement of labour productivity.

7.4.2 The Location Factor indicators of the IB Database

The IBC database does not only include data covering the economic performance of regions. Also it provides an overview on the position of the regions regarding several location factors. These are organised in separate so-called Modules. The following introduces the modules and provides an overview on the information available for the econometric analysis. In some cases, the data was collected especially for the project and have not been available before. They are described here as well, as they will be part of the IBC data in future.

Taxation

Taxation of companies and highly qualified manpower plays a very important role in the competition between regions as business locations and is now even being intensified by globalisation. In order to underscore subjective estimates of the tax burdens of different business locations with objective data, BAK Basel Economics is conducting a study carried out by the ZEW (Zentrum für Europäische Wirtschaftsforschung, Mannheim).

The objective of this IBC module consists in compiling and comparing indicators for the regions and countries. The module is divided into two parts: Company taxation and tax burdens on highly qualified manpower.

Company taxation:

The method applied in this module is the Devereux-Griffith Approach (DG Approach). It calculates «effective average tax burdens» in addition to «effective marginal tax burdens» (i.e., the tax burdens borne by capital projects whose return on investment is just high enough to be deemed worthwhile to the investors). The effective average tax burdens are defined as the tax burdens on projects that yield returns greater than the minimum return. They take a set of different kinds of investment goods (e.g. machines, industrial buildings, financial assets) as well as different ways to finance the investment (e.g. profits, shares, credits) into account. National, regional and local taxes are included in the calculation.

Tax burdens on highly qualified manpower:

A traditional way of comparing the fiscal attractiveness of regions competing with one another internationally is to concentrate on the tax burdens borne by mobile capital and mobile companies. Lately this approach has been broadened by paying increasing attention to the mobility of employees, especially those with high and highest qualifications. Of course local governments like to see such highly qualified people moving in, for one thing because of their lack of need for social support services. Several surveys have shown that companies competing for the best-qualified job applicants are also very interested in the level of taxation and other charges these potential employees would be faced with at the location in question. In the module the average tax burden on atypical highly qualified employee is calculated, taking into account not only all direct taxes on wage and other benefits, but also social security contributions in as far as there is no market identical return. This can be calculated for different level of available net income (50,000, 100,000, 200,000 EURO), different family settings (single, married with 2 children), or different pay-packets (normal, old age oriented, incentive oriented). Further, the assumption can be varied (pensions are completely market equivalent; all social security contributions are market equivalent).

Accessibility

Transport infrastructure plays an important role in the development of regions. According to economic theory, regions with a well established access to markets

are more productive, more competitive, and hence basically more successful than regions with less developed access possibilities. Economical reasons for this are lower transport and time costs enterprises and individuals have to bear in easily accessible regions. Such lower costs allow a division of labour between regions and thus regional specialisation, which entails economies of scale and benefits of specialisation. In an increasingly globalised world the part a region can take in economic growth depends mainly on its Accessibility. This is why the improvement of regional Accessibility has a high priority in the European Regional Development Fund (ERDF), one of the four structural funds of the EU.

Accessibility is a complex term. Before specifying indicators it has to be clear what kind of Accessibility is going to be measured. Accessibility analysis works on a combination of travel costs with structural data of locations. Two components of measures are necessary:

- Activity of regions (population, places of work, GDP etc.)
- Impedance (geographical distance, travel cost, travel time etc.)

Accessibility values are calculated from activities and impedances according to special functions.

- Specifications Focus on Accessibility requirements of companies and institutions
- Access to input and goods markets (activity)
- Only Accessibility of persons
- Travel time as impedance measure
- Modes: road, rail and air

Separate view on intraregional, interregional and intercontinental Accessibility is necessary. An indicator for intraregional Accessibility could be the highly qualified manpower within 60 minutes commuting distance. Furthermore, infrastructure measures like bus stops or measuring actual average travel times can be used. Up to today data could only be calculated for a few model regions and these indicators can not be used in the econometric part of the project.

The interregional indicator focuses on the access to the European market, to clients, suppliers, partners, and advanced business services. Activity values are economic potential, level of advanced producer services, level of research, prominence as conference cities, etc. Impedance values are calculated on the basis of the fastest daily connection using all modes.

The focus in intercontinental Accessibility is on the worldwide contacts within the corporate group, the cooperation with partners, the Accessibility of trade fairs and conferences, but also the access to worldwide clients and suppliers. Activity values of destination world cities are based on economic activity, density of headquarters, density of multinational companies and organisations, prominence as conference cities etc. The calculation of total travel time takes into account access time to the inter-continental hub and the time spent on the hub.

Regulation

What is the optimal level of public regulation? Regulation corrects market failures and compensates for externalities. On the other hand regulation is costly. There are direct costs like administration and controlling. There are indirect costs as well, e.g. not market-conform incentives or government failure. The optimal level of regulation can not be determined theoretically; empirical studies have to be used to answer this question at least partly.

Regulations work through many channels of an economic system, and the relationship between regulation and growth is very complex. Due to data availability and the wider focus of the complete study the indicators used in this project had to be limited to two, one for product market regulation and one for employment protection.

The indicators are based on the OECD regulation database. The two indicators used are themselves a summary of a wide range of regulation indicators collected by the OECD, weighted according to the results of a factor analysis. The individual indicators include among others economic regulation concerning market access, the use of inputs, output choices, pricing and international trade and investment; administrative regulation i.e. the interface between government agencies and economic agents including means for communicating regulatory requirements to the public as well as compliance procedures; and employment protection legislation (EPL) for regular as well as temporary employment contracts.

The OECD-regulation database contains indicators for the years 1990 (Labour Market Regulation), 1998 (Product and Labour Market Regulation) and 2003 (Product Market Regulation). To add variation in the time dimension, OECD time series information on the product market regulation in several industries have been used as well as data from the Fraser Institute (the so called CATO-Indices) to build up a time series for labour market regulation. The CATO regulation index follows

an approach similar to the OECD, and a cross section comparison yields similar country ratings.

Population

Population and population growth is often related to economic development. Although the causality of the relation is not clear, it is useful to take population into account when analysing economic performance. In the IBC a variety of population data are available. Separate information is included on gender and age. Age is split in groups according to possible labour market participation: From birth to age 15, from 16 to 64, 65 and older. As the geographical size of the regions is included in the database as well, population density can be calculated, for the complete population as well as for population parts according to gender and age group.