Annual Competitiveness Report 2007

Volume 1

Benchmarking Ireland's Performance

Forfás

National Competitiveness Council

Introduction to the NCC

The National Competitiveness Council was established in 1997 as a Social Partnership body. It reports to An Taoiseach on key competitiveness issues facing the Irish economy, together with recommendations on policy actions required to enhance Ireland's competitive position.

Each year the NCC publishes the two-volume Annual Competitiveness Report.

- Volume One, **Benchmarking Ireland's Performance**, is a collection of statistical indicators of Ireland's competitiveness performance in relation to 16 other economies and the OECD and EU averages.
- Volume Two, **Ireland's Competitiveness Challenge**, uses this information along with the latest research to outline the main challenges to Ireland's competitiveness and the policy responses required to meet them.

As part of its work, the NCC also publish other papers on specific competitiveness issues.

This report is Volume 1, **Benchmarking Ireland's Performance**. This report analyses Ireland's competitiveness performance using over 140 competitiveness indicators. These range from measures of the successes of past competitiveness, such as economic growth and quality of life, to the policy inputs that will drive future competitiveness, such as the regulatory environment and public spending on infrastructure. Drawing primarily on data from international sources including the OECD, the UN and Eurostat, this report benchmarks Ireland's performance, comparing and ranking it to that of our economic peer group and tracing its evolution over time.

The National Competitiveness Council hopes that this report will, as a reference document, stimulate further debate and discussion on the competitiveness challenges that face Ireland.

Ireland's Competitiveness Challenge examines these challenges facing Ireland's exporting sectors in particular in more detail. It highlights policy directions that will sustain Ireland's competitiveness so that Ireland can continue to be successful over the next decade.

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National Competitiveness Council

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Mr Brendan Butler	Director of Strategy, Trade, EU and International Affairs, IBEC
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Foreword by An Taoiseach

Ireland's international competitiveness has played a critical role in our successful economic performance. As economic growth and social progress are intrinsically linked, this economic success has brought many benefits to our society. As this report highlights, Ireland has experienced significant and widespread improvements in living standards and continues to create high quality jobs. It is for these reasons that competitiveness remains a key priority of Government policy as we seek to continually improve the living standards of everyone in Ireland.

Since the mid-1990s, Ireland's economic performance has been excellent and current predictions for the next five years suggest that the Irish economy will continue to perform well. However, it is clear that we are entering a period of more challenging economic conditions. The challenge is to restore Ireland's internationally trading firms in manufacturing and services as key drivers of growth. It is important, therefore, that we focus our efforts in the development of policy and programmes, and in social partnership, to restore and renew our competitiveness across all dimensions.

This is core to the new Programme for Government. As the Council's 'Competitiveness Pyramid' shows, it encompasses policies on the regulatory environment, including taxation, competition and the labour market, on Ireland's physical infrastructure, including transport, ICT and housing, and on Ireland's knowledge infrastructure, including all levels of education as well as R&D.

The National Competitiveness Council is well positioned to contribute to our understanding of a rapidly changing global environment. On my behalf and on behalf of my colleagues in Government, I would like to thank the Council for its valuable work, and I am pleased to introduce *Benchmarking Ireland's Performance, 2007*.

Bertie Ahern, T.D.
Taoiseach

Chairman's Preface

The economic context to this report is generally positive. The Irish economy continues to perform very well. There was further strong growth in the numbers employed, supported by strong inward migration as well as natural population increases. Government finances are healthy and there continues to be steady flows of foreign direct investment into the economy. Overall, figures from the Central Statistics Office suggest that Irish GNP grew by 7.4 percent in 2006 (and GDP by 6.0 percent), compared to the estimated average of 3.1 percent in the OECD. However, as noted by the Taoiseach, we may face greater difficulties in the future as domestic driven growth slows. Maintaining and growing our international competitiveness is essential.

The aim of this report is to provide an objective evidence base, particularly so that growing or potential weaknesses in the factors contributing to Ireland's competitiveness can be identified. While Ireland fares well in many aspects of competitiveness, there are three main areas of concern that arise from this report:

1 The **composition of Ireland's economic growth** is troubling. In general, with a small open economy and a young, growing and increasingly better educated population, one would expect the sources of economic growth to be a balance between trading and domestic sectors and between employment and productivity growth. Ireland's growth has shifted from export-led and productivity-led growth to domestically driven growth, dependent on new jobs in construction and public services for increases in GDP. A symptom of this is Ireland's increasing deficit on its current account with the rest of the world.

2 Ireland's **price and cost environment** remains distinctly unfavourable both to firms and to households. General cost levels are among the highest in the EU-15 and this situation is worsening, with inflation rates still among the highest in the EU-15 also. In response, labour costs are growing across a range of sectors at a rate well above EU-15 average, raising the threat of a wage-cost spiral. Across a range of non-pay costs, too, Ireland is expensive, including property rental or purchase and domestics services including the legal and accounting professions.

3 The **physical infrastructure** in Ireland remains poor and despite high levels of investment, Ireland's international rankings have not improved significantly since 2000. Ireland's transport, energy and ICT infrastructures in particular – upon which so many of our exporting sectors depend – appear to lag counterparts across the OECD.

I would like to thank Council members and the advisors from the relevant government departments for their work on this document, as well as their counterparts from previous years. The structure of the analysis in this report reflects the evolving thought process of past and current members of the Council. I would also like to acknowledge the Forfás Secretariat for the work that they have done in preparing material for consideration by the Council.

Dr Don Thornhill

Chair, National Competitiveness Council

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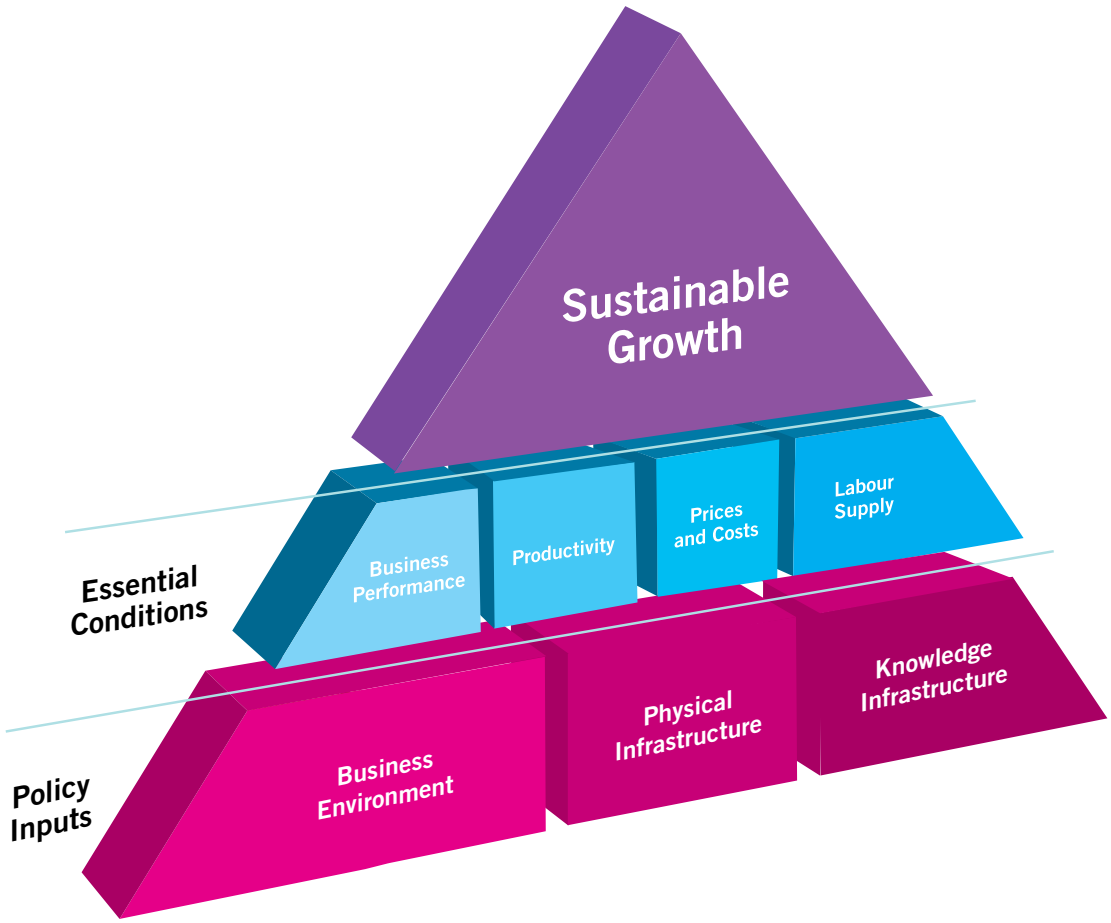
1 Overview of Ireland's Competitiveness



1. Overview of Ireland's Competitiveness

Ireland has made remarkable economic progress over the past 15 years. In that period, there have been two different phases to Ireland's economic growth. The first phase, which started in the early 1990s, was set in motion by high levels of investment in Ireland by multinational companies, attracted to Ireland by our membership of the European Union and pro-enterprise Government policies in areas such as taxation, education, international trade and industrial relations through social partnership. By the late 1990s, export success combined with low interest rates and rising national confidence stimulated household and government spending.

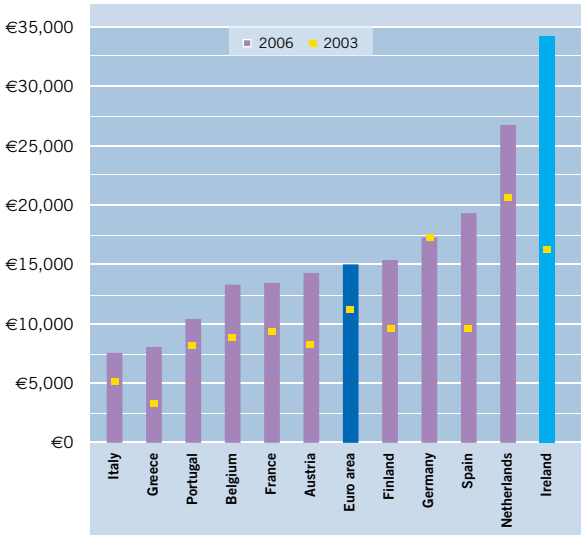
From 2000 on, Ireland's national competitiveness declined. During the past few years, domestic growth has driven the economy and to some degree overshadowed evidence of our weakening international competitiveness. Currently, the domestically driven boom is decelerating, as increasing Eurozone interest rates combine with high household debt levels to reduce domestic demand. For sustainable long-run wealth generation, Ireland needs to return to a phase of export-driven growth. This report by the NCC presents an assessment of our current competitiveness strengths and weaknesses, and highlights areas for concerted national focus.

1.1 Ireland's Recent Economic Performance

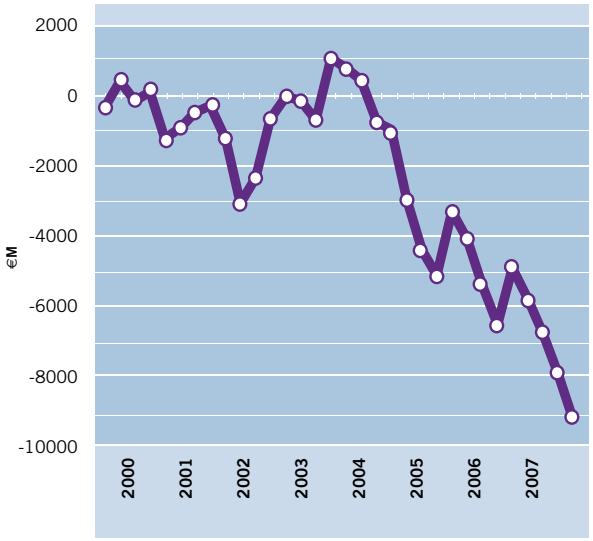
The Irish economy continues to perform very well by the standards of other developed countries, according to indicators that assess income levels, economic growth rates and measures of quality of life. Irish income per capita has converged with the OECD average. The ESRI predicts that the Irish economy will grow by 4.7 percent in 2007 and 2.7 percent in 2008 (GDP), above the EU average[1]. Ireland's rankings in the UN's Human Development Index (HDI) also continue to improve. Ireland is now ranked fourth in the world based on strong improvements in income per capita, life expectancy and education levels.

Figures 1 (a) and (b). Ireland's Growing Debt Levels

1 (a). Household debt per capita (€), selected countries, 2003 and 2007



1 (b). Ireland's current account balance (€m), 2000-2007



Source: European Central Bank; Central Statistics Office, ESRI.

1 Quarterly Economic Commentary ESRI, Autumn, 2007

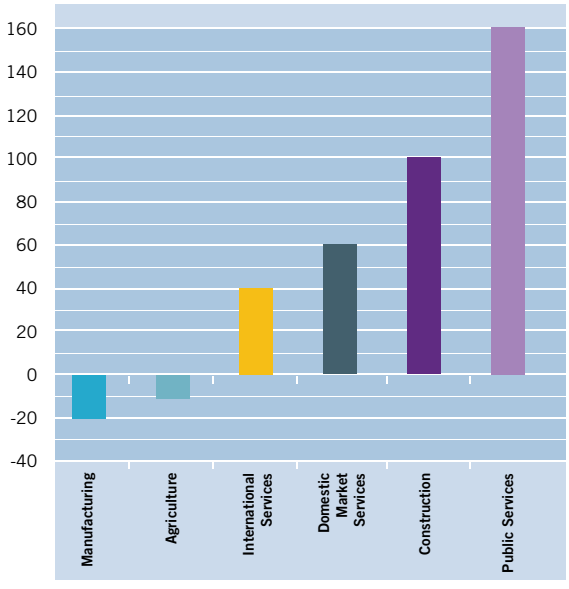
As highlighted in previous NCC reports, the nature of Ireland's economic growth has changed dramatically in recent years, from export-led growth to a situation now where domestic sectors are driving the Irish economy. In particular, consumption and construction, supported by high levels of overseas borrowing, are driving our performance. Given Ireland's increased wealth, it is not surprising that consumption is playing a more prominent role. Also, the additional construction activity is welcome as it is addressing Ireland's housing and broader infrastructural deficits. However, the domestic consumption and construction boom has led to large increases in Ireland's debt. Irish households are spending more than they are earning, and in the process are building up foreign liabilities on a scale that cannot continue (Figures 1 (a) and (b)).

Ireland's current account balance, the balance between Ireland's foreign earnings and expenditure, has slipped into a large and growing deficit. At a more tangible level, Ireland's debt per capita has increased very rapidly in recent years. Apart from Luxembourg, Ireland is now the most indebted Eurozone member, both relative to national income and on a per capita basis. With house prices increasing dramatically since 2000, household borrowing more than doubled between 2003 and 2007 and the average Irish person is almost €35,000 in debt by 2007. Debt levels continue to grow - private sector credit growth, while slowing, grew by 19.5 percent in the year to September 2007, despite higher Eurozone interest rates.[2]

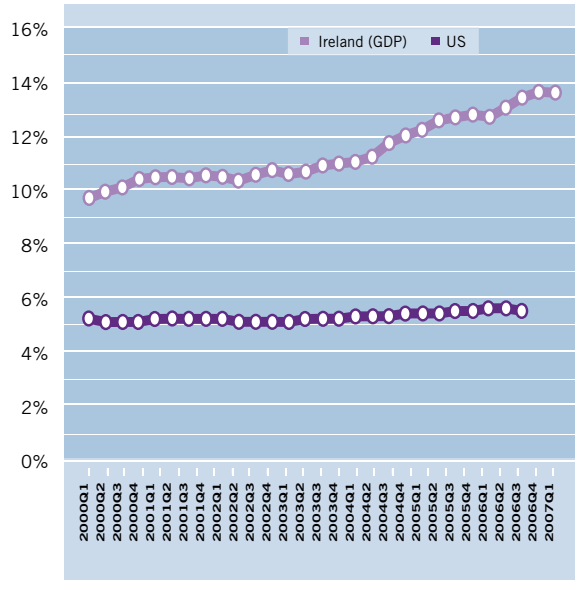
One of the great successes Ireland has had in the last decade has been the generation of large amounts of jobs, virtually solving Ireland's long-term unemployment problem. Ireland continues to create many thousands of new jobs every year and is now attracting labour from elsewhere in the EU. Since 2000, the bulk of Ireland's new jobs have come from non-trading sectors, in particular public services and construction (Figures 2 (a) and (b)). Manufacturing, both traditional and modern, and agriculture lost jobs over the same period. It should be noted that the bulk of job losses in manufacturing occurred between 2000 and 2003. Construction now accounts for over one in seven workers, compared to one in seventeen in the US, which itself is more dependent on construction than other OECD economies.

Figures 2 (a) and (b). The Nature of Ireland's Employment Growth

2(a). Sources of employment growth (000s jobs), Ireland, 2000-2006



2(b). Construction as proportion of total employment, Ireland & USA, 2000-2007



Source: European Central Bank; Central Statistics Office, ESRI.

2 Source: Central Bank of Ireland, September Statistics, November 2007.

There are strong signals that construction growth is slowing.[3] This slowdown in the construction sector is inevitable – domestically driven growth cannot sustain itself indefinitely in a small open economy. Naturally, construction will continue to remain an important part of the economy, particularly given that Ireland's per capita housing stock still remains below the EU average. In addition, the latest National Development Plan (NDP) envisions expenditure of approximately €100 billion in capital investment in infrastructure and social housing over the next seven years, compared to about €40 billion during the previous NDP. It is critical, then, that exporting sectors, both goods and services reassume a greater role in driving Ireland's long-term growth.

1.2 Ireland's Trade Performance

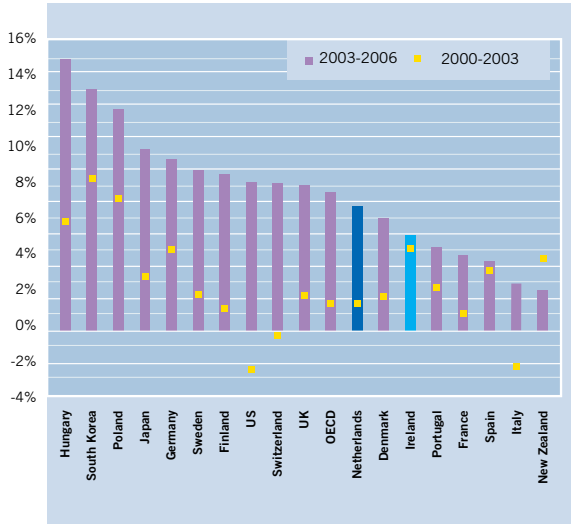
Achieving success in international markets is the core of the NCC's definition of competitiveness. Due in part to policy and in part to its small size, Ireland is one of the most open economies in the world. Ireland's trade performance has been mixed in recent years:

- Total exports of Irish-owned firms amounted to €9.6 billion in 2005, with a nominal growth rate of six percent between 2004 and 2005. Food and drink exports continue to account for the largest share of indigenous manufacturing exports (54 percent), while about one-fifth comes from software development and other internationally traded services.
- Total exports of foreign-owned manufacturing and internationally traded services amounted to €79 billion in 2005. The largest exporting sectors were chemicals (€22 billion), electrical and electronic equipment (€20 billion), and software development (€17.3 billion). Overall, exports of foreign-owned manufacturing grew by 5.8 percent between 2004 and 2005.

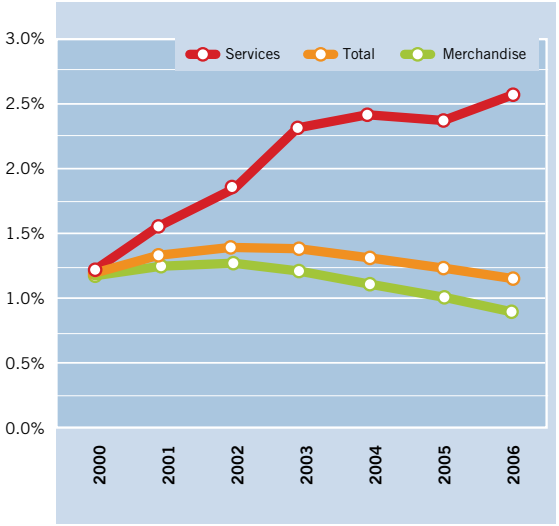
CSO data indicates that merchandise exports grew by just 0.8 percent in 2006, which is disappointing, given strong growth in our key international markets. Services exports are performing better, with exports of services increasing by 14 percent in 2006. In 2000, the export of services from Ireland accounted for 15.9% of total foreign earnings. By 2006, services earnings were 27% of total foreign earnings, with growth driven by exports in computer services, business services (including consulting) and insurance.

Figures 3 (a) and (b). Ireland's Export Performance

3 (a). Growth in Exports of Goods and Services (%), 2000-2006



3 (b). Ireland's Share of World Trade (%), 2000-2006



Source: World Trade Organisation; OECD

3 CSO figures on the number of planning permissions for new dwellings peaked in 2004, while the total size (in square metres) of planning permissions peaked in 2005. Completions figures, albeit based on estimates, point to a year-on-year slowdown in activity starting in December 2006.

The NCC is concerned that growth rates in exports have fallen below those in peer countries. Ireland's growth in exports during the 2000-2003 period was well above the OECD average, but Ireland's relative position has worsened considerably in the 2003-2006 period (Figure 3(a)).

The consequence is that Ireland is losing some of its share in world markets, driven by merchandise trade, where Ireland's share has fallen gradually since 2002 (Figure 3(b)). Latest figures indicate that Ireland's share of world services trade, a smaller but growing component of Irish trade increased in 2006 after a slight decline in 2005. Ireland's overall loss in world market share is not simply a reflection of the growing role of developing economies in world trade. While China continues to gain market share globally, a range of developed economies also continue to grow their internationally trading sectors strongly including Germany, Japan, the UK and the US.

1.3 Productivity, Prices and Costs

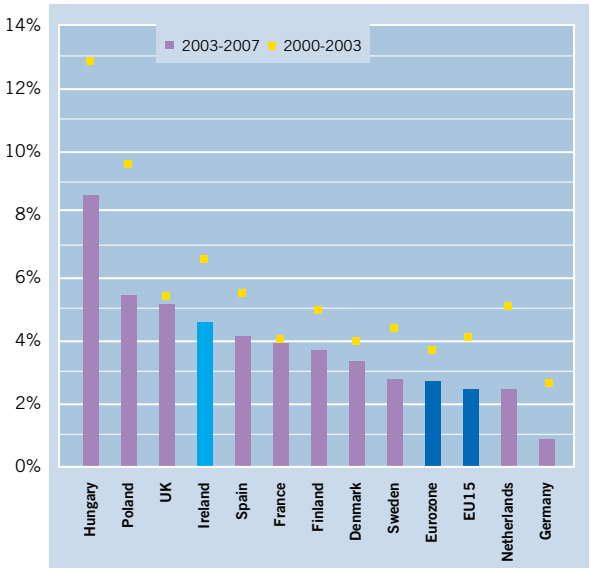
Productivity levels are important for enterprise as they measure the value added by a typical hour's work. In the long run, productivity is the key determinant of living standards. Figures from this report highlight that Irish productivity levels have converged with the OECD average.[4] It is growth rates in productivity, however, which are important for facilitating international competitiveness and sustainable wage growth. Productivity growth can come about due to investment in physical or human capital, and greater efficiency due to improvements in organisational management or the use of technology.

Irish productivity growth has slowed in recent years. Average productivity growth was just 1.4 percent during the period 2003-2006, below the OECD average of 1.7 percent and well below the Irish average between 2000 and 2003 of 3.3 percent. As in other advanced economies, Ireland's productivity is strongest in a small number of high technology export-oriented manufacturing and services sectors. While productivity growth has slowed in these high-tech sectors, large and growing domestic services sectors continue to perform poorly in terms of productivity growth. Many domestic services are more labour-intensive and less exposed to international competition, with less opportunities and incentives for automation (through the greater use of ICT for example) and for innovation.

Figures 4 (a) and (b). Ireland's Pay and Productivity Performance

3 (b). Average Growth in Output per hour Worked, Slected Economices,2000-2006

4 (b). Average Growth in Labour Cost, Selected Economies, 2000-2007



Source: European Central Bank; Central Statistics Office, ESRI.

4 This convergence holds even allowing for some distortion of Ireland's productivity figures due to the presence of many multinationals here.

As Irish productivity growth rates have been slowing, Ireland's cost base has been rising. Based on the consumer price index data, Ireland is now the second most expensive location for consumers in the EU-15 and has the third highest inflation rate in the EU-15. This inflation performance is being driven by sectors such as housing, utilities, education, health and catering. There is a risk that high inflation rates are becoming embedded in the Irish economy. Combined with this, Ireland's harmonised competitiveness indicator (combination of prices and exchange rate development) has worsened considerably since 2000, although the bulk of that change occurred between 2000 and 2003.

As inflation remains a problem, so too do increases in labour costs. Unit labour costs in manufacturing, one-eighth of the workforce, have not increased significantly on average since 2003. However, in sheltered sectors of the economy, including utilities, catering and communications, labour costs are rising at a rate at least twice the Eurozone average. This is of serious concern, as prices and costs in non-traded sectors quickly feed into the cost base of internationally trading firms who purchase goods and services in the local economy. Examples include labour services frequently purchased by trading sectors, such as accountancy, IT and legal services, where figures show Ireland – and Dublin in particular – to be very expensive. Other non-pay costs in Ireland also compare poorly with those in competitor countries across a range of cost types. These include property costs, both purchase and rental, utilities costs from electricity to water and waste, and communications costs, in particular mobile telephony.

1.4 Drivers of Future Competitiveness

Improving competitiveness will not be easy. Ireland's future competitiveness will depend heavily on decisions made today in key policy areas that affect Ireland's business environment (e.g. taxation, regulation, finance and social capital), physical infrastructure, and knowledge infrastructure, as represented by the bottom layer of the competitiveness pyramid.

Ireland's **business environment** compares well on average to OECD counterparts. The taxation regime is favourable to corporations and workers, although consumers – including tourists – pay relatively high rates of VAT. Despite relatively low corporation tax rates, the tax take from corporations as a percentage of GNP is above the OECD average. It is notable that other countries are replicating our strategy.

In relation to competition legislation, perceived efficiency has weakened relative to other countries in recent years and competition remains weak in many sectors of the economy, including utilities and professional services. Labour market regulations are perceived to be increasing in Ireland, with the employment framework here considerably less flexible than in economies such as the UK and Denmark. Overall, access to capital in Ireland is not perceived to be a barrier to enterprise in Ireland. Finally, social capital, such as trust in political and social institutions, is good, although there are perceived weaknesses in the accountability of Ireland's political system.

Ireland's **physical infrastructure** remains a source of acute competitive disadvantage, with a lack of investment in the 1980s combining with huge growth in the economy and the population since the 1990s to bring about infrastructural bottlenecks. Across transport networks, energy, information and communication technology and housing, Ireland's stock of infrastructure lags those of comparable countries elsewhere in the OECD. However, government investment in infrastructure is significantly higher in Ireland than in most developed economies. Finally, Ireland's housing infrastructure remains an issue, with house prices increasing dramatically since 2000 and household borrowing more than doubling between 2003 and 2007. By 2007, the average Irish person is almost €35,000 in debt.

Ireland's **knowledge infrastructure** fares better. Average educational attainment in Ireland has increased steadily in the last two decades, with younger cohorts of the population now as well qualified as their OECD counterparts. However, participation in pre-primary education in Ireland is well below the EU-15 average and although participation rates in life long learning in Ireland have increased significantly in recent years, there is still a significant gap between Ireland and the leading countries.

While educational participation rates are generally strong, except for pre-primary and lifelong learning, concerns remain about the quality of the outputs. At primary education level, the amount of time spent on the key subjects of maths, science and technology lags most other OECD countries. At secondary education, where international benchmarks exist, reading, mathematical and scientific literacy of Irish students ranks 6th, 16th and 13th consecutively in the OECD. At third and fourth level, based on data from The Times Higher Education Supplement, none of Ireland's institutions are ranked among the best in the world. The use of ICT also remains relatively poor in Irish education.

While Ireland can be regarded as an impressive latecomer in recognising the importance of sustained investment in R&D, current employment and expenditure on R&D remain well below leading comparator countries, in both higher education and in enterprise. In terms of global triadic patents granted per million of population, which is one way of measuring output from R&D, Ireland ranks 19th in the OECD.

1.5 Conclusions

Ireland has made remarkable economic progress over the past 15 years. The first phase was set in motion by high levels of investment in Ireland by multinational companies, attracted to Ireland by our membership of the European Union and pro-enterprise Government policies in areas such as taxation, education, international trade and industrial relations through social partnership. The second phase saw export success combine with rising national confidence and low interest rates, to stimulate household and government spending. Over the past few years, this domestic growth has driven the economy and to some degree overshadowed evidence of our weakening international competitiveness. Currently, the domestic driven boom is peaking as higher Eurozone interest rates on high debt levels reduce domestic demand.

While there is much to be proud of in terms of our recent economic performance, we must not become complacent. Ireland needs to enter a new phase of economic growth, one where Ireland regains its international competitiveness. To remain at the forefront of international trade and competitiveness, we must display a singular commitment to promoting a competitive business environment. *Ireland's Competitiveness Challenge 2007* examines the policy requirements in detail, and highlights the key policy directions that are needed today to ensure that Ireland can be as successful over the next decade, as it has over the past decade, to sustain improvements in standards of living.

1.6 What Is This Report and How To Read It

Who is the NCC and what is its purpose?

The National Competitiveness Council (NCC) was set up in 1997 under Ireland's social partnership process. Its purpose is to advise An Taoiseach and other government ministers in relation to Ireland's current competitive performance and the policy measures required to enhance Ireland's performance.

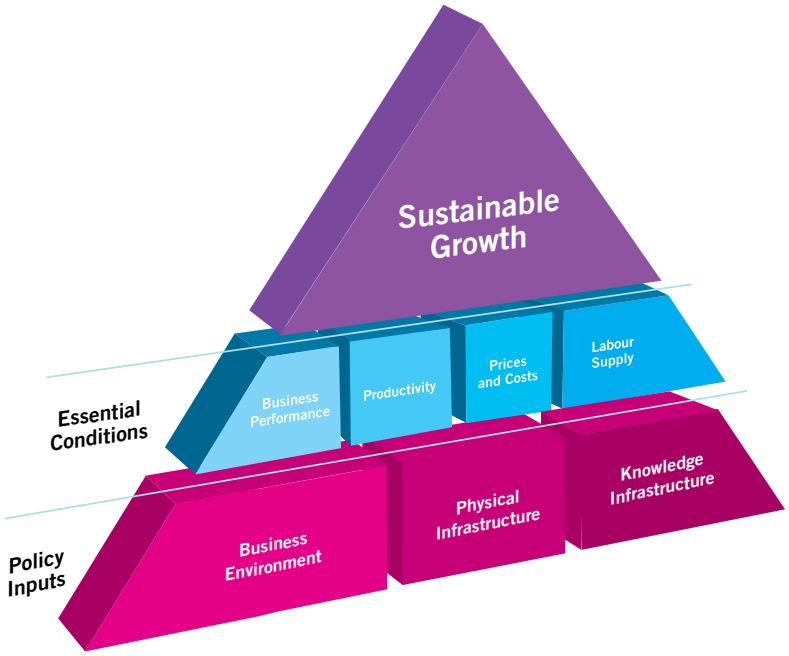
To fulfil its purpose, it prepares an Annual Competitiveness Report in two volumes, of which this is Volume 1, *Benchmarking Ireland's Performance*. Based on this report and other analysis, Volume 2, *Ireland's Competitiveness Challenge*, makes recommendations on the public policy actions needed to improve the competitiveness of Ireland's enterprise base. The NCC also issues other policy statements periodically on issues of importance to Ireland's national competitiveness.

What is competitiveness?

Competitiveness refers to the ability of firms to compete in markets. Ireland's national competitiveness refers to the ability of the enterprise base in Ireland to compete in international markets. The NCC uses a 'competitiveness pyramid' to outline the framework within which it assesses Ireland's competitiveness (Figure 5).

At the top of the pyramid is sustainable growth in living standards. This is the fruit of past competitiveness success. Below this are the essential conditions to achieving competitiveness, including business performance (such as trade and investment), productivity, prices and costs and labour supply. These can be seen as the metrics of current competitiveness. Lastly, there are the policy inputs, which cover three pillars of future competitiveness, i.e. the business environment (e.g. taxation, regulation, social capital, etc.), physical infrastructure, and knowledge infrastructure.

Figure 5. The NCC Competitiveness Pyramid



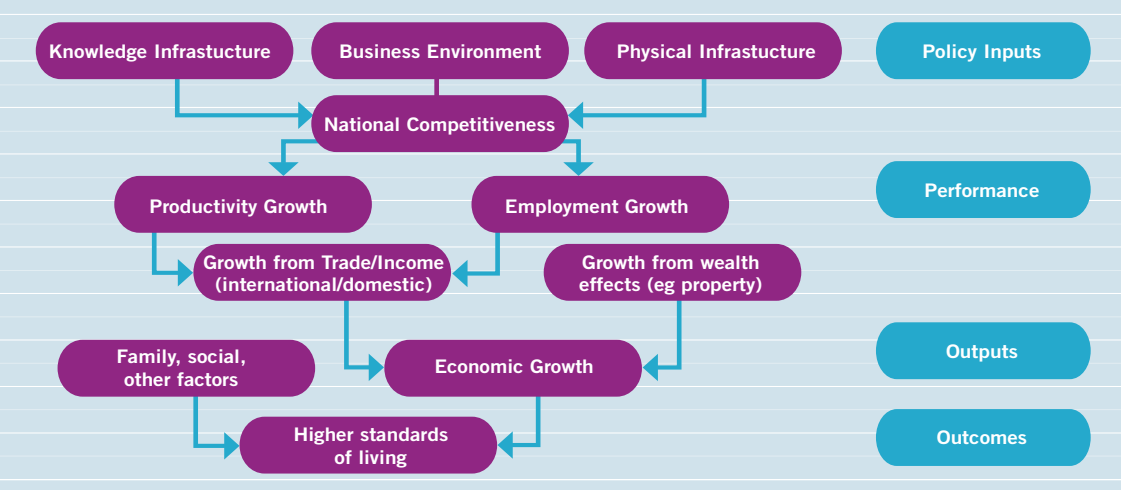
Source: National Competitiveness Council

Why does the NCC measure competitiveness?

Competitiveness is not an end in itself; it is a means of achieving higher and sustainable living standards (Figure 6). As is set out in Towards 2016, Ireland's aim over the next ten years is to develop "a dynamic, internationalised, and a participatory society and economy with a strong commitment to social justice, where economic development is environmentally sustainable and is internationally competitive". Ireland's national competitiveness, therefore, has been identified as a key objective for the next ten years. Without a strong enterprise base able to compete in international markets, many of Ireland's other goals become more difficult to achieve.

Ireland's competitiveness is, therefore, a topic of national importance. With this in mind, the NCC measures competitiveness, as it believes that policymaking should be evidence-based, i.e. making decisions using the best possible information.

Figure 6. National Competitiveness and Higher Standards of Living



Source: National Competitiveness Council

What type of metrics does the NCC use to measure competitiveness?

Benchmarking Ireland's Performance is divided into three main sections, sustainable growth, essential conditions for competitiveness and policy inputs, which correspond to the various components of the competitiveness pyramid. This report uses internationally comparable metrics, with the OECD, the EU, the UN and the WTO the sources for the vast bulk of indicators. Indicators from specialist international competitiveness bodies (e.g. from the WEF's Global Competitiveness Report and the IMD's World Competitiveness Yearbook) are also used. Where further depth is of benefit, national sources such as the CSO, the Central Bank, Forfás and the ESRI are used.

To whom do we compare ourselves and why?

Countries have been chosen to provide a mix of Eurozone members (Finland, France, Germany, Italy, the Netherlands and Spain), other non-Eurozone European countries (Denmark, Sweden, Switzerland and the UK), and two new EU member states (Hungary and Poland). Five non-European countries (Japan, South Korea, New Zealand, Singapore and the US), who are global leaders or are of a similar size or pace of development to Ireland, are also included. This allows for a detailed comparison between Ireland and many of its closest trading partners and competitors. Ireland is also compared to a relevant peer group average, the OECD-28, EU-15 or EU-27 average where possible.

What are the limitations of benchmarking?

Benchmarking Ireland's performance across more than 140 competitiveness indicators is an important exercise. It informs the policymaking process and raises awareness of the importance of continuing national competitiveness to Ireland's wellbeing. Nonetheless, there are limitations to benchmarking:

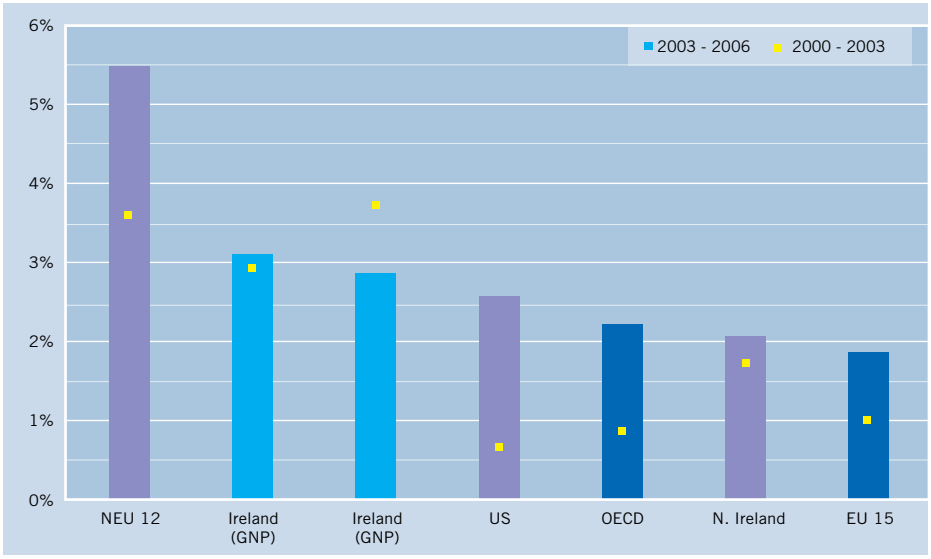
- While every effort is made to ensure timeliness of the data, there is a natural lag in collating comparable official statistics across the selected countries. There are also factors that are difficult to benchmark (e.g. the benefit of being in the GMT time zone or of speaking English fluently).
- Secondly, given the different historical contexts and economic, political and social goals of various countries, and their differing physical geographies and resource endowments, it is not realistic or even desirable for any country to seek to outperform other countries on all measures. There are no generic strategies to achieve national competitiveness.
- Finally, it is important to note that trade and investment between countries is not a zero-sum game; economic advances by other countries can, in aggregate terms, lead to improvements in living standards for the Irish population.

How to read the charts

The remainder of this report is broken up into sections whose order follows the NCC's Competitiveness Pyramid. We have endeavoured to ensure that all charts are self-explanatory. However, with reference to the sample chart in figure 7, the following points may be of value when interpreting the charts:

- The best performing country is located at the left of the chart (e.g. in vertical bar charts) or at the top of the chart (in horizontal charts). In a limited number of charts, it is not possible to designate a best performer.
- In charts that assess output/income or other factors relative to these, Irish figures are provided in GDP and GNP terms. GDP (national output) is significantly greater than GNP (national income) due to the repatriation of profits and royalty payments by multinational firms based here. Other countries are assessed in GDP terms.
- The text at the right of the chart explains the charts further or provides additional information.

Figure 7. Sample Chart



Source:

How to interpret the rankings

Ranking are provided where appropriate, but in a limited number of charts, it is not possible to designate a best performer.

- In interpreting the ranking for each indicator, a low ranking (i.e. close to 1st) implies a healthy competitiveness position, while a high ranking implies an uncompetitive position.
- Changes in rankings refer to the change in Ireland's position, generally since 2000. Exceptions to this base year, due to data availability, are highlighted in footnotes. (↑) refers to an improvement in Ireland's competitive position, so ↑4 means an improvement of four places in Ireland's ranking. (--) means that there has been no change in Ireland's ranking, while (↓) refers to a fall in Ireland's ranking.
- The OECD is the preferred comparator group. However, in some cases depending on data availability, rankings are provided relative to the group of countries shown or to the EU.
- OECD rankings and averages are based on a maximum of 28 countries. Turkey and Mexico are not included in the analysis, in part due to how their size and income levels affect averages and in part due to data availability. These 28 countries are as follows: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden, Switzerland, UK and the US. Where the sample is less than 28 countries due to data availability, the countries omitted are detailed in the endnotes.

How to interpret the traffic lights

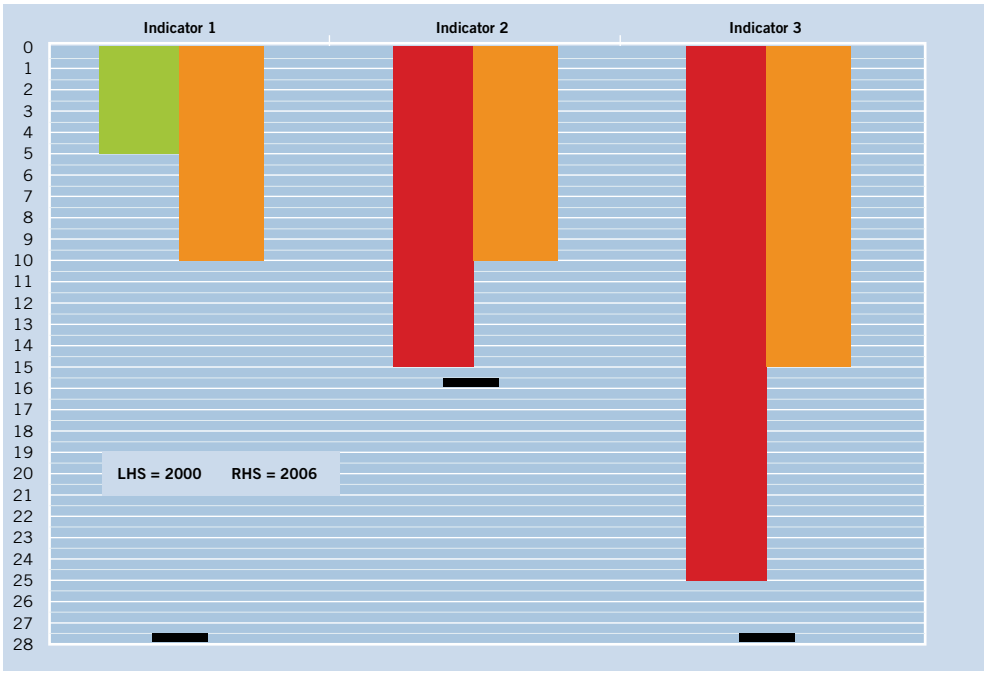
Using a traffic light system, each chart is accompanied by a traffic light indicator, coloured green, orange or red, in order to provide a high level indication of Ireland's performance. Green indicates a strong or improving performance, orange signals an average performance or some cause for concern while red means that Ireland has performed poorly on the indicator.

How to interpret the summary charts

This year's report includes new summary charts at the beginning of each chapter in order to give a brief, general high level overview of current performance in each area relating to the competitiveness pyramid. An example summary chart is displayed below.

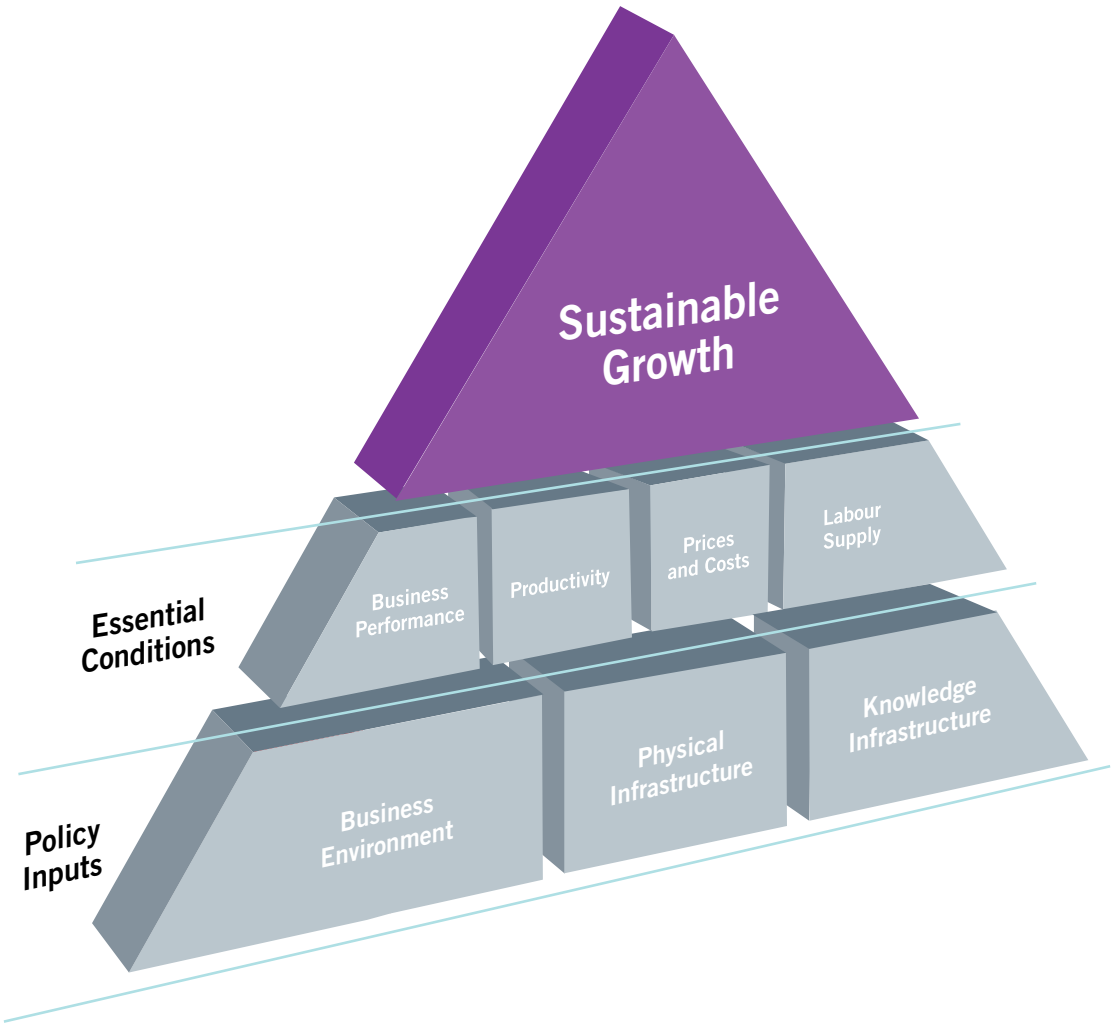
- The scale on the left hand side of the chart puts countries with a good ranking (i.e. close to first) at the top, while countries with a worse ranking are towards the bottom.
- There are two entries for each indicator, Ireland's ranking in 2000 (or nearest) on the left and Ireland's ranking in 2006 (or nearest) on the right.
- Most indicators are ranked on an OECD basis. However, this is not possible in all cases, meaning that an EU-15 or group ranking is given instead. A line under each indicator represents the lowest possible rank obtainable for an indicator, e.g. 15 for an EU-15 ranking and 28 for an OECD-28 ranking. In the sample chart below, indicators 1 and 3 are ranked by OECD-28, while indicator 2 is ranked by the EU-15.
- Each indicator is colour coded. As before, green indicates a strong or improving performance, orange signals an average performance or some cause for concern while red means that Ireland has performed poorly on the indicator.
- For example, Ireland's 2000 ranking for indicator 2 below, 15 out of the EU-15, is coloured red to represent a poor performance. At the same time, a ranking of 15 out of the OECD-28 (Indicator 3, 2006) is coloured orange to represent an average performance.

Figure 8. Sample Summary Chart



Source: *N/A*

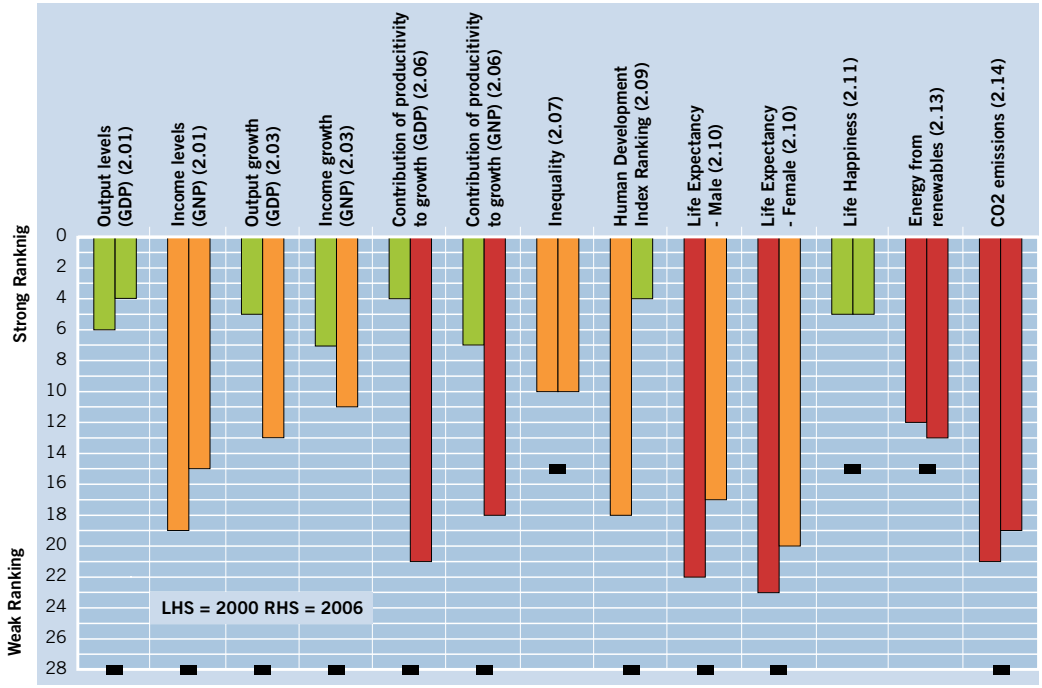
2 Sustainable Growth



2. Sustainable Growth

Competitiveness is not an end in itself, but is a means of achieving sustainable improvements in living standards and quality of life. This section benchmarks Ireland's performance regarding this desired outcome, under three headings: national income, quality of life and environmental sustainability. Summary chart 1 highlights key changes in relevant rankings since 2000 or nearest available year.

Summary Chart 1:
Rankings in Indicators of Sustainable Growth, 2000-2006 (or nearest)



Income

High and rising living standards are a key measure of the success of national competitiveness. The indicators in this section cover the level, growth and distribution of Ireland's national income.

Ireland has made significant progress in recent years. Irish output per capita (GDP) is now among the highest in the OECD while income per capita (GNP), a better measure of Irish living standards, is close to the OECD average (Fig. 2.01). Regionally, the South and East region is among the wealthiest in the EU and the US (Fig. 2.02). The BMW region's performance is weaker, but it is still above the EU-15 average. Overall, income inequality in Ireland is greater than the EU-15 average (Fig. 2.07). Regional disparities have also increased marginally since 2000 (Fig. 2.08).

Irish economic growth rates have slowed since 2000, particularly for GDP, but they remain above the OECD average (Fig. 2.03). It is clear that international trade, the engine of Ireland's growth during the 1990s, is no longer driving Ireland's current economic growth. The contribution of Ireland's exporting sectors to economic growth has faltered since 2003, although this rebounded slightly in 2006 (Fig. 2.04). It is also notable that while the 1990s were marked by strong growth in both productivity and employment, the contribution of productivity to Irish growth has been among the lowest in the OECD for the 2003-2006 period (Fig. 2.06).

Quality of Life

A key objective of competitiveness is to support a high quality of life, which is broader than material living standards. To measure quality of life, the United Nation's Human Development Index is used, along with measures of life expectancy and 'life-happiness'.

Ireland's recent performance in the Human Development Index has been very strong. The index covers indicators of economic, educational and health progress. Ireland ranked fourth in 2004, an improvement of fourteen places since the 2000 report (Fig. 2.09), driven by strong economic growth. Life expectancy for both men and women in Ireland has also improved since 1990, but has yet to reach the OECD average (Fig. 2.10). Finally, in response to survey questions, Irish people are generally happier with their lives than people in many other countries (Fig. 2.11).

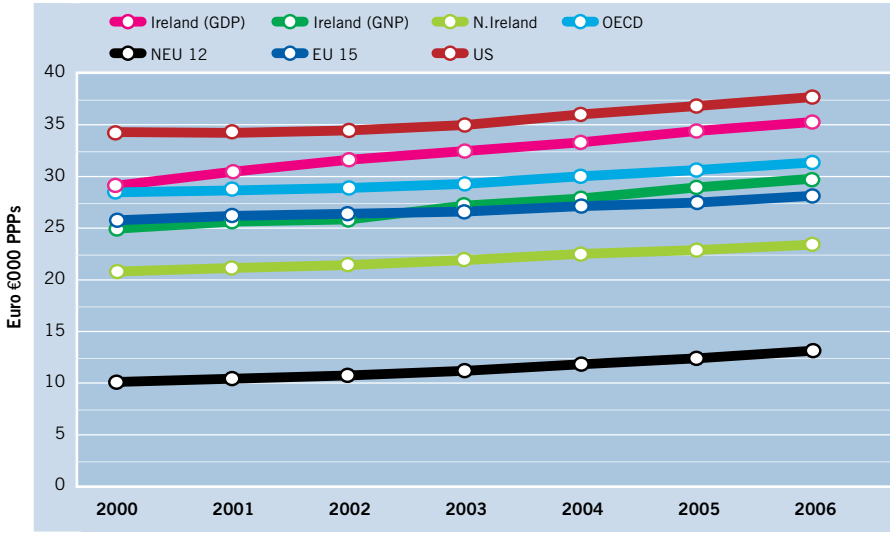
Environmental Sustainability

The essence of environmental sustainability is a stable relationship between human activities and the natural world, one that does not diminish the prospects for future generations to enjoy a quality of life at least as good as our own. This section examines Ireland's broad environmental performance and also focuses specifically on energy, carbon emissions and waste.

Ireland's performance in relation to environmental sustainability remains mixed. The composite environmental performance index places Ireland ninth in the OECD (Fig. 2.12). However, there are challenges. While, Ireland consumes slightly more energy on a per capita basis than the EU-15 average, Ireland's share of energy coming from renewable sources is almost one-third that of the EU-15 average (Fig. 2.13). Given our high dependence on fossil fuels, and a lack of alternative and nuclear energy sources, Ireland ranks poorly in terms of per capita carbon dioxide emissions (Fig. 2.14). Lastly, none of Ireland's municipal waste is converted into energy, compared to about half of waste in Sweden and Denmark. Landfill, the least preferred waste solution, dominates in Ireland (Fig. 2.15).

2.1 National Income

Figure 2.01
Levels of GDP per Capita, Ireland and Selected Economies, 2000-2006 (€000 PPPs)



The level of output (GDP) per head of population in Ireland is above EU-15 and OECD averages. Using income (GNP) per head, Ireland's performance is still strong and is now above the EU-15 average, but has not converged with the OECD average.

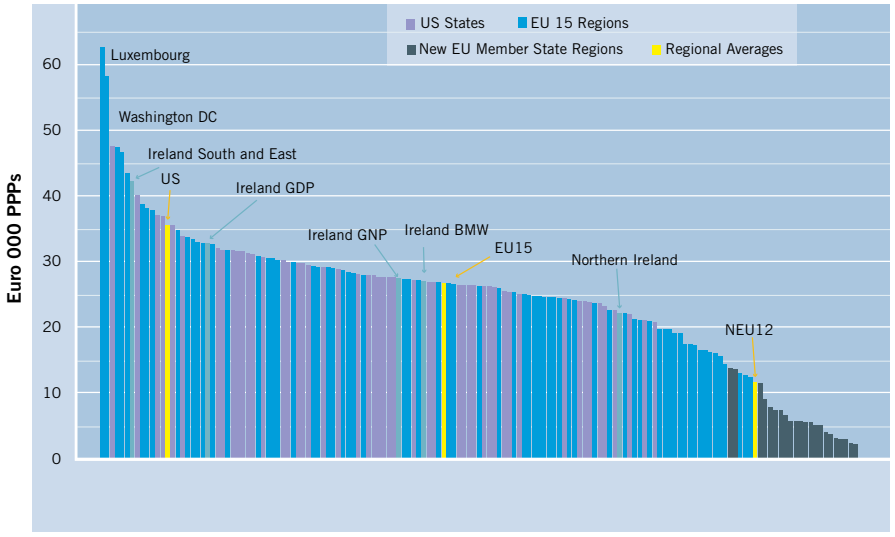
OECD-28 Ranking:

GDP: 4 (↑2)

GNP: 15 (↑4)

Source: Forfás calculations; Groningen Growth & Development Centre, Total Economy Database, January 2007; UK Office for National Statistics [online]

Figure 2.02
Levels of GDP per Capita, US States and EU Regions, 2004/05 (€000 PPPs)



Ireland (GDP) ranks as one of the wealthiest regions in the EU and US. In terms of GNP, a better measure of income, Ireland ranks above the EU- 15 average. A noticeable gap in output per head exists between Ireland's two regions, the South & East and the Border, Midlands & West.

EU-15 Regions (of 81):

Ireland S.E: 6

Ireland BMW: 33

Source: Forfás calculations, Eurostat General and Regional Indicators, [online]; US Bureau of Economic Analysis [online]

Figure 2.03
Average Growth Rates (%) in GDP per Capita, 2003-2006 Compared to 2000-03[1]

Irish economic growth rates (in both GNP and GDP terms) remain above OECD and EU-15 averages, although GDP growth is slowing. Average economic growth picked up throughout the OECD in the 2003-2006 period, compared to the 2000-2003 period.

OECD-28 Ranking:

GDP: 13 (↓8)

GNP: 11(↓4)

Source: Forfás calculations, Groningen Growth & Development Centre, Total Economy Database, January 2007; OECD Annual National Accounts Database; UK Office for National Statistics, 2007 [online]

Figure 2.04
Contribution of Growth in Net Exports to Irish Economic Growth (GDP), 2001-2007f

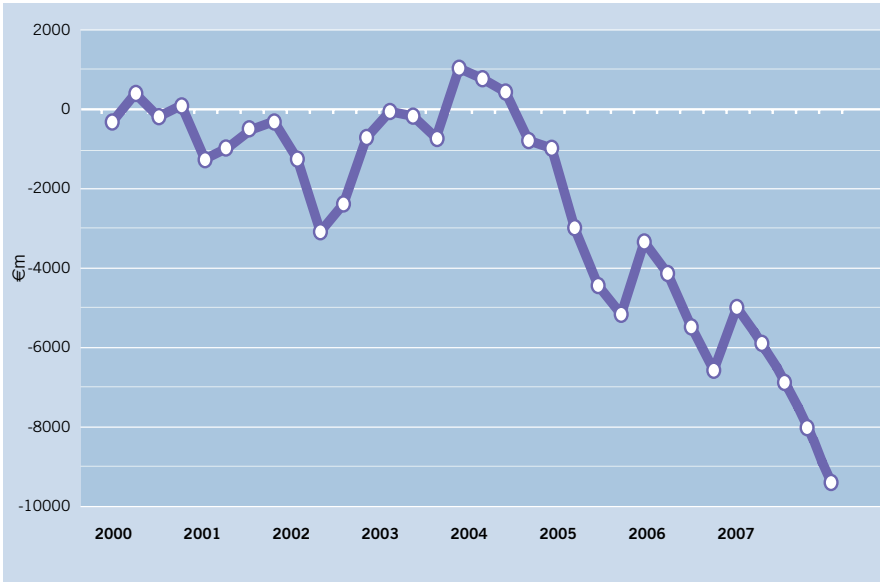
This chart examines the sources of recent Irish economic growth. The contribution of trade (i.e. net exports) to economic growth has been small or negative since 2004. This contrasts with the pre-2003 period. Investment, particularly in construction and consumption have driven growth since 2003.

Ranking:

N/A

Source: Forfás calculations, Central Statistics Office, Annual National Accounts [online]

Figure 2.05
Current Account Balance, €m (2000-2007f)



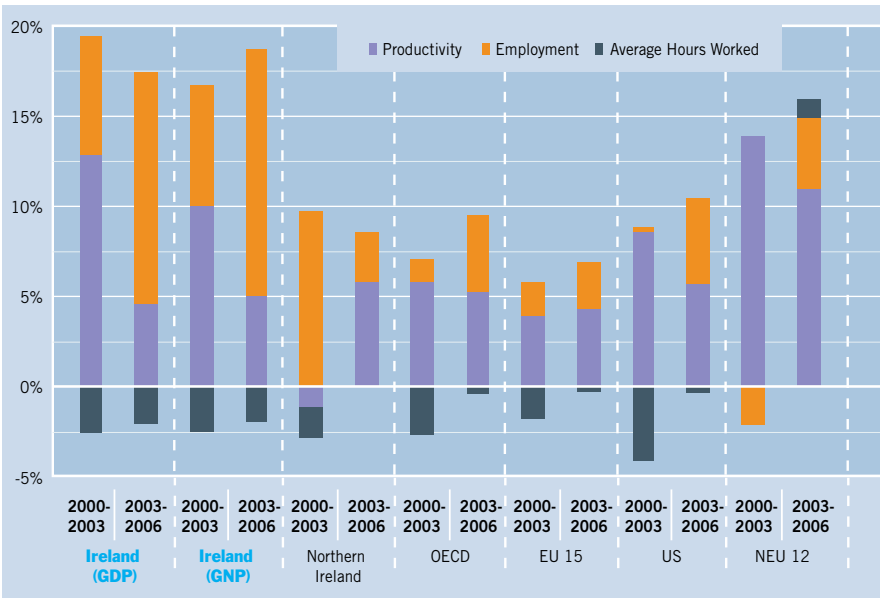
The current account balance measures national income less expenditure. Ireland is borrowing heavily internationally to pay for consumption and investment. Future exports and other (factor) income from abroad must be generated to pay for current borrowings; otherwise Irish assets will have to be sold.

Ranking:

N/A

Source: Forfás calculations; Central Statistics Office; Economic & Social Research Institute

Figure 2.06
Contribution of Productivity to Economic Growth, Selected Economies,2000-2006



Growth in the economy has two main sources: labour productivity and labour use (a combination of employment and hours at work). Since 2003, Irish growth has been predominantly employment-driven, unlike 2000-2003, when it was productivity driven.

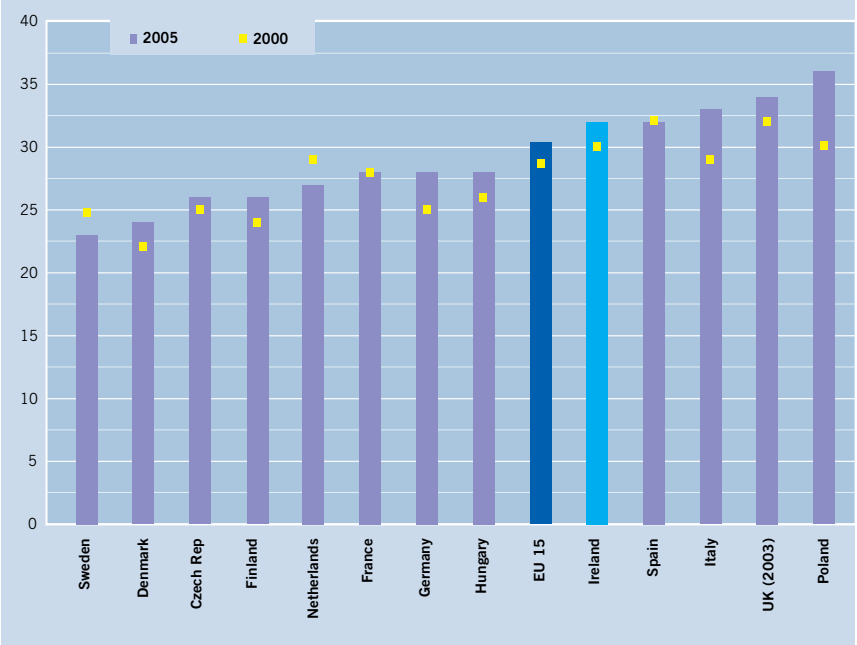
OECD-28 Ranking:

GDP: 21 (↓17)

GNP: 18 (↓11)

Source: Forfás calculations; Groningen Growth and Development Centre, Total Economy Database, January 2007; Eurostat, General and Regional Indicators [online]; UK Office for National Statistics [online]; Northern Ireland Department of Enterprise, Trade & Investment, Northern Ireland Labour Force survey: Spring 2006

Figure 2.07
Levels of Income Inequality (Gini Coefficient), 2000 and 2005[2]



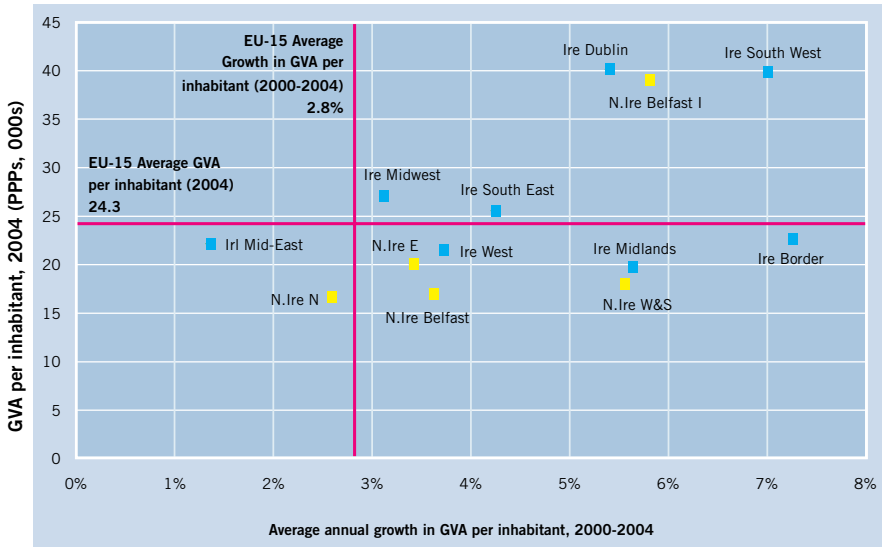
Gini coefficients measure the distribution of incomes across households but do not measure absolute poverty. Ireland is marginally more unequal than the EU-15 average. Ireland as with most other EU countries has experienced an increase in relative inequality since 2000 based on this measure.

EU-15 Ranking:

10 (--)

Source: Eurostat, Population and Social Conditions

Figure 2.08
Regional Convergence, Ireland and Northern Ireland, (Growth versus Wealth), 2000-2004



Convergence between regions would be represented in this diagram by a downward sloping trend line. Irish regions do not appear to be converging, with the richest areas generally those growing the fastest during the 2000-2004 period.

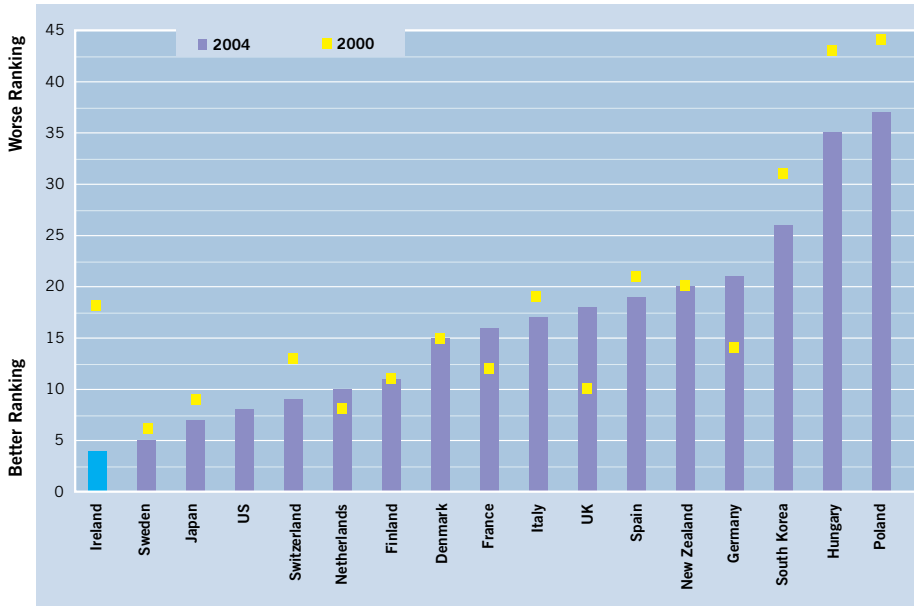
Ranking:

N/A

Source: Forfás calculations; Eurostat, General and regional Indicators [online]

2.2 Quality of Life

Figure 2.09
Ranking in the United Nation's Human Development Index, 2000-2004



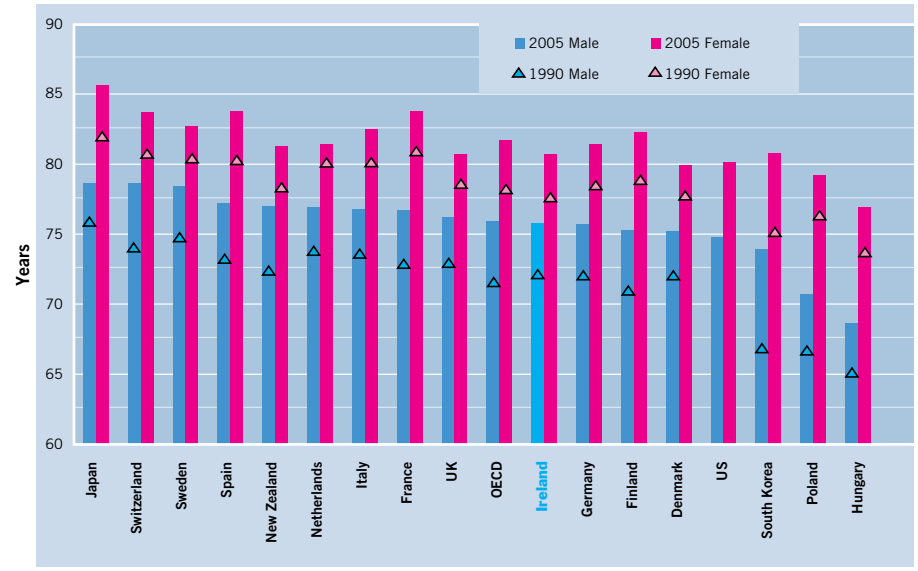
The UN's Human Development Index combines measures of education, health and income. Ireland's rank has improved strongly since 2000 and is among the highest in the world (4th overall), indicating a high quality of life.

OECD-28 Ranking:

4 (↑14)

Source: Forfás calculations, UN Human Development Report, 2006

Figure 2.10
Life Expectancy in Years, by Gender (2005 compared with 1990)



Life expectancy can be used as a simple indicator of health and well-being. Average life expectancy for Irish males and females was above 75 and 80 respectively in 2005, an increase of three years since 1990 levels. Life expectancy in Ireland remains marginally below the OECD average.

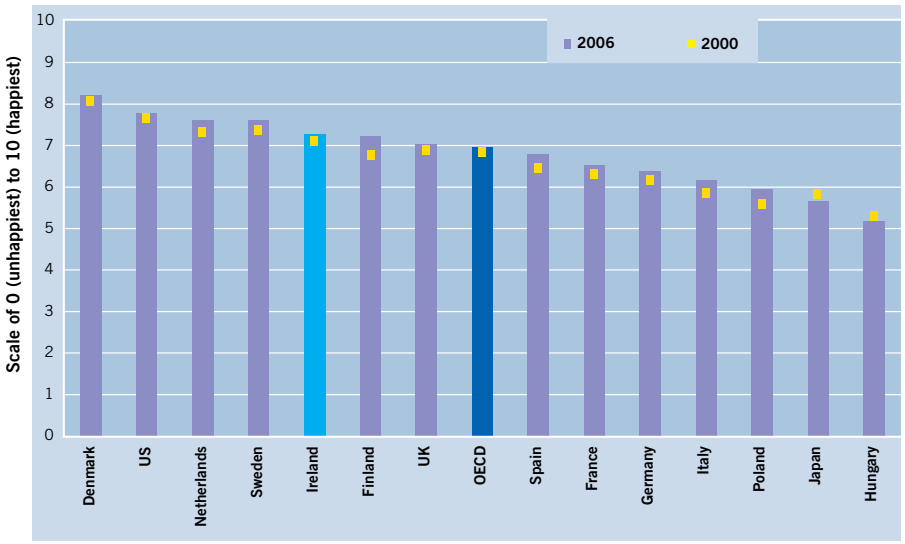
OECD-28 Ranking:

Males: 17(↑5)

Females: 20(↑3)

Source: Forfás calculations, OECD Factbook, 2007

Figure 2.11
Average Happiness in Life, Scale (0-10) 2000-2006



This database provides international data on life happiness and satisfaction. Ireland performs relatively well among comparator countries. While these scores are somewhat subjective, the findings mirror those in other international surveys.

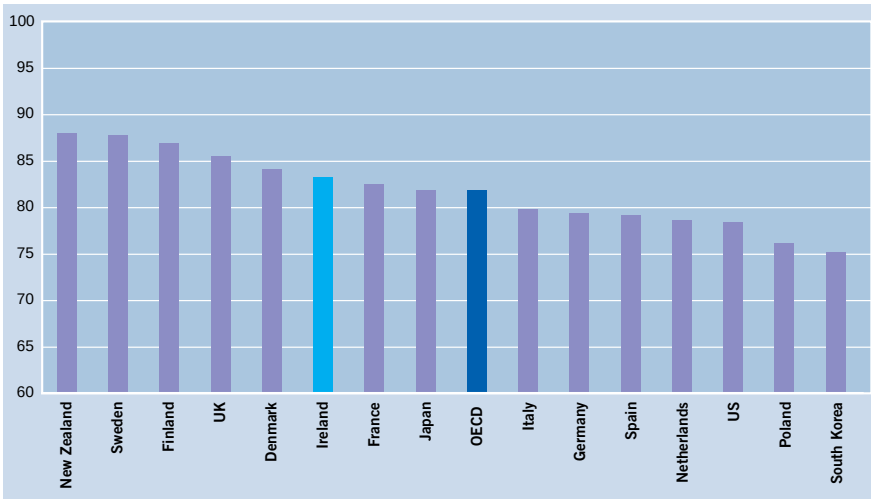
Ranking of 15:

5 (--)

Source: World Database of Happiness, Erasmus University Rotterdam

2.3 Environmental Sustainability

Figure 2.12
Environmental Performance Index, 2006, Scale (0-100)[3]



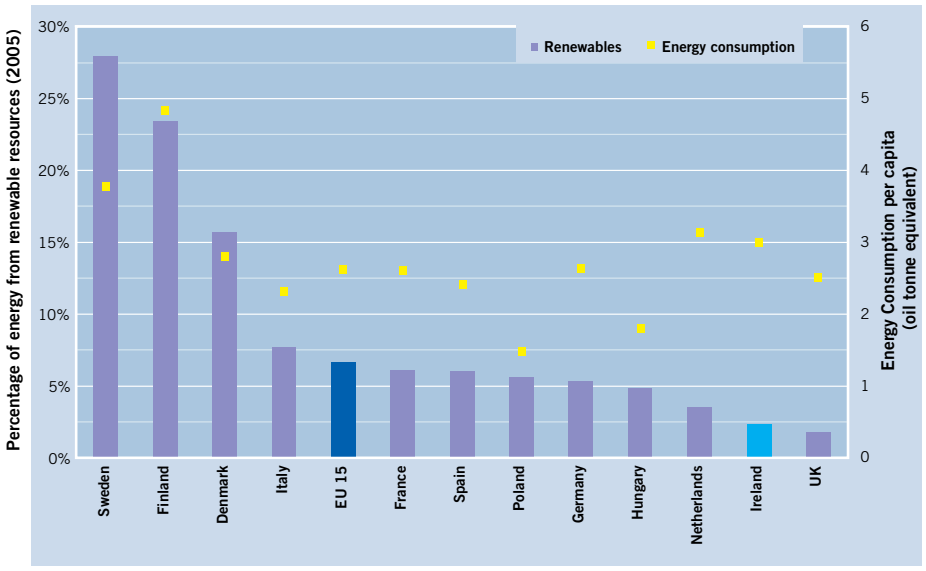
This index aggregates sixteen metrics in environmental health, air quality, water resources, productive natural resources, biodiversity and habitat, and sustainable energy. Ireland's performance is better than the OECD average.

OECD-28 Ranking:

9

Source: Yale Centre for Environmental Law and Policy; Centre for International Earth Science Information Network

Figure 2.13
Proportion of Energy from Renewable Sources and per Capita Energy Consumption, 2005



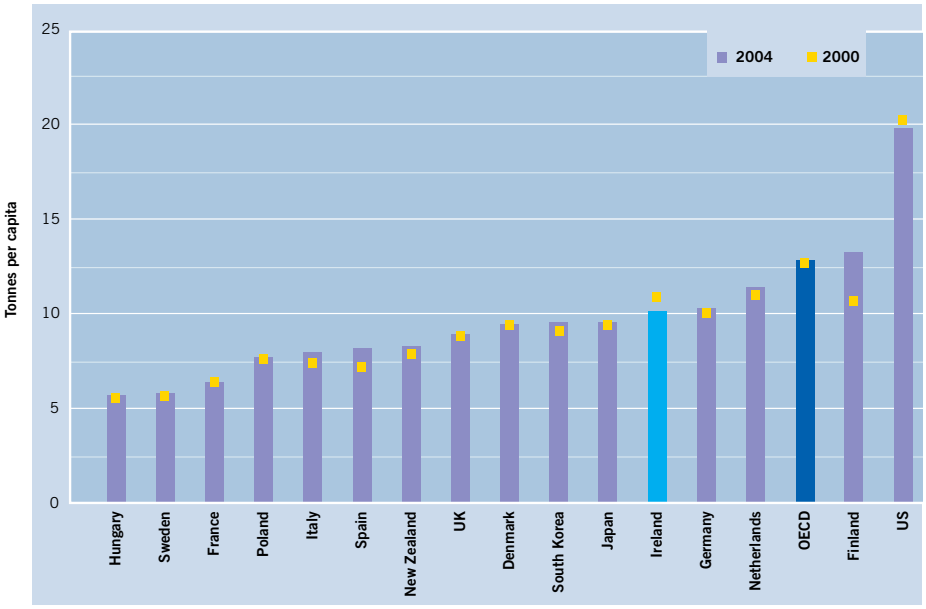
Ireland consumes more energy per capita than the EU-15 average (right axis). Ireland's share of energy derived from renewable resources (left axis) is almost one third that of the EU-15 average, which reflects our high dependence on fossil fuels.

EU-15 Ranking:

13(↓1)
(ranked by renewables)

Source: Forfás Calculations; Eurostat, Environment and Energy; OECD Factbook 2007

Figure 2.14
Emissions of Carbon Dioxide (per capita), 2000 and 2004



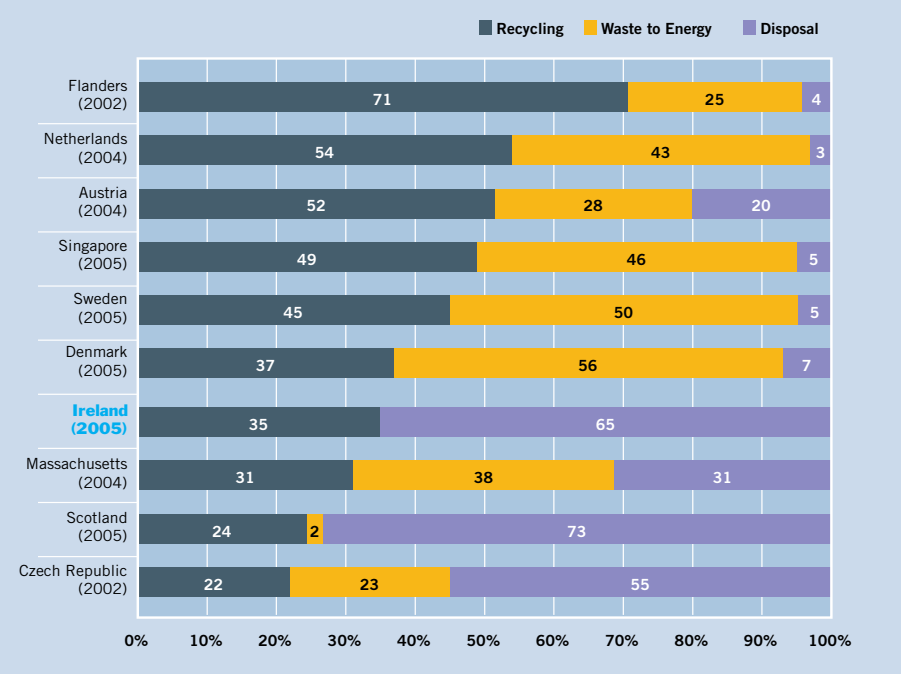
Although Ireland's position has improved since 2000, Ireland is still among the highest polluters of carbon dioxide in the OECD on a per capita basis.

OECD-28 Ranking:

19(↑2)

Source: Forfás Calculations, OECD Factbook 2007

Figure 2.15
Municipal Waste Recycling Performance, Various Years[4]



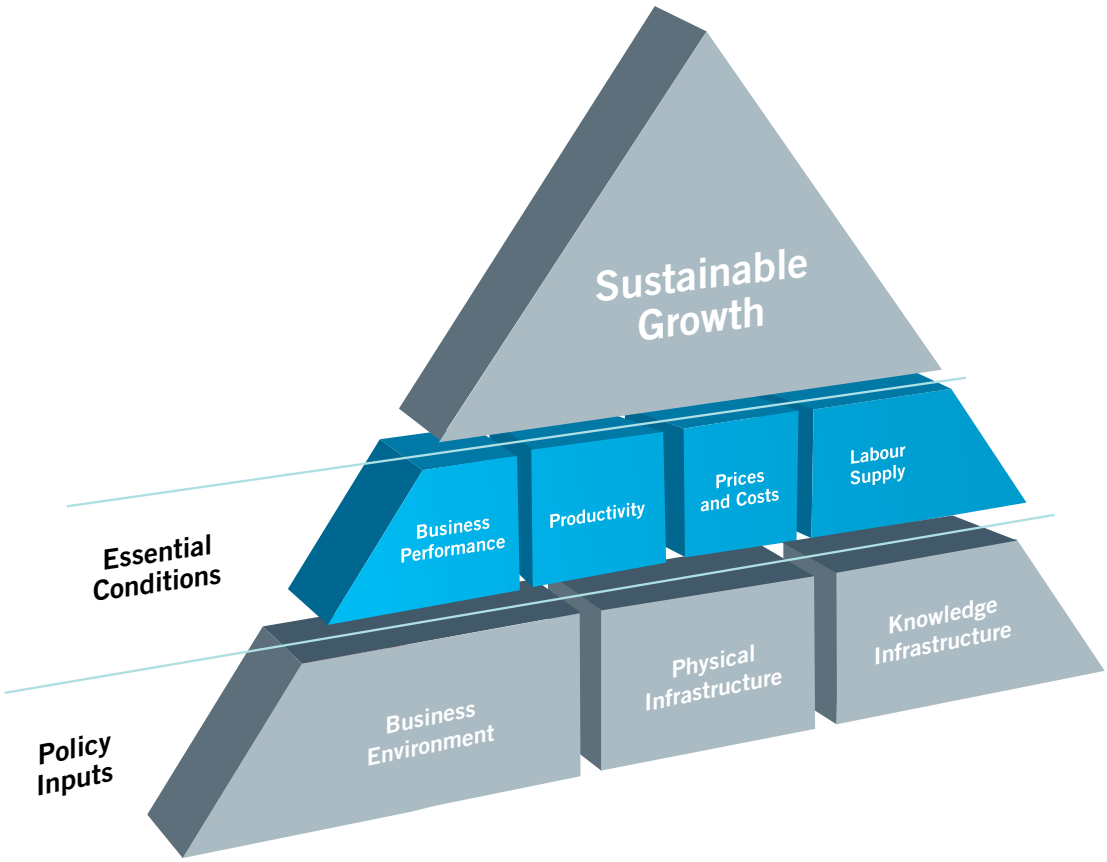
The rate of municipal waste recycling in Ireland continues to improve slowly but Ireland still ranks 7th out of 10 locations benchmarked. None of Ireland's municipal waste is converted into energy contrasting to Denmark where over 50 percent is converted to energy.

Ranking of 10:

7(↑1)

Source: Forfás, Waste Management in Ireland, March 2007

3 Essential Conditions



3. Essential Conditions

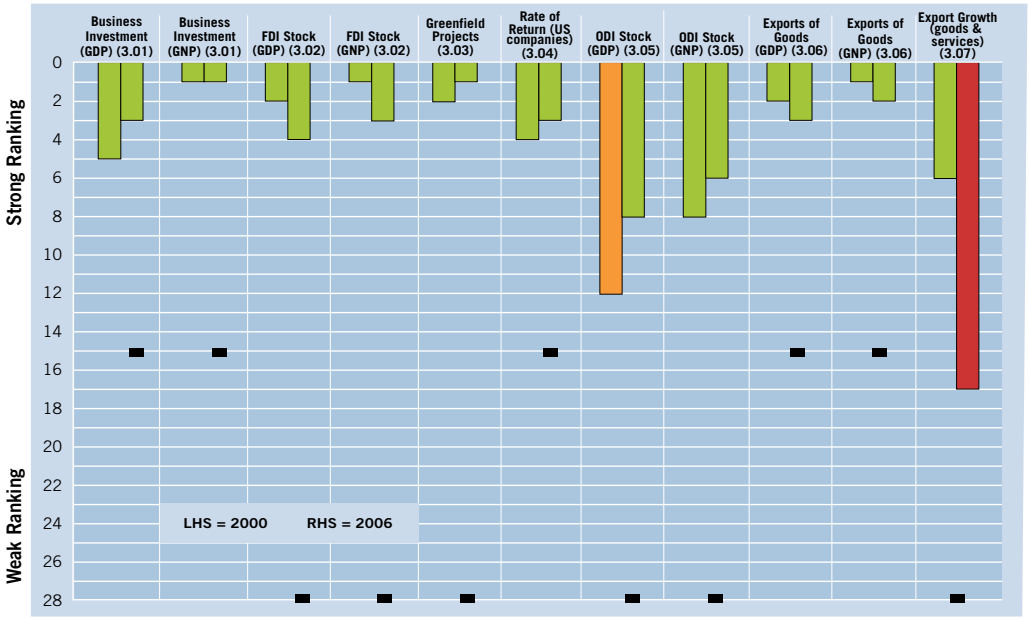
Ireland's national competitiveness relies on certain key conditions to support the economic environment. These intermediate indicators connect the government's policy inputs (indicators in chapter four) with improvements in sustainable growth (indicators in chapter two). This section benchmarks Ireland's performance regarding four essential conditions:

- The performance of Ireland's businesses in terms of investment and trade;
- Ireland's productivity and innovation;
- Ireland's prices and costs structure; and
- Labour supply.

Business Performance

The performance of the business sector is critical to income growth and maintaining high employment levels in Ireland. Its strength is also essential to sustaining strong government finances and spending on public services. This section assesses business performance in Ireland under the headings of investment and trade.

Summary Chart 2:
Rankings in Indicators of Business Performance, 2000-2006 (or nearest)



Investment

Ireland remains an investment-intensive country. Domestic investment levels are among the highest in the EU-15 (Fig. 3.01), driven by investment in construction. Despite a continued reduction in the levels of FDI relative to GDP, Ireland continues to attract high numbers of foreign direct investment projects (Fig. 3.02, Fig. 3.03), as overseas investors continue to earn a relatively high rate of return in Ireland (Fig. 3.04). Irish firms are also increasingly investing overseas, with stocks of outward direct investment already among the highest in the OECD (Fig. 3.05).

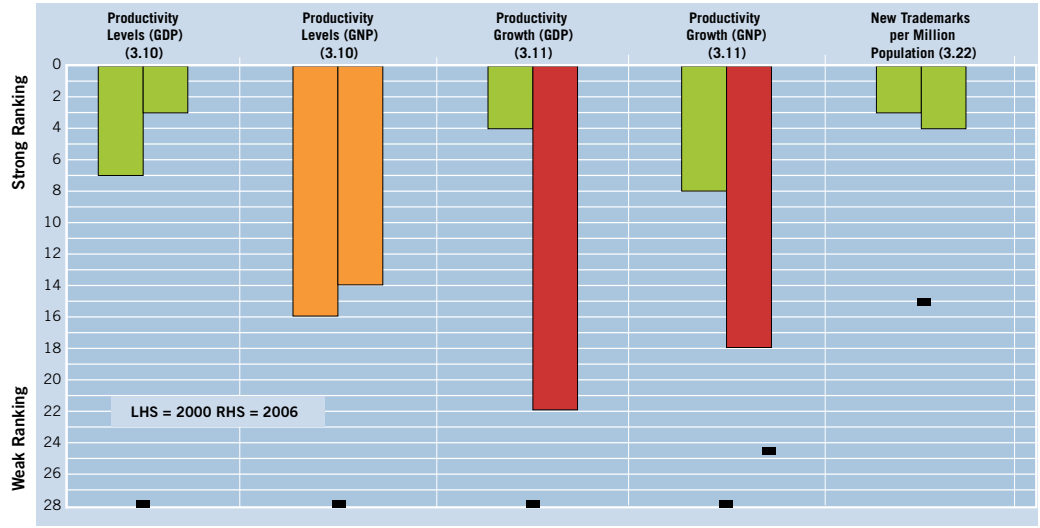
Trade

Ireland continues to be one of the most open economies in the OECD in terms of our trade performance. However, growth in total exports - goods and services - remained relatively weak between 2000 and 2006, while growth elsewhere in the OECD accelerated (Fig. 3.07). As a result, Ireland's overall share of world trade is falling, driven by a steady fall in our share of merchandise trade. Ireland's share of services trade continues to increase despite a fall in 2005 (Fig. 3.08). Comparing Ireland's world market share in 2001 to 2006, Ireland's services exports, particularly in other services, which includes business and finance, have increased, while the share in office/telecommunications equipment and machinery/transport equipment has fallen. Ireland's share of the chemicals sector has remained steady (Fig. 3.09). It is also notable that Irish merchandise exports to non-EU locations are large relative to other EU-15 states (Fig. 3.06).

Productivity and Innovation

In the long run, a country's standard of living depends on its productivity performance. The indicators in this section examine Ireland's overall productivity performance, as well as by broad sector of economic activity. As innovation is a key driver of productivity, it is also assessed in this section.

Summary Chart 3:
Rankings in Indicators of Productivity and Innovation, 2000-2006 (or nearest)



Productivity

Ireland's productivity levels (GDP) are now on a par with some of the highest in the world. Using GNP figures indicates that Ireland has converged with the OECD average (Fig. 3.10). Growth rates of productivity, rather than levels, are vital to ensuring wage increases are sustainable and in this regard, Ireland performed poorly between 2003 and 2006, with productivity growth below the OECD average (Fig. 3.11). Latest sectoral productivity growth figures indicate that a range of sectors performed well between 2000 and 2004, including agri-food, construction, textiles, metals, financial services and the wholesale and retail trades (Fig. 3.12). Productivity growth has lagged behind in a range of sectors across modern manufacturing (e.g. publishing/reproduction, office machinery and medical/precision goods) and traditional manufacturing (e.g. paper, wood, non-metallic minerals and transport equipment), as well as transport services and utilities (Fig. 3.13-3.17).

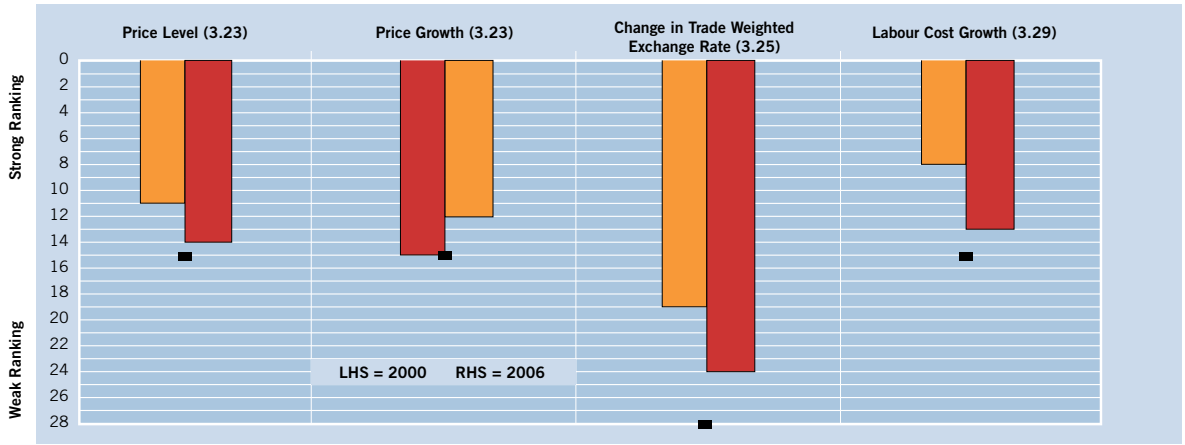
Innovation

More Irish firms engage in innovation (the creation of new products, services, or processes) than the EU-15 average, although this masks a significant gap between manufacturing and services (Fig. 3.18). Modern manufacturing and tradable services sectors are generally at the forefront of innovation, although the proportion of financial services firms engaged in innovation was the lowest of all sectors (Fig. 3.19). A relatively modest percentage of turnover in Ireland comes from innovated products, compared to leading countries (Fig. 3.20).

Prices and Costs

While productivity is the key long-run determinant of competitiveness, the cost environment within the economy is a very important factor. This section examines the overall level and inflation in Ireland's prices and business costs, both pay and non-pay.

Summary Chart 4:
Rankings in Indicators of Prices and Costs, 2000-2006 (or nearest)



General Prices

In terms of general consumer price levels, Ireland is among the most expensive locations and still exhibits inflation rates that are among the highest in the EU-15 (Fig. 3.23). A breakdown of inflation by sector shows that food, clothing, furniture and communications have shown little or no inflation since 2003. Other sectors, however, compare very poorly with the Eurozone average throughout the 2003-2007 period. These include housing, utilities, education, health and catering (Fig. 3.24). Ireland's trade-weighted exchange rate has worsened considerably since 2000, although the bulk of that change occurred between 2000 and 2003 (Fig. 3.25). Combining prices and exchange rates, Ireland's harmonised competitiveness indicator deteriorated markedly in 2002, and has declined marginally since then (Fig. 3.26).

Pay Costs

Unit labour costs, the ratio of changes in productivity to earnings, show little change for the manufacturing sector as a whole over the 2003-2007 period, regardless of the choice of weighting (Fig. 3.27). Since 2000, economy-wide labour costs continue to rise at a rate over one and a half times the Eurozone average (Fig. 3.29), particularly in utilities, construction and a range of services sectors including public services (Fig. 3.30). Given high inflation rates, a risk exists that Ireland could become trapped into a wage-price spiral that could damage Ireland's competitiveness, as increasing costs in domestically trading sectors are passed on to internationally trading firms who source goods and services in the local economy.

This report indicates that for basic manufacturing occupations, Ireland remains cheaper than other high-income locations, but significantly more expensive than locations in the new EU member states and in Asia (Fig. 3.31). For certain occupations in science and R&D, Ireland remains attractive relative to other high-income locations (Fig. 3.32, 3.34). The same is true for financial services, with Dublin cheaper than other leading financial centres (Fig. 3.33). Overall, wages in internationally trading sectors have grown relatively slowly due to pressures from international competition. This is not mirrored in the wider economy, which is dominated by domestically trading sectors.

Non-Pay Costs

Non-pay costs in Ireland compare poorly with other countries across a range of cost types. These include property costs - both purchase and rental, utilities costs from electricity to water and waste, mobile communications costs, and a range of domestic services, such as accountancy, information technology and legal services (Fig. 3.35-3.45). Dublin is particularly expensive.

Labour Supply

Growth in labour supply has played a key role in Ireland's economic development over the past decade. This section looks at the overall trends in Ireland's labour supply and identifies areas of spare capacity.

Summary Chart 5:
Rankings in Indicators of Labour Supply, 2000-2006 (or nearest)

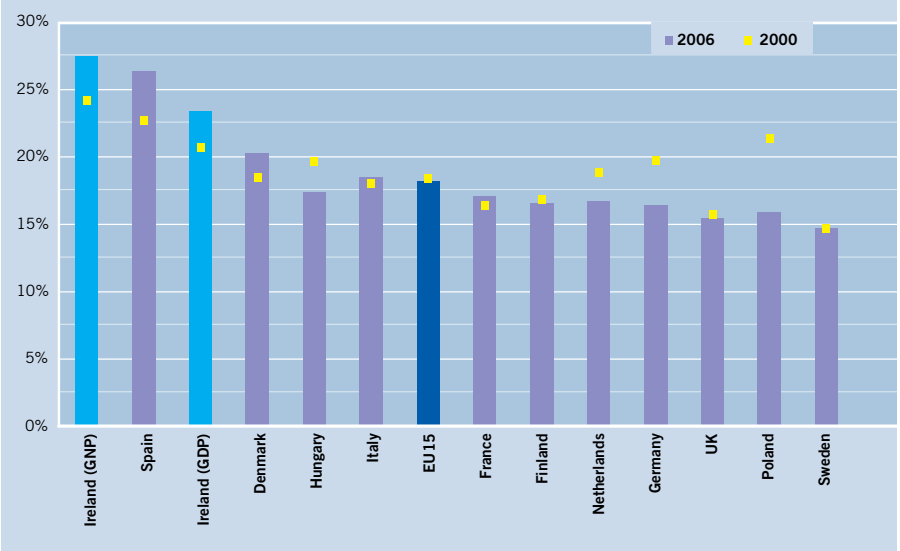
Ireland's labour force continues to grow strongly, driven by both natural increases in the Irish-born population and growing levels of inward migration (Fig. 3.47, 3.48, 3.53, and 3.54). Foreign-born workers now comprise almost 11% of the Irish labour force; more than two and a half times the level in 2000 (Fig. 3.55). Despite rapid increases, participation rates, particularly for women, remain below leading OECD countries. While, Ireland's overall demographic position is among the healthiest in the OECD, Ireland will also face an ageing population into the medium term (Fig. 3.60).

Employment growth in Ireland has been exceptionally strong. The bulk of new jobs between 2000 and 2006 were created in the public service (37 percent - predominantly in education, health and the civil service) and construction (29 percent) while manufacturing, both traditional and modern, and agriculture lost jobs over the same period (Fig. 3.49, 3.50). Certain manufacturing sectors, including medical/precision devices and chemicals, increased their employment levels between 2000 and 2007, although most, including the largest indigenous sector, food - were static or falling (Fig. 3.51). Unemployment remains among the lowest in the OECD, and regional variance in the unemployment rate remains relatively small (Fig. 3.57, 3.58).

3.1 Business Performance

3.1.1 Investment

Figure 3.01
Gross Fixed Capital Formation by the Private Sector (% of GDP), 2006



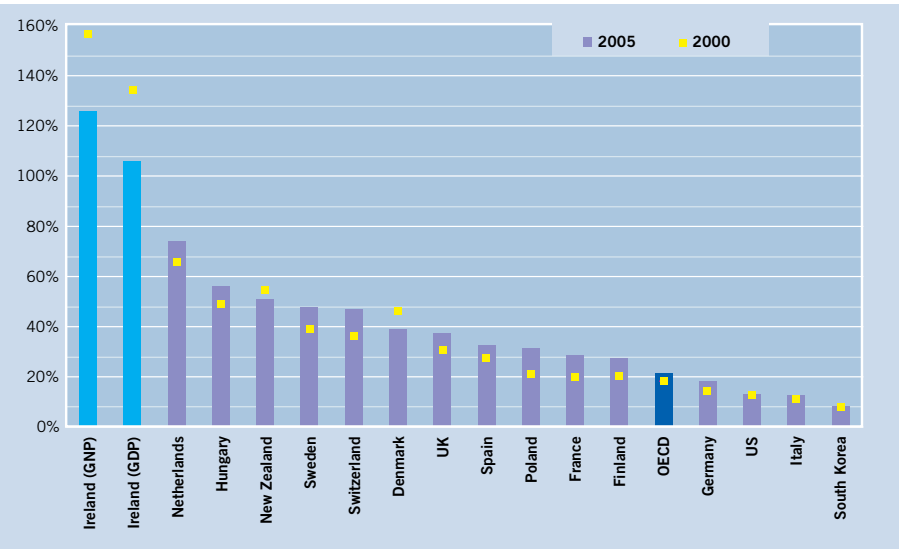
Investment rates in Ireland are among the highest in the EU-15. While investment is dominated by construction related activities (74%), investment in machinery and equipment is also growing rapidly.

EU-15 Ranking:

GDP: 3 (↑2)
GNP: 1 (--)

Source: Eurostat, Structural Indicators

Figure 3.02
Stock of Inward Direct Investment (FDI, % of GDP), 2005



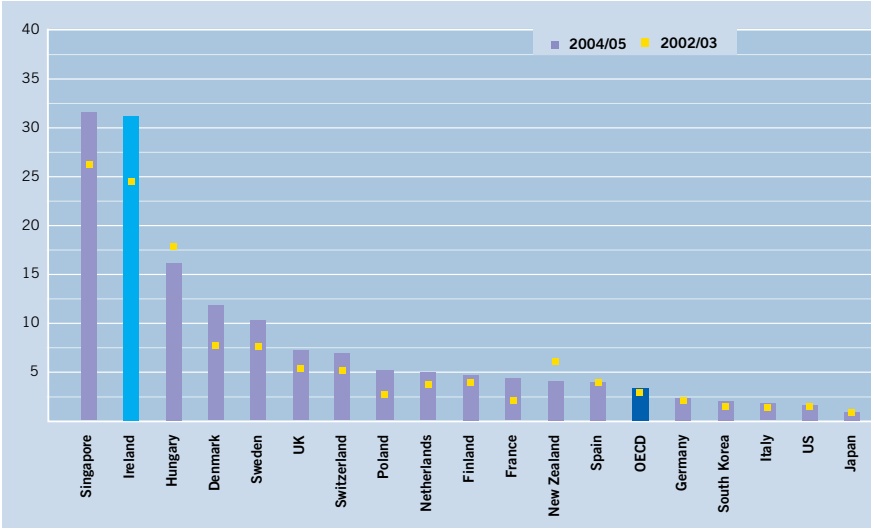
While the stock of inward investment in Ireland as a percentage of both GDP and GNP has declined since 2000, it remains among the highest in the OECD and well above the OECD average. Hungary has made strong progress since opening its economy to FDI.

OECD-28 Ranking:

GDP: 4 (↓2)
GNP: 3 (↓2)

Source: UNCTAD World Investment Report 2006

Figure 3.03
Number of Greenfield Projects by Destination (per million of population), 2004/05



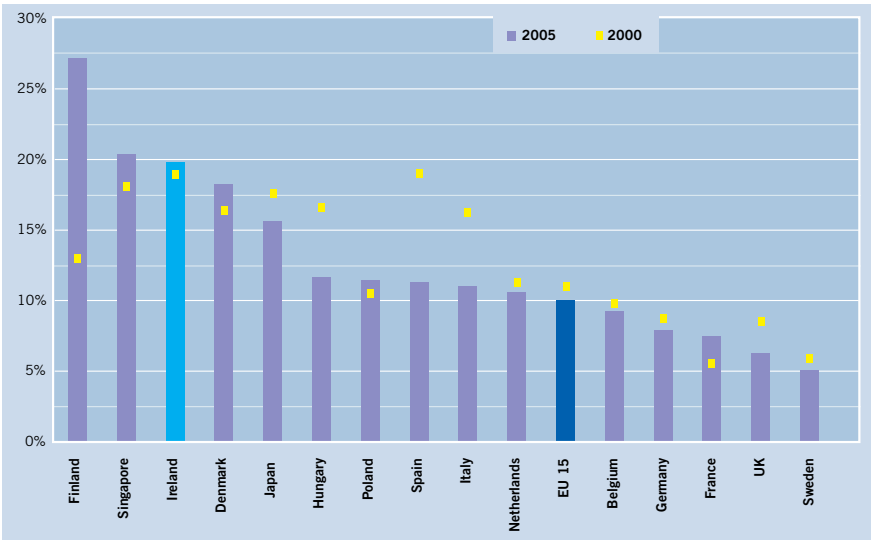
Ireland continues to attract a large number of international greenfield investment projects, relative to its size. Only Singapore has attracted a similar number of projects per capita. The number of new greenfield projects increased between 2002/03 and 2004/05.

OECD-28 Ranking:

1 (↑1)

Source: UNCTAD World Investment Report 2006

Figure 3.04
Rate of Return to US-Owned Companies on their Investments in Foreign Countries (%), 2005[5]



This indicator measures income earned by US companies as a proportion of the amount invested in a particular country. The rate of return in Ireland is well above the EU-15 average and among the highest of the countries benchmarked.

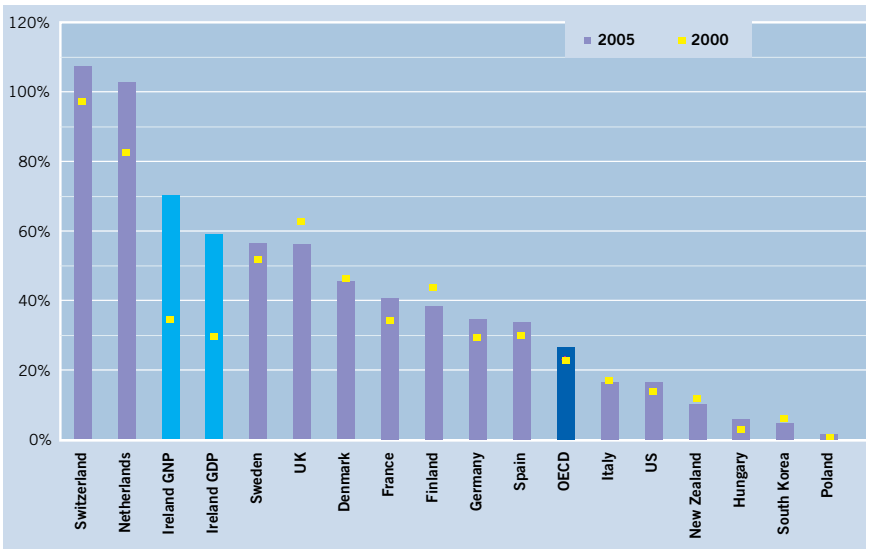
EU-15 Ranking:

3(↑1)

Source: Forfás calculations; US Bureau of Economic Analysis figures, 2007 [online]

Figure 3.05

Stock of Outward Direct Investment (ODI, % of GDP), 2005



Ireland's levels of outward direct investment increased significantly between 2000 and 2005, meaning that Ireland's stock of investments abroad relative to the size of our economy has grown rapidly.

OECD-28 Ranking:

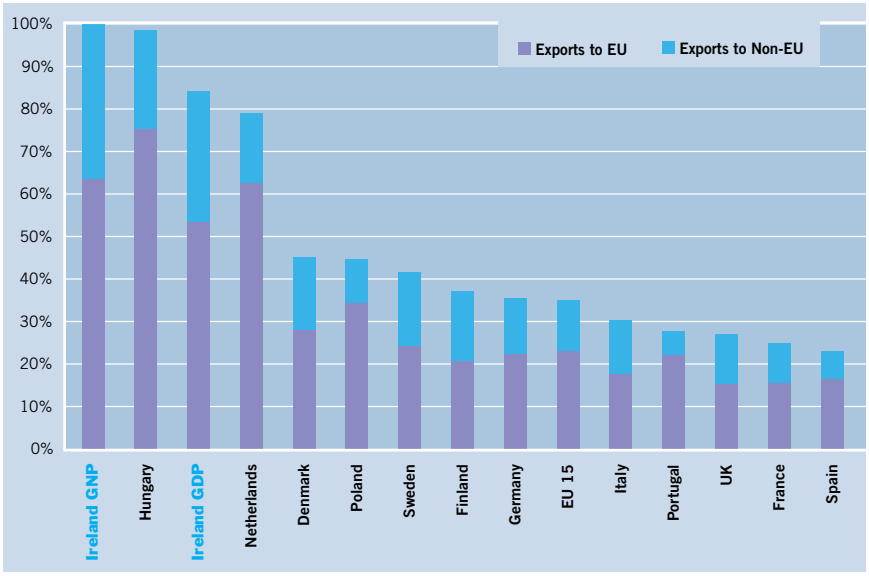
GDP: 8 (↑4)
GNP: 6 (↑2)

Source: UNCTAD World Investment Report 2006

3.1.2 Trade

Figure 3.06

Exports of Goods, intra-EU and extra-EU (% of GDP), 2005



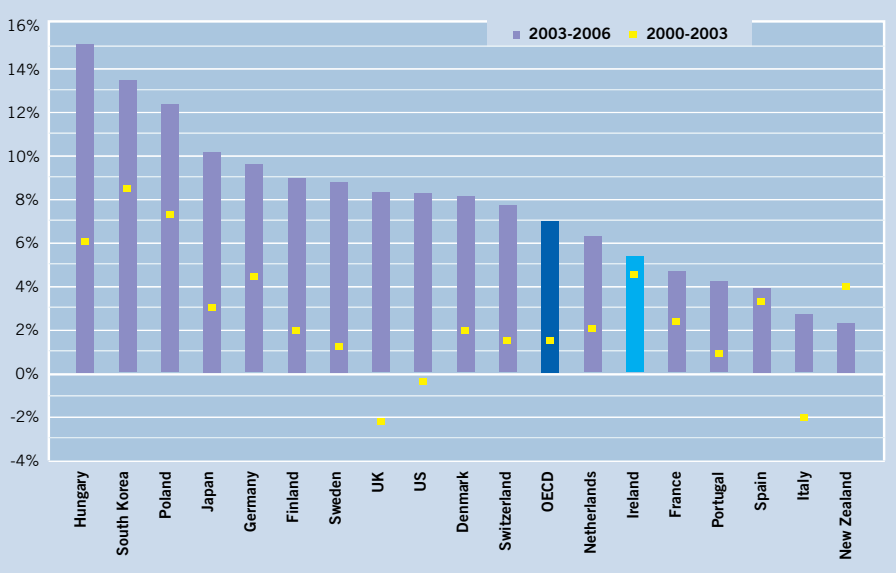
Ireland continues to be one of the most open countries to trade in the EU-15. Most of Ireland's goods exports in 2005 were to other parts of the EU, although Ireland also trades substantially with the rest of the world, compared to other EU member states.

EU-15 Ranking:

(Ranked by total exports)
GDP: 3 (↓1)
GNP: 2 (↓1)

Source: External and Intra EU trade-Statistical Yearbook (1985-2005)

Figure 3.07
Annual Average Growth in Exports of Goods and Services (%), 2000-2006[5]



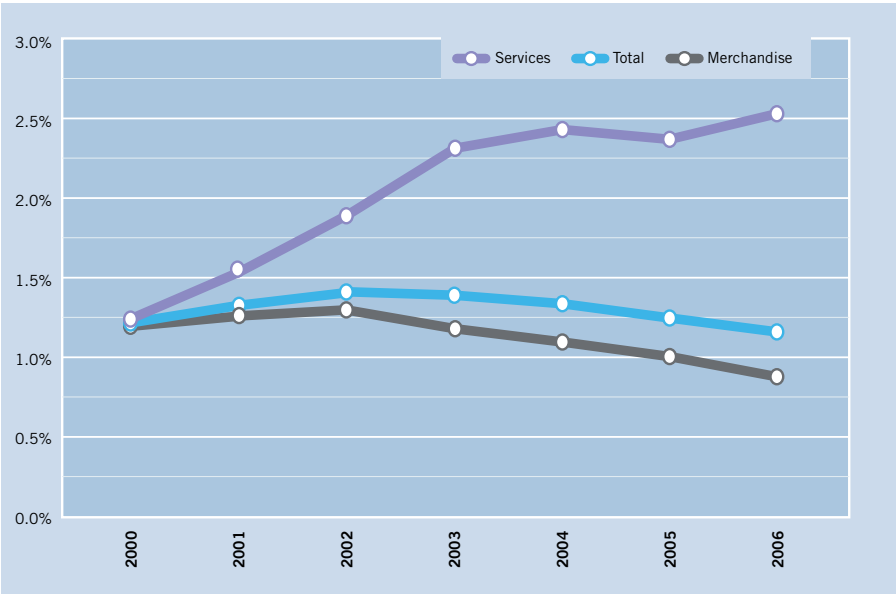
Total growth in Irish exports between 2000 and 2003 was substantially above the OECD average. However, between 2003 and 2006, while Ireland's export growth increased, growth in trade elsewhere has been at a quicker pace.

OECD-28 Ranking:

17(↓11)

Source: OECD, Economic Outlook No. 81, 2007

Figure 3.08
Ireland's Share of World Trade: Overall, Merchandise and Services (%), 2000-2006



Ireland's share of merchandise trade has fallen gradually, while our share of services trade (a smaller but growing component of world trade) continues to grow. While trade from China and India is growing, the EU was the world's largest source of new trade in 2005.

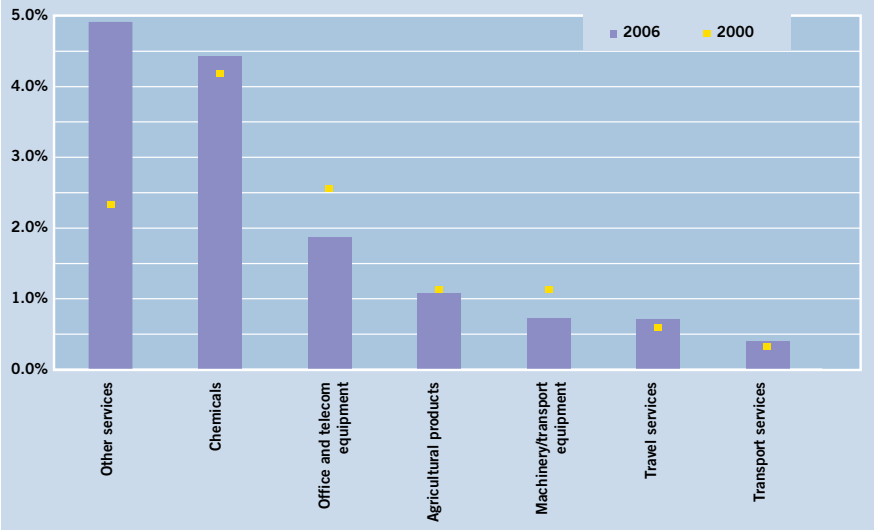
Ranking:

N/A

Source: World Trade Organisation [online]

Figure 3.09

Ireland's Share of World Trade by Sector (%), 2006



The period between 2000 and 2006 has seen a change in the structure of Ireland's trade. Strong gains in the 'other services' finance, computers, and business, have offset losses in office and telecommunications equipment, and machinery and transport equipment.

Ranking:

N/A

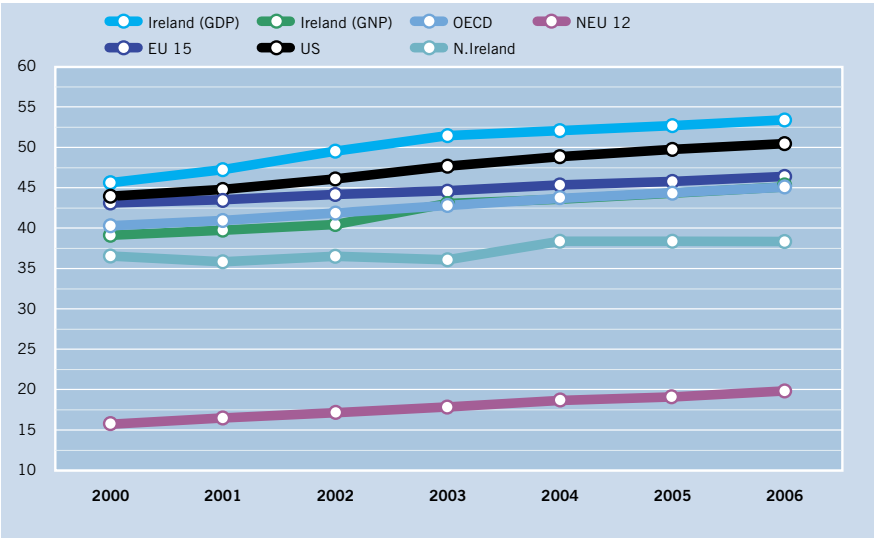
Source: World Trade Organisation [online]

3.2 Productivity and Innovation

3.2.1 Productivity

Figure 3.10

Per Hour Output, Ireland and Selected Economies, 2000-2006 (€ value added)



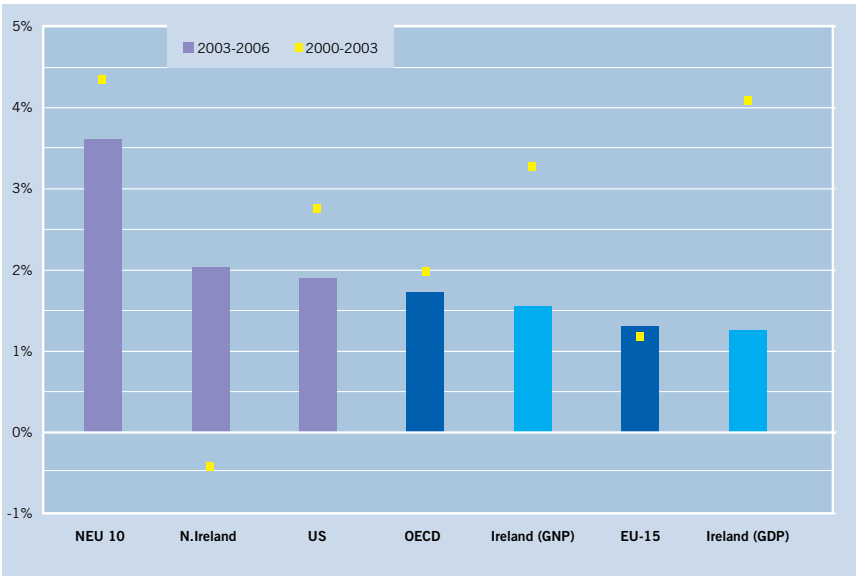
Figures for GDP per hour worked indicate that Irish productivity has been among the highest in the world since the late 1990s. Using GNP figures, which reduces the effects of MNCs, suggests that Irish productivity levels have converged with the OECD average.

OECD-28 Ranking:

GDP: 3 (↑4)
GNP: 14 (↑2)

Source: Forfás Calculations; Groningen Growth & Development Centre, Total Economy Database, January 2007; United Kingdom, Office for National Statistics, 2007 [online]; Northern Ireland Department of Enterprise, Trade & Investment, Northern Ireland Labour Force Survey: Historical Supplement Spring 1984 – Spring 2006, March 2006

Figure 3.11
Annual Average Growth in Output per Hour Worked, Selected Economies, 2000-2006[6]



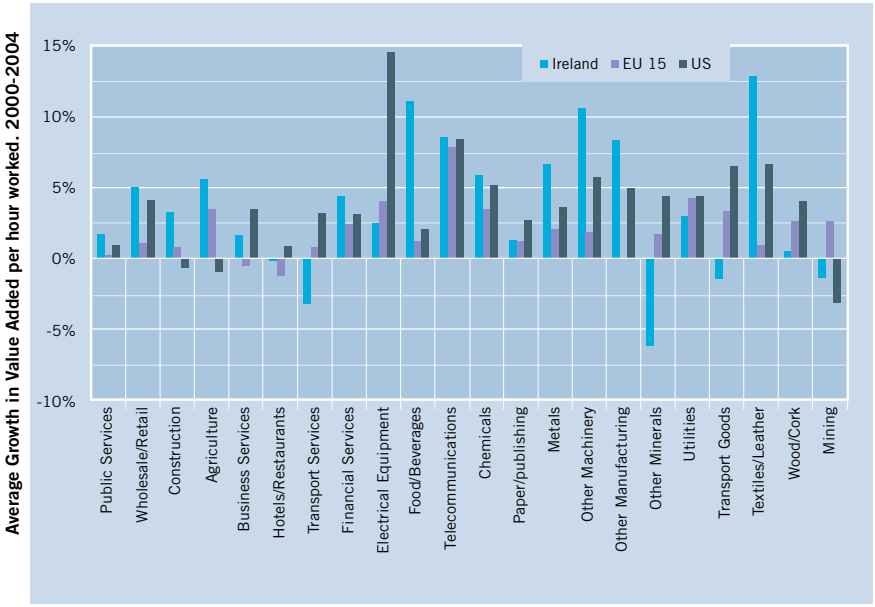
Source: Forfás Calculations; Groningen Growth & Development Centre, Total Economy Database, January 2007; United Kingdom, Office for National Statistics, 2007 [online]; Northern Ireland Department of Enterprise, Trade & Investment, Northern Ireland Labour Force Survey: Historical Supplement Spring 1984 – Spring 2006, March 2006

While productivity levels in Ireland remain strong, growth rates have declined to their lowest levels since the 1980s. Average productivity growth in Ireland is now below the OECD average and in line with the EU-15.

OECD-28 Ranking:

GDP: 22(↓18)
GNP: 18(↓10)

Figure 3.12
Productivity Growth by Sector, Ireland, EU 15 and US, 2000-2004



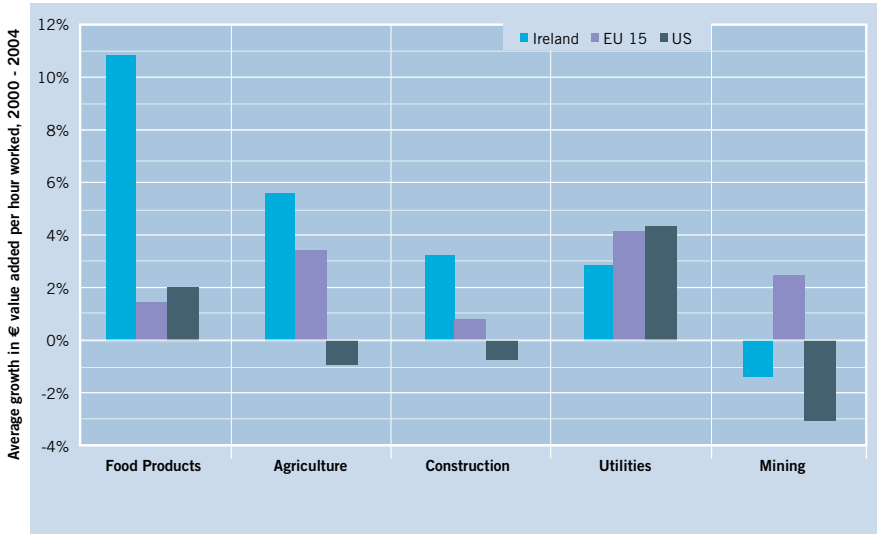
Source: Forfás calculations, EU KLEMS Database March 2007

This chart shows productivity growth by sector between 2000 and 2004. The sectors are ranked from left to right by employment share. Few of Ireland's larger, mostly services, sectors have shown productivity growth in line with the national average of 3.5% between 2000 and 2004, which was driven instead by smaller sectors.

Ranking:

N/A

Figure 3.13
Annual Average Productivity Growth in Primary Sectors, 2000-2004



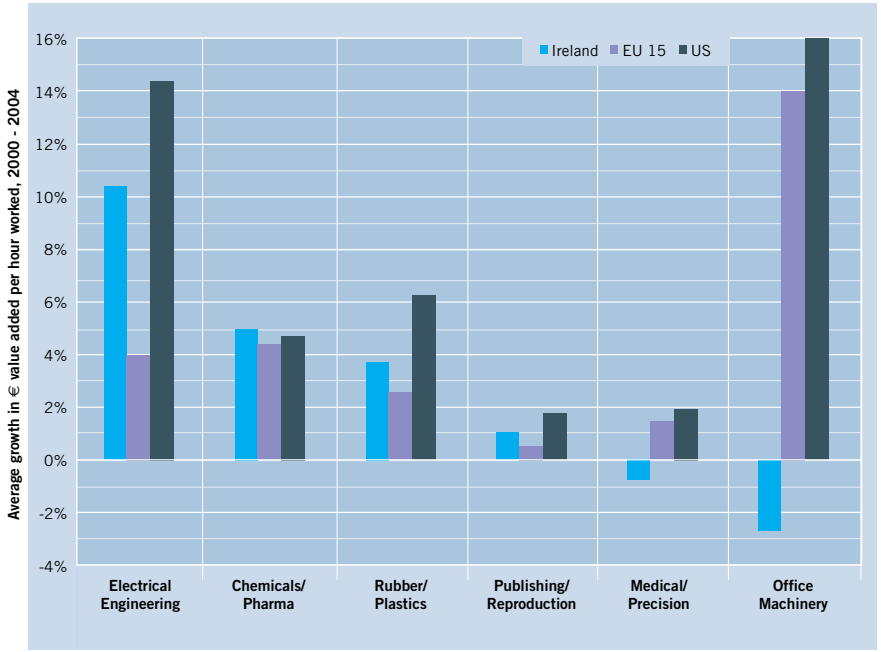
Relative to the US and EU-15, productivity growth in Ireland's agriculture and food sectors has been strong since 2000. Productivity growth rates in utilities continue to lag behind EU and US averages. Productivity growth in construction is strong compared to other countries.

Ranking:

N/A

Source: Forfás calculations, EU KLEMS Database March 2007

Figure 3.14
Annual Average Productivity Growth in Modern Manufacturing, 2000-2004



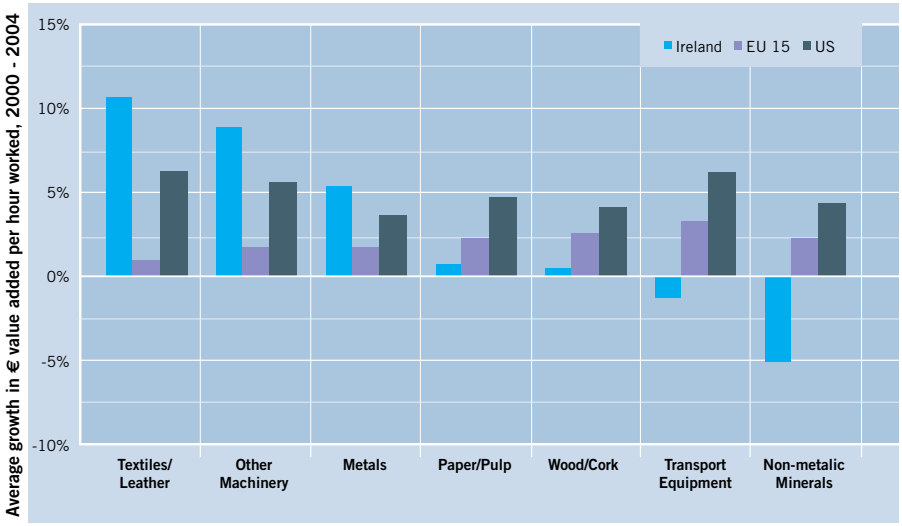
The measurement of productivity in modern manufacturing in Ireland is difficult due to the concentration of foreign-owned multinationals. The US has achieved the highest productivity growth rates in modern manufacturing over the period 2000-2004.

Ranking:

N/A

Source: Forfás calculations, EU KLEMS Database March 2007

Figure 3.15
Annual Average Productivity Growth in Traditional Manufacturing, 2000-2004



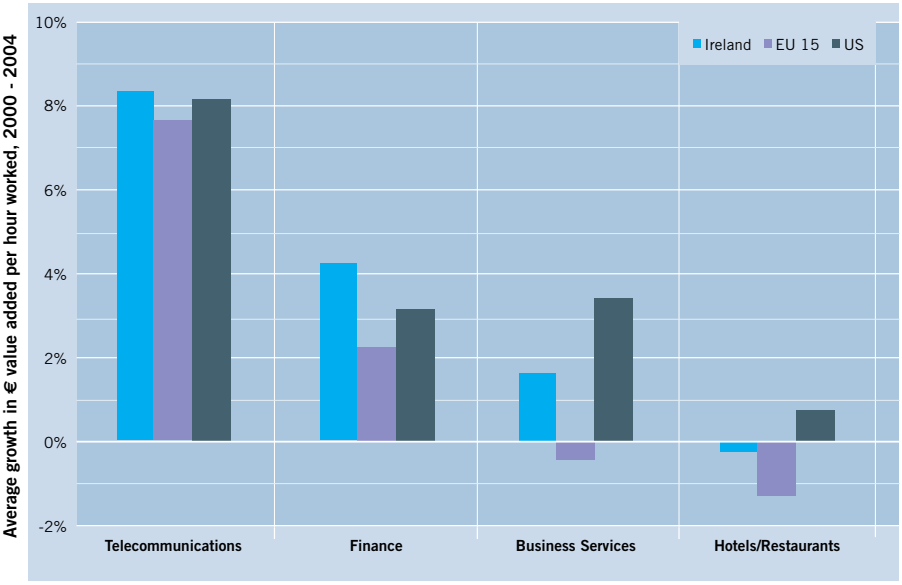
Between 2000 and 2004, productivity growth rates in paper, wood, non-metallic minerals, and transport equipment lagged their EU and US equivalents. The Irish textiles, metals and 'other machinery' sectors performed better.

Ranking:

N/A

Source: Forfás calculations, EU KLEMS Database March 2007

Figure 3.16
Annual Average Productivity Growth in Tradable Services, 2000-2004



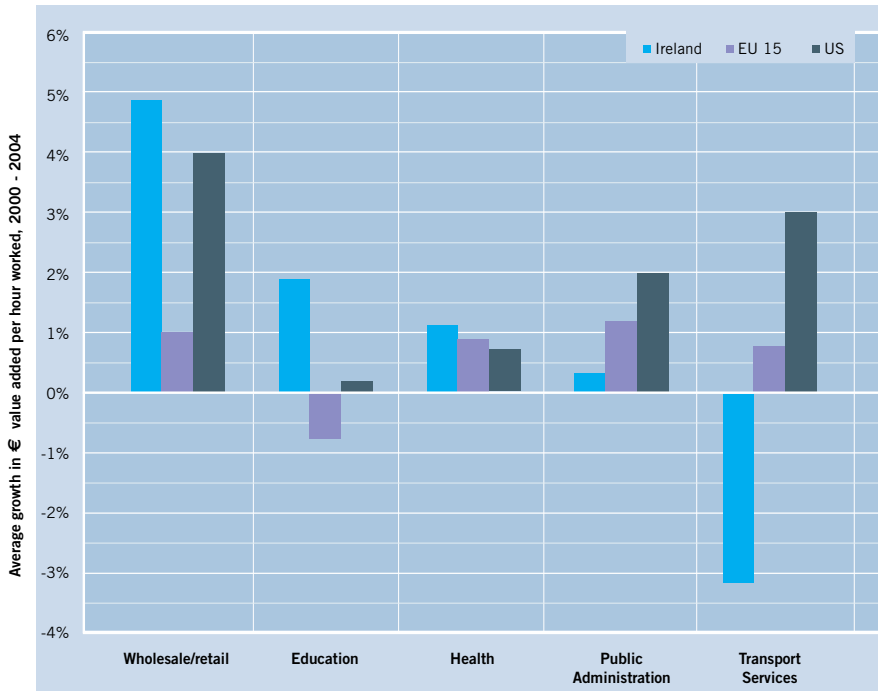
The productivity growth performance of the hotels/ restaurants sector has been stagnant in all three regions. Irish productivity growth in telecommunications is on a par with the EU and US, while productivity growth in financial services is strong.

Ranking:

N/A

Source: Forfás calculations, EU KLEMS Database March 2007

Figure 3.17
Annual Average Productivity Growth in Non-Tradable Services, 2000-2004



Non-tradable services are critical to Ireland's overall productivity performance as they account for almost half of total hours worked. Productivity is particularly difficult to measure in non-tradable services. The figures suggest that Irish productivity growth is relatively strong in the wholesale and retail trade, but has been negative in transport services.

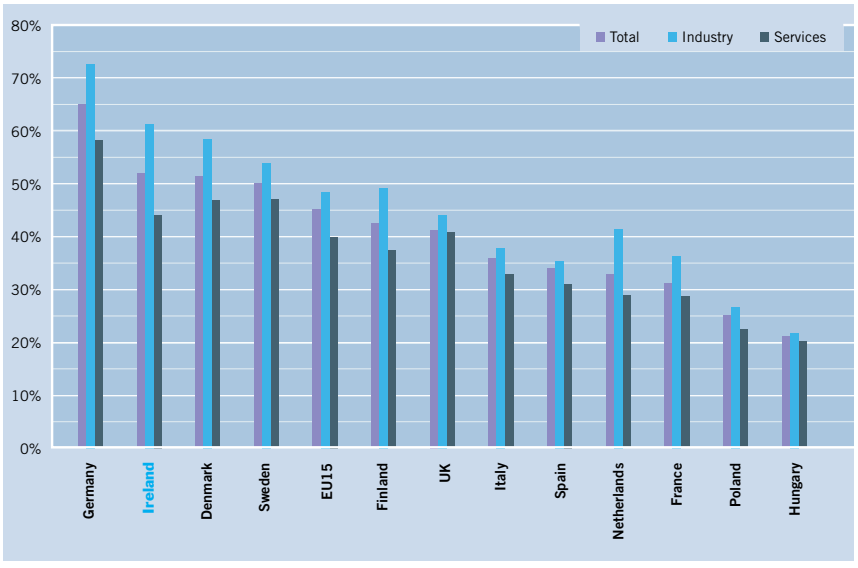
Ranking:

N/A

Source: Forfás calculations, EU KLEMS Database March 2007

3.2.2 Innovation

Figure 3.18
Percentage of Firms Engaged in Innovative Activity, 2004



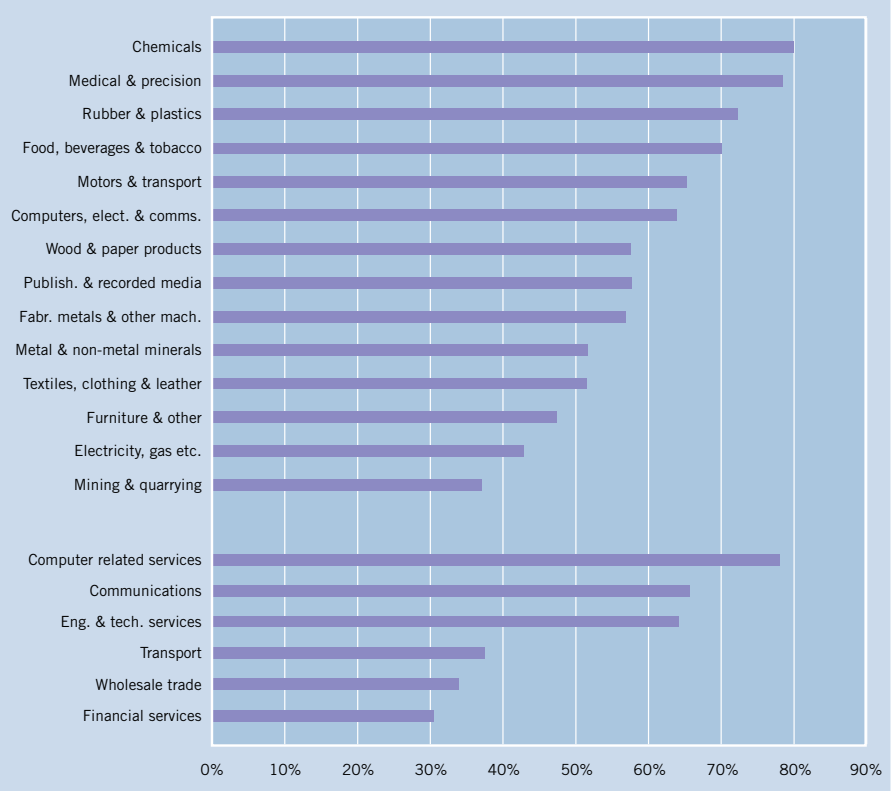
This chart shows the total number of firms which engage in innovative activity, either by changing their products or their processes. Overall, Ireland performs above the EU-15 average, although the innovation gap between Irish industry and services sectors at almost 20% is among the widest in the EU.

EU-15 Ranking:

4

Source: Eurostat, Fourth Community Innovation Survey, 2004

Figure 3.19
Percentage of Firms Engaged in Innovation Activity, by Sector, 2004



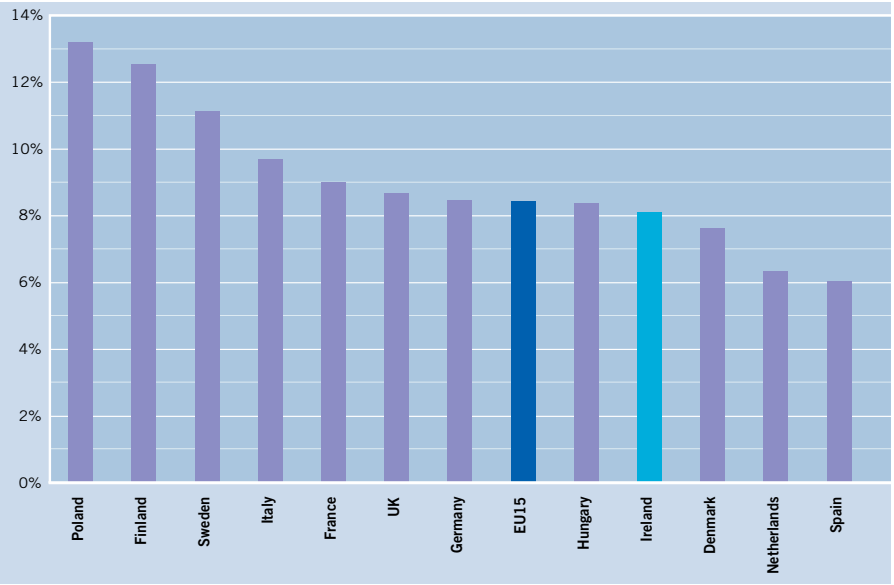
This chart presents the innovation activity rate by sector in Ireland. Overall, manufacturing sectors exhibited higher innovation activity rates, although certain services sectors, particularly computer-related services also show high innovation activity rates.

Ranking:

N/A

Source: Forfás, Fourth Community Innovation Survey, 2004

Figure 3.20
Percentage Turnover from Innovative Activity, 2004



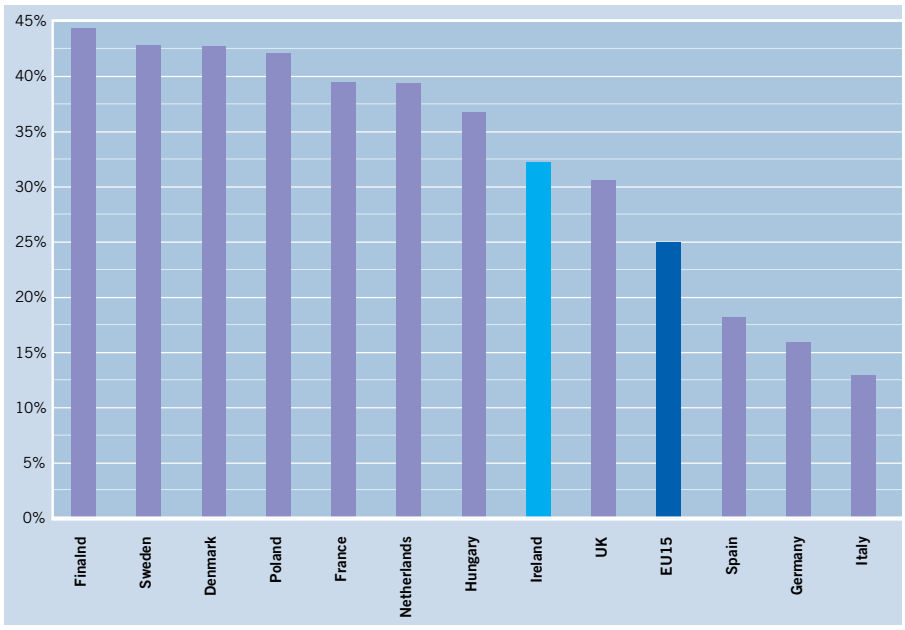
Ultimately, innovation is about turning ideas into revenue. This chart shows the percentage contribution to turnover from the introduction of new/ improved products to the market among innovative firms. Ireland's performance is in line with the EU average but lags leading countries.

EU-15 Ranking:

9

Source: Eurostat, Fourth Community Innovation Survey, 2004

Figure 3.21
Percentage of Innovation Firms Engaged in Co-operation, 2004



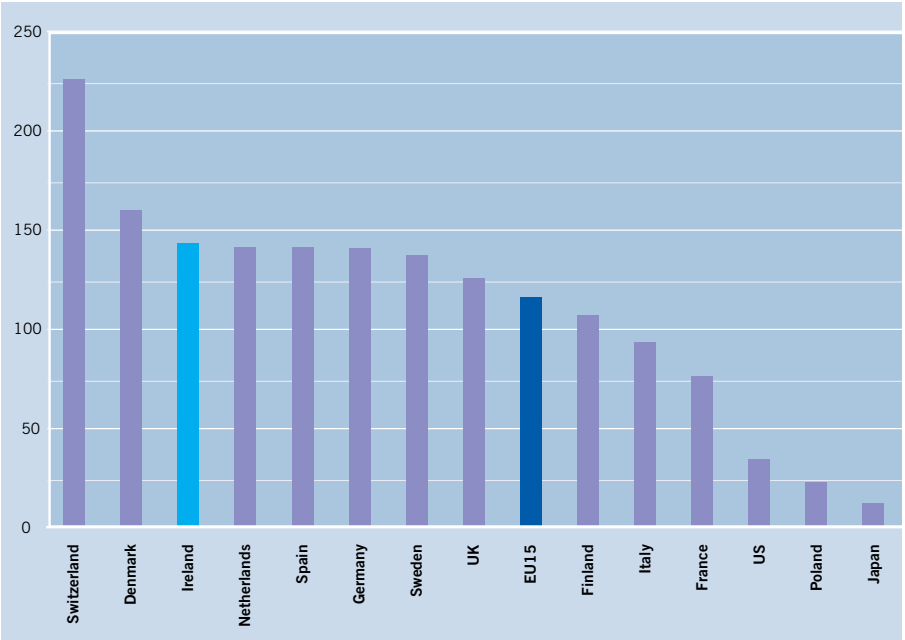
Innovation co-operation is defined as active participation with other enterprises or non-commercial institutions on innovation activities. This chart displays all categories of cooperation (customers, businesses, public institutions, etc.).

EU-15 Ranking:

7

Source: Eurostat, Fourth Community Innovation Survey, 2004

Figure 3.22
New Community Trademarks per Million Population, 2006



Trademarks identify a product to a specific owner and are important business assets that can play a key role in the marketing of innovative products and services. Irish firms have a relatively high number of community trademarks per million population.

EU-15 Ranking:

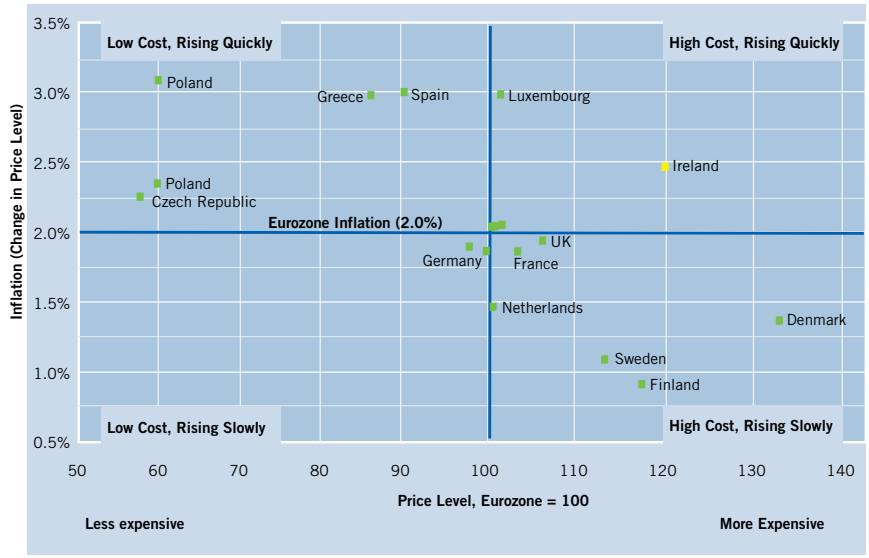
4(↓1)

Source: European Commission, European Innovation Scoreboard, 2006

3.3 Prices and Costs

3.3.1 Prices

Figure 3.23
Price Level 2006, and Inflation 2003-2007, EU Member States



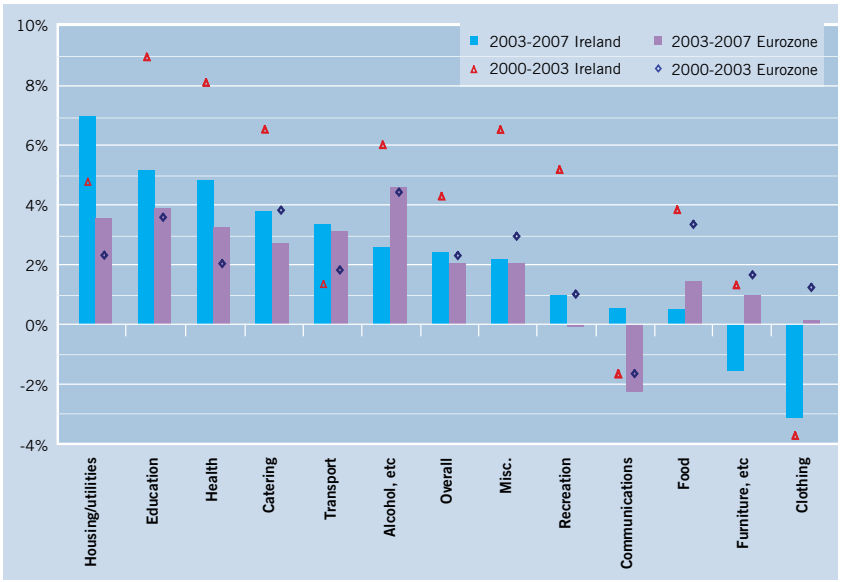
Prices, and the rate of change in prices, are key indicators of competitiveness. Price levels in Ireland are the second highest in the EU and are continuing to rise at rates above both the Eurozone average and the ECB target rate of 2 percent.

EU-15 Ranking:

Price Level 14 (↓3)
Inflation 12 (↑3)

Source: Eurostat, Economy and Finance Indicators, 2007 [online]

Figure 3.24
Inflation by Commodity Group, Ireland and the Eurozone, 2000-2007



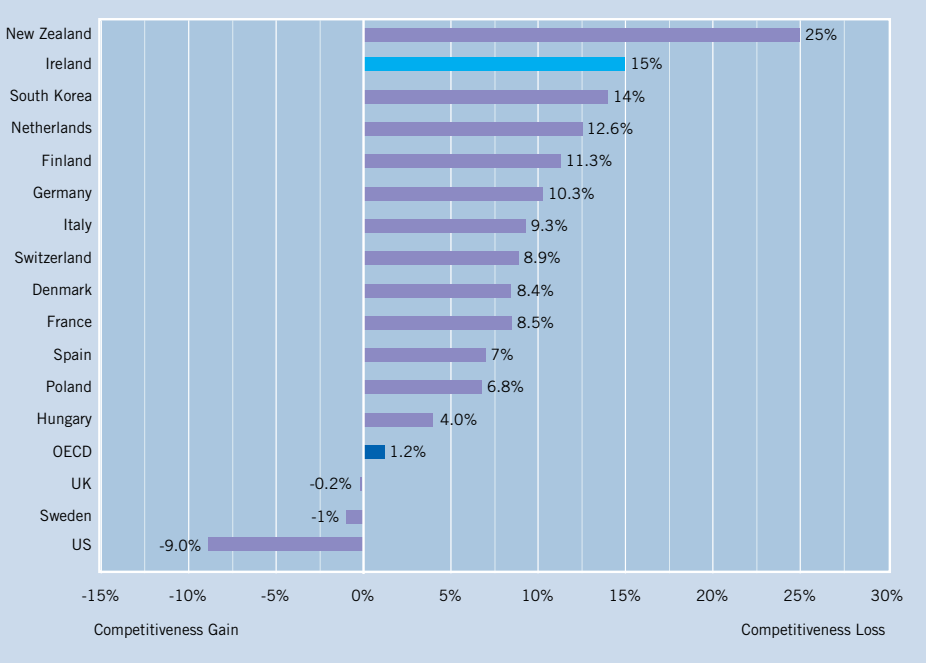
This chart shows inflation in particular sectors of the Irish and EU economy. While Irish inflation rates have fallen since the first period (2000-03), they remain higher than the Eurozone average across most sectors, particularly for housing, utilities and domestic services such as education and health.

Ranking:

N/A

Source: Eurostat, Economy and Finance Indicators, 2007 [online]

Figure 3.25
Percentage Change in the Trade-Weighted Exchange Rate, 2000-2006[7]



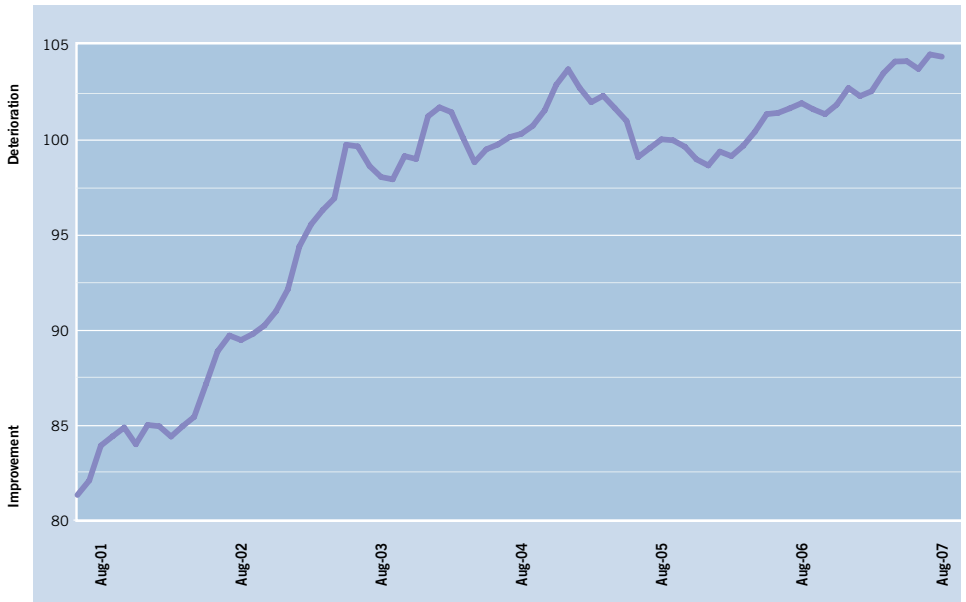
Exchange rates show the price of an economy's currency. This chart shows the change in a country's exchange rate weighted by the importance of trade with other countries. Ireland's trade-weighted exchange rate has appreciated by 15% since 2000, meaning that Irish goods/services are now more expensive in international markets.

OECD-28 Ranking:

24(↓5)

Source: Forfás Calculations; OECD, Economic Outlook no. 81, 2007

Figure 3.26
Harmonised Competitiveness Indicator, 2001-2007 (2004=100)



This chart combines changes in price levels and exchange rates to give a single measure of changes in international price competitiveness. The bulk of Ireland's loss of price competitiveness occurred between 2002 and early 2004, when the euro strengthened considerably against the dollar.

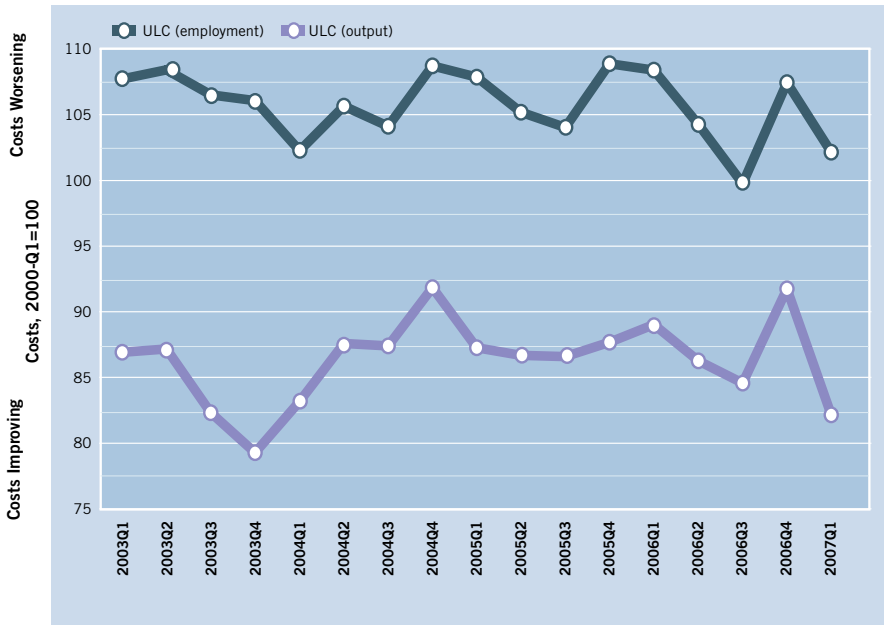
Ranking:

N/A

Source: Central Bank of Ireland, 2007

3.3.2 Pay Costs

Figure 3.27
Changes in Unit Labour Costs in Manufacturing, 2003-2007 (Q1, 2000 = 100)



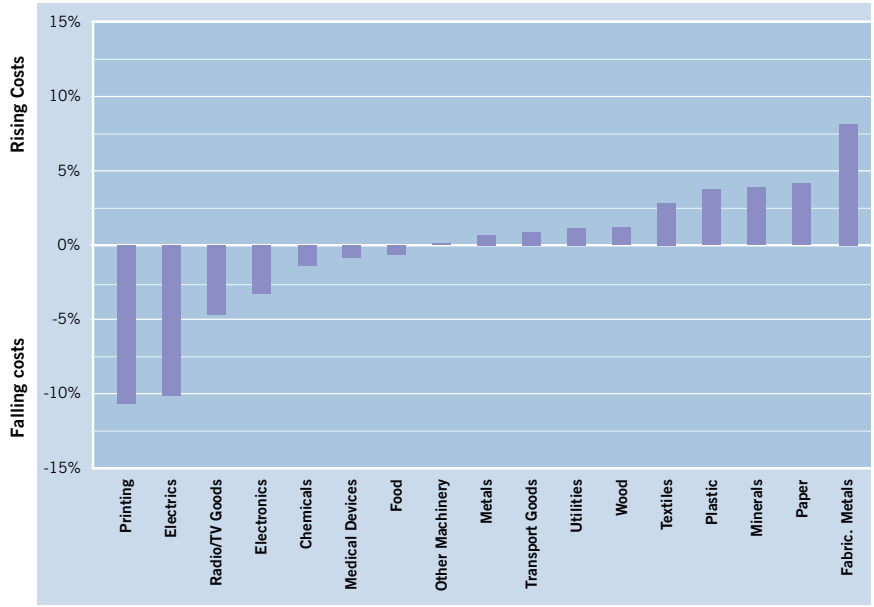
Unit labour costs reflect relative changes in productivity and earnings. A downward trend indicates that productivity rose faster than wages, which is good for competitiveness. ULCs weighted by output and employment both suggest that manufacturing unit labour costs have not changed significantly since the start of 2003.

Ranking:

N/A

Source: Central Bank of Ireland; Central Statistics Office, Industrial Production, Industrial Earnings, Employment (by 2 digit NACE codes)

Figure 3.28
Average Annual Change in Unit Labour Costs by Manufacturing Sector, 2000-2007



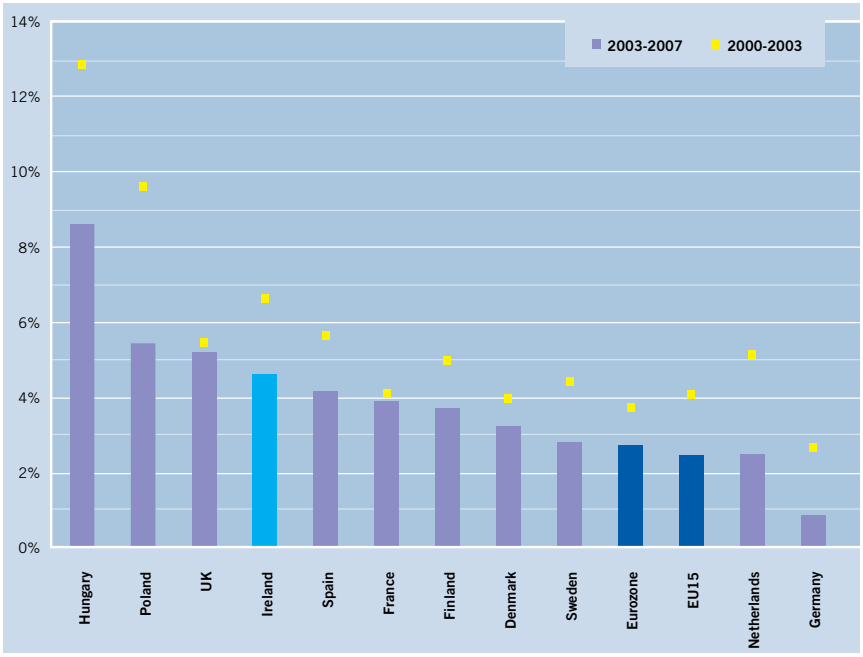
Unit labour costs (ULC) measure the change in labour costs relative to output. While some Irish manufacturing sectors (e.g. electrics and printing) have seen their ULCs fall since 2000, costs have risen faster than output in a number of sectors.

Ranking:

N/A

Source: Forfás Calculations; Central Statistics Office, Industrial Production, Industrial Earnings, Employment (by 2 digit NACE codes)

Figure 3.29
Average Growth in Labour Costs, 2000-2007[8]



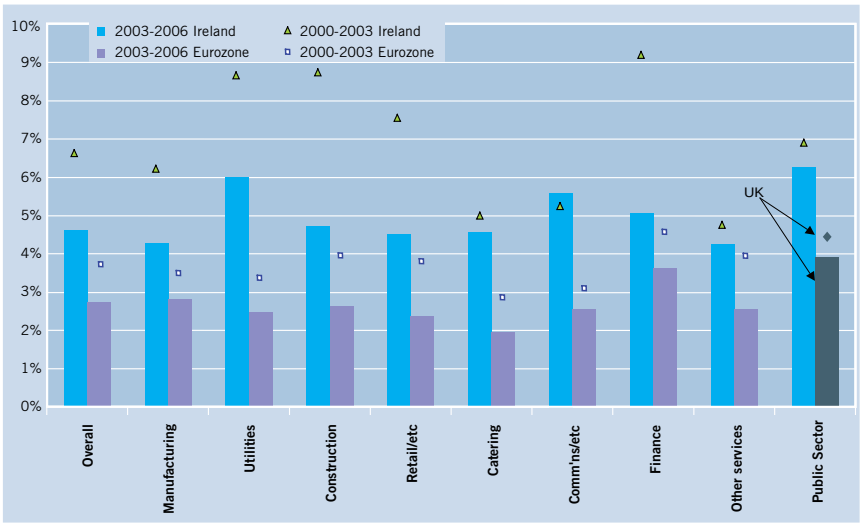
Labour cost growth rates show the change in the cost of employing workers over time. Ireland's growth rates across all sectors of the economy have exceeded the EU-15 average over both periods. The average rate of wage inflation in Ireland between 2003 and early 2007, was over one and a half times the Eurozone average.

EU-15 Ranking:

13(↓5)

Source: Eurostat, General and Regional Indicators, 2007 [online]

Figure 3.30
Inflation in Overall Labour Costs, by Sector, Ireland & the Eurozone, 2000-2007[9]



Since 2000, labour costs in all sectors of the Irish economy have increased by more than the Eurozone average.

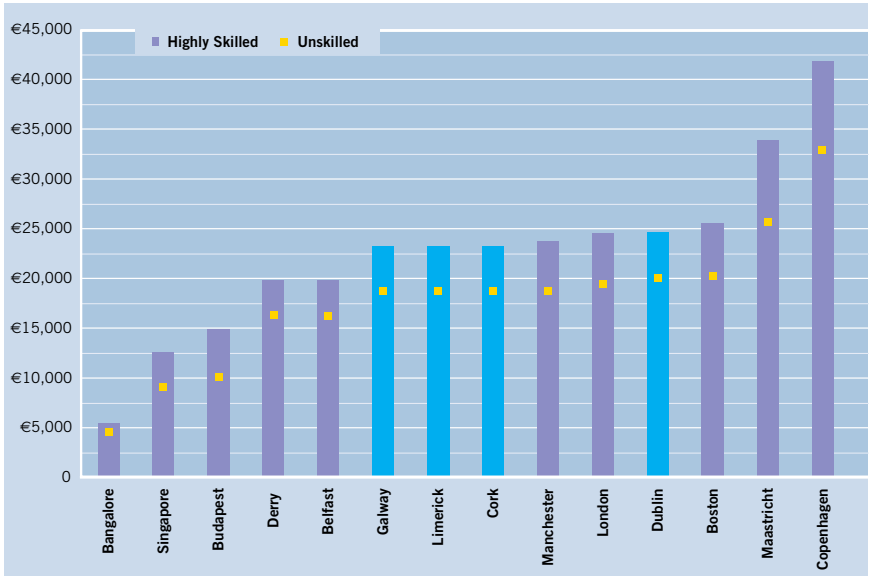
While Irish wage inflation fell in the 2003-2007 period, it is still growing by more than double the Eurozone average in utilities and a number of services sectors.

Ranking:

N/A

Source: Eurostat, General and Regional Indicators, 2007 [online]; Central Statistics Office, Labour Market Statistics; Office of National Statistics, Labour Market Statistics

Figure 3.31
Wage Costs for Highly Skilled and Unskilled Production Operatives, 2007



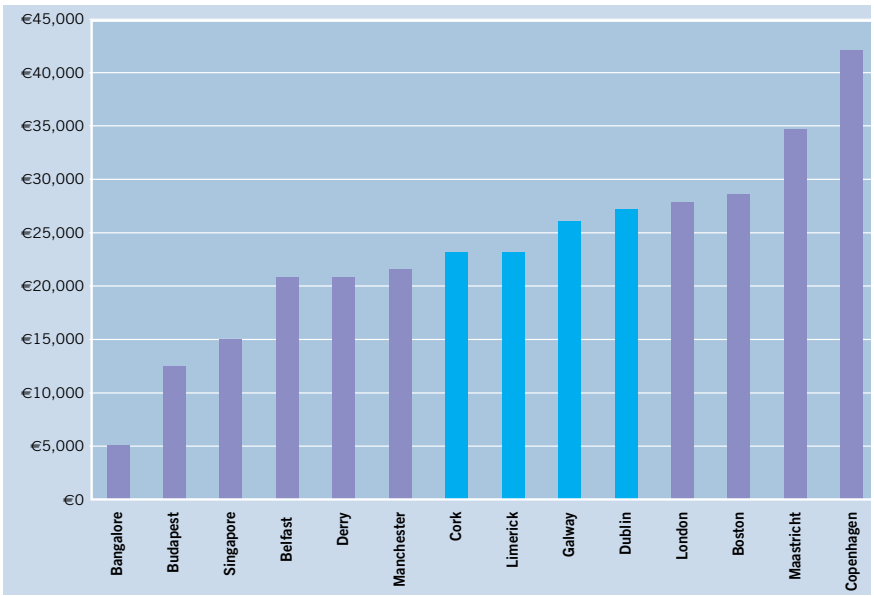
Wage costs for highly skilled and unskilled production operatives follow a relatively similar pattern among the benchmarked countries. While Ireland is cheaper than some European cities, it is considerably more expensive than Budapest, Singapore and Bangalore.

Ranking of 14:

Highly skilled: Galway 6, Limerick 7, Cork 8, Dublin 11

Source: NCC, Costs of Doing Business in Ireland, 2007

Figure 3.32
Wage Costs for Laboratory Technicians, 2007



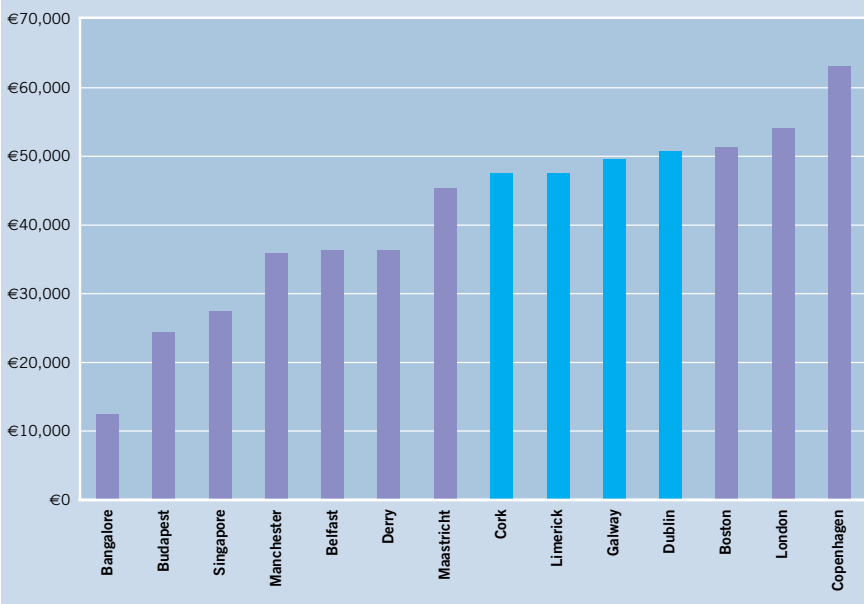
Laboratory technicians undertake research and development. Although wage costs are over four times higher in Ireland than the cheapest location, Bangalore, Ireland's highest cost location, Dublin, is still 35 percent lower than Copenhagen.

Ranking of 14:

Cork 7, Limerick 8, Galway 9, Dublin 10

Source: NCC, Costs of Doing Business in Ireland, 2007

Figure 3.33
Wage Costs for Financial Analysts, 2007



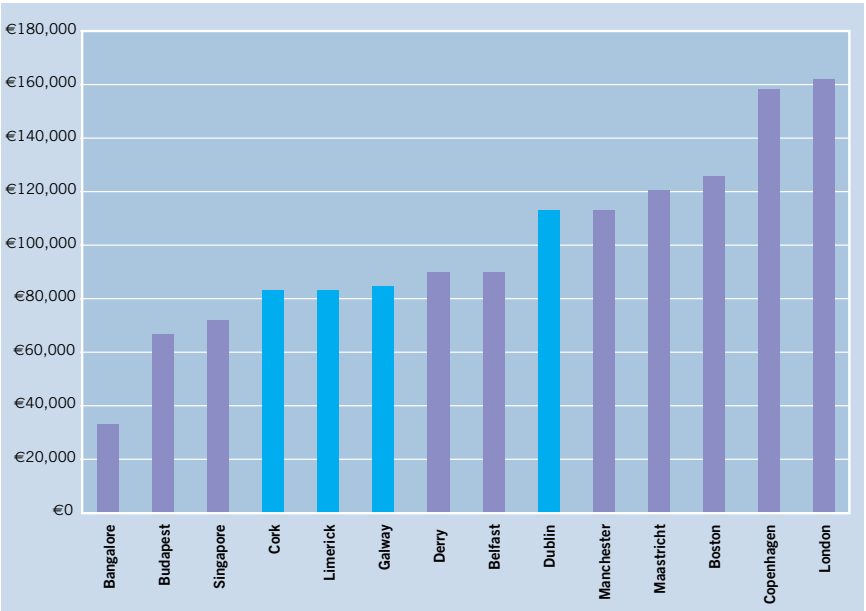
Financial analysts assess economic trends and risk. They account for a large part of the labour cost base of a fund administration company. Irish locations rank among the highest countries benchmarked. Nonetheless, Dublin is cheaper than other financial centres such as Boston and London.

Ranking of 14:

Cork 8, Limerick 9, Galway 10, Dublin 11

Source: NCC, Costs of Doing Business in Ireland, 2007

Figure 3.34
Wage Costs for Directors of Research & Development, 2007



A director of R&D, with at least 15 years of experience, has control of the R&D function of a company exporting to international markets. There is a gap between Dublin and the other Irish cities. However, all Irish cities compare favourably to other high-income cities.

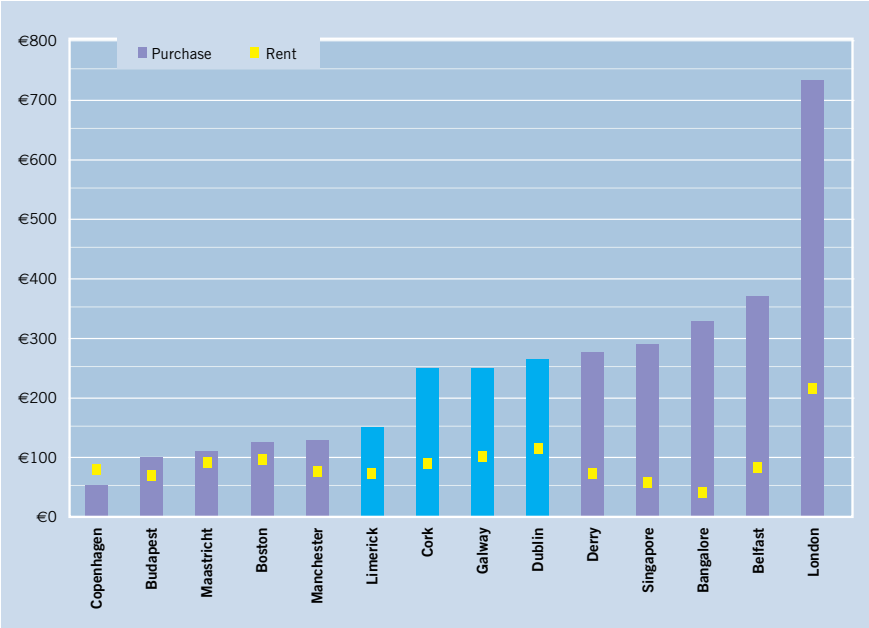
Ranking of 14:

Cork 4, Limerick 5, Galway 6, Dublin 9

Source: NCC, Costs of Doing Business in Ireland, 2007

3.3.3 Non-Pay Costs

Figure 3.35
Cost (per m²) to Purchase or Rent a Prime Industrial Site, 2007



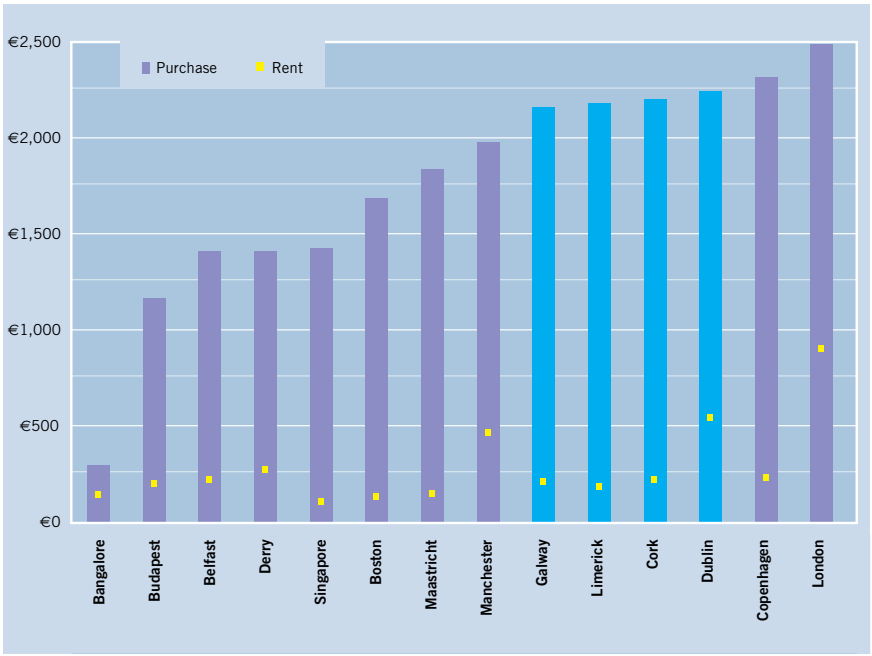
All firms face property costs, either to rent or to purchase. This chart shows purchase and rental costs for industrial sites. Irish cities are among the most expensive of the cities surveyed to rent a prime industrial site but are cheaper than other locations particularly London for purchase costs.

Ranking of 14:

Purchase cost: Limerick 6, Cork 7, Galway 8, Dublin 9
Rent cost: Limerick 5, Cork 10, Galway 12, Dublin 13

Source: NCC, Costs of Doing Business in Ireland, 2007

Figure 3.36
Cost (per m²) to Purchase and Rent an Office Space, 2007



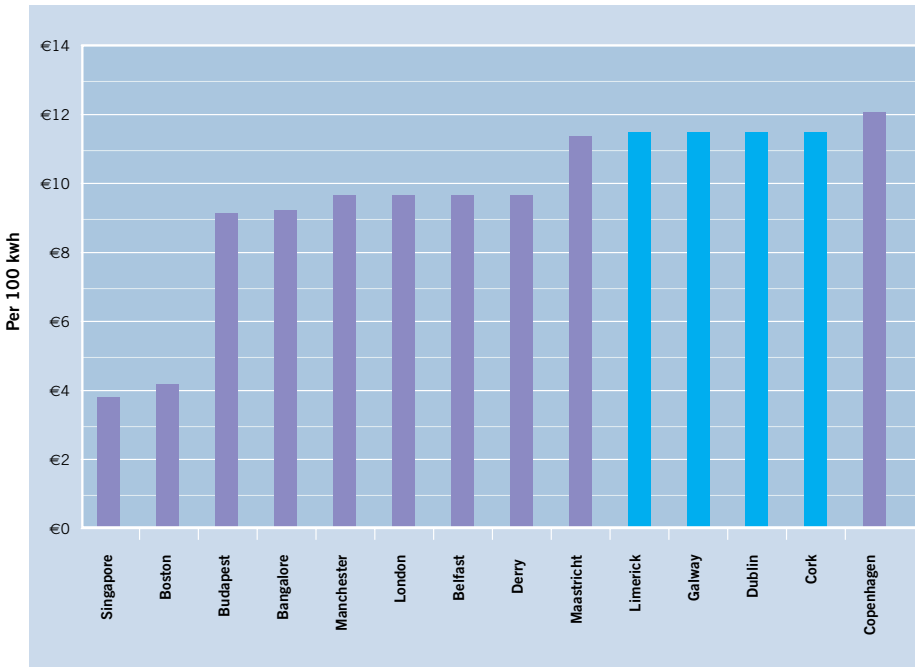
The cost to purchase an office site in Ireland is among the highest of the cities benchmarked. While office rents in most Irish cities are on a par with those in other high-income cities, rents in Dublin are expensive and only exceeded by London.

Ranking of 14:

Purchase Cost: Galway 9, Limerick 10, Cork 11, Dublin 12
Rent Cost: Limerick 5, Galway 7, Cork 9, Dublin 13

Source: NCC, Costs of Doing Business in Ireland, 2007

Figure 3.37
Electricity Costs (per 100 kwh) for Industrial Users, 2007



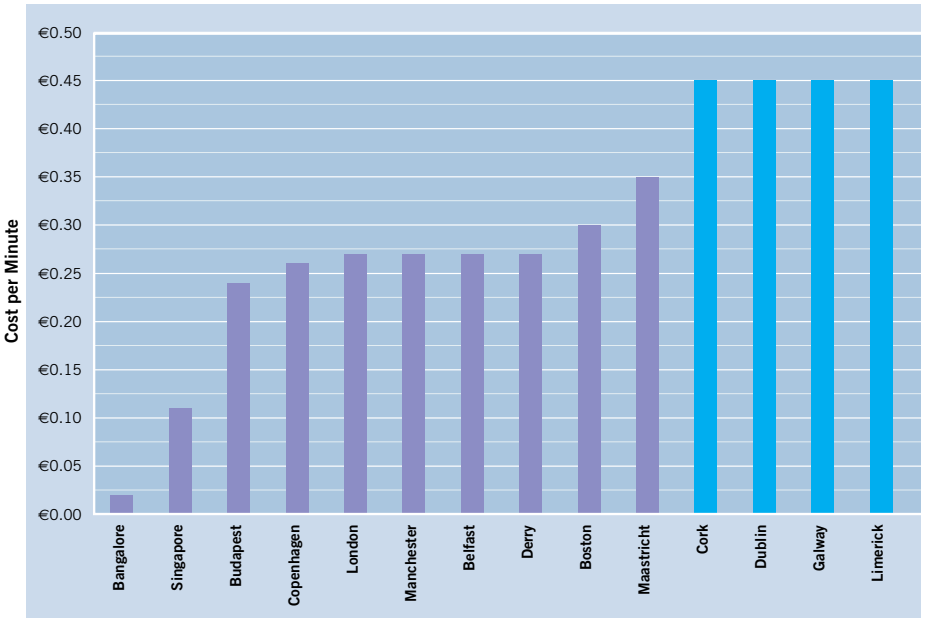
This indicator measures electricity costs (including VAT) for a typical medium sized enterprise. It shows that Ireland ranks as the second most expensive location.

Ranking of 11:

Irish cities 10

Source: NCC, Costs of Doing Business in Ireland, 2007

Figure 3.38
National Mobile Telephone Costs (per min), 2007



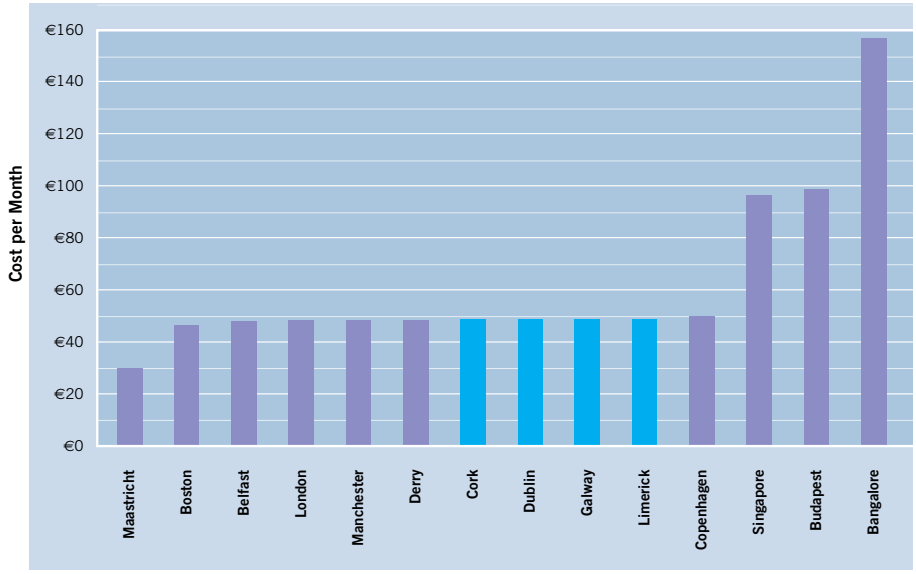
Mobile telephony has become an integral part of enterprise. National mobile telephone costs per minute are significantly more expensive in Irish cities than all other cities surveyed.

Ranking of 11:

Irish cities 11

Source: NCC, Costs of Doing Business in Ireland, 2007

Figure 3.39
Internet Costs (per month) 2MB, 2007



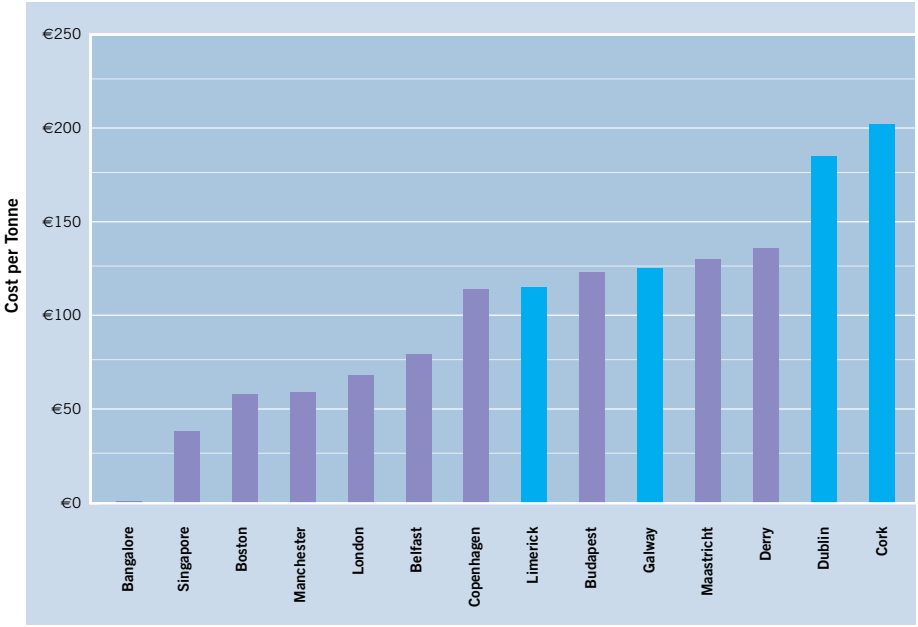
Broadband internet is now a necessity for modern business, particularly information-intensive services. Ireland's internet costs (per month) are in line with many of the other cities surveyed. Costs are falling across most of the cities surveyed.

Ranking of 11:

Irish cities 7

Source: NCC, Costs of Doing Business in Ireland, 2007

Figure 3.40
Waste Disposal Costs (per tonne), 2007



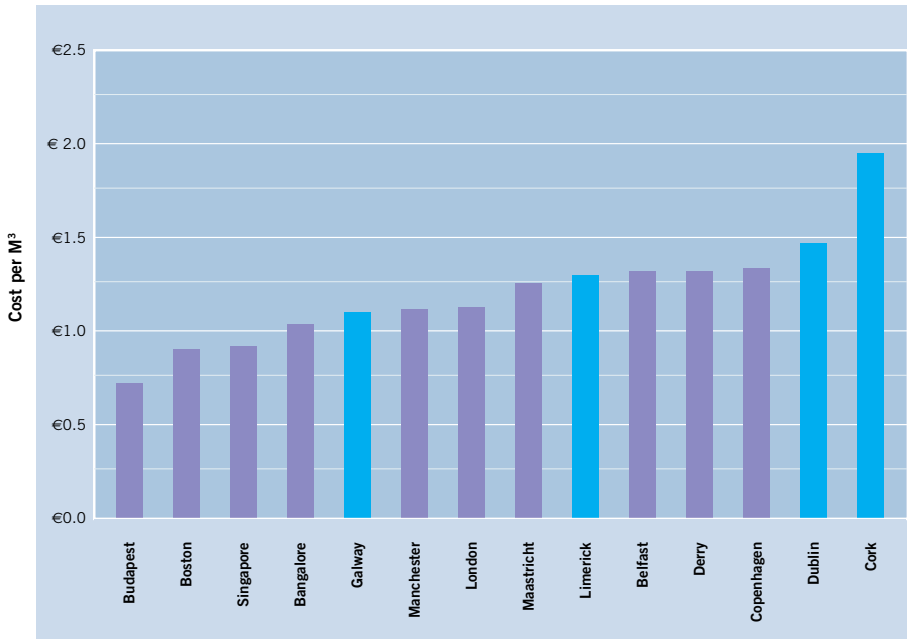
Waste costs measure the cost of disposing of a tonne of non-hazardous waste into landfill. While costs in Irish cities have fallen in the last year, Dublin and Cork remain the most expensive cities surveyed.

Ranking of 14:

Limerick 8, Galway 10, Dublin 13, Cork 14

Source: NCC, Costs of Doing Business in Ireland, 2007

Figure 3.41
Water Costs (per cubed metre), 2007



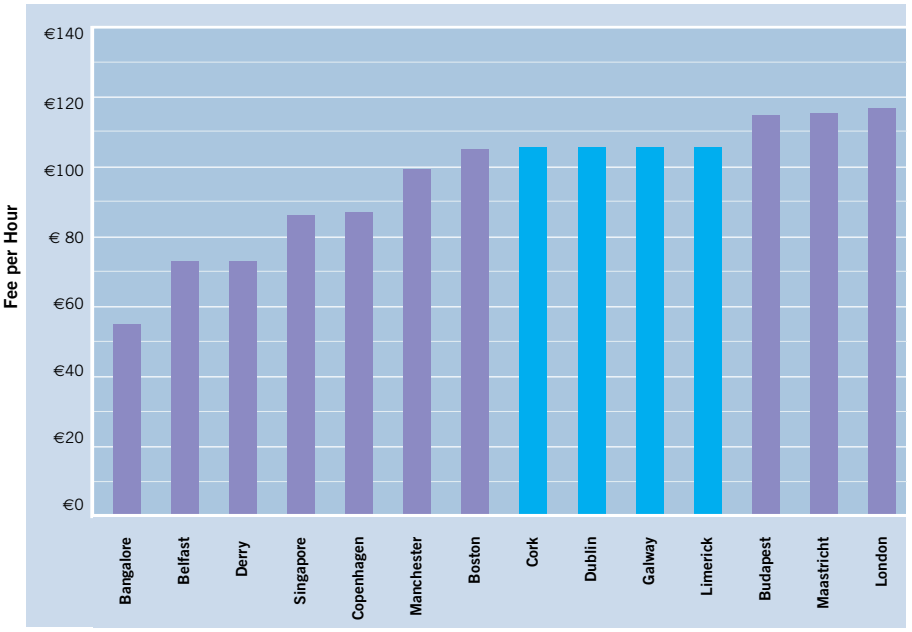
Water costs measure the cost for industrial users per metre cubed. Cork and Dublin rank as the most expensive cities. Furthermore, costs have increased in the last twelve months.

Ranking of 14:

Galway 5, Limerick 9, Dublin 13, Cork 14

Source: NCC, Costs of Doing Business in Ireland, 2007

Figure 3.42
Accountancy Fees per Hour 2007



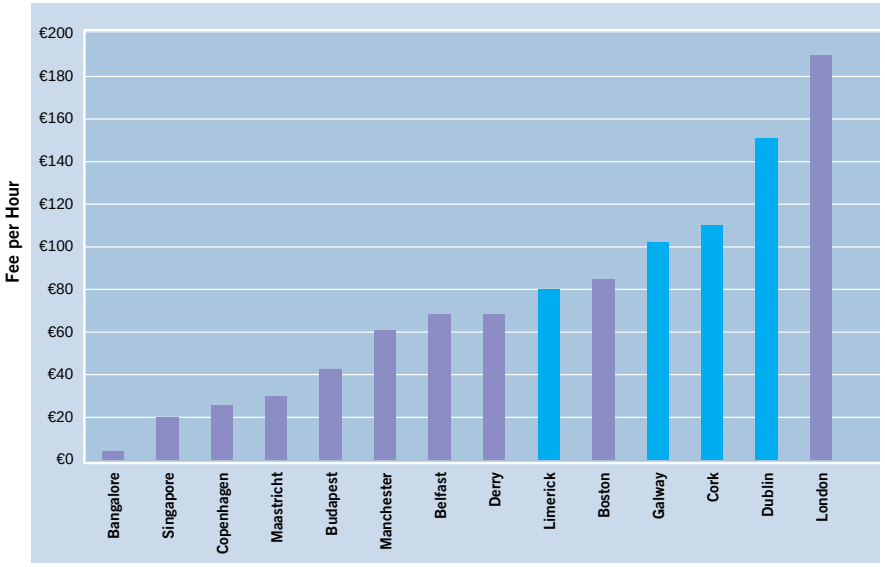
This chart measures junior accountancy fees per hour. Irish cities are among the most expensive for accountancy fees, significantly more expensive than Belfast, Derry or Copenhagen.

Ranking of 14:

Irish cities 8

Source: NCC, Costs of Doing Business in Ireland, 2007

Figure 3.43
IT Fees per Hour 2007



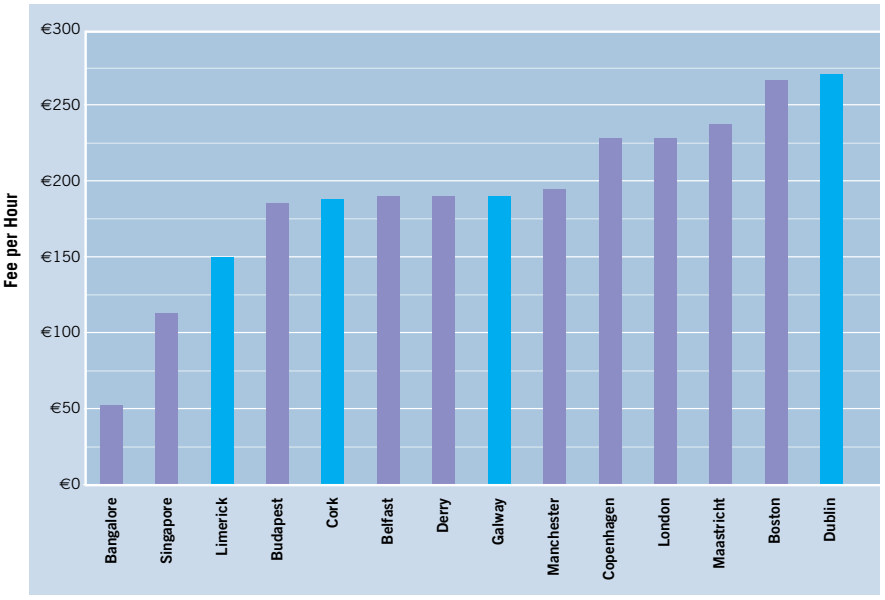
This chart measures the cost of ad-hoc on-site services per hour. Irish cities, particularly Dublin, are among the most expensive cities surveyed. IT services fees vary considerably across the cities surveyed.

Ranking of 14:

Limerick 9, Galway 11, Cork 12, Dublin 13

Source: NCC, Costs of Doing Business in Ireland, 2007

Figure 3.44
Legal Fees per Hour 2007



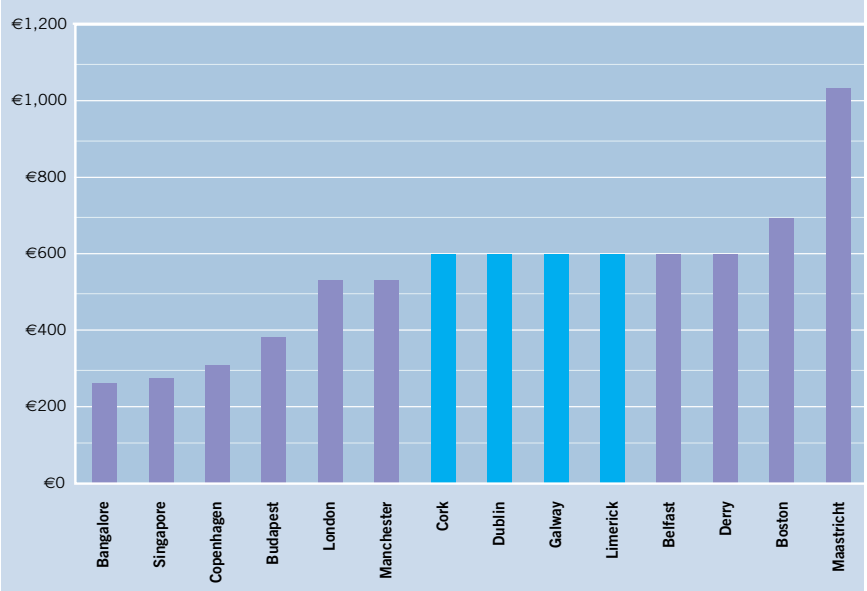
This chart measures the cost charged by a major legal company for a junior legal assistant excluding VAT. There is considerable variation between Irish cities. While Galway, Cork and in particular Limerick are cost competitive relative to other cities surveyed, Dublin remains the most expensive city.

Ranking of 14:

Limerick 3, Cork 5, Galway 8, Dublin 14

Source: NCC, Costs of Doing Business in Ireland, 2007

Figure 3.45
Health Insurance Costs, 2007



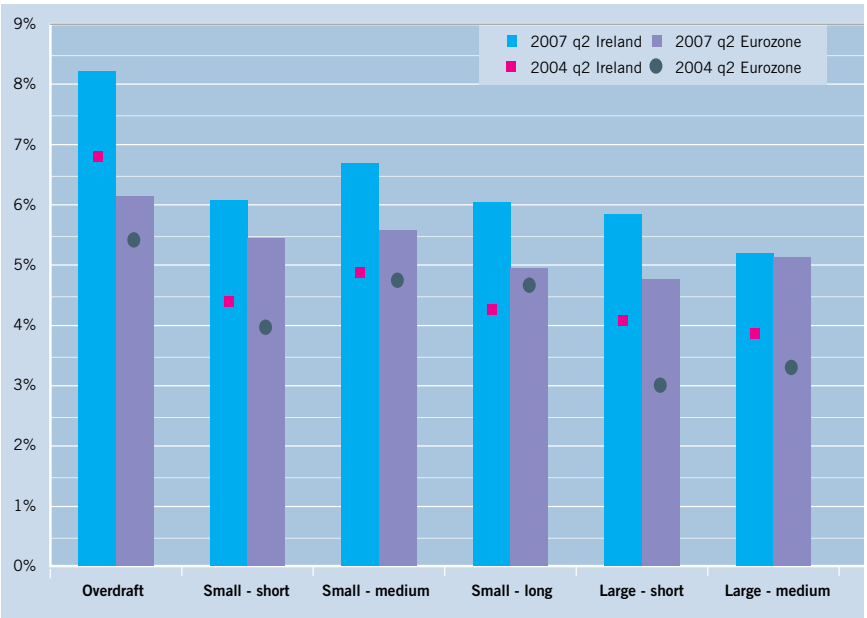
Health insurance costs for firms are broadly similar across high-income countries. However, Maastricht is particularly expensive and Copenhagen is cheap.

Ranking of 11:

Irish cities 7

Source: NCC, Costs of Doing Business in Ireland, 2007

Figure 3.46
Interest Rates, Ireland and the Eurozone, by loan type, 2007-q2



This chart shows average interest rates in Ireland and the Eurozone, by loan type, in the second quarter of 2004 and 2007. All loans types in Ireland are now more expensive than the Eurozone average. While interest rates have increase in Ireland and the Eurozone since 2004, the gap between Ireland and the Eurozone has widened for almost all loan types.

Ranking:

N/A

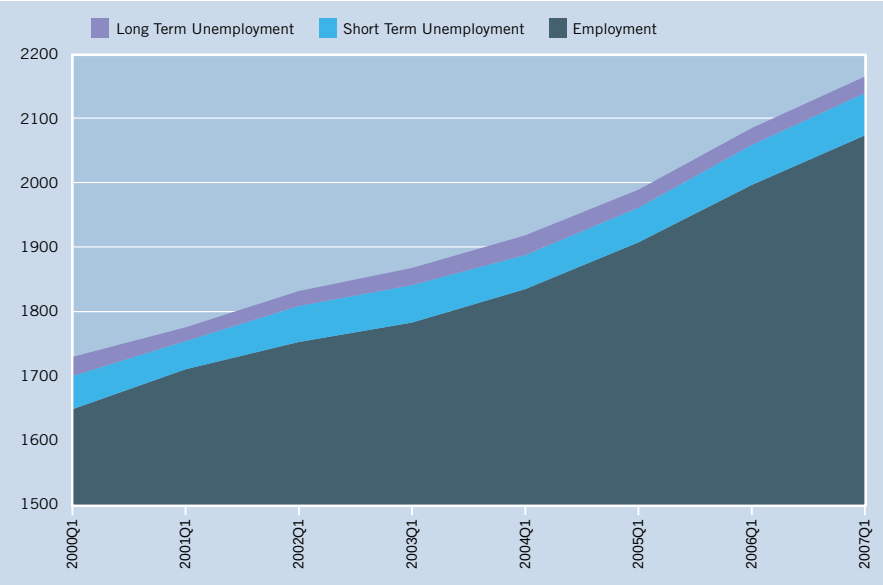
Source: European Central Bank; Central Bank of Ireland

3.4 Labour Supply

3.4.1 Overview

Figure 3.47

Labour Force (Employment & Unemployment), Ireland 000s, 2000-2007



Ireland's ongoing economic growth has been facilitated by a remarkable increase in labour supply. Labour force growth continued in 2006 and early 2007, with most unemployment taking the form of short term unemployment.

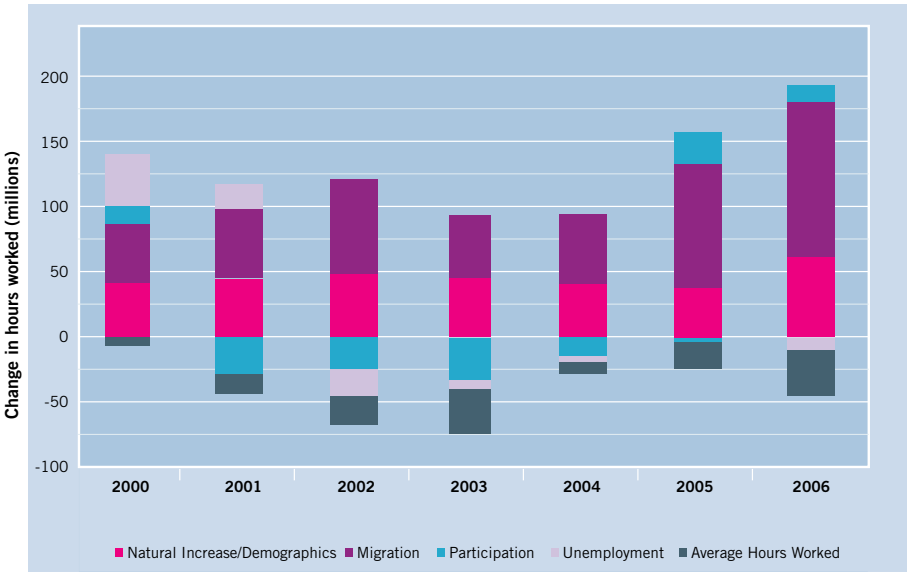
Ranking:

NA

Source: Forfás Calculations; Central Statistics Office, Quarterly National Household Survey Data, 2000-2007

Figure 3.48

Decomposition of Change in Total Hours Worked in Ireland, 2000-2006



Changes in total hours worked in the Irish economy depend on a wide variety of factors. Natural population growth and migration induced increases in population are driving employment growth. Average hours worked are falling.

Ranking:

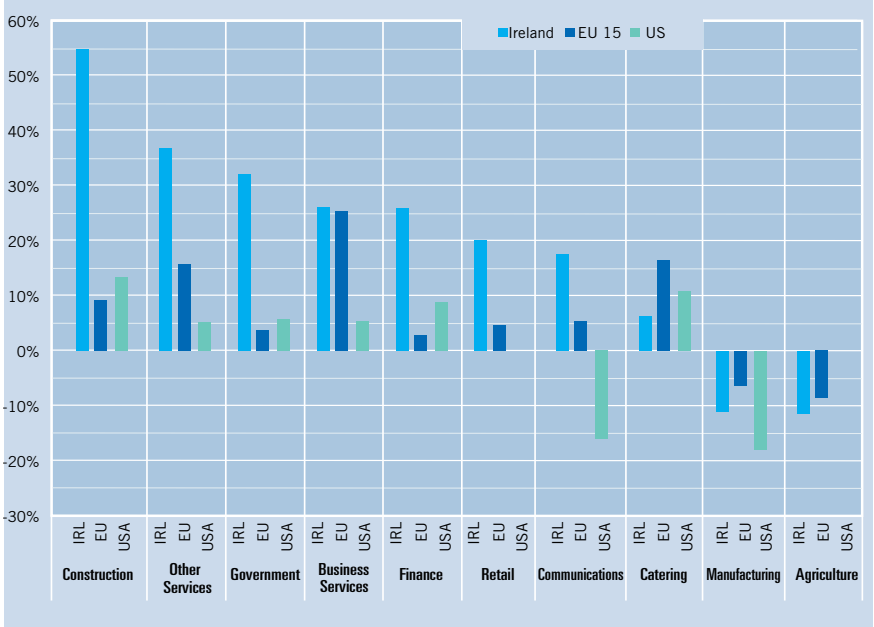
NA

Source: Forfás Calculations; EU KLEMS Database, March 2007; Central Statistics Office, Quarterly National Household Survey Data, 2000-2006

3.4.2 Employment

Figure 3.49

Percentage Change in Employment, 2000-2006, by Broad Sector, Ireland, EU-15 and US



Overall, employment in Ireland increased faster than either the EU or US averages between 2000 and 2006. At a sectoral level, employment growth in construction, 'other services', and public services has outstripped the EU / US performance.

Ranking:

N/A

Source: Central Statistics Office, Eurostat, US Bureau of Labour Statistics

Figure 3.50

Source of Jobs Growth in Ireland, (000's) 2000-2007

This chart shows the number of jobs created by sector in Ireland between 2000 and the second quarter of 2007. Modern and traditional manufacturing and agriculture have contracted, while education/health, construction, and finance/business services have expanded strongly, particularly since 2003.

Ranking:

N/A

Source: Central Statistics Office (by 2 digit NACE codes)

Figure 3.51
Change in Employment in Irish Manufacturing by Sector (000's), 2000-2007

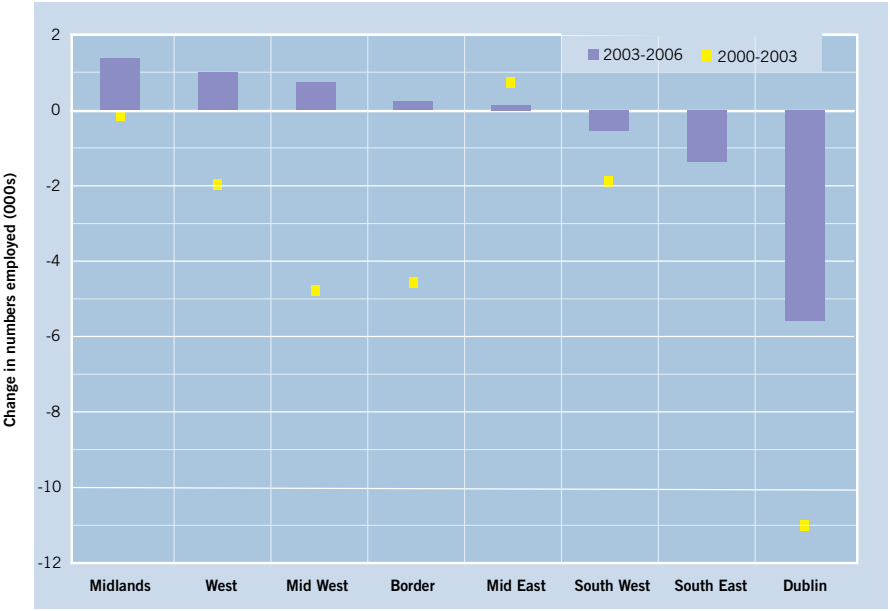
The rate of job losses in manufacturing slowed over the 2000–2007 period. The chemicals and medical/precision devices sector have expanded throughout.

Ranking:

N/A

Source: Central Statistics Office (by 2 digit NACE codes)

Figure 3.52
Change in Employment in Manufacturing by Region (000's), 2000-2006



Dublin, Ireland's most populous region has experienced the bulk of manufacturing job losses over the past six years, particularly in the 2000-2003 period. The Midlands, West, Mid West and Border regions have regained manufacturing jobs since 2003.

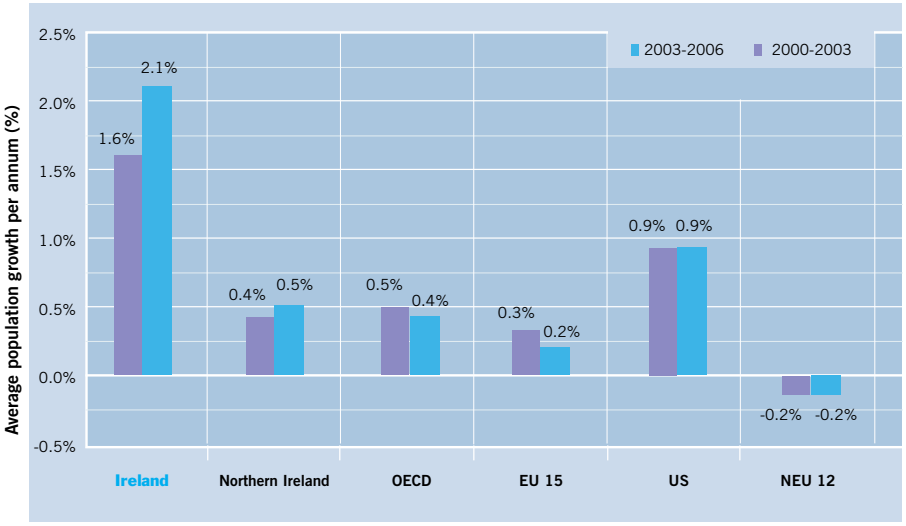
Ranking:

N/A

Source: Forfás Annual Employment Survey, 2006

3.4.3 Labour Supply Characteristics

Figure 3.53
Average Population Growth per Annum, 2000-2006



Ireland's population continues to grow at a fast rate. Overall, the EU-15 population is growing at a very slow pace, while the population in the new 12 EU member states is falling.

OECD-28 Ranking:

1(--)

Source: Forfás Calculations; Groningen Growth & Development Centre, Total Economy Database, January 2007; United Kingdom, Office for National Statistics, 2007 [online]

Figure 3.54
Net Migration per 1,000 of Population, 1999-2005[10]

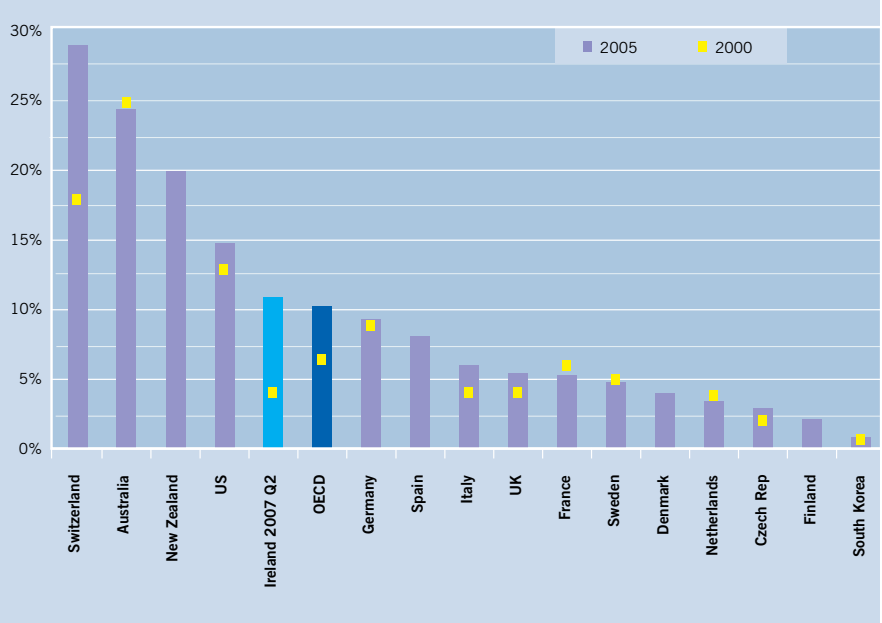
Ireland's increases in population are not just domestically driven. Net migration has been increasing dramatically.

OECD-28 Ranking:

2(--)

Source: Forfás Calculations; Groningen Growth & Development Centre, Total Economy Database, January 2007; United Kingdom, Office for National Statistics, 2007 [online]; Northern Ireland Department of Enterprise, Trade & Investment, Northern Ireland Labour Force Survey: Historical Supplement Spring 1984 – Spring 2006, March 2006

Figure 3.55
Stock of Foreign Labour as a Percentage of the Total Labour Force, 2005[12]



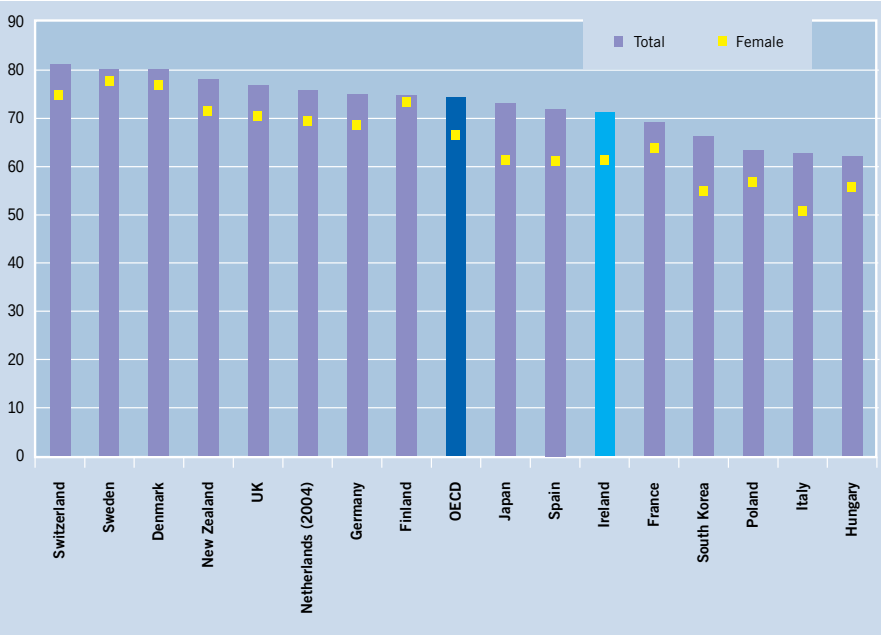
Foreign workers comprise 10.9% of the Irish labour force, more than two and a half times the level in 2000. A more detailed breakdown of Irish statistics reveals that almost half of these foreign workers are from the twelve new EU member states.

OECD-28 Ranking:

7 (↑2)

Source: Forfás Calculations; Central Statistics Office Labour Market Statistics; OECD, International Migration Outlook, 2007

Figure 3.56
Participation Rates of 15-64 Population in the Workforce, by Gender, 2006



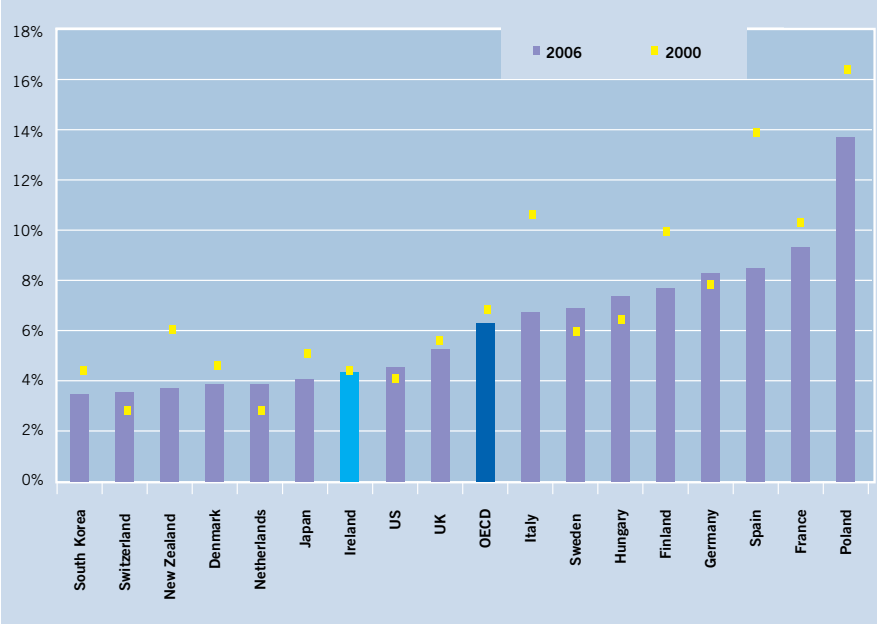
This chart displays total and female participation rates in 2006. Participation rates in Ireland have increased steadily in recent years. They are converging on the OECD average, but the gap between female participation in Ireland and leading countries such as Switzerland and Sweden remains considerable.

OECD-28 Ranking:

Overall: 18(↑2)
Males: 15(↑1)
Females: 17(↑5)

Source: Forfás Calculations; OECD, Employment Outlook 2007

Figure 3.57
Unemployment, Standardised Rates, 2000 and 2006[13]



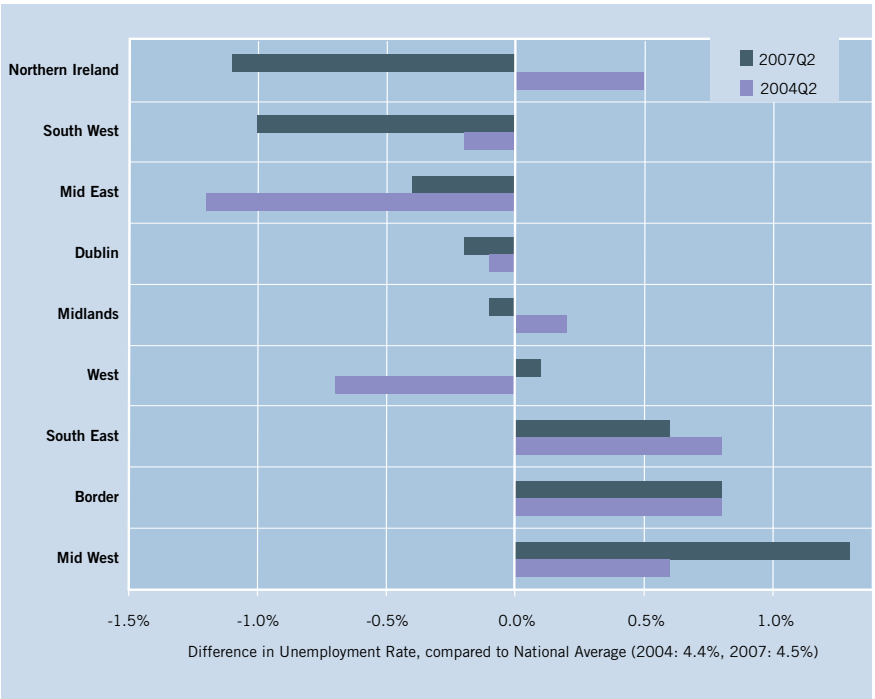
Unemployment remains low in Ireland, below the OECD average and many of the larger economies in the EU. A number of OECD countries have recorded higher unemployment rates since 2000, causing Ireland's ranking to improve marginally.

OECD-28 Ranking:

8(↑1)

Source: Forfás Calculations; OECD, Employment Outlook 2007

Figure 3.58
Regional Unemployment, 2004 and 2007, Ireland and Northern Ireland



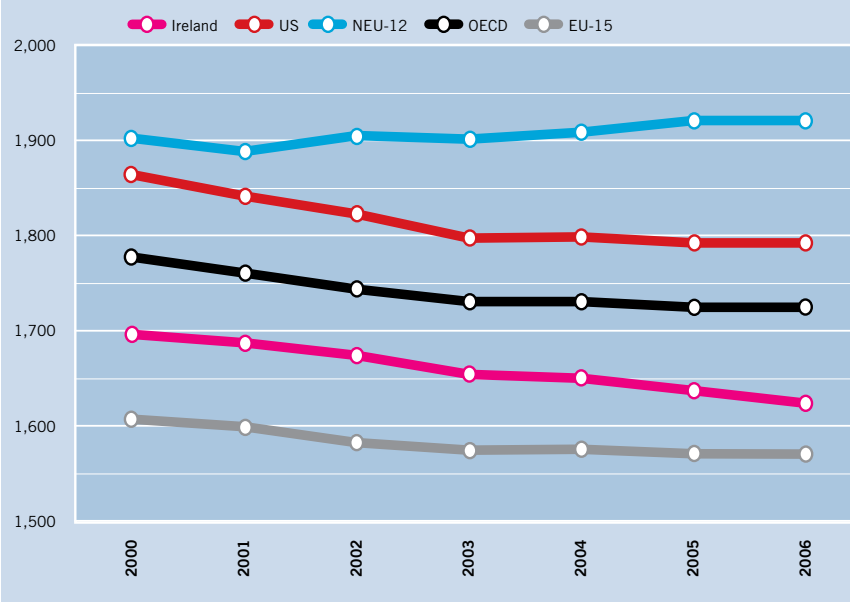
In the second quarter of 2007, unemployment was lowest in the South West, Mid East, Dublin and Midlands regions. Unemployment levels in the West region are now above the national average and the Mid West region now has the highest unemployment rate in the country. Northern Ireland has made strong progress.

Ranking:

N/A

Source: Forfás Calculations; Central Statistics Office, Quarterly National Household Survey Data, 2000-2007; Northern Ireland Department of Enterprise, Trade & Investment, Monthly Labour Market Report, September 2007

Figure 3.59
Average Hours Worked per Person Employed per Year



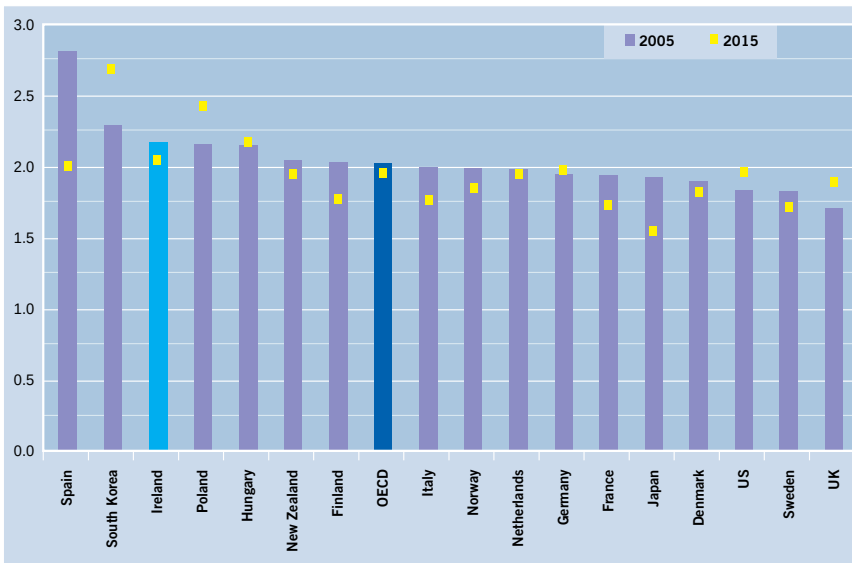
Average hours worked per person in Ireland have declined gradually since 2000 and remain below the OECD average for the entire 2000-2006.

OECD-28 Ranking:

12(↑2)

Source: Forfás Calculations; Groningen Growth & Development Centre, Total Economy Database, January 2007

Figure 3.60
Number of Persons of Working-Age per Dependent, 2006[14]



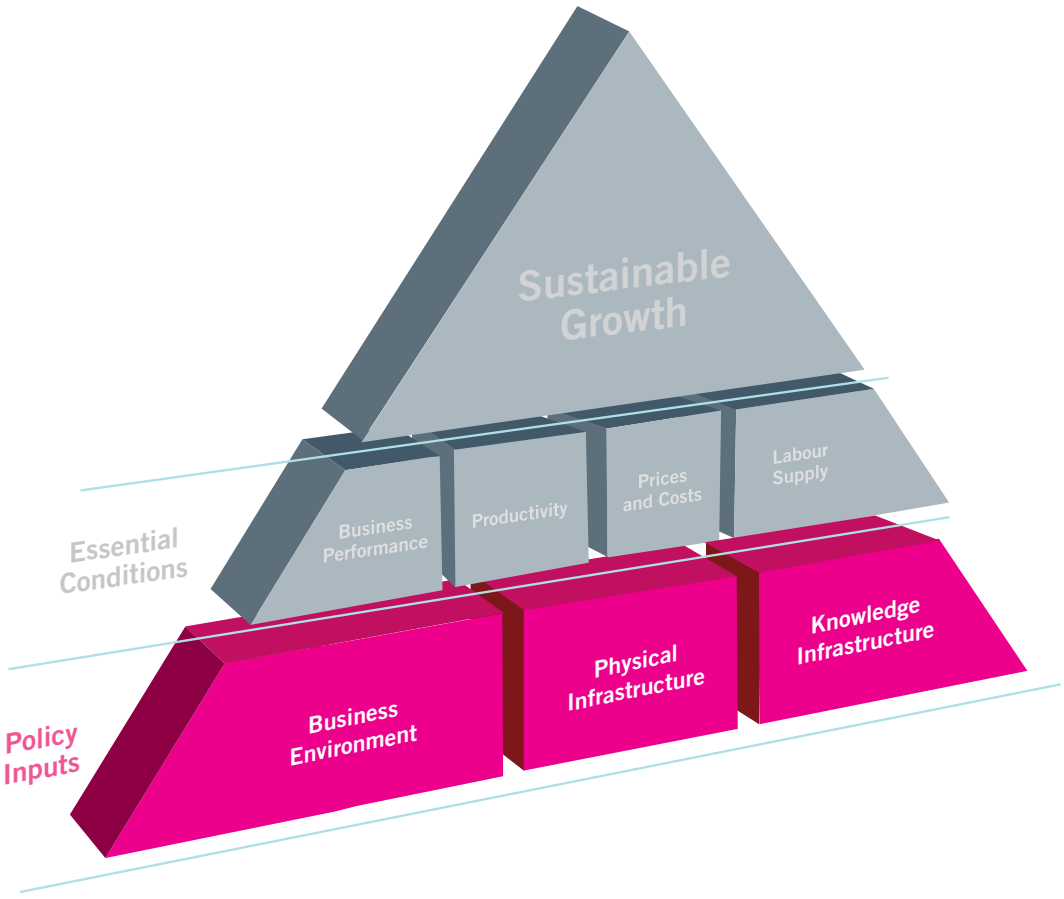
Economies with higher ratios of workers to dependents (children and retirees) are able to fund their social services more easily. Ireland's population is favourably structured, due to a peak in births in 1980. Projections for 2015 suggest there may be a slight decline in the ratio.

OECD-28 Ranking:

8(↓3)

Source: Forfás Calculations; OECD, Labour Force Statistics 2007 (online); UN, Human Development Report 2006

4 Policy Inputs



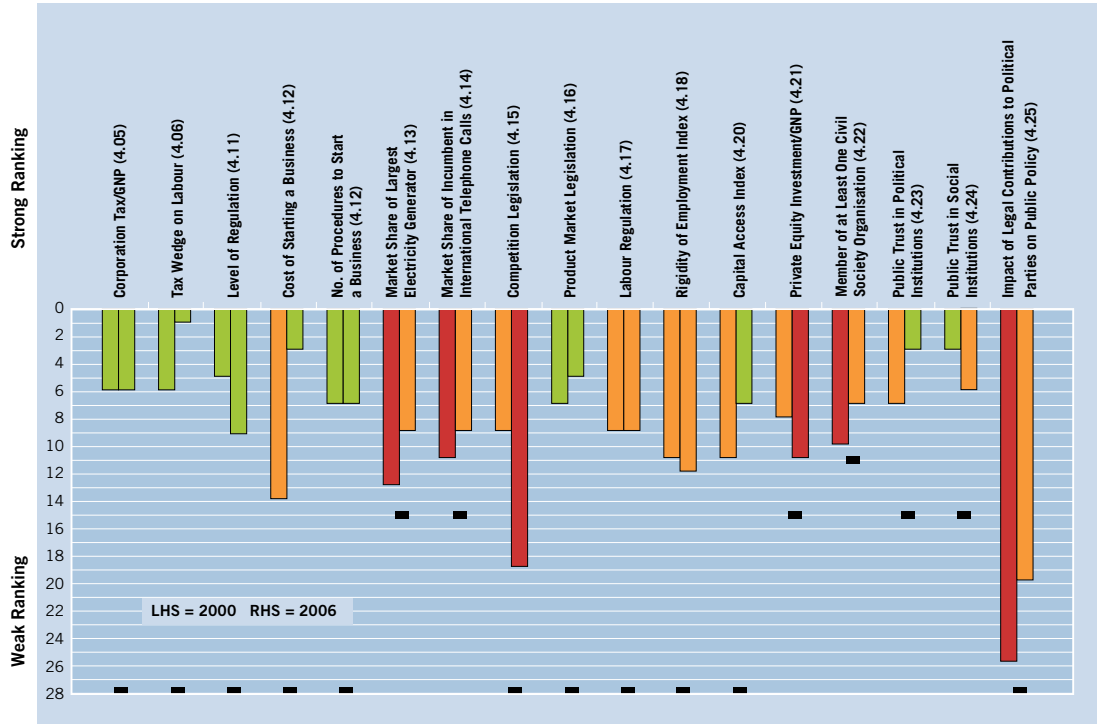
4. Policy Inputs

4.1 Business Environment

The business environment can have a significant impact on a country's economic performance and competitiveness. In this section, indicators that illustrate Ireland's relative performance on taxation, regulation and competition, labour market regulations, finance and social capital are assessed.

Chart 6 provides an overview of Ireland's recent performance in terms of key business environment indicators.

Summary Chart 6:
Rankings in Indicators of Business Environment, 2000-2006 (or nearest)



Taxation

Overall, tax revenues in Ireland as a proportion of income are above the OECD average (Fig. 4.01). Ireland's tax structure is much less dependent on social security contributions than elsewhere in Europe, raising Government revenues instead from direct and indirect taxation (Fig. 4.02, 4.07). Nonetheless, taxes on both capital (profits) and labour (wages) are low relative to other countries, while the tax take from corporations is above the OECD average (Fig. 4.03-4.06). Indirect taxation rates are amongst the highest in the OECD (Fig. 4.08), which influences consumer prices and tourism. Tax revenues from property are in line with the OECD average, although they come from taxes on transactions rather than taxes on assets (Fig. 4.09). Lastly, Ireland does not tax pollution directly, unlike some other countries (Fig. 4.10).

Regulation and Competition

Both overall regulatory levels and regulatory impediments to product market competition in Ireland are perceived to be lower than the OECD average, although perceived regulatory levels have increased in recent years (Fig. 4.11, 4.16). Nonetheless, the financial and administrative costs of starting a business in Ireland are small compared to other countries (Fig. 4.12). In relation to domestic competition, while the legislation is perceived to be efficient, incumbents still dominate the market in certain utilities - in particular, the electricity and communications markets (Fig. 4.13-4.15).

Labour Market

Labour market regulations are perceived to be increasing in Ireland, with the employment framework here considerably less flexible than economies such as the UK and Denmark (Fig. 4.17, 4.18). The minimum wage in Ireland is the fourth highest in the OECD (Fig. 4.19).

Finance

Overall, access to capital in Ireland is not perceived to be a significant barrier to enterprise (Fig. 4.20). In the Milken Institute's Capital Access Index, Ireland ranked 9th place globally in 2006, an improvement of 8 places since 2000. However, private equity investment is not well developed in Ireland (Fig. 4.21).

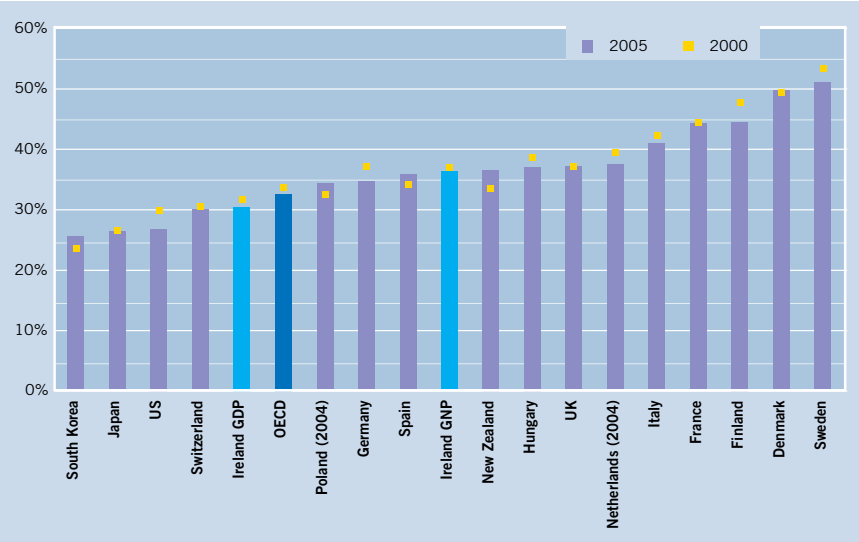
Social Capital

Membership of civil society organisations increased in Ireland between 1990 and 2000 (Fig. 4.22). The public's trust in social and political institutions, while falling, still compares favourably with other countries (Fig. 4.23, 4.24). Finally, when surveyed, more Irish executives believe that legal contributions to political parties have a direct influence on specific public policy outcomes than in all but two other countries in the EU-15 (Fig. 4.25).

Business Environment

4.1.1 Taxation

Figure 4.01
Total Tax Revenue (% GDP), 2005



Ireland's tax take, as a proportion of its income (GNP) is above the OECD average. Total tax revenue taken as a percentage of GDP has remained relatively stable across the OECD since 2000.

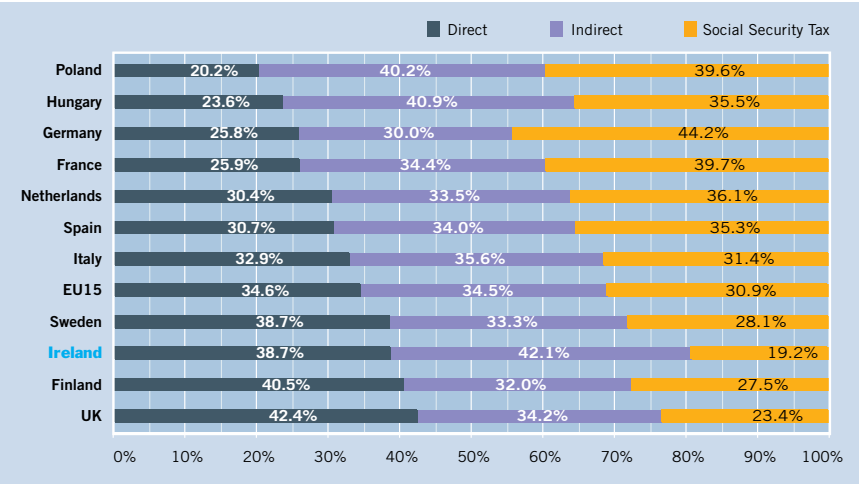
OECD-28 Ranking:

GDP: 6 (↑1)

GNP: 14 (↑1)

Source: OECD, Revenue Statistics 1965-2005

Figure 4.02
Breakdown of Tax Revenue, 2005



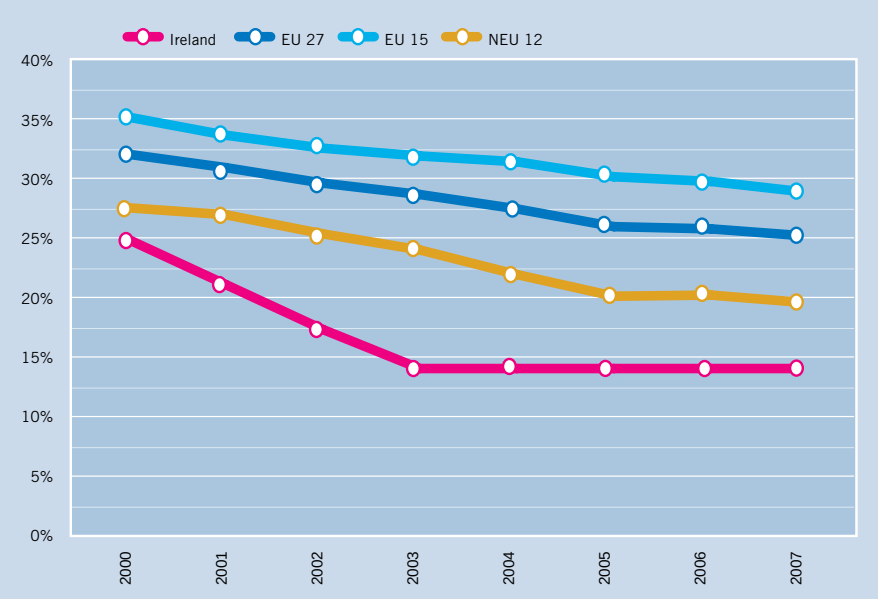
Ireland's tax structure is less dependent on social security contributions than other economies. There is a relatively even split between direct and indirect taxes, reflecting a policy to reduce taxes on factors of production – i.e. workers and firms.

Ranking:

N/A

Source: Eurostat, Statistics in Focus 31/2007

Figure 4.03
Top Standard Tax Rate on Corporate Income (%), 2000-2006[15]



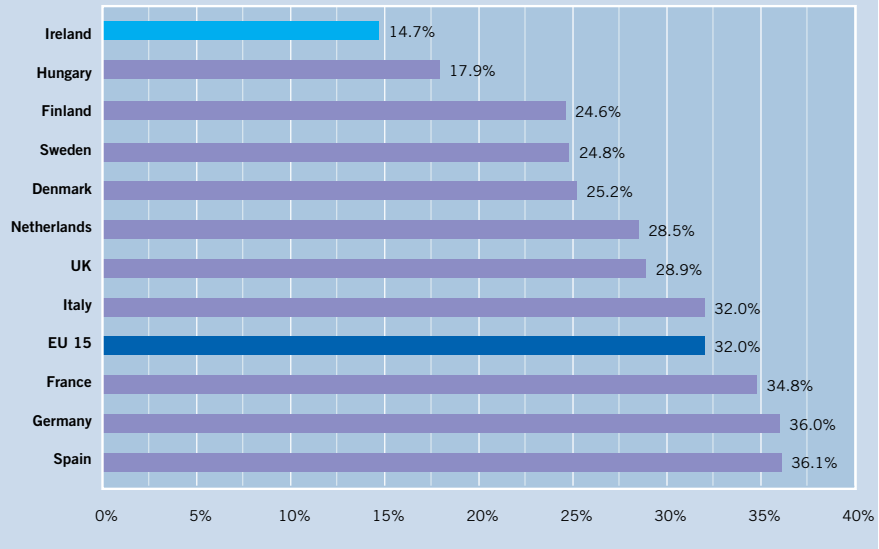
The average top rate of corporation tax in the EU has continued its declining trend as economies seek to create attractive investment environments. At 12.5 percent, Ireland has the third lowest rate in the EU-27.

EU-15 Ranking:

1 (--)

Source: Eurostat, Taxation Trends in the European Union

Figure 4.04
Effective Average Tax Rate on Companies (%), 2005



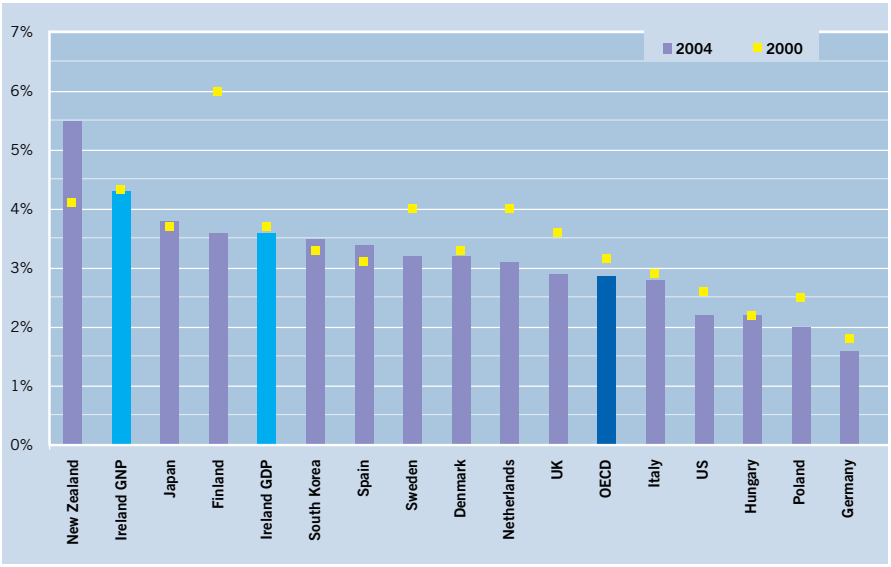
These estimates measure the burden on a hypothetical investment project, taking into account the existing tax rules in each country. It includes corporate tax rates on income, taxes on capital and local taxes (where applicable). This rate fell in six of the EU-15 countries in 2005 reflecting a downward trend.

EU-15 Ranking:

1

Source: CESifo, The Effective Tax Burden of Companies in Europe, DICE Report 4/2005, Michael Overesch

Figure 4.05
Corporation Tax Receipts as a Percentage of GDP, 2004



While Ireland's corporation tax rates are low, Ireland earns more in corporation tax payments as a percentage of GNP or GDP than most other OECD countries.

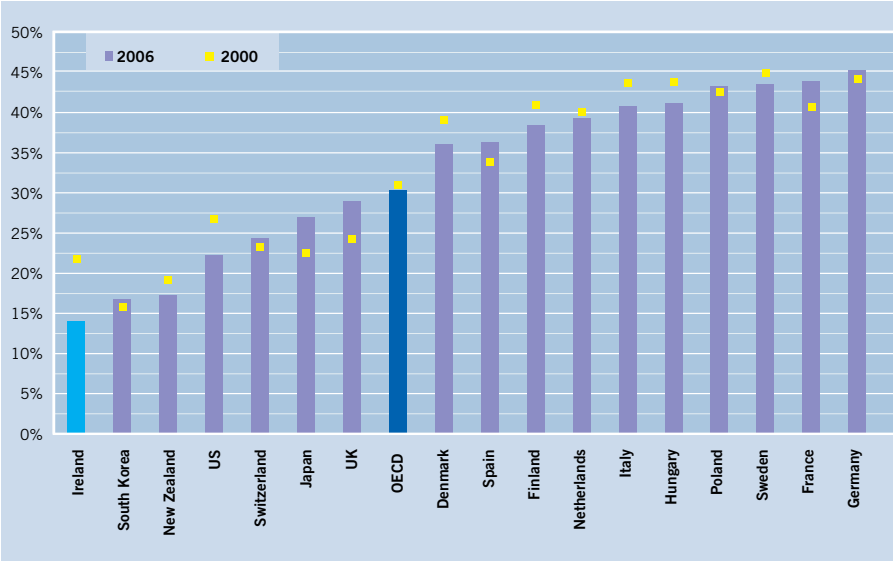
OECD-28 Ranking:

GDP: 8 (↑4)

GNP: 6 (--)

Source: OECD, Revenue Statistics 1965-2005

Figure 4.06
Total Tax Wedge on Labour (% of Average Earnings), 2006



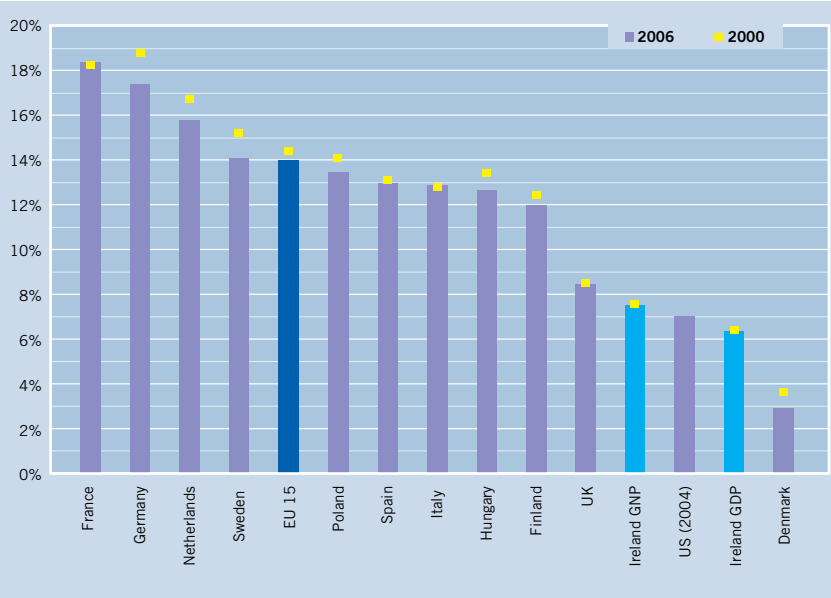
Ireland's tax wedge on labour, i.e. the gap between what the employer pays and what the employee receives has fallen since 2000. Ireland's tax wedge is now the smallest in the OECD and is less than half the OECD average.

OECD-28 Ranking:

1 (↑5)

Source: OECD Taxing Wages 2005/2006

Figure 4.07
Social Contributions Received by Government (% GDP) 2006



Social contributions are paid by workers to social security funds – typically run by governments – in return for entitlement to social benefits. Contributions by Irish workers are about half EU-15 levels.

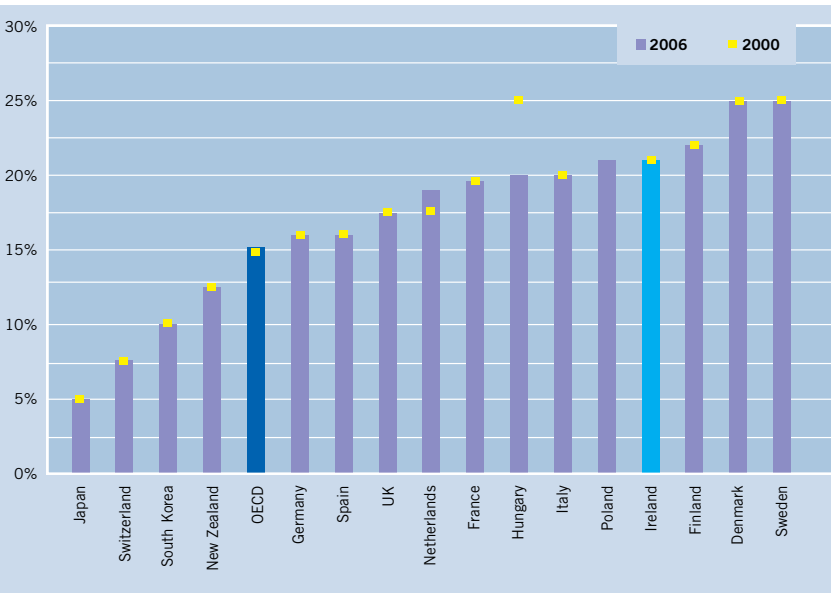
EU-15 Ranking:

GDP: 15 (↓1)

GNP: 14 (↓1)

Source: European Commission, AMECO, General Government Data, February 2007

Figure 4.08
Value Added Tax, Standard Rate, 2006[16]



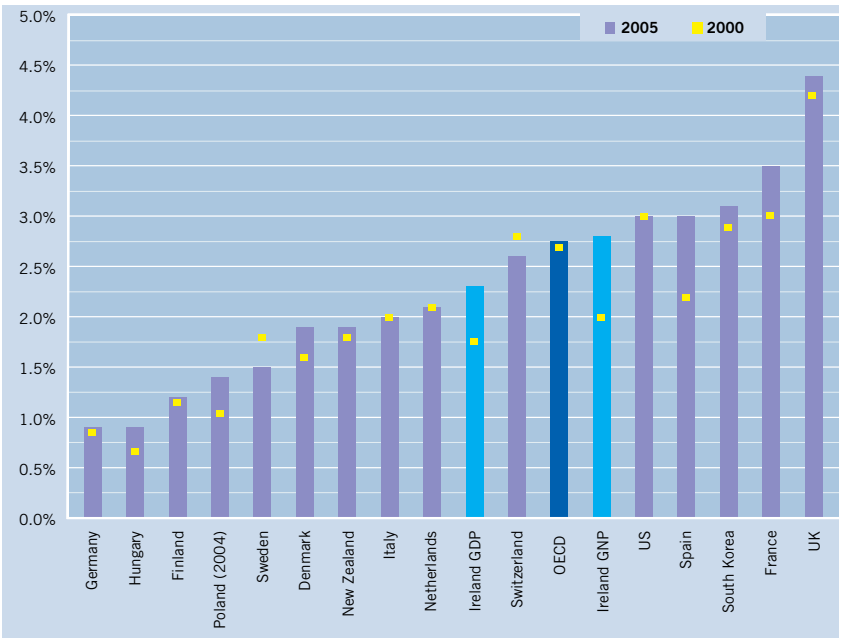
The main source of indirect tax revenues for all countries is a sales or value added tax on consumption. While they are less likely to affect incentives to work or invest, they can be regressive. They can also discourage tourism. Irish VAT rates are amongst the highest in the benchmarked countries.

OECD-28 Ranking:

19(↓1)

Source: OECD, Revenue Statistics 1965-2005

Figure 4.09
Property Tax Receipts as a Percentage of GDP, 2005



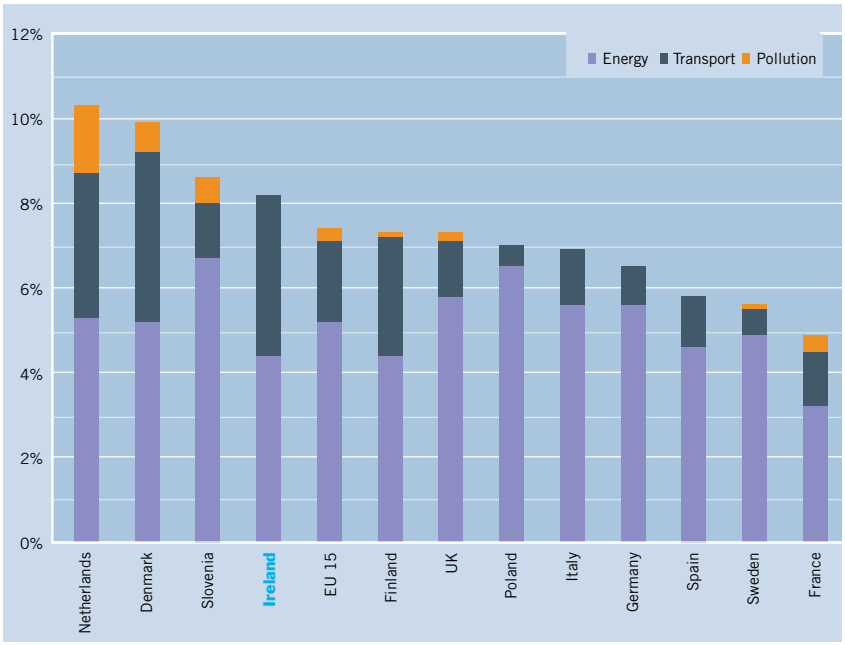
Ireland's tax take from property is close to the OCED average. The major component of property tax revenue in Ireland is stamp duty, which is dependent on property transactions. Other components include capital gains tax and capital acquisitions tax.

OECD-28 Ranking:

GDP: 17 (↓5)
GNP: 22 (↓6)

Source: OECD Revenue Statistics 1965 - 2005

Figure 4.10
Use of Environmental Taxes by Type (as % of Total Tax Revenue), 2004[17]



Overall, Ireland collects a relatively large proportion of its tax revenue from environmental sources, but Ireland does not tax pollution, as some other countries do. Ireland's share of revenues from energy is also below the EU average.

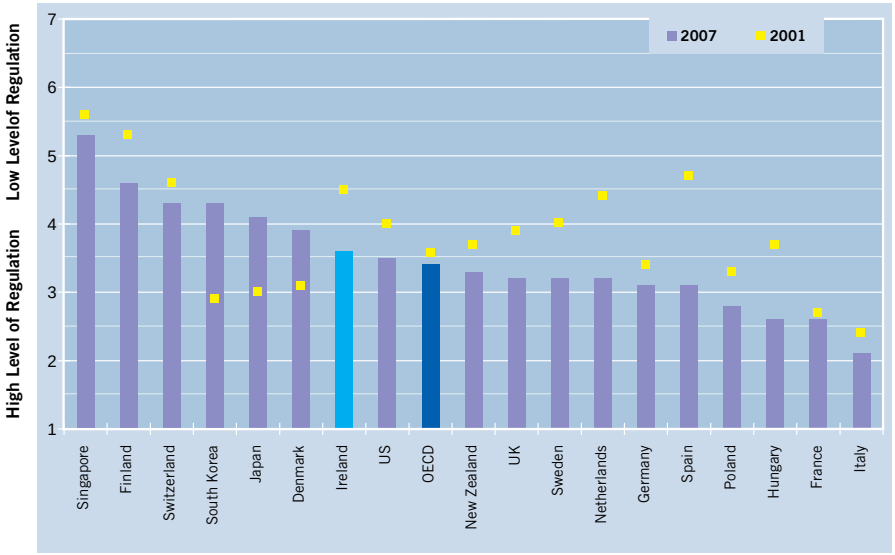
EU-15 Ranking:

4 (↓1)

Source: Forfás Calculations; Eurostat, Economy and Finance Indicators, 2006 [online]

4.1.2 *Regulation and Competition*

Figure 4.11
Level of Regulation, 2007 (Scale 1-7)[18]



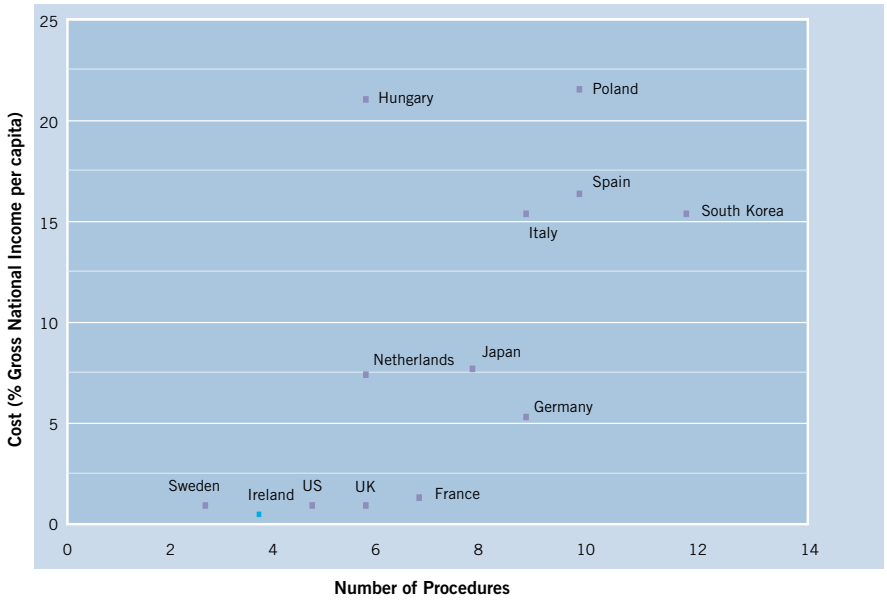
The overall level of regulation in Ireland is among the lowest in the OECD. Regulation levels are increasing in most countries, including Ireland. Denmark, Japan and South Korea have reduced perceived regulatory levels since 2001.

OECD-28 Ranking:

9(↓4)

Source: WEF Global Competitiveness Report 2007/08

Figure 4.12
Cost of Starting a Business and the Number of Procedures Involved, 2006[19]



This chart shows both the financial costs of establishing a business and the number of procedures required. Ireland ranks well on both measures, particularly on financial costs.

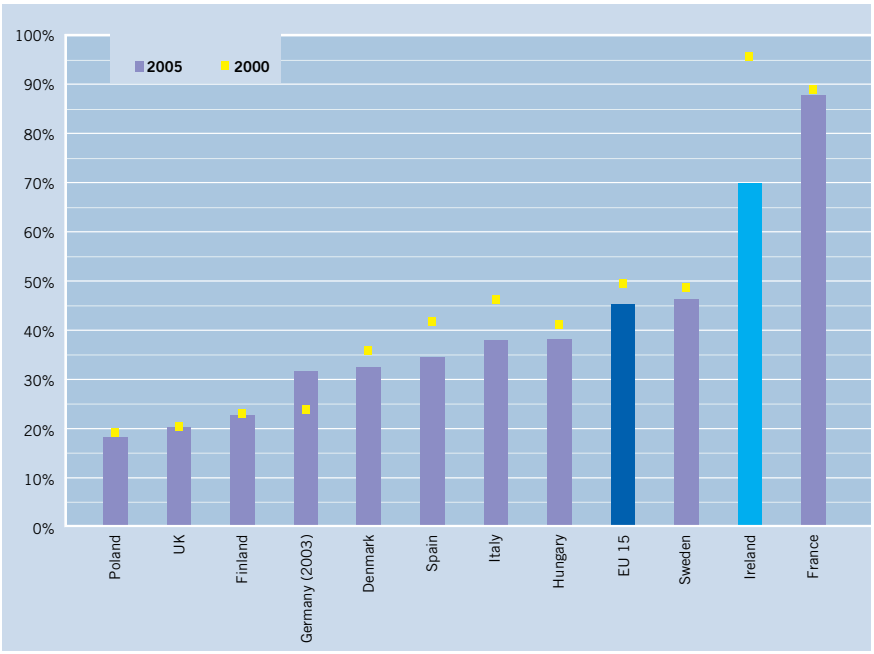
OECD-28 Ranking:

Cost: 3 (↑11)

Procedures: 7 (--)

Source: World Bank, Doing Business, 2006 [online]

Figure 4.13
Market Share of Largest Generator in the Electricity Market, 2005[20]



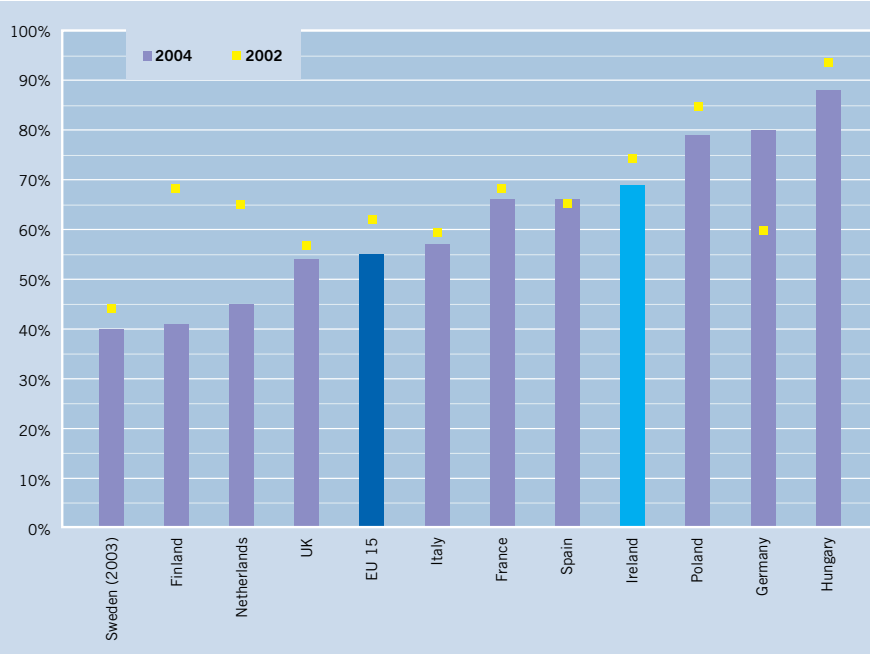
The Irish electricity market is undergoing reform, but despite progress it remains highly concentrated, with the incumbent having a larger share than its average EU counterpart. This may be partially explained by our limited market size and limited international connectivity.

EU-15 Ranking:

9(↑4)

Source: Eurostat, General and Regional Indicators, 2007 [online]

Figure 4.14
Market Share of Incumbent in International Telephone Calls, 2004[21]



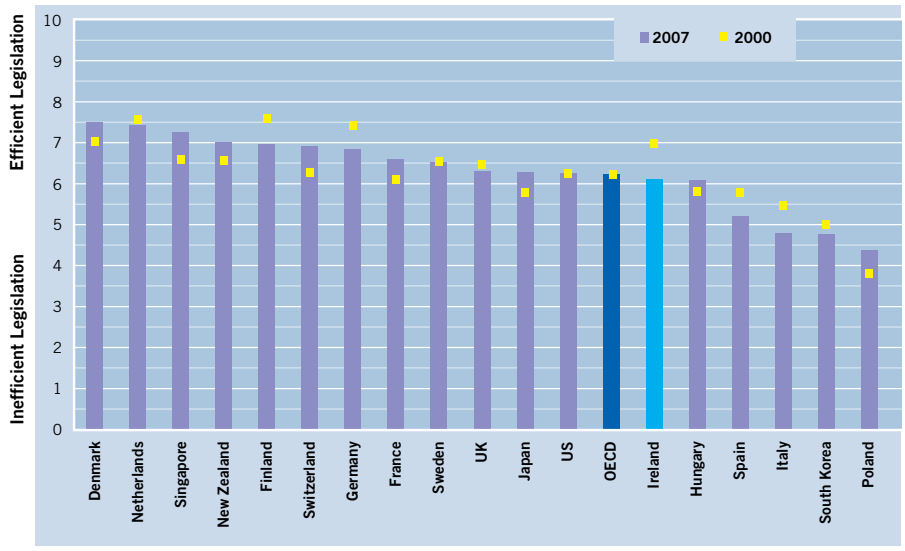
This chart shows the market share of the incumbent in the market for international phone calls. While, the Irish telecommunications market is open to competition, the largest player in the market still dominates, with almost 70 percent of the market.

EU-15 Ranking:

9(↑2)

Source: Eurostat, General and Regional Indicators, 2007 [online]

Figure 4.15
Efficiency of Competition Legislation, 2007 (Scale 0-10)



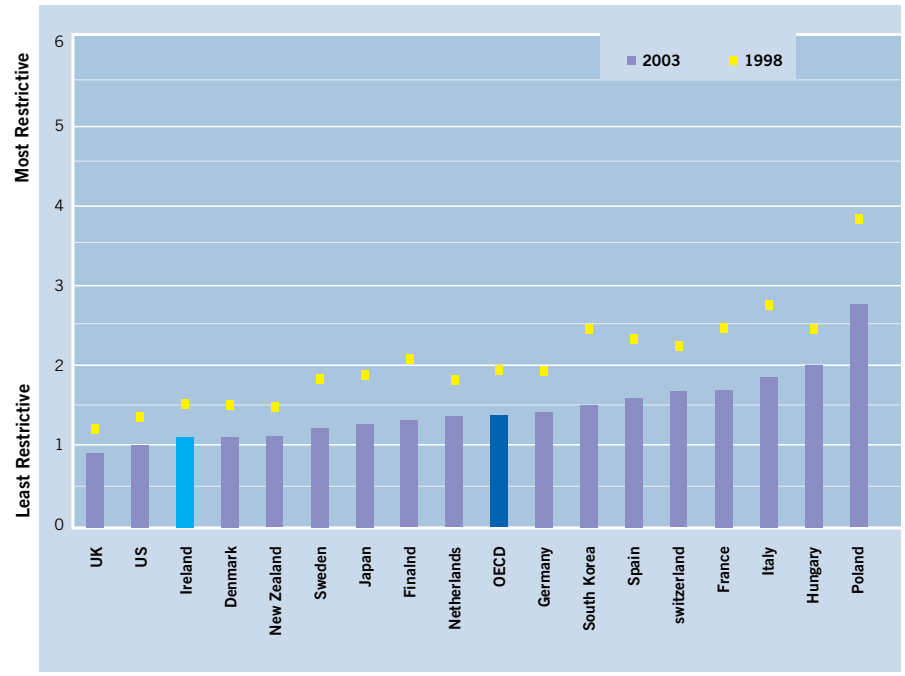
Competition can boost productivity and reduce prices for consumers and other businesses. According to executives, Ireland's competition legislation is perceived as slightly less efficient than the average OECD economy.

OECD-28 Ranking:

19 (↓10)

Source: IMD World Competitiveness Yearbook, 2007 [online]

Figure 4.16
Product Market Regulation, 2003 (Scale 0-6)[22]



This measure captures the degree to which policies promote or inhibit competition in product markets. Regulatory impediments to product market competition declined throughout the OECD between 1998 and 2003. Ireland, along with the UK and US, has one of the most liberalised environments.

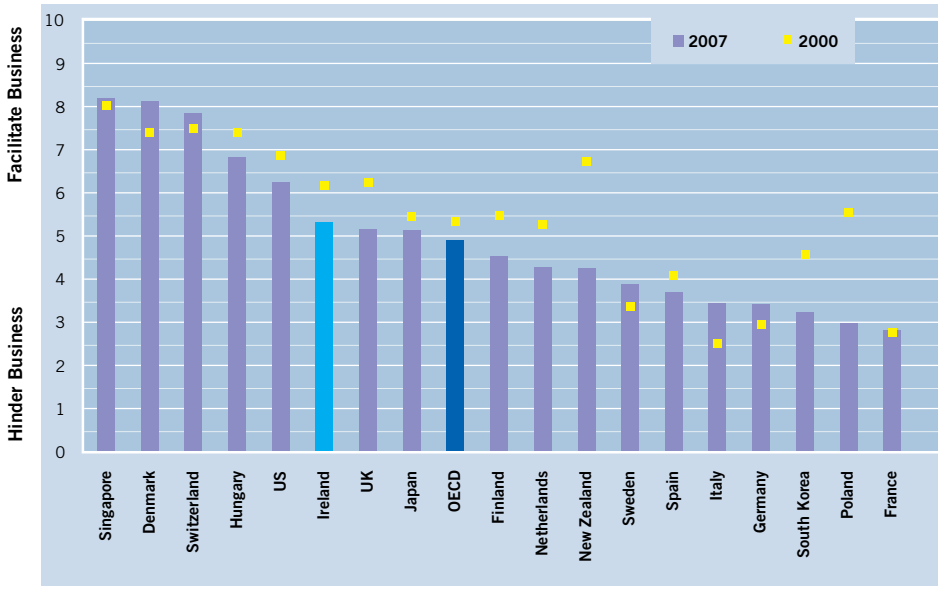
OECD-28 Ranking:

5 (↑2)

Source: OECD, Going for Growth, 2006

4.1.3 Labour Regulation

Figure 4.17
Labour Market Regulations, 2007 (Scale 0-10)



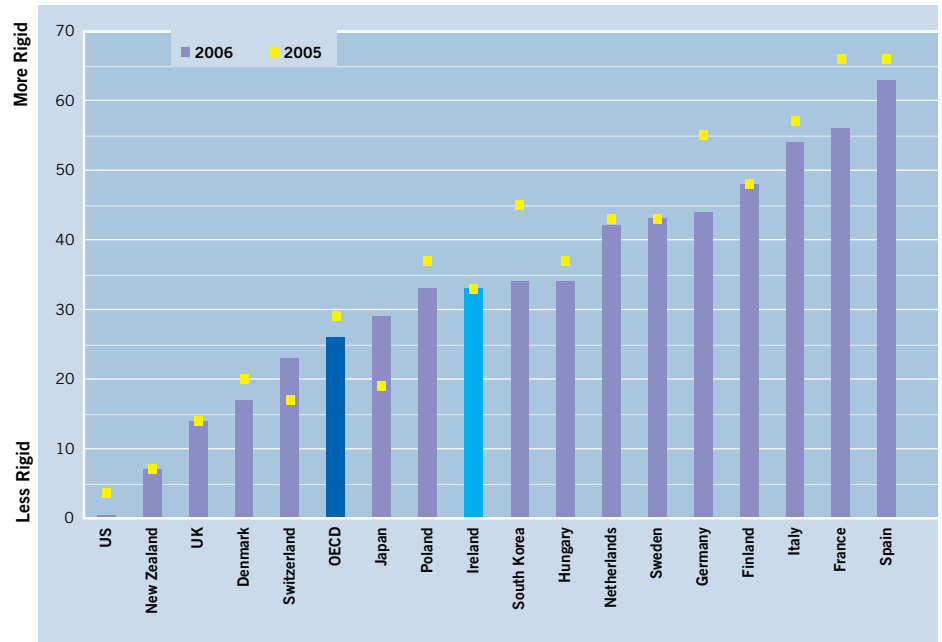
According to executive opinion, labour market regulations in Ireland are not believed to have a significant impact upon business activities but the trend for most countries, including Ireland, is one that is increasingly impacting on business activities.

OECD-28 Ranking:

9 (--)

Source: IMD World Competitiveness Yearbook, 2007 [online]

Figure 4.18
Rigidity of Employment Index, 2006 (Scale 0-100)[23]



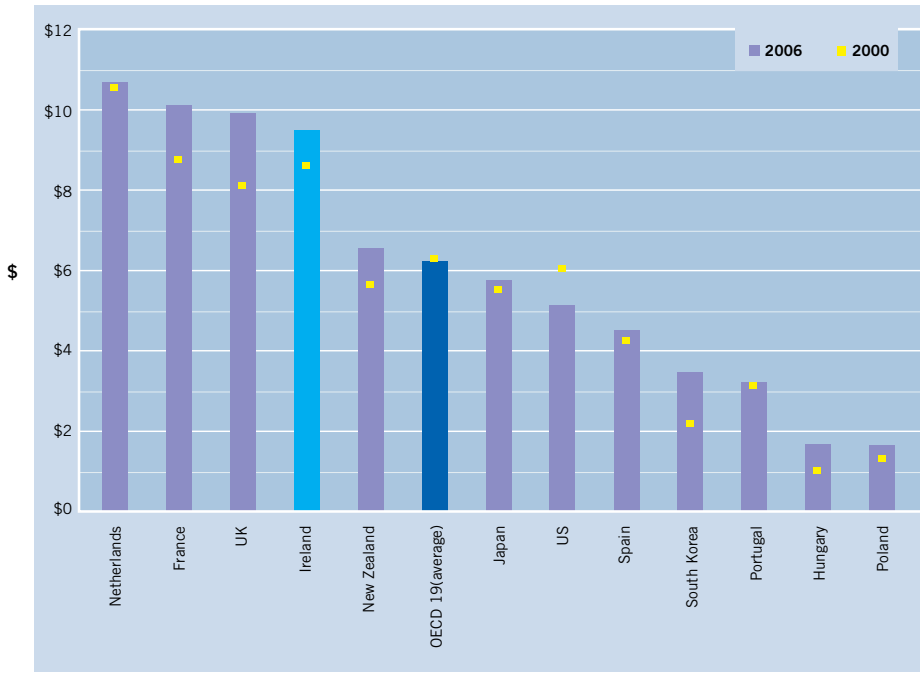
This index measures the flexibility of employment regulation. Higher values indicate more rigid regulation. Ireland's employment framework is more rigid than the OECD average and significantly more rigid than economies such as the UK, Denmark and Switzerland.

OECD-28 Ranking:

12 (↓1)

Source: World Bank, Doing Business, 2006 [online]

Figure 4.19
Hourly Minimum Wages US$, 2006[24]



Ireland's minimum wage is relatively high compared to nineteen other OECD countries. However, by 2004 only 3.1 percent of full time employees were on the minimum wage in Ireland.

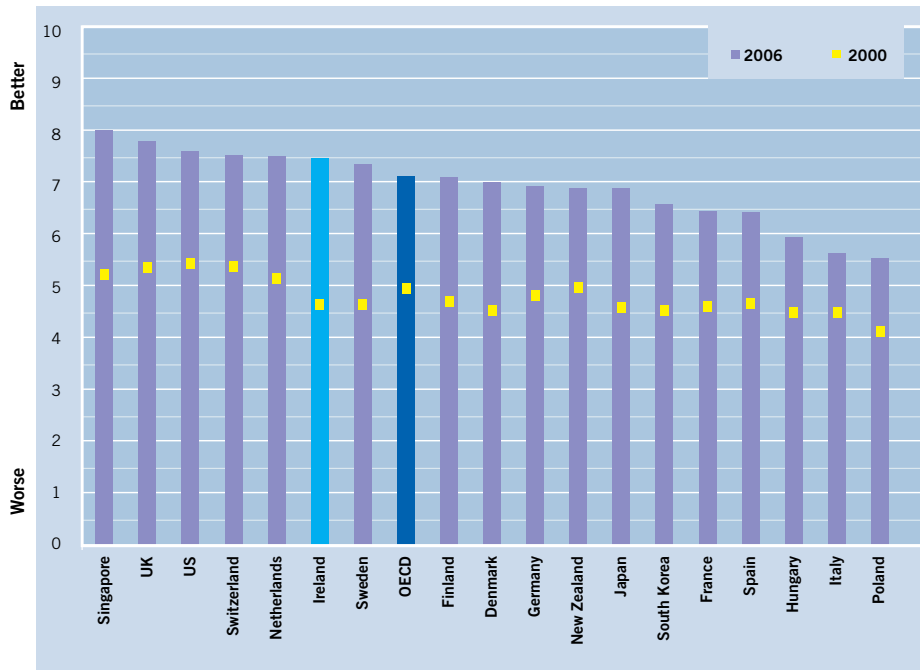
Ranking of 19:

4(↓1)

Source: OECD, National Accounts Database, 2007

4.1.4 Finance

Figure 4.20
Capital Access Index, 2006 (Scale 0-10)



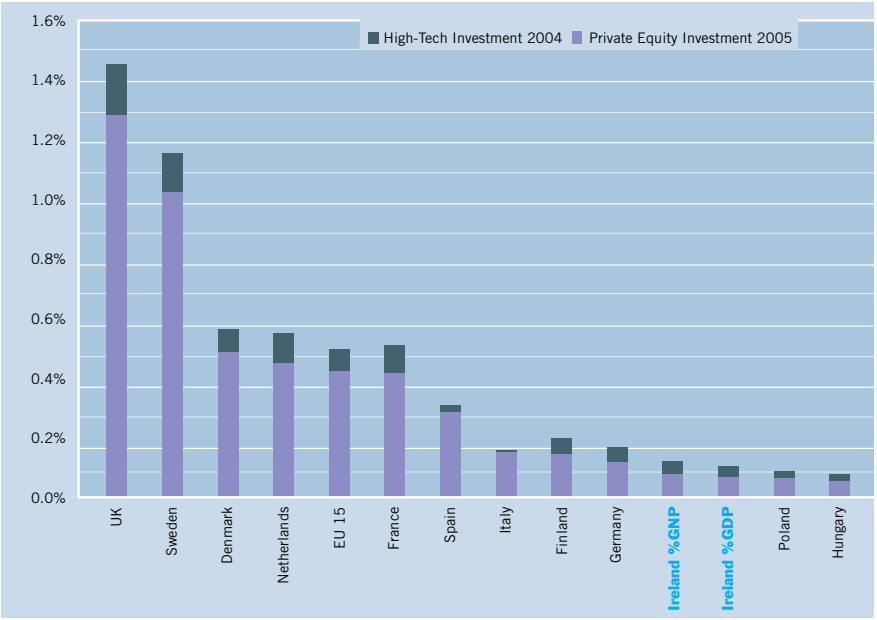
This index measures the breadth, depth and vitality of capital markets. Efficient financial markets by making capital accessible to entrepreneurs are key to long-term growth. Ireland ranks in 7th place in the OECD, an improvement of 4 places since 2000.

OECD-28 Ranking:

7(↑4)

Source: Milken Institute's Capital Access Index, 2006

Figure 4.21
Private Equity Investment, including High-Tech Investment (% of GDP), 2004/05[25]



Private equity investment is formal investment outside public capital markets and represents total start up, expansion, turnaround and buyout investments. Private equity investment is not well developed in Ireland.

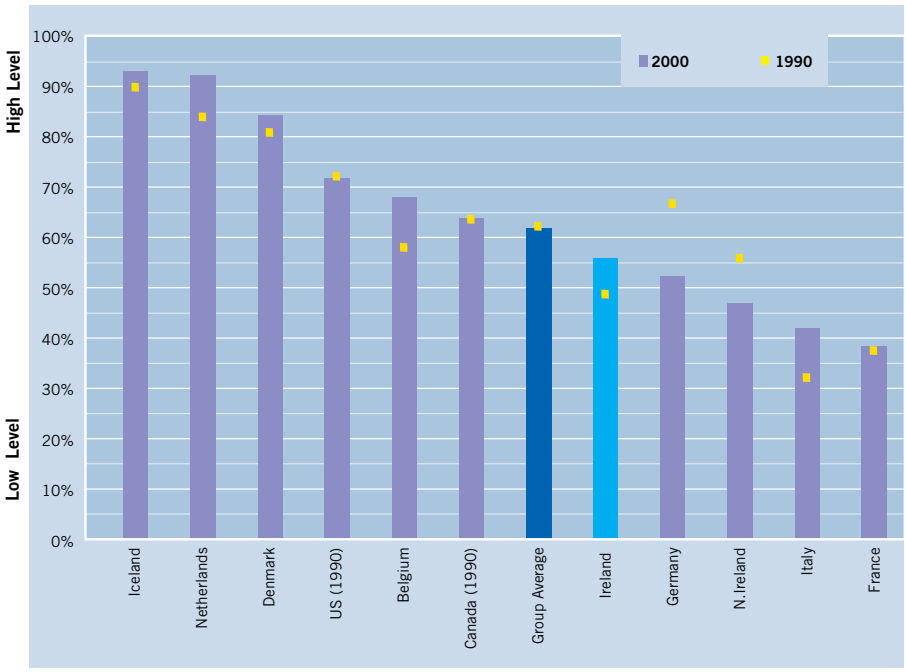
EU-15 Ranking:

GDP: 12(↓2)

GNP: 11(↓3)

Source: Forfás Calculations; European Venture Capital Association (EVCA)/Thompson; PricewaterhouseCoopers, European Technology Investment Report, 2005

Figure 4.22
Percentage of the Population that is a Member of at Least One Civil Society Organisation 1990-2000[26]



Social capital refers to trust between actors in society. One summary measure of this is the proportion of the population that is a member of at least one civil society organisation (e.g. youth work, human rights). The proportion increased slightly in Ireland between 1990 and 2000, but lies well below countries such as Iceland and the Netherlands.

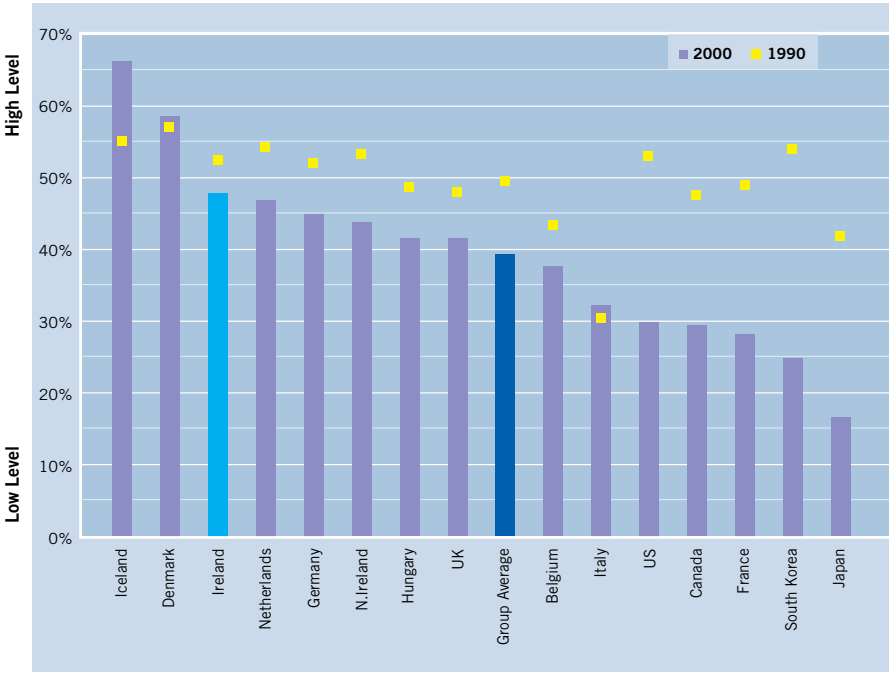
Group Ranking of 11

7(↑3)

Source: World Values Survey,1980- 2000

4.1.5 Social Capital

Figure 4.23
Public Trust in Political Institutions 1990-2000[27]



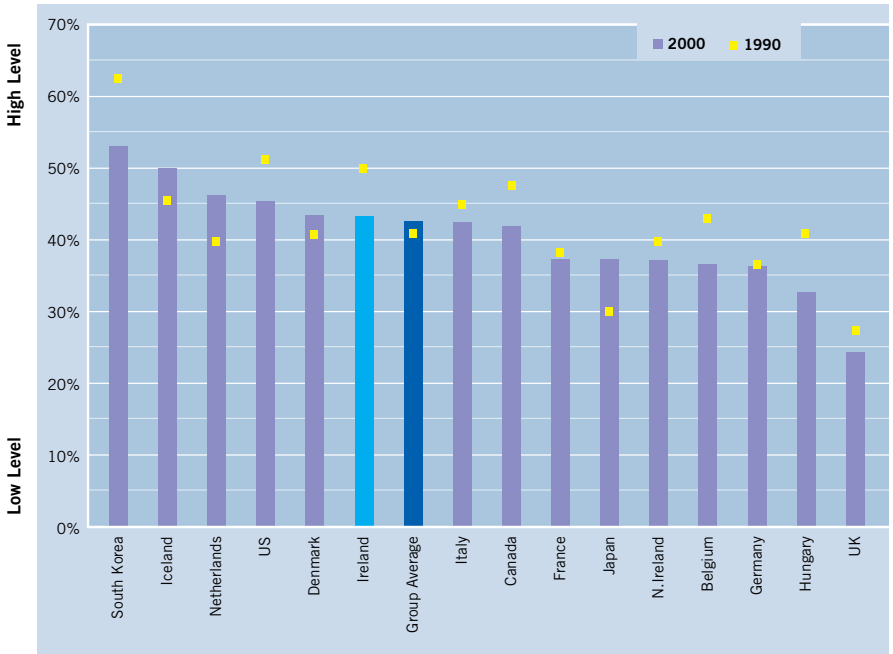
Trust in political institutions (parliament, civil service and the judiciary) fell in most countries between 1990 and 2000. This was also true of Ireland; however the fall was not as marked as most.

Group Ranking of 15

3(↑4)

Source: World Values Survey, 1980-2000

Figure 4.24
Public Trust in Social institutions 1990-2000[28]



Social institutions, including the media, religious organisations and trade unions, are important parts of civil society. Irish people's trust in these institutions fell by almost 10% to 44% although it still remains above the group average.

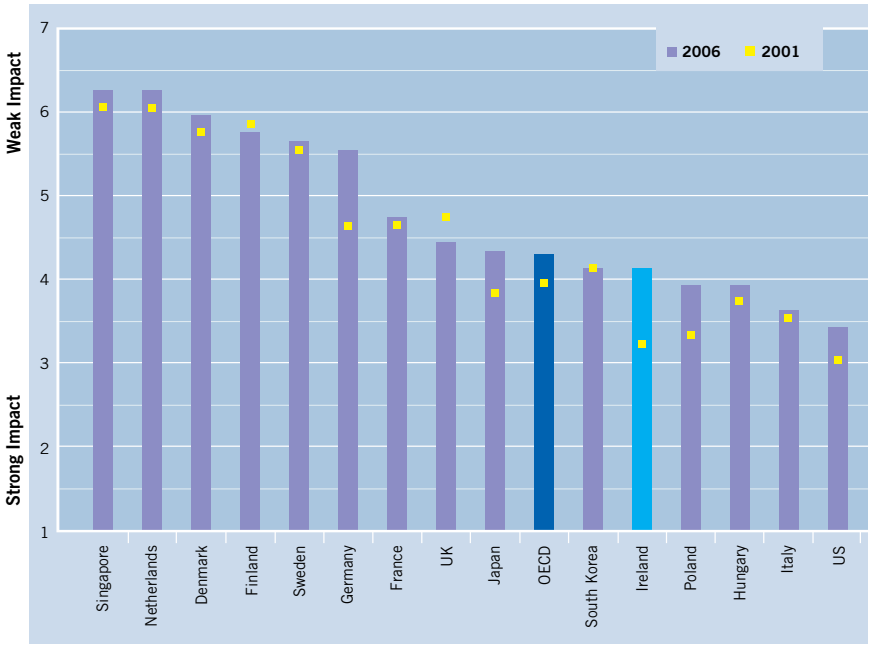
Group Ranking of 15

6(↓3)

Source: World Values Survey, 1980-2000

Figure 4.25

Impact of Legal Contributions to Political Parties on Public Policy 2006, Scale (1-7)[29]



When surveyed, more executives based in Ireland believed that legal contributions to political parties have a direct influence on specific public policy outcomes than in all but two other countries in the EU-15.

OECD-28 Ranking:

20(↑6)

Source: WEF Global Competitiveness Report, 2006/07

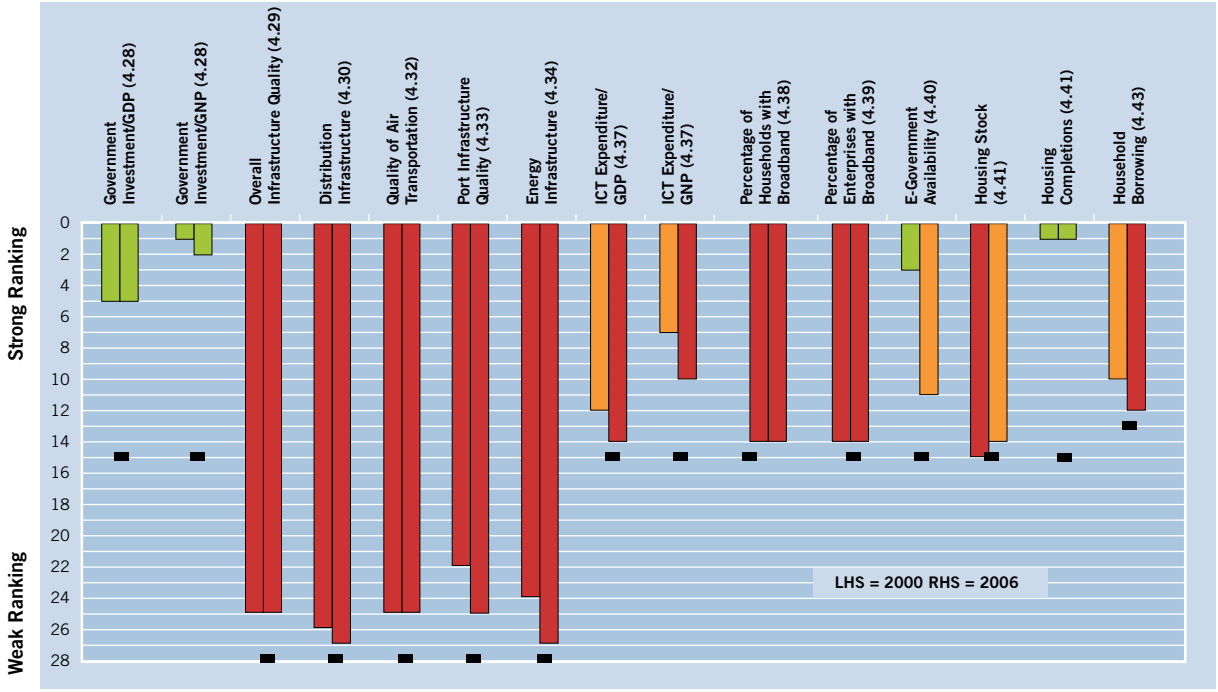
4.2 Physical Infrastructure

The level of infrastructure in a country affects competitiveness in a number of ways. Well developed infrastructure can reduce traffic congestion, increase productivity and reduce costs. This not only affects existing firms, but also affects a country's attractiveness as an investment location and general quality of life. In this section, indicators that illustrate Ireland's relative performance are grouped under four headings;

- Investment in Physical Infrastructure,
- Transport and Energy Infrastructure,
- Information and Communications Technology Infrastructure, and
- Housing.

Chart 7 provides an overview of Ireland's recent performance in terms of key infrastructure indicators.

Summary Chart 7:
Rankings in Indicators of Physical Infrastructure, 2000-2006 (or nearest)



Investment in Physical Infrastructure

Public capital stock as a proportion of output in Ireland has fallen steadily since the late 1980s as the economy has grown (Fig. 4.26). Overall, perceptions of infrastructure quality remain very low (Fig. 4.29), and despite real improvements to date, Ireland's rankings have fallen across a number of categories since 2001. Through successive National Development Plans, Ireland's investment rates - the rate at which new public capital stock is formed - are among the highest in the EU-15 (Fig. 4.28).

Transport and Energy Infrastructure

Ireland's distribution networks rank poorly internationally, with peak speeds in Dublin well below most other cities surveyed (Fig. 4.30, 4.31). Air and seaport infrastructure also scores poorly, highlighting the need for ongoing investment to improve Ireland's performance (Fig. 4.32, 4.33). In energy, the perceptions of enterprise about the efficiency of energy infrastructure have weakened across many countries since 2002. Ireland's energy infrastructure again scores poorly (Fig: 4.34). Ireland is particularly dependent on imported and non-renewable forms of energy (Fig. 4.35).

Information and Communication Technology Infrastructure

Ireland's investments in both information and communications technologies are below the EU-15 average, and lags leading countries by some distance (Fig. 4.37). Related to this, the penetration rate of broadband in both households and firms in Ireland is well below the EU-15 average (Fig. 4.38, 4.39). At government level, the proportion of public services available online is below that of the EU-15 average (Fig. 4.40).

Housing

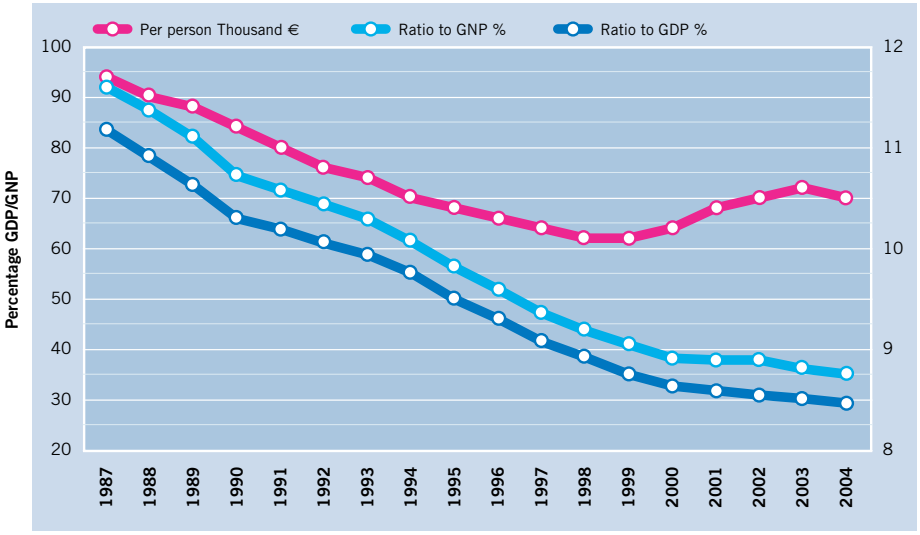
There are two aspects to housing that are relevant to competitiveness: infrastructure/activity and costs/debt. In relation to relative levels of housing, Ireland has fewer houses per capita than the EU-15 average (Fig. 4.41). This gap is narrowing quickly as household completions per capita are by far the highest in the EU. Housing activity is slowing, however, with the number of planning permissions peaking in 2004 (Fig. 4.42).

In relation to costs and debt, house prices have increased dramatically since the mid-1990s (Fig. 4.44). As a result household borrowing, almost four-fifths of which is for house purchase, more than doubled between 2003 and 2007. The average Irish person is almost €35,000 in debt by 2007 (Fig. 4.43). The value of Irish housing stock (over €500 billion) significantly outweighs mortgage debt (€118.5 billion). However, a disproportionately large part of the debt is borne by recent entrants to the housing market.

Physical Infrastructure

4.2.1 Investment in Physical Infrastructure

Figure 4.26
Ireland's Public Capital Stock as a % of GDP and per Person (2003 prices) 2004



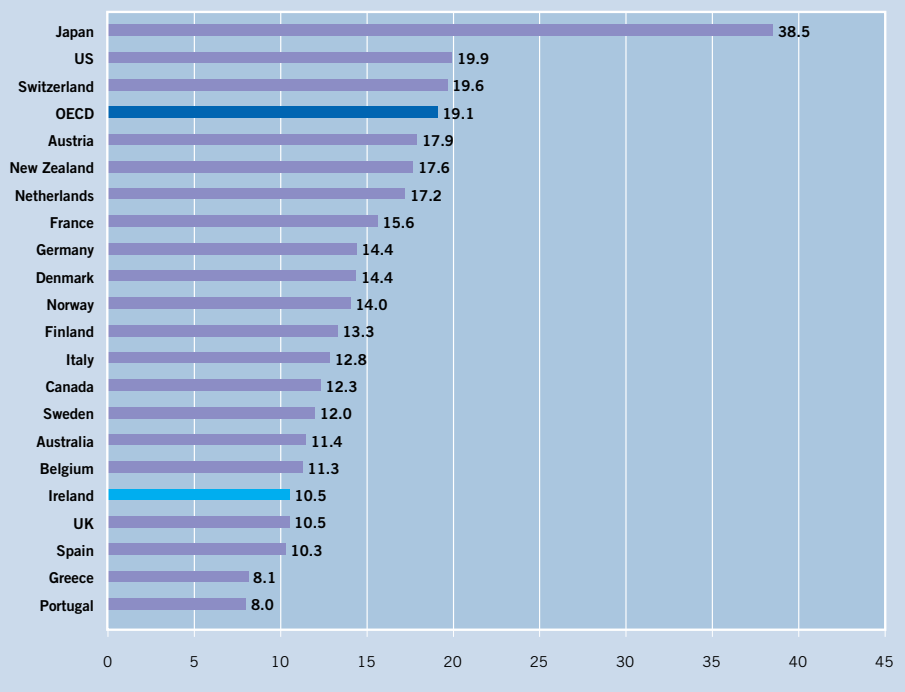
This indicator measures the level of public capital stock (e.g. roads, railways, airports, schools, etc.) relative to national income and per person. Since 2000, the level of public capital stock per person has grown due to high rates of investment in infrastructure.

Ranking:

N/A

Source: OECD (2005), Economic Outlook 78 database and Kemps, C. (2004), "New Estimates of Government Net Capital Stocks for 22 OECD Countries: 1960-2001", IMF Working Paper

Figure 4.27
Public Capital Stock per Person in Thousand €, 2004



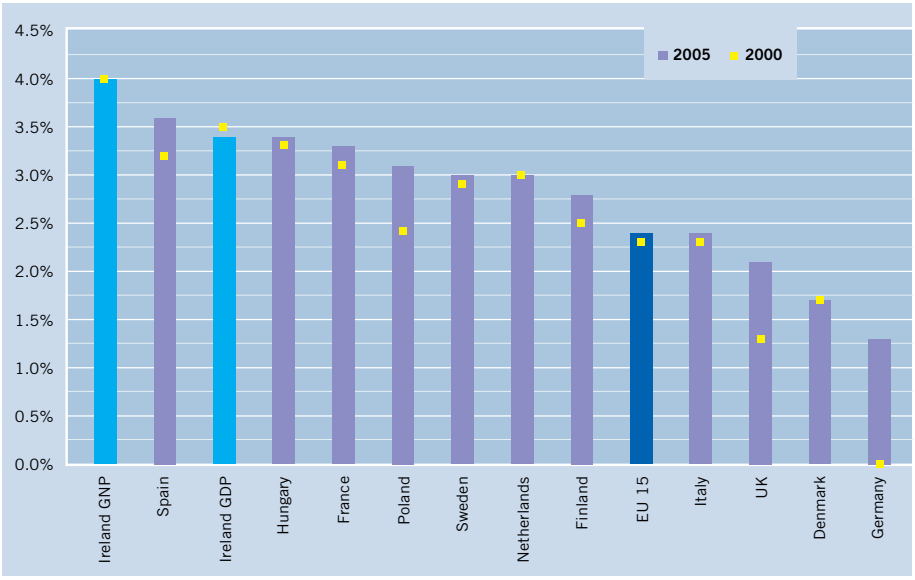
Levels of public capital stock per person in Ireland compare poorly with other countries, with the estimated amount just over half the OECD average. Ireland's poor ranking is a result of underinvestment in the past and strong population growth in recent years.

OECD-28 Ranking:

17

Source: OECD (2005), Economic Outlook 78 database and Kemps, C. (2004), "New Estimates of Government Net Capital Stocks for 22 OECD Countries: 1960-2001", IMF Working Paper

Figure 4.28
General Government Gross Fixed Capital Formation (% GDP), 2005



The 2000-2006 National Development Plan resulted in higher levels of investment in gross fixed capital formation (% of GNP) in Ireland than in other countries. The new National Development Plan (2007-2013) commits to sustained investment.

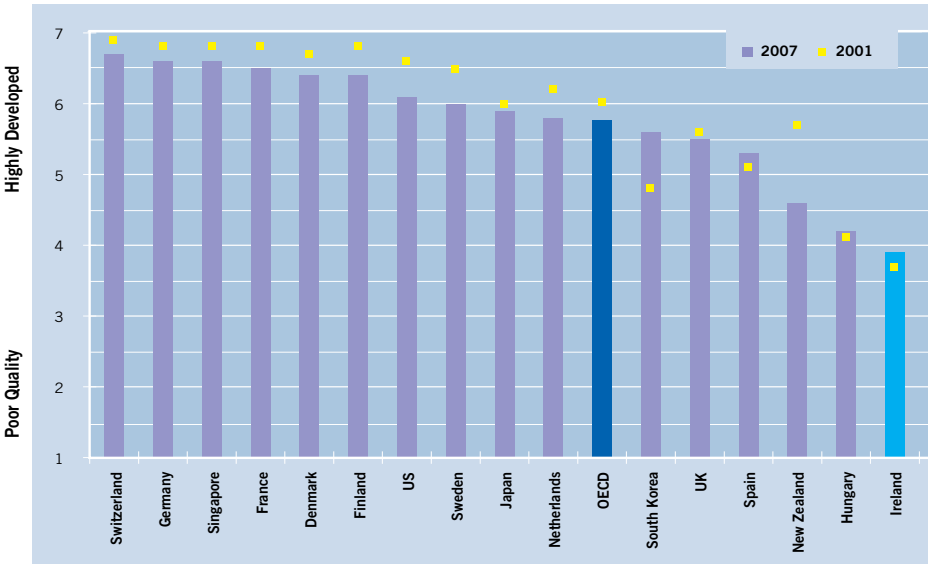
EU-15 Ranking:

GDP: 5 (--)

GNP: 2 (↓1)

Source: Eurostat, Structural Indicators

Figure 4.29
Overall Infrastructure Quality, 2007 (Scale 1-7)[30]



Measuring the quality of infrastructure across countries is difficult.This chart shows executive perceptions regarding overall quality of infrastructure in an economy. Ireland's score is improving slowly relative to the OECD average.

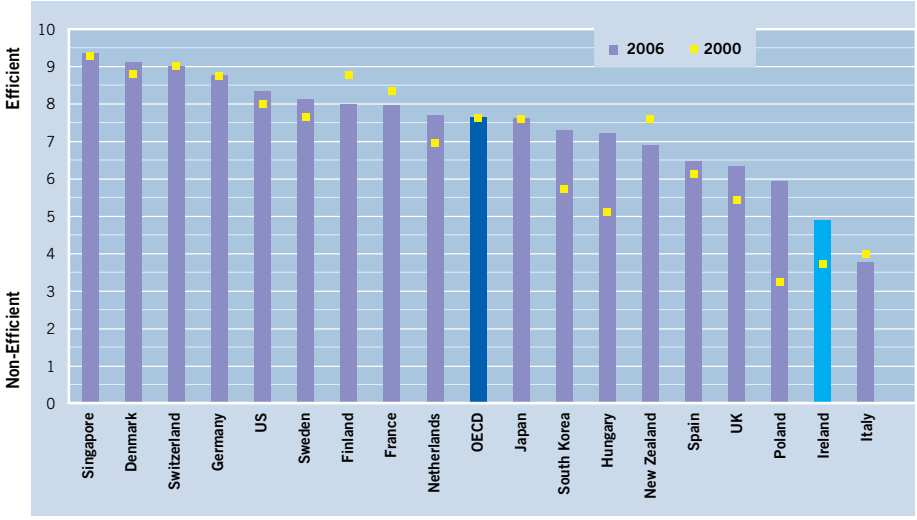
OECD-28 Ranking:

25 (--)

Source: WEF Global Competitiveness Report 2007/08

4.2.2 Transport and Energy Infrastructure

Figure 4.30
Efficiency of Distribution Infrastructure, 2007 (Scale 0-10)



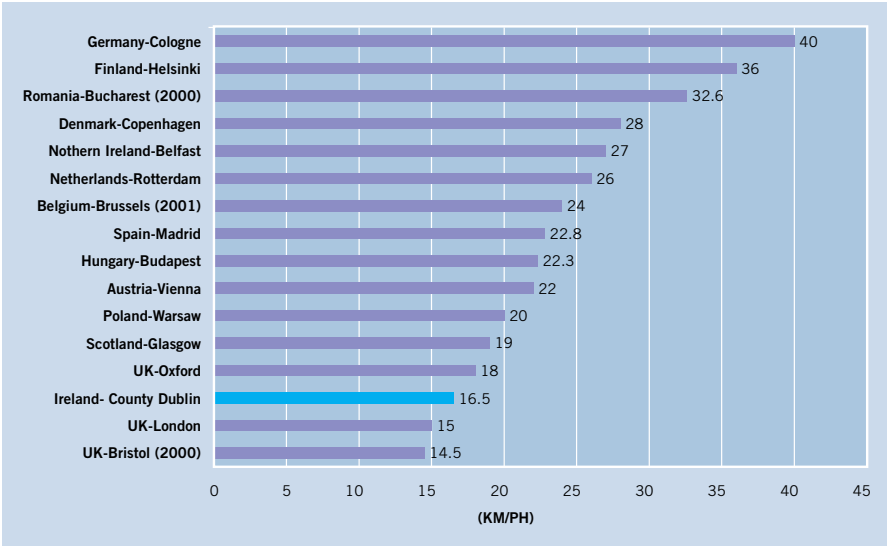
This chart shows executives' perceptions of Ireland's distribution infrastructure, including road, rail, air and sea transport. While Ireland continues to rank poorly – among the weakest in the OECD - there has been an improvement since 2000.

OECD-28 Ranking:

27 (↓1)

Source: IMD World Competitiveness Yearbook, 2007 [online]

Figure 4.31
Average Peak Hour Speeds in Major Cities (KM/ Per Hour), 2002/3



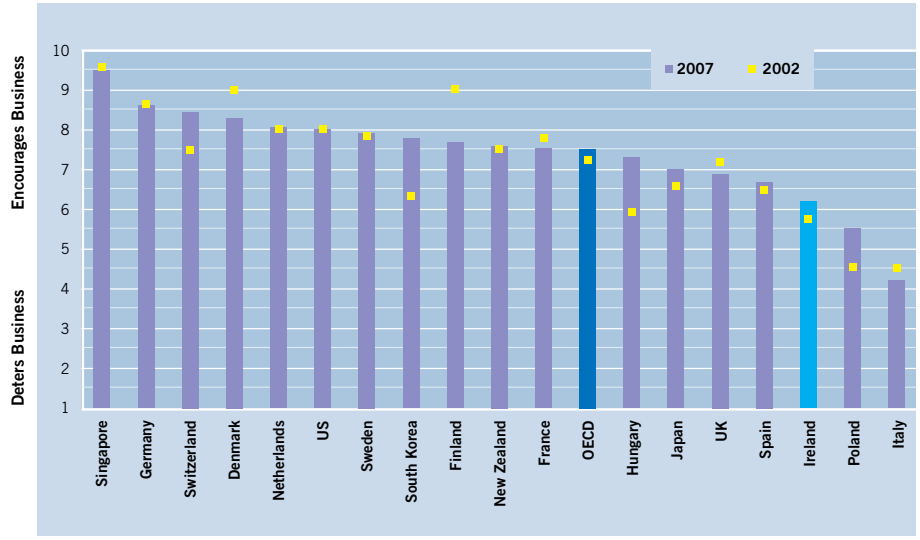
A possible measure of transport congestion in our main cities and regions is the average peak-hour speeds of cars and motorcycles in these cities. Dublin is ranked 28th out of 30 cities and regions on this measure. The Irish car speed data is taken from the Dublin Transport Office. It should be noted that Dublin refers to car speeds only.

Ranking of 16:

14

Source: Urban Transport Benchmarking Initiative [online] / Dublin Transportation Office

Figure 4.32
Quality of Air Transportation, 2007 (Scale 0-10)[31]



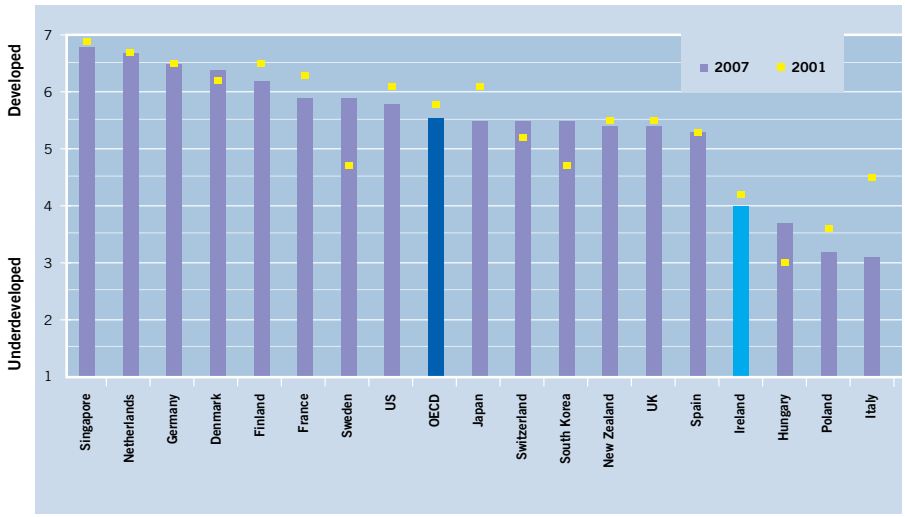
This chart measures executives' perceptions of the quality of Ireland's air transportation infrastructure. Ireland scores poorly, although the score is improving. A second terminal at Dublin airport, due to open in 2009, should improve Ireland's score.

OECD-28 Ranking:

25 (--)

Source: IMD World Competitiveness Yearbook, 2007 [online]

Figure 4.33
Port Infrastructure Quality, 2007 (Scale 1-7)[32]



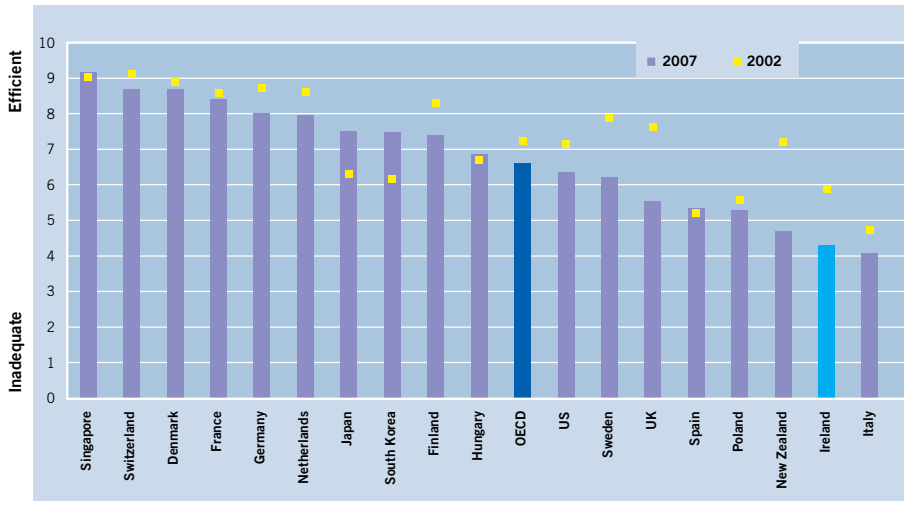
Ireland's seaport infrastructure also lags our economic peer group. Based on a survey of enterprise perceptions, Ireland ranks among the lowest in the OECD. Ireland's score has not changed significantly since 2001.

OECD-28 Ranking:

25(↓3)

Source: WEF Global Competitiveness Report 2007/08

Figure 4.34
Efficiency of Energy Infrastructure, 2007 (Scale 0-10)[33]



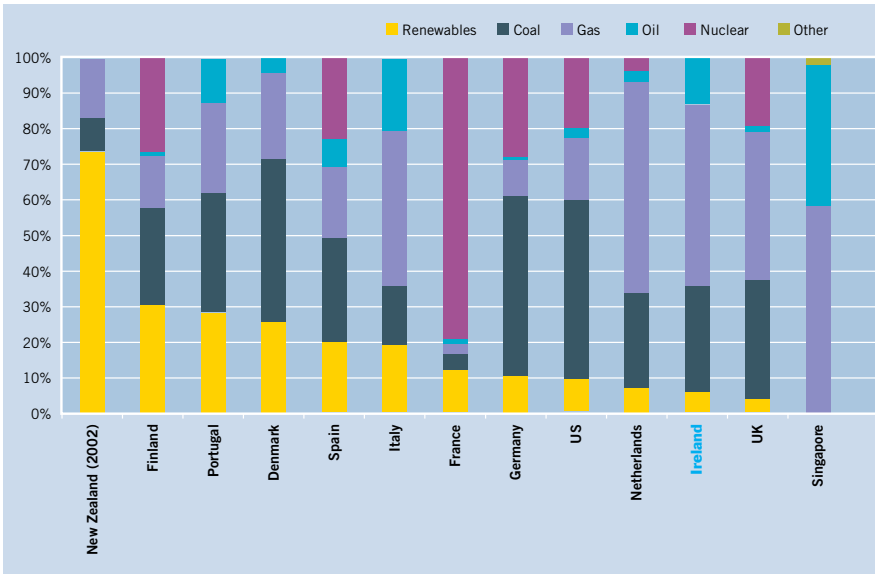
The perceptions of enterprise about the efficiency of energy infrastructure have weakened across many countries since 2002. This includes Ireland, which ranks among the weakest in the OECD.

OECD-28 Ranking:

27 (↓3)

Source: IMD World Competitiveness Yearbook, 2007 [online]

Figure 4.35
Fuel Mix for Electricity Generation, 2004[34]



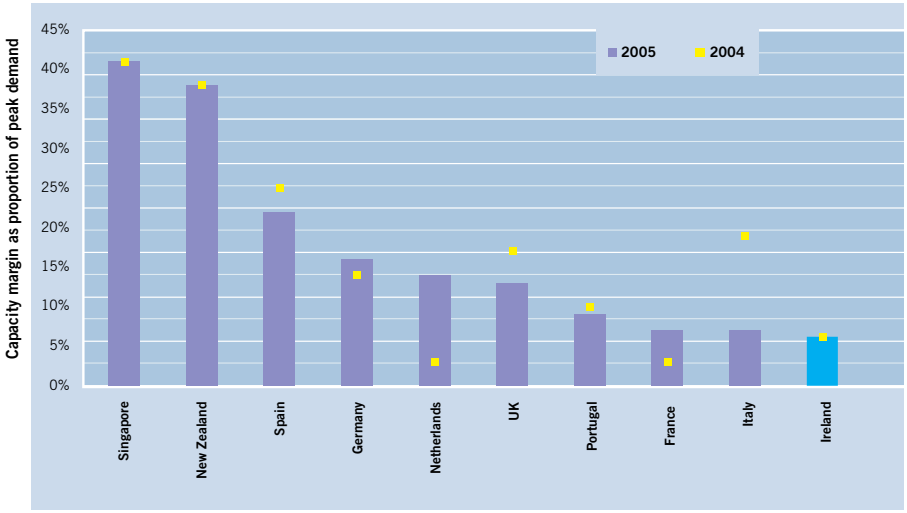
Ireland's energy comes predominantly from imported non-renewable resources, in particular coal and gas. Of the countries surveyed, only the UK and Singapore generated less energy from renewable resources.

Ranking of 13:
(ranked by renewables)

11

Source: Forfás Calculations; International Energy Agency

Figure 4.36
Level of Spare Electricity Generation Capacity over Peak Demand



This indicator shows the difference between available electricity capacity and peak demand. In Ireland, peak demand is highest in winter. Ireland has a low level of spare electricity capacity over peak demand among the benchmarked countries.

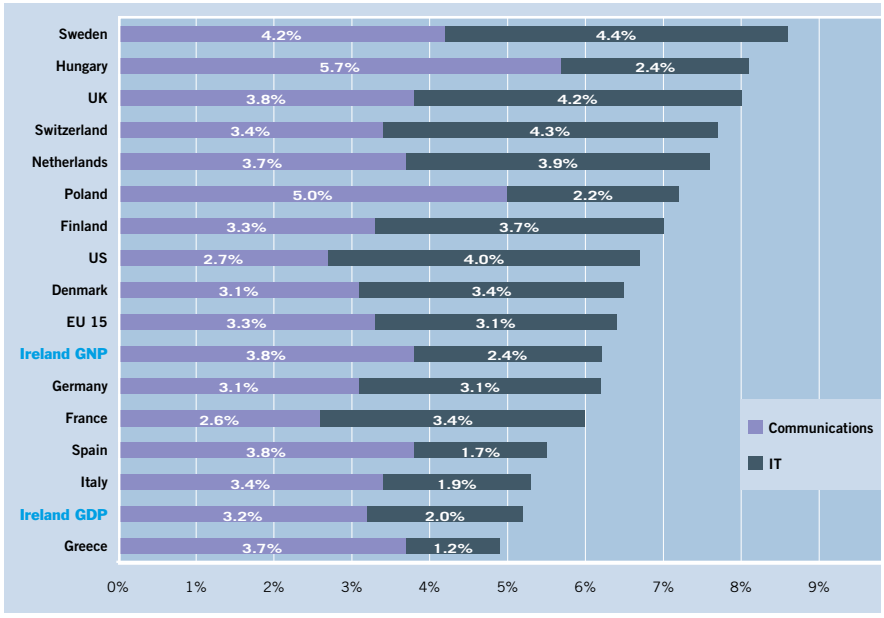
Ranking of 10:

10

Source: Forfás Electricity Benchmarking Report, 2006

4.2.3 Information and Communication Technology (ICT)

Figure 4.37
ICT Expenditure as a % of GDP, 2005[35]



Information and communication technology (ICT) are essential to modern enterprise. Ireland's investment in both forms of technology, particularly IT, ranks among the lowest in the EU-15.

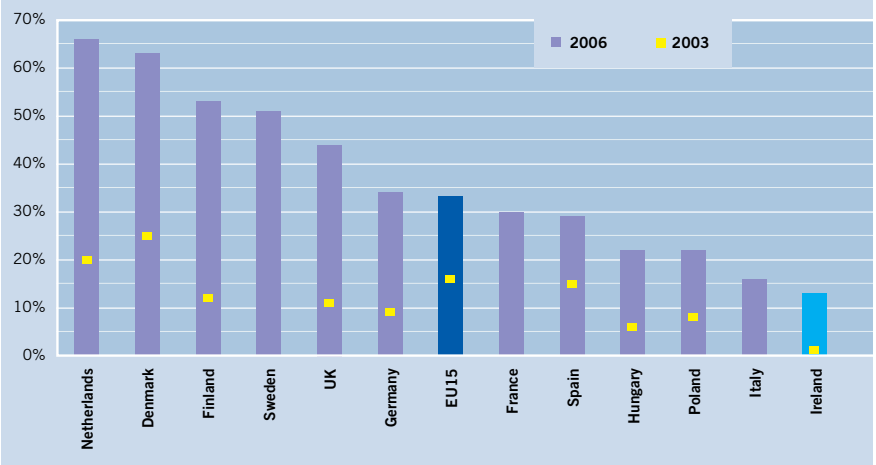
EU-15 Ranking:

GDP: 14 (↓2)

GNP: 10 (↓3)

Source: Eurostat, Structural Indicators

Figure 4.38
Percentage of Households with Broadband 2006[35]



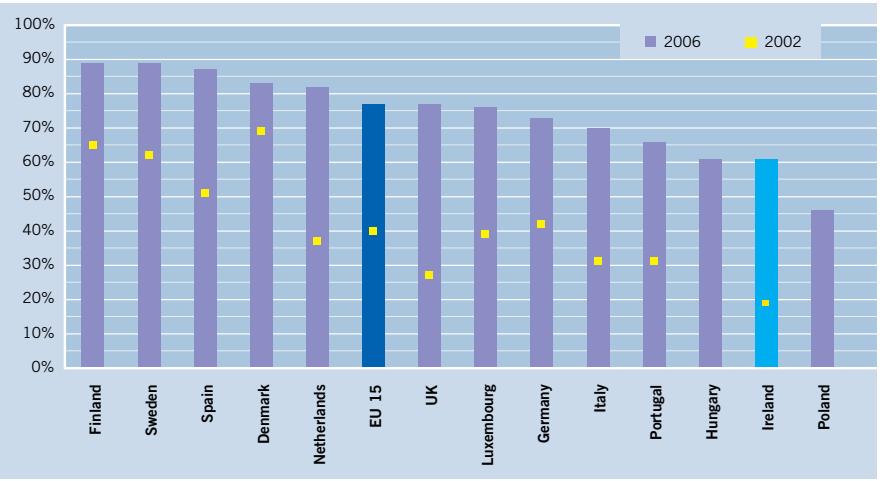
Broadband affects not just how enterprises work internally or with each other, but also how they interact with consumers.This chart shows the percentage of total households that use a broadband connection. Despite strong growth since 2003, Ireland continues to perform poorly.

EU-15 Ranking:

14(--)

Source: Eurostat, Information Society Indicators

Figure 4.39
Percentage of Enterprises with Broadband, 2006[37]



Broadband penetration in Irish firms is among the lowest in the EU. Despite broadband growth in Ireland, Ireland's ranking has not improved since 2003.

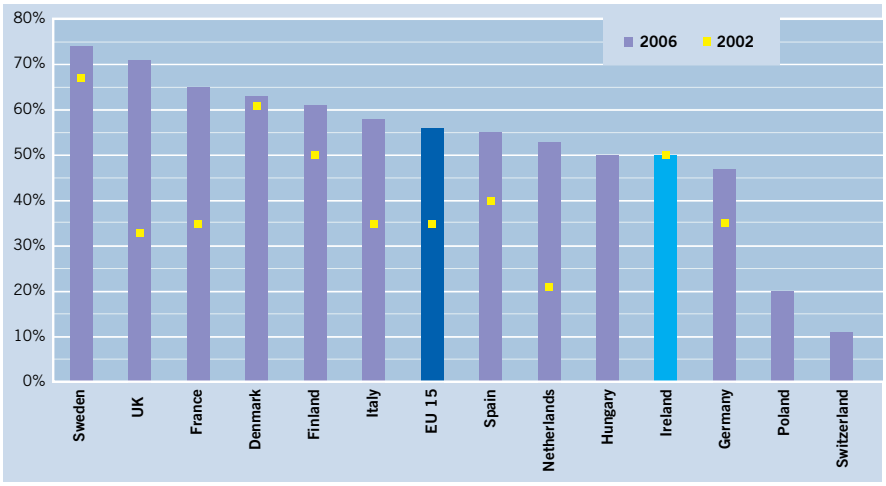
EU-15 Ranking:

14(--)

Source: Eurostat, Information Society Indicators

Figure 4.40

E-Government Availability, 2006[38]



This indicator shows online availability of 20 basic public services i.e., for which it is possible to carry out full electronic case handling. There has been a significant decline in Ireland's relative performance as other countries have progressed faster.

EU-15 Ranking:

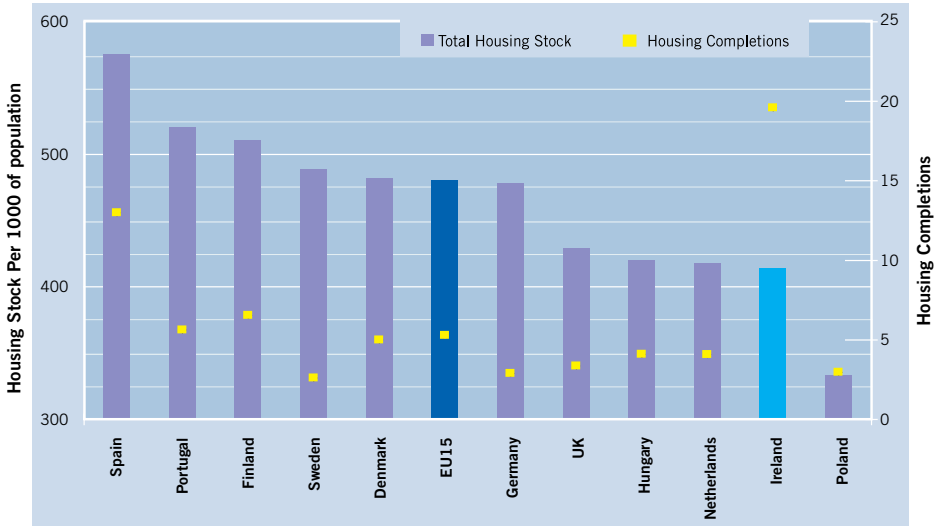
11 (↓8)

Source: Eurostat, Information Society Indicators

4.2.4 Housing

Figure 4.41

Total Housing Stock and Completions (Dwellings per 000 of Population), 2005[39]



Compared to the EU-15, Ireland is under-housed, relative to its population size. Ireland is adding to its housing stock at a rate far above any other European country. In 2006 there were approximately 90,000 house completions in Ireland.

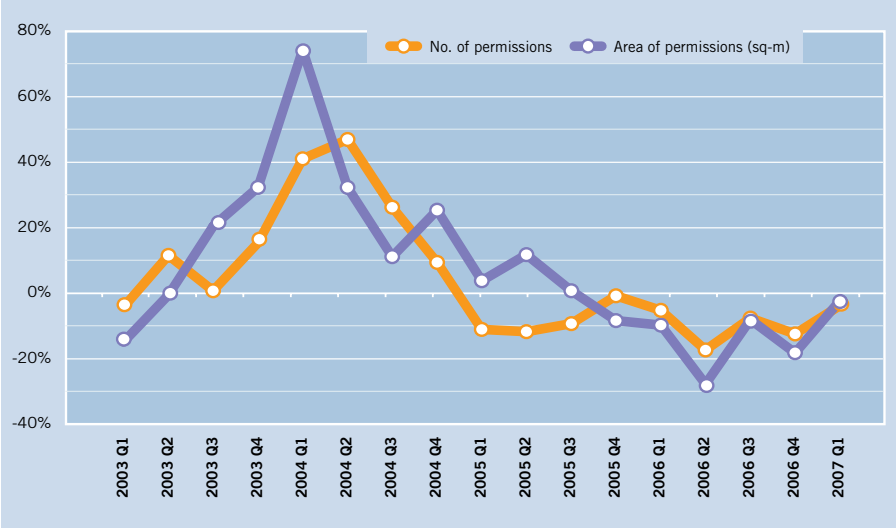
EU-15 Ranking:

Stock 14 (↑1)

Completions 1 (--)

Source: European Mortgage Federation, Hypostat, 2005

Figure 4.42
Year-on-year Change in Planning Permissions Granted, 2003-Q1 to 2006-Q4



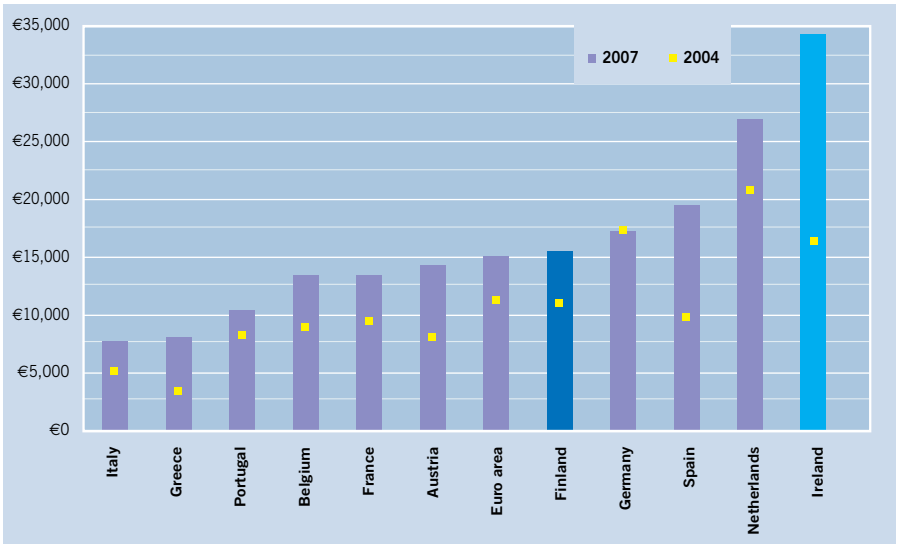
While the number of housing completions remains at a very high level relative to the population, forward-looking indicators based on the number of planning permissions have pointed towards a slowdown in construction activity since 2004.

Ranking:

N/A

Source: Forfás Calculations; Central Statistics Office, Housing and Households Statistics

Figure 4.43
Household Borrowing per Capita, 2007



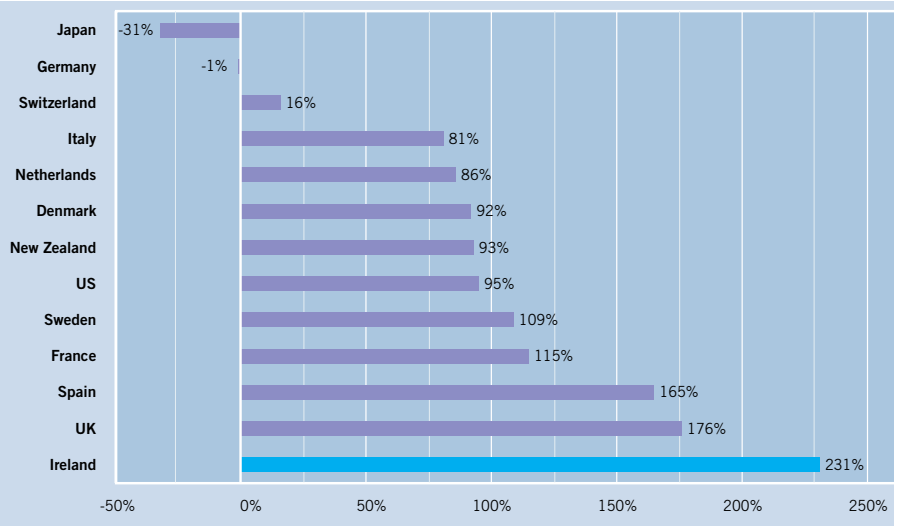
Ireland's debt per capita has increased very rapidly in recent years and Ireland is now one of the most indebted Eurozone members. Average household debt per person is almost €35,000 in 2007. 80% of this is mortgage debt, followed by consumer credit (13%). Assets values have increased also - the value of the Irish housing stock is over four times greater than mortgage debt.

Eurozone-13 ranking:

12 (↓2)

Source: European Central Bank, Aggregated Balance Sheet of Euro Area Monetary Financial Institutions

Figure 4.44
National House Price Index Change (%), 1997-2006



Excessive house price growth places upward pressure on wage demands and business costs. It also exposes the economy to greater volatility. Between 1997 and 2006, Irish house prices increased by 231 percent. There is evidence that house prices are falling in 2007.

OECD-28 Ranking:

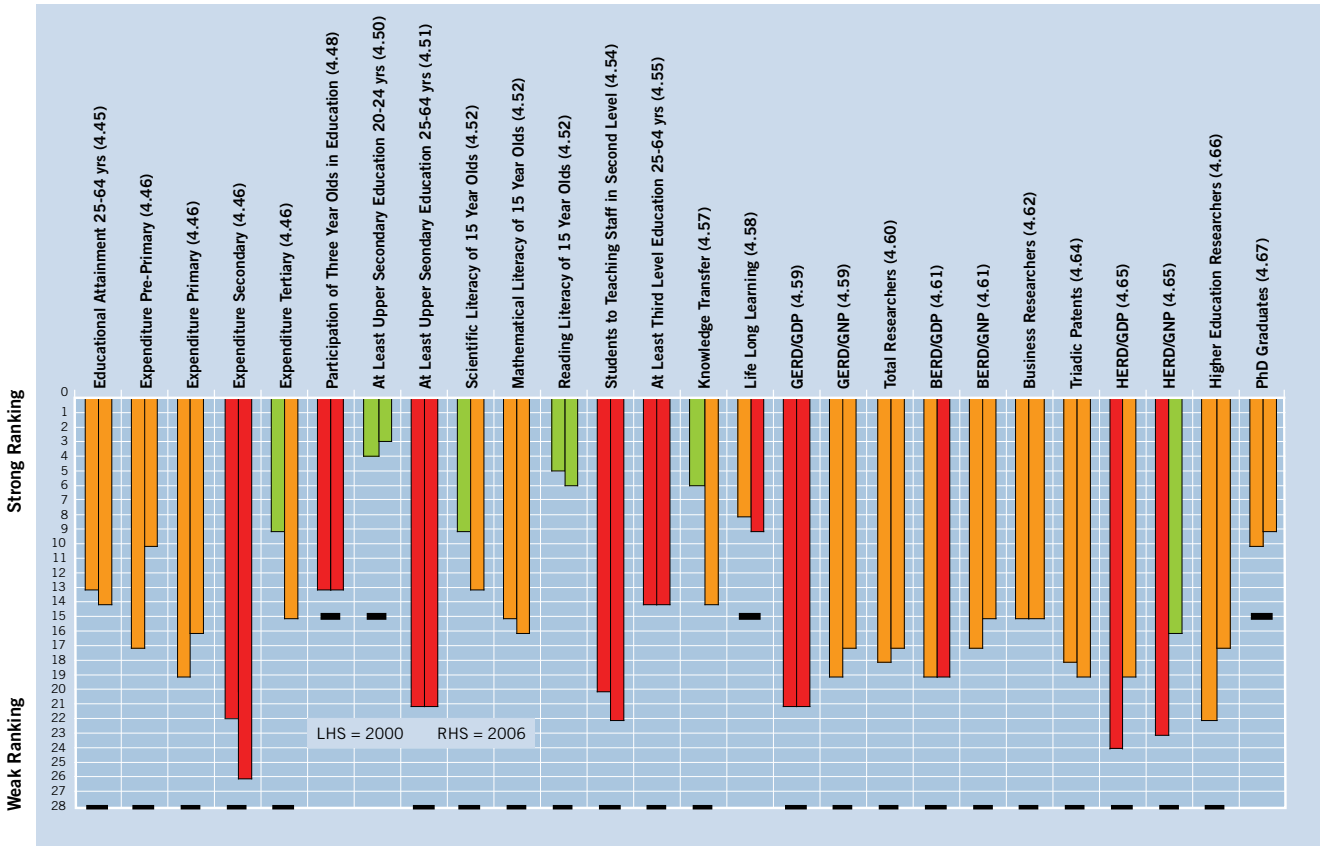
28

Source: Economist Intelligence Unit (EIU)

4.3 Knowledge Infrastructure

Education, training and research and development form key parts of a nation's infrastructure for generating knowledge. This section assesses Ireland's performance in this area. Chart 8 provides an overview of Ireland's recent performance in terms of key knowledge infrastructure indicators.

Summary Chart 8:
Rankings in Indicators of Knowledge Infrastructure, 2000-2006 (or nearest)



Education: Overview

Average educational attainment in Ireland has increased steadily in the last two decades, with younger cohorts of the population as well qualified as their OECD counterparts. Older cohorts of Ireland's labour force remain less qualified than the OECD average, though, and a relatively large share of the working age population has no more than lower secondary education (Fig. 4.45). Expenditure per student is below the OECD average at all levels (except pre-primary), while the pre-primary education system is predominantly privately funded, unlike in other countries (Fig. 4.46, 4.47).

Pre-Primary and Primary

Without a comprehensive state-funded pre-primary system, participation of three year-olds in education in Ireland is minimal and well below the EU-15 average (Fig. 4.48). At primary level, while the average number of hours tuition given to 9-11 year-olds is among the highest in the OECD, the amount of time spent on the key skills of mathematics, science and technology is among the lowest of the countries surveyed (Fig. 4.49).

Secondary

Ireland has made significant progress over time and relative to other countries in terms of increasing secondary school participation rates. The proportion of the 20-24 year-old population with upper secondary in Ireland is above the EU-15 average and now exceeds the Lisbon target of 85 percent (Fig. 4.50). In the latest OECD PISA study (2003), Irish 15 year-olds ranked well among OECD countries in terms of reading literacy (6th) but less well in terms of scientific literacy (13th) and mathematical literacy (16th) (Fig. 4.52). Ireland's scientific literacy ranking has fallen four places since 2000. The number of computers per student is relatively low in Ireland (Fig. 4.53).

Tertiary and Life-Long Learning

Ireland's younger population is considerably better qualified than older cohorts, with 41 percent of the 25-34 age group possessing a third-level qualification. This compares very favourably with the OECD average of 35 percent (Fig. 4.55). It is difficult to measure the quality of third level institutions due to a range of issues. Based on available data, the performance of Irish third level institutions ranks far behind the leading institutions overseas. Ireland's leading third level institution ranks 78th in the world (Fig. 4.56).

Life long learning is defined as all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competencies. Adult participation in life long learning remains relatively low in Ireland - below both the EU average and Ireland's Lisbon target (Fig. 4.58).

Research and Development

The transition to a knowledge economy requires higher levels of expenditure in research and development, both in terms of capital infrastructure and development programmes. This section examines various measures of expenditure in research and development, and the outputs achieved.

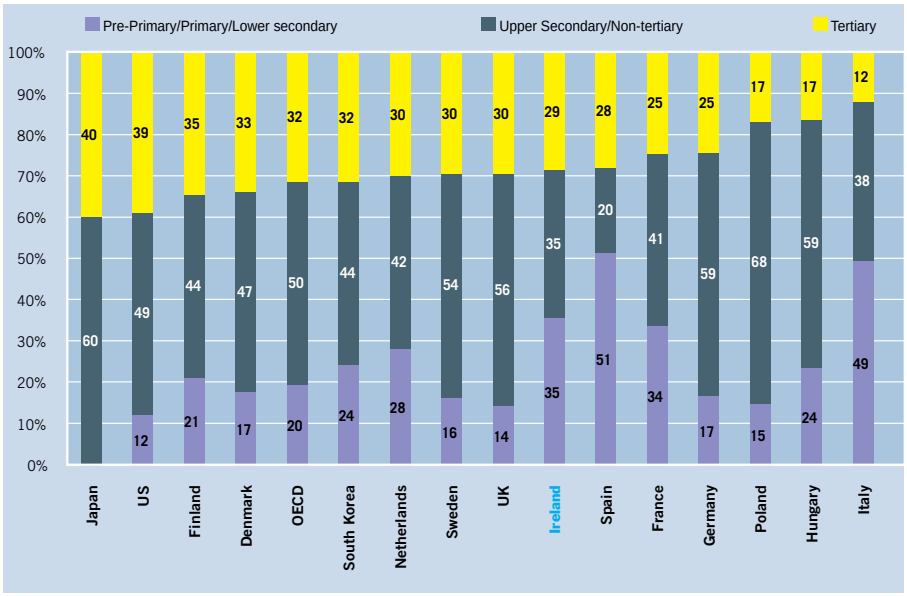
Despite a large increase in actual expenditure on R&D, Ireland is making limited progress towards the Irish (2.5 percent of GNP by 2013) and the Lisbon (3 percent of GDP by 2010) targets as strong economic growth is making these targets more difficult to achieve. Total R&D spending in Ireland increased from 1.32 percent of GNP in 2000 to 1.59 percent of GNP in 2006 (Fig. 4.59). This compares with an OECD average of 2.26 percent (2006). The number of researchers in Ireland is also growing. The number of researchers per 1000 total employment has grown from 5 per 1000 in 2000 to 6 per 1000 in 2006 (Fig. 4.60). The R&D Action Plan for promoting investment in R&D has set a target of 9.3 researchers per 1000 of total employment by 2010. Despite strong growth rates in expenditure, business R&D as a percentage of economic activity has remained relatively static over the past decade (Fig. 4.61). Most business expenditure on R&D in Ireland is undertaken by foreign-owned companies (Fig. 4.63). Finally, higher education expenditure has increased strongly since 2000 (Fig. 4.65).

Knowledge Infrastructure

4.3.1 Education: Overview

Figure 4.45

Educational Attainment of Population Aged 25-64 by Highest Level of Education (%), 2005[40]



Average educational attainment in Ireland has increased steadily in the last two decades. Older cohorts of Ireland's labour force remain less qualified than the OECD average, though, and a relatively large share of the working age population (35%) has no more than lower secondary education.

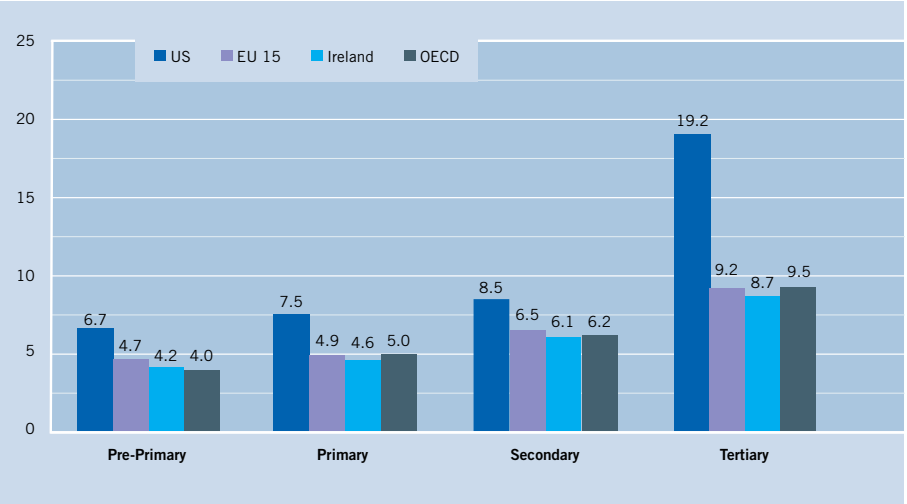
OECD-28 Ranking:

(Ranked by third level)
14(↓1)

Source: OECD, Education at a Glance, 2007

Figure 4.46

Annual Expenditure on Educational Institutions – per Student (€'000s PPP), 2004



At all levels of education, Ireland invests less per student than the EU-15 and OECD averages (with the exception of pre-primary). The gap between the EU-15 and the US at all levels is considerable, particularly at third level.

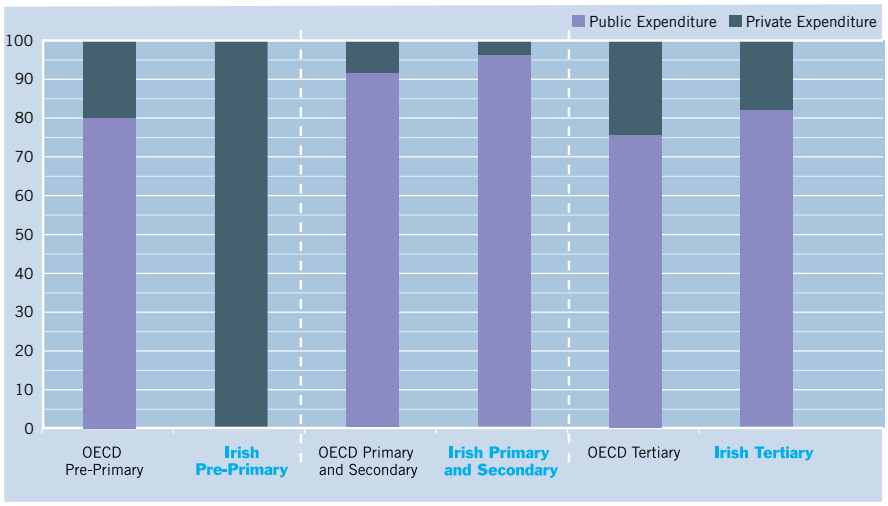
OECD-28 Ranking:

Pre-Primary 10 (↑7)
Primary 16 (↑3)
Secondary 26 (↓4)
Tertiary 15 (↓6)

Source: OECD, Education at a Glance, 2007

Figure 4.47

Relative Public and Private Expenditure on Educational Institutions (%), 2004[41]



Ireland's pre-primary system is almost entirely privately funded, unlike the typical OECD system. Public funding is relatively more important in Ireland at all other levels of the education system.

Ranking:

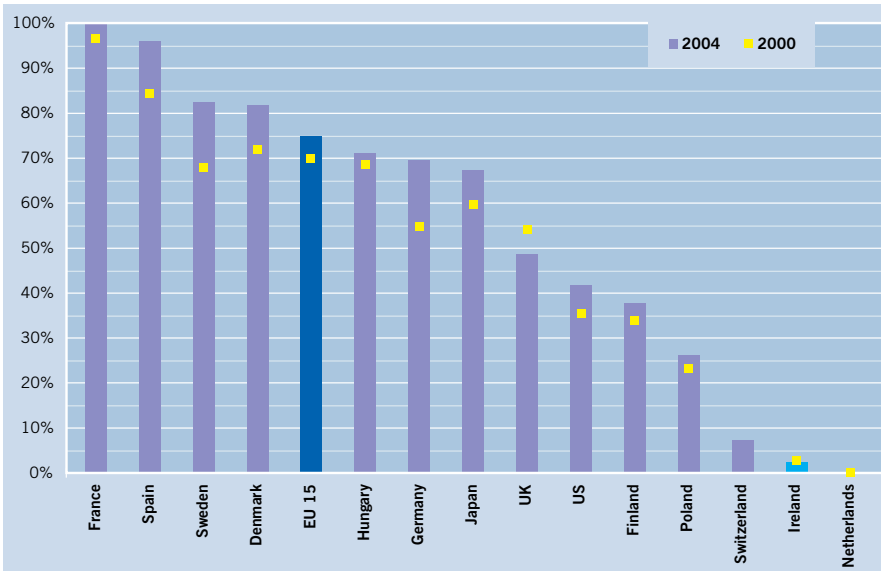
N/A

Source: OECD, Education at a Glance, 2007: Pre-Primary data for Ireland provided by the Department of Education and Science, Ireland

4.3.2 Pre-Primary and Primary Education

Figure 4.48

Participation of Three Year Olds in Education (as a % of population age cohort), 2004[42]



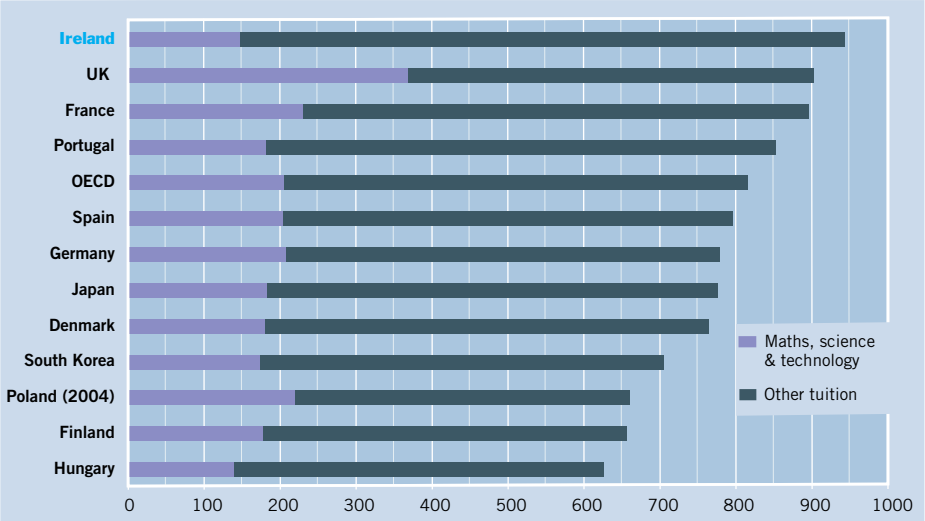
Pre-primary education includes programmes designed for children at least three years old and not older than 6 years. Ireland lags the EU-15 average by a considerable amount on this indicator. Pre-primary education, rather than childcare, is found to have significant individual and social returns.

EU-15 Ranking:

13 (--)

Source: Eurostat, Population and Social Conditions [online]

Figure 4.49
Average Annual Hours of Tuition to 9-11 year-olds, by Subject, 2005



Overall, 9 -11 year old students at primary level in Ireland receive more hours of tuition per year than in most other OECD countries. However, of 22 countries surveyed, only two spent less time teaching mathematics, science, and technology.

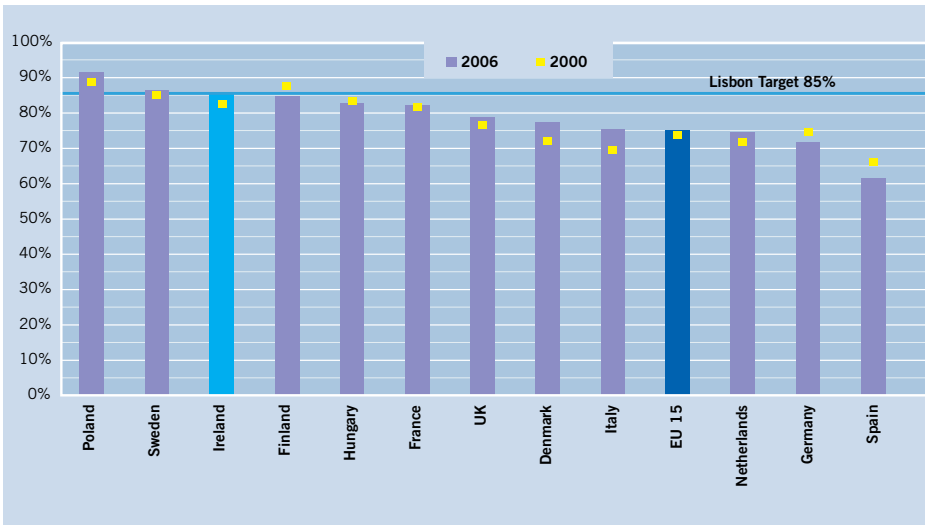
OECD-28 Ranking:

Overall 4

Source: OECD, Education at a Glance, 2007

4.3.3 Secondary Education

Figure 4.50
Percentage of the Population Aged 20 to 24 having Completed at Least Upper Secondary Education 2006



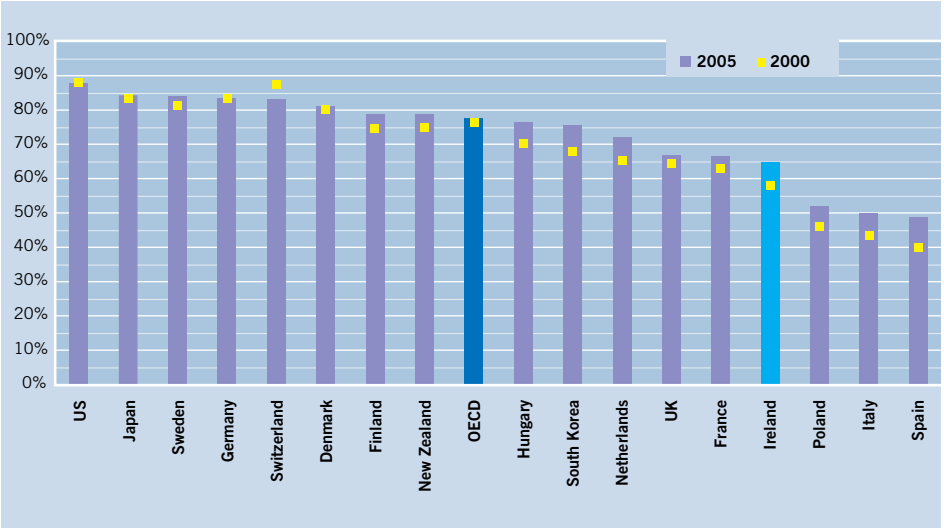
This indicator forms a key metric in the Lisbon Agenda. It is defined as the percentage of young people aged 20-24 years having achieved at least an upper secondary education attainment level. Data for 2006 suggests that Ireland (85.4 percent) exceeds the EU Lisbon target of 85 percent.

EU-15 Ranking:

3 (↑1)

Source: Eurostat, Structural Indicators

Figure 4.51
Percentage of the Population Aged 25-64 with at least Upper Secondary Level Education, 2005



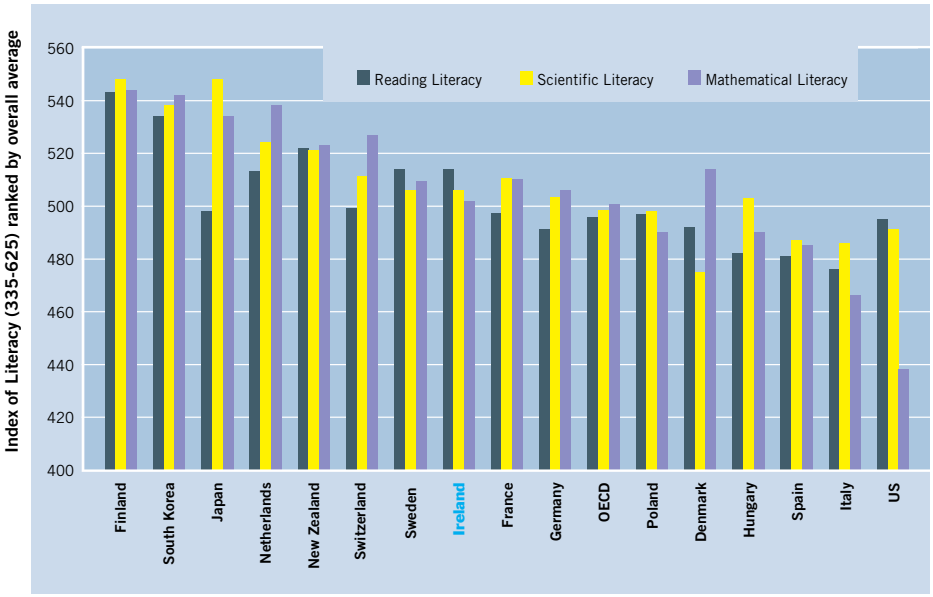
Current secondary level completion rates take a long time to raise the overall level of qualifications. 65 percent of the 25-64 age group in Ireland have attained at least upper secondary education, which is below the OECD average and significantly below leading countries (e.g. US).

OECD-28 Ranking:

21(--)

Source: OECD, Education at a Glance, 2007

Figure 4.52
Scientific, Mathematical and Reading Literacy of 15 Year Olds, 2003[43]



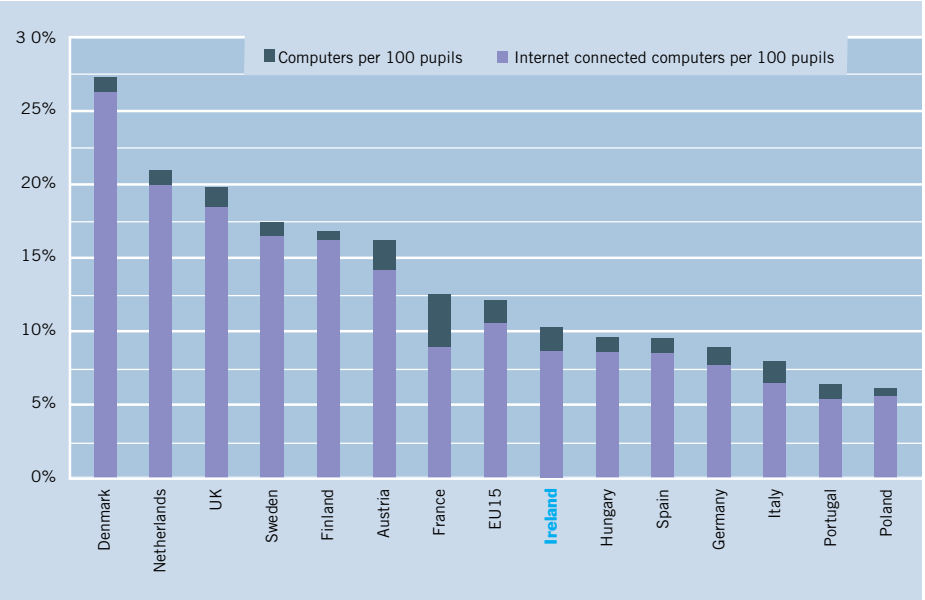
In the 2003 PISA study, Irish 15 year olds ranked comparatively well in terms of reading literacy but ranked less well for scientific and mathematical literacy. Small differences between countries should be interpreted with caution.

OECD-30 Ranking:

Reading 6 (↓1)
Science 13 (↓4)
Maths 16 (↓1)

Source: OECD, PISA Database, 2003

Figure 4.53
Computers and Number of Internet Connected Computers per 100 Pupils, 2006[44]

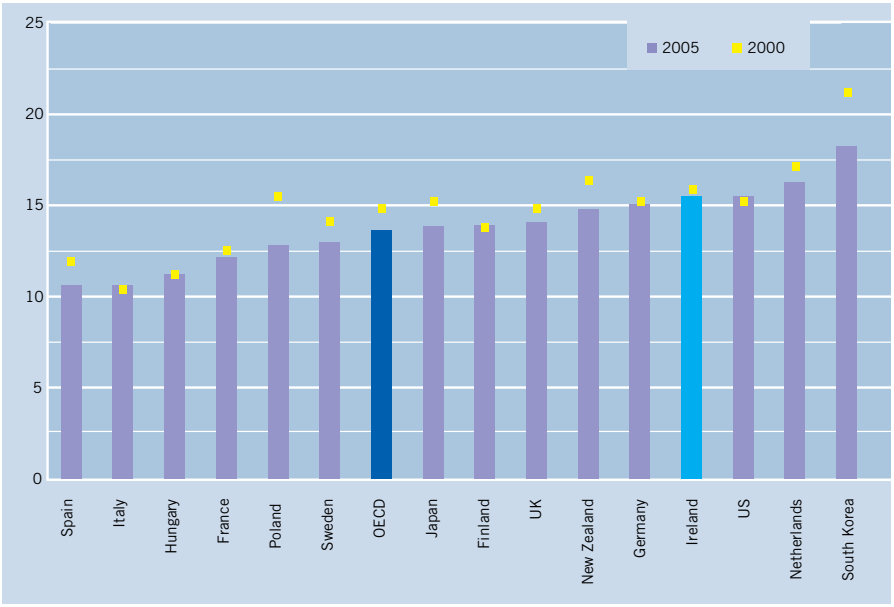


ICT has profound implications for education, as it can facilitate new forms of learning and is now a necessary preparation for adult life. Among the benchmarked countries, Ireland has fewer computers per student than the EU-15 average.

EU-15 Ranking:
9(--)

Source: Benchmarking Access and Use of ICT in European Schools, 2006

Figure 4.54
Ratio of Students to Teaching Staff in Secondary Education Institutions, 2005[45]



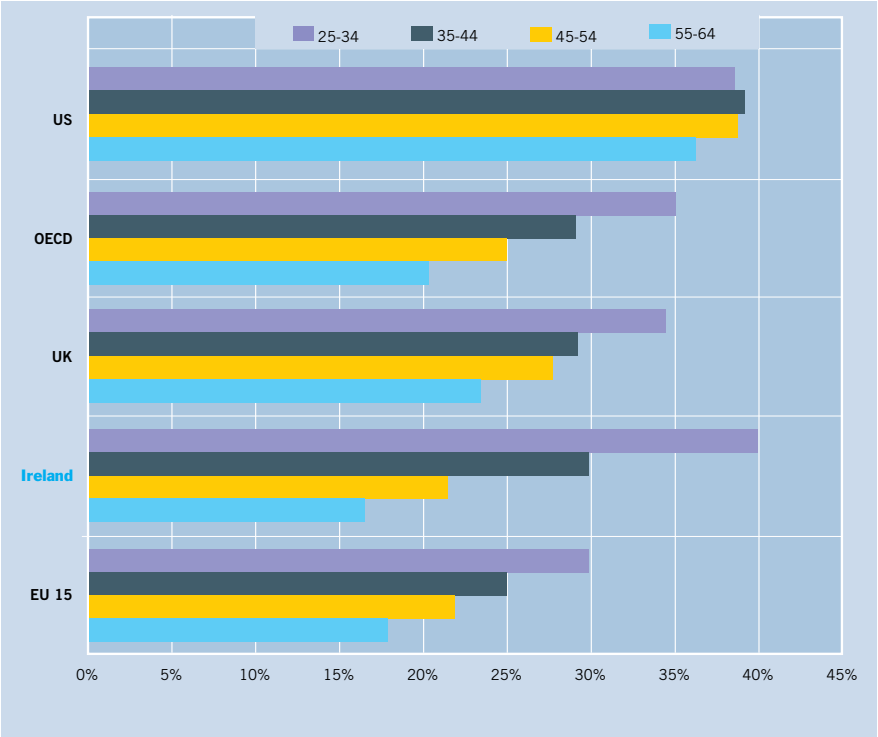
Ireland continues to be above the OECD average of 13.7 for the ratio of students to teaching staff in secondary schools in 2005. As in most countries, this ratio has fallen since 2000.

OECD-28 Ranking:
22(↓2)

Source: OECD, Education at a Glance, 2007

4.3.4 Tertiary Education and Life Long Learning

Figure 4.55
Population by Age Cohort that has at Least Third Level Education, 2005[46]



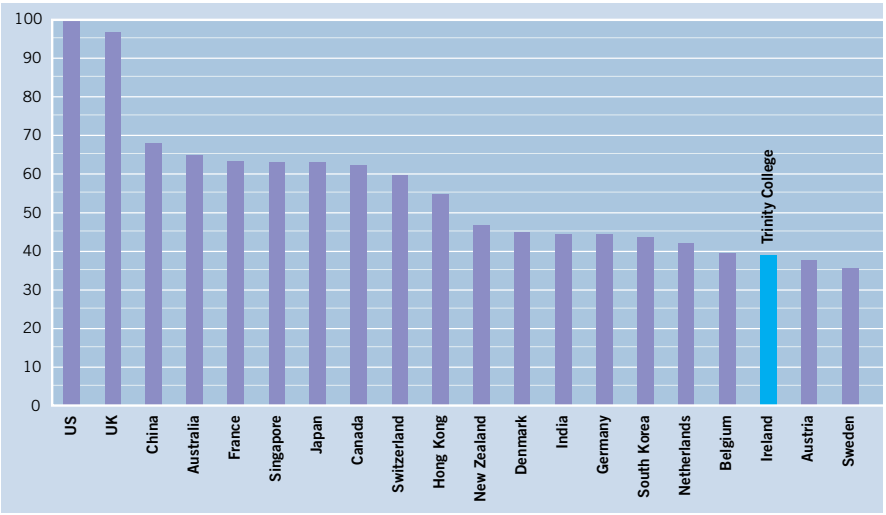
A breakdown of third-level graduates by age reveals that Ireland's educational attainment varies much more by age than in other countries. While cohorts over 45 – in particular the 55-64 age group – have lower attainment rates than the OECD average, Ireland's 25-34 year-olds are more qualified than most of their counterparts elsewhere in the OECD, in particular the EU-15.

OECD-28 Ranking:

(ranked by total 25-64 year olds) 14 (--)

Source: OECD, Education at a Glance, 2007

Figure 4.56
Performance of the Third Level Sector (Scale 0-100), 2005



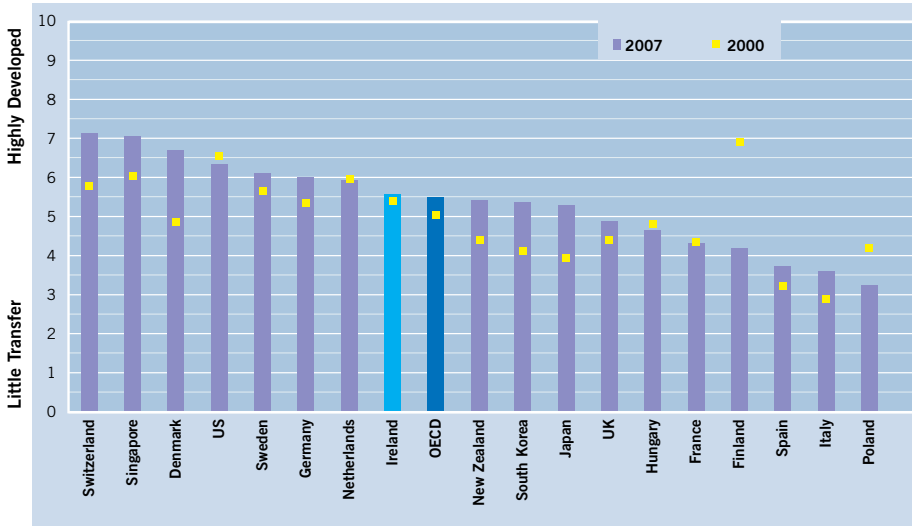
Ranking third-level institutions is an exercise fraught with difficulties. The rankings shown in the chart are based on peer review and recruiter review assessments, number of citations, ratio of faculty to student numbers and success in attracting foreign students. Ireland's leading institution, Trinity College, comes 78th out of 200.

Ranking of Institution:

78 (out of 200)

Source: The Times Higher Education Supplement, 2006

Figure 4.57
Knowledge Transfer Between Companies and Universities, 2007 (Scale 0-10)



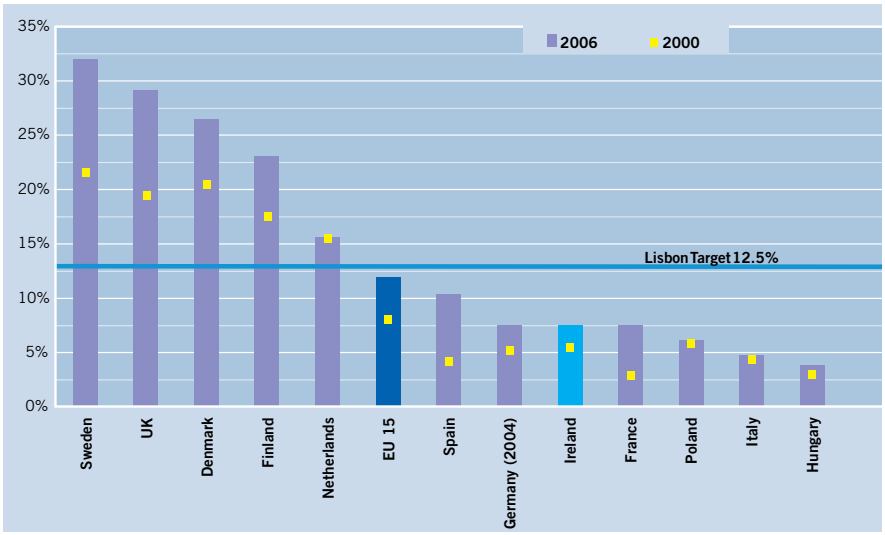
Executive opinions regarding the state of development of knowledge transfer between academia and enterprise in Ireland are in line with the OECD average. Barriers to more effective knowledge transfer include lack of knowledge of third level research projects and difficulties with intellectual property contracts.

OECD-28 Ranking:

14 (↓8)

Source: IMD World Competitiveness Yearbook, 2007 [online]

Figure 4.58
Life Long Learning in EU Member States (% 25-64 year olds), 2006[47]



Life long learning is defined as all learning activity undertaken throughout life, with the aim of improving knowledge skills and competencies. This indicator measures the percentage of persons aged 25 to 64 in receipt of education in the four weeks prior to the survey and includes both formal and non formal education. Ireland's score is below both the EU-15 average and the Lisbon target.

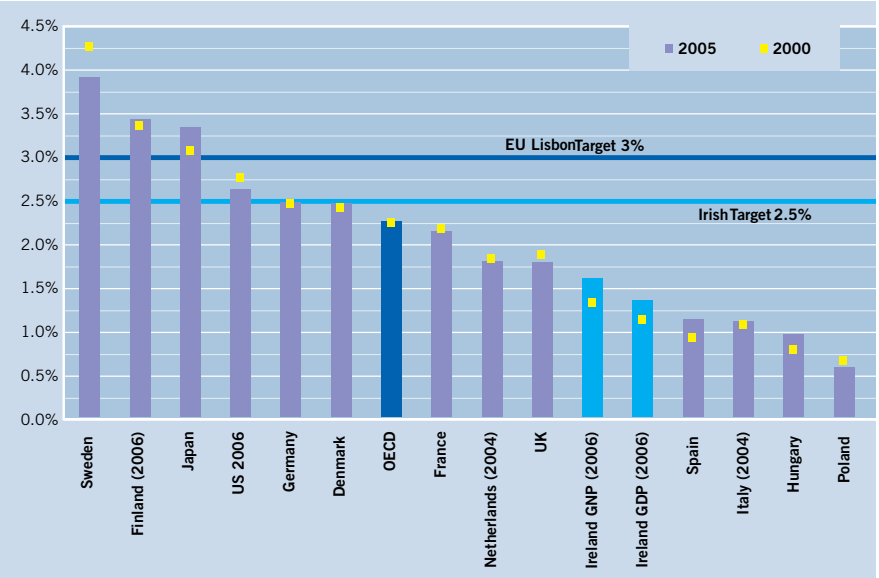
EU-15 Ranking:

9 (↓1)

Source: Eurostat, Structural Indicators

4.3.5 Research and Development

Figure 4.59
Gross Domestic Expenditure on R&D (GERD), % GDP, 2005[48]



As part of the Lisbon Strategy, the European Council set a target that 3 percent of EU GDP would be spent on R&D by 2010. The Irish Strategy for Science, Technology and Innovation 2006-2013 foresees Ireland reaching 2.5 percent of GNP by 2013.

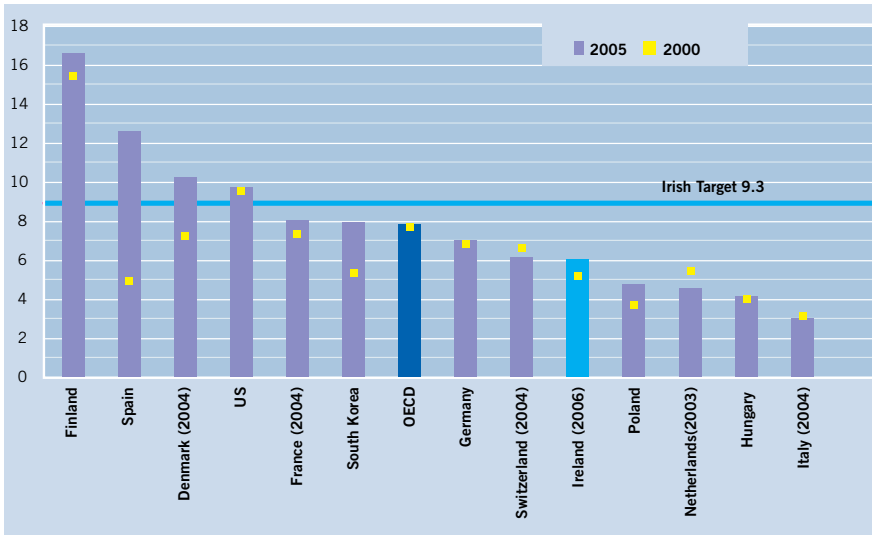
OECD-28 Ranking:

GDP: 21(--)

GNP: 17(↑2)

Source: Forfás, Research and Development Statistics in Ireland at a Glance 2006; OECD, Main Science and Technology Indicators, 2007/ Issue 1

Figure 4.60
Total Researchers per 1000 Total Employment, 2005[49]



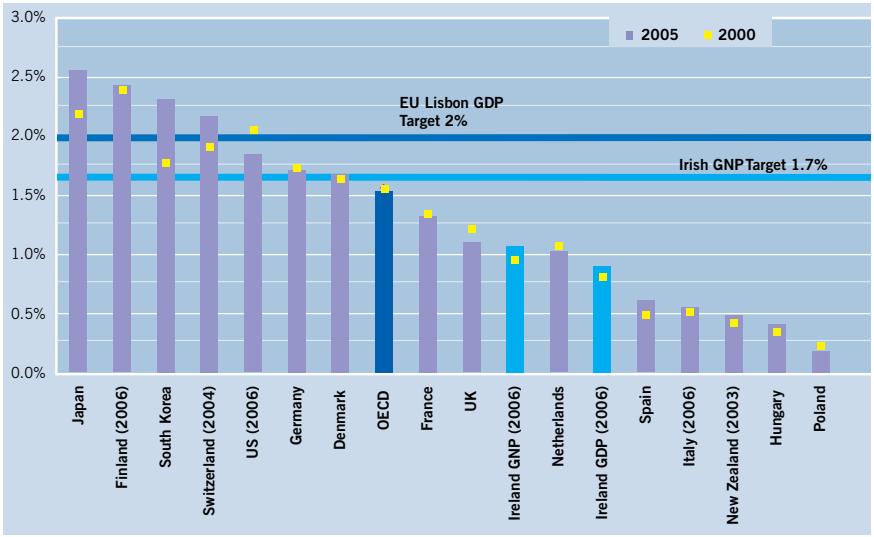
The R&D Action Plan for promoting investment in R&D has set a target of 9.3 researchers per 1000 of total employment by 2010. The number of researchers has grown from 5 per 1,000 total employment in 2000 to 6 per 1,000 in 2006.

OECD-28 Ranking:

17(↑1)

Source: OECD, Main Science and Technology Indicators, 2007/ Issue 1

Figure 4.61
Business Expenditure on R&D (BERD) % GDP, 2005[50]



The Irish Strategy for Science, Technology and Innovation has set a target of €3 billion for business expenditure on R&D by 2013. In 2005, business expenditure on R&D in Ireland stood at €1,329 million.

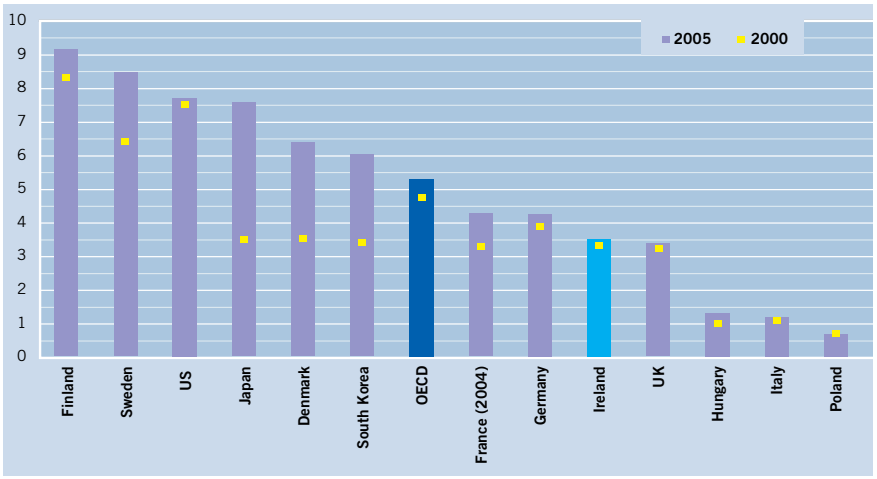
OECD-28 Ranking:

GDP: 19(--)

GNP: 15(↑2)

Source: Forfás, Research and Development Performance in the Business Sector Ireland, 2005/06; OECD, Main Science and Technology Indicators, 2007/ Issue 1

Figure 4.62
Business Researchers per 1000 Total Employment 2005[51]



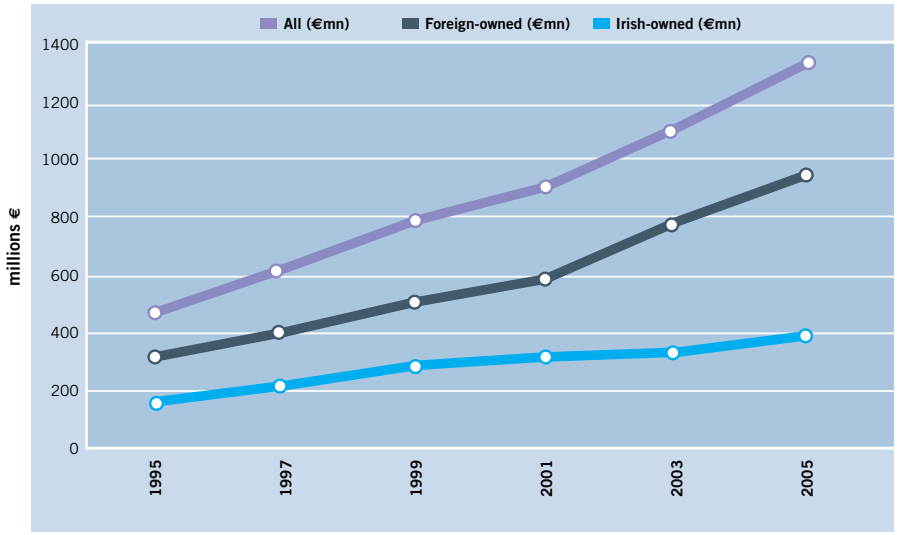
Research staff can play an important part in helping a company increase its scientific and technological capabilities. Ireland had a lower number of business researchers per 1000 employment than the OECD average in 2005.

OECD-28 Ranking:

15(--)

Source: Forfás Calculations; OECD, Main Science and Technology Indicators, 2007/ Issue 1

Figure 4.63
Business Sector R&D Expenditure by Firm Type 2001-2005



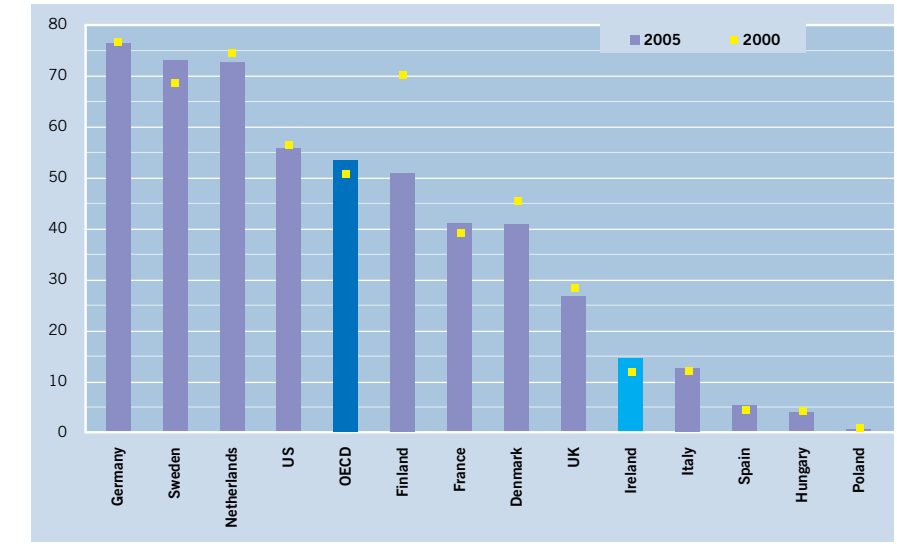
Foreign-owned companies undertake most business expenditure on R&D in Ireland. The Irish Strategy for Science, Technology and Innovation 2006-2013 has set a target for business expenditure on R&D in indigenous firms to grow to €825 million by 2013. This is more than double the amount being spent by Irish firms in 2005.

Ranking:

N/A

Source: Forfás, Research and Development Performance in the Business Sector Ireland, 2005/06

Figure 4.64
Triadic Patent Granted per Million Population, 2005



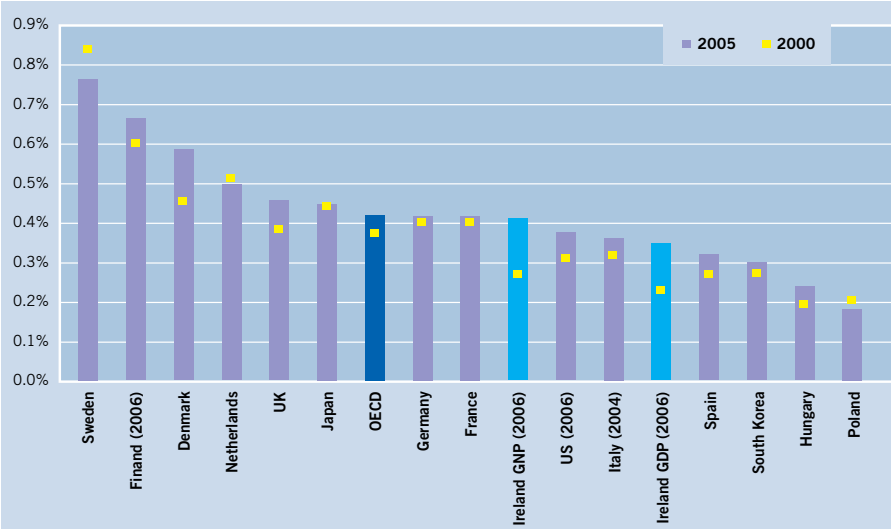
Patents can be taken as the reflection of a country's inventive activity. Triadic patent are patents granted at the European, Japanese and US Patent offices. On this measure, Ireland continues to perform well below the OECD average.

OECD-28 Ranking:

19(↓1)

Source: OECD, Main Science and Technology Indicators, 2007/ Issue 1

Figure 4.65
Higher Education Expenditure on R&D (HERD) as a % of GDP, 2005[52]



Higher education expenditure has more than doubled over the last seven years rising from €238 million in 2000 to €565 million in 2005. As a percentage of GNP, Ireland has converged with the OECD average, but remains far behind the leading countries.

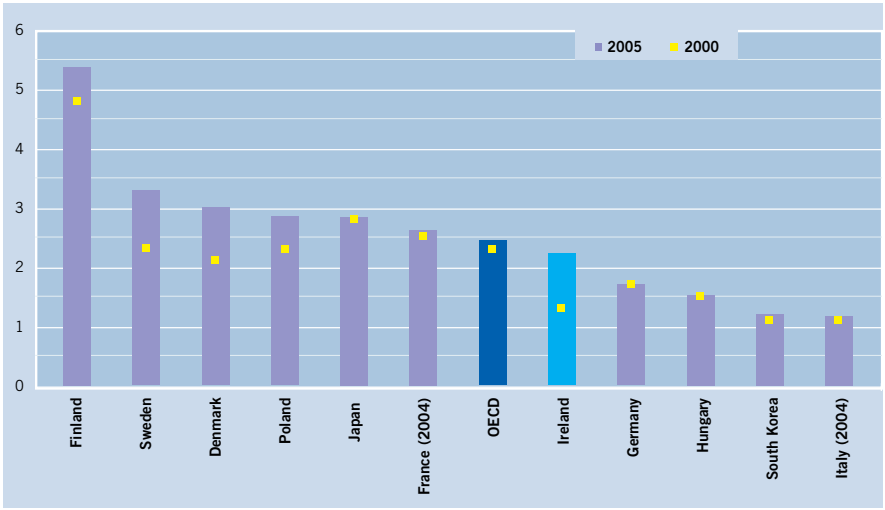
OECD-28 Ranking:

GDP: 19 (↑5)

GNP: 16 (↑7)

Source: OECD, Main Science and Technology Indicators, 2007/ Issue 1

Figure 4.66
Higher Education Total Researchers per 1000 Employment 2005[53]



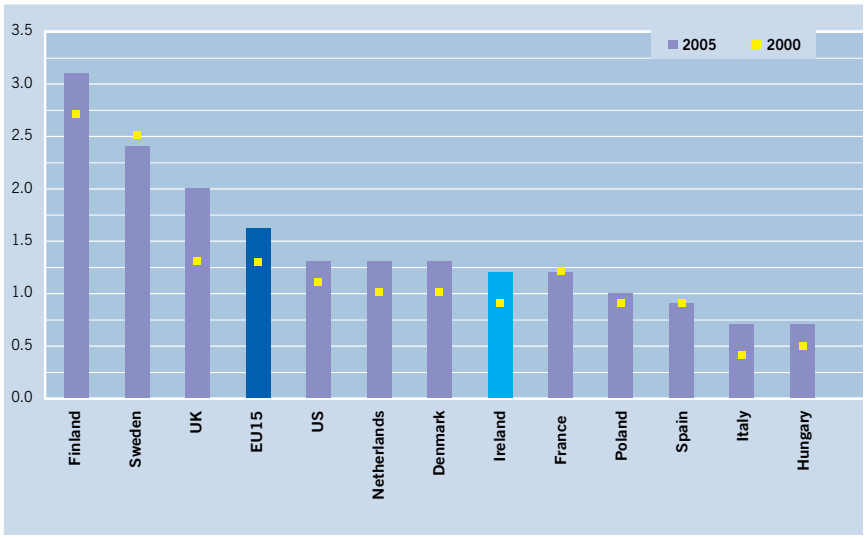
The number of researchers in the higher education sector in Ireland is growing rapidly. This is evident by Ireland's convergence towards the OECD average.

OECD-28 Ranking:

17 (↑5)

Source: Forfás Calculations; OECD, Main Science and Technology Indicators, 2007/ Issue 1

Figure 4.67
PhD Graduates per 1000 of Population aged 25-34, 2005[54]



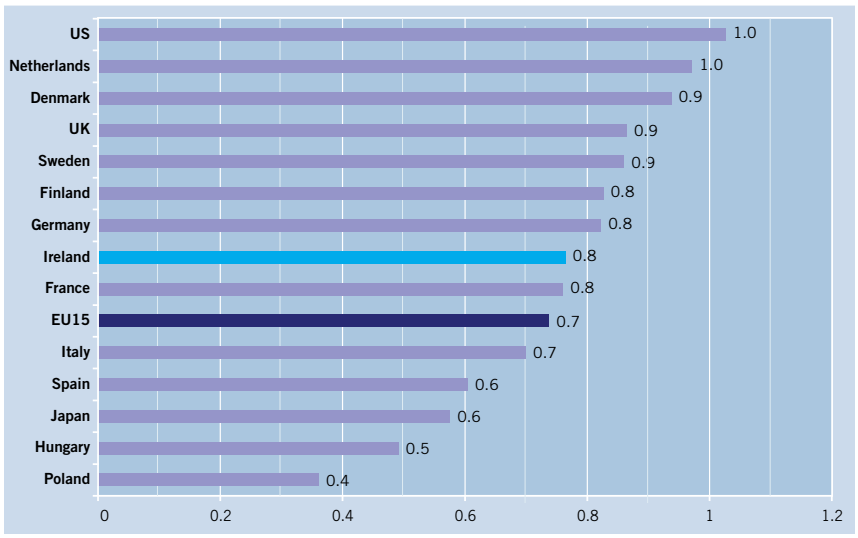
PhD graduates are central to the delivery of Ireland's Strategy for Science, Technology and Innovation. In 2005, PhD graduates per 1000 of population in Ireland lagged the EU15 by more than 25%. While more 25-34 year-old males in Ireland have PhDs than females, the gap is not as large as in other EU-15 countries.

EU-15 Ranking:

9 (↑1)

Source: Eurostat, Population and Social Conditions; National science Foundation, Thompson ISI, Science and Engineering Indicators, 2006

Figure 4.68
Scientific Citations and Publications Index 2003



This index represents an economy's share of scientific citations and references relative to its share of published literature. Ireland performs relatively well in this measure, scoring just above the EU-15 average.

EU-15 Ranking:

9

Source: Science and Engineering Indicators, 2006 (National Science Foundation), Thomson ISI

End Notes

1 Base year for ranking change is 2000-2003 period compared to 2003-2006 period
2 UK refers to 2003 data
3 OECD average minus Luxembourg
4 Base year for ranking change is 2004 compared to 2005
5 EU-15 2000 average – Austria, Italy, Luxembourg, Portugal and Spain refer to 2001
6 Base year for ranking change is 2000-2003 compared to 2003-2006
7 Base year for ranking change is 2000-2003 period compared to 2003-2007 period
8 Base year for ranking change is 2001 compared to 2006
9 Base year for ranking change is 2000-2003 period compared to 2003-2006 period
10 Ireland public sector wage inflation (minus health) refers to third quarter 2006;
Public sector comparison is made to UK public sector wage inflation due to data availability
11 Base year for ranking change is 2000-2002 period compared to 2002-2005 period
12 OECD average minus Iceland, Canada and Poland. Australia and US refer to 2004
13 OECD average minus Iceland
14 Base year for ranking change is 2005 compared to 2015 projections
15 In Ireland, companies in the manufacturing industry had a rate of 10% until the rate changed to 12.5% in 2003. In making international comparisons of corporate tax rates, it is important to take account of the impact of exemptions in the tax base.
16 OECD average minus US
17 Base year for ranking change is 1995 compared to 2004
18 Base year for ranking change is 2002 compared to 2003
19 Base year for ranking change is 2005 compared to 2006
20 EU-15 average minus Austria and the Netherlands
21 EU-15 average minus Luxembourg and Denmark
22 Base year for ranking change is 1998 compared to 2003
23 Base year for ranking change is 2005 compared to 2006. OECD average minus Luxembourg
24 OECD average composes of 19 countries
25 EU-15 average minus Luxembourg
26 Base year for ranking change is 1990 compared to 2000
27 Base year for ranking change is 1990 compared to 2000
28 Base year for ranking change is 1990 compared to 2000
29 Base year for ranking change is 2001 compared to 2006
30 Base year for ranking change is 2001 compared to 2006
31 Base year for ranking change is 2002 compared to 2006
32 Base year for ranking change is 2001 compared to 2006
33 Base year for ranking change is 2002 compared to 2006
34 Data for Singapore 'other' category is 2002
35 EU-15 minus Luxembourg
36 Base year for ranking change is 2003 compared to 2006
37 Base year for ranking change is 2002 compared to 2006
38 Base year for ranking change is 2002 compared to 2006
39 EU average minus Italy, Greece and France
40 Base year for ranking change is 2003 compared to 2004
41 EU-15 average minus Greece
42 OECD-28 minus UK in 2003 and minus Slovakia and the Netherlands in 2000
43 EU-15 average minus Greece
44 OECD average minus Canada, Norway and Denmark
45 Base year for ranking change is 2001 compared to 2004
46 Ireland refers to change since 2002 and Poland since 2001
47 Rankings incorporate the latest available data for countries that are unavailable for 2005
48 OECD average minus UK & Ireland. Rankings incorporate the latest available data for countries that are unavailable for the current year
49 Rankings incorporate the latest available data for countries that are unavailable for the current year
50 Rankings incorporate the latest available data for countries that are unavailable for the current year
51 Rankings incorporate the latest available data for countries that are unavailable for the current year
52 OECD average minus UK & US. Rankings incorporate the latest available data for countries that are unavailable for the current year
53 EU-15 minus Luxembourg; Finland and France refer to 2003

5 Appendices

5. Appendices

Appendix 1- ACR Data Sources

Organisation for Economic Cooperation and Development (OECD)

The OECD is an organisation of 30 member countries characterised by democratic government and adherence to the market economy. These countries are located primarily in Western Europe, but also in North America and in the Asia-Pacific region. Its work covers economic and social issues including macroeconomics, trade, education, development and science and innovation. The OECD provides statistical data for member countries on a wide range of economic and social indicators.
http://www.oecd.org/statistics

Eurostat

Eurostat is part of the European Statistics System (ESS). The ESS comprises Eurostat and the statistical offices, ministries, agencies and central banks that collect official statistics in EU Member States, Iceland, Norway and Liechtenstein. Member States collect data and compile statistics for national and EU purposes. The ESS functions as a network, in which Eurostat's role is to facilitate the harmonization of statistics in cooperation with the national statistical authorities. The ESS also coordinates its work with international organisations such as OECD, the UN, the International Monetary Fund and the World Bank.
http://www.europa.eu.int/comm/eurostat/

Central Statistics Office (CSO) Ireland

The Central Statistics Office serves as Ireland's national statistical agency. The Office exists primarily to meet the needs of Government for quality statistical information that is a vital input to the formation, implementation and monitoring of policy and programmes at national, regional and local levels in a rapidly changing economic and social environment. It also serves the needs of the wider national and international community (i.e. business, EU, international organisations, media, researchers, and the public generally) for impartial and relevant information on social and economic conditions.
http://www.cso.ie

Groningen Growth and Development Centre

The Groningen Growth and Development Centre is a research group of economists and economic historians at the Economics Department of the University of Groningen. It was created in June 1992 within the Economics Department of the University. The group carries out research on comparative analysis of levels of economic performance and differences in growth rates in the world economy. Up-to-date GGDC data include: the Total Economy database (GDP, Population and Employment data), and the EU Klems Database (Value added data and Employee data), which allow analysis of macroeconomic and productivity performance over time.
http://www.ggdc.net/

IMD World Competitiveness Yearbook (IMD WCY), (2007)

The stated aim of the World Competitiveness Yearbook is to analyse and rank the ability of nations to create and maintain a competitive enterprise environment. It features 55 industrialised and emerging countries and provides 323 different competitiveness criteria grouped into four 'Competitiveness Factors' (Economic Performance, Government Efficiency, Business Efficiency, and Infrastructure). Indicators are derived from both hard data taken from international, national and regional organisations and private institutes, and survey data drawn from the annual Executive Opinion Survey (over 4,000 respondents). This report is published every summer, and the figures in the 2007 report generally relate to 2006 and 2007 data.

World Economic Forum Global Competitiveness Report (WEF GCR), (2006-2007 and 2007-2008)

The Global Competitiveness Report measures the competitiveness of nations through two main indices developed by the WEF team, the Global Competitiveness Index (GCI) and the Business Competitiveness Index (BCI). Both indices are derived from a combination of publicly available hard data, and information provided in the Forum's Executive Opinion Survey, which conveys information about the competitiveness of 131 countries. Through the survey, over 11,000 business executives in these countries assess the importance of a broad range of factors central to the business environment. The response rate to the survey averages over 80 respondents per country. The ACR mainly uses WEF survey data to supplement statistical information about the innovation, enterprise and general business climates. This report is published every year and the figures in the 2006-2007 and 2007-2008 reports generally relate to 2006 and 2007.

UNCTAD World Investment Report (2006)

Established in 1964, UNCTAD promotes the development-friendly integration of developing countries into the world economy. In performing its functions, the secretariat works together with member Governments and interacts with organizations of the United Nations system and regional commissions. Its World Investment Report focuses on global trends in foreign direct investment. This report is published annually.
http://www.unctad.org

The UK Office for National Statistics (ONS)

The ONS is the government department that provides UK statistical and registration services. It is responsible for producing a wide range of economic and social statistics that are used by government to monitor performance. It also registers life events and holds the decennial census of the population.
http://www.statistics.gov.uk/

United Nations Human Development Report (UN HDR), (2006)

This report presents two types of statistical information: statistics in the human development indicator tables, which provide a global assessment of country achievements in different areas of human development, and statistical evidence on the thematic analysis in the chapters. The Human Development Report Office is primarily a user, not a producer, of statistics. It therefore relies on international data agencies with the resources and expertise to collect and compile international data on specific statistical indicators. This report is published annually and the figures in the 2006 report generally relate to 2003-2004.
http://hdr.undp.org/

International Energy Agency

The International Energy Agency is the energy forum for 26 industrialised countries. IEA Member governments have agreed to share energy information, to co-ordinate their energy policies and to co-operate in the development of rational energy programmes. These provisions are embodied in the Agreement on an International Energy Program, which established the Agency in 1974.
http://www.iea.org/Textbase/subjectqueries/index.asp

US Bureau of Economic Analysis (BEA)

BEA is an agency of the Department of Commerce in the US. BEA produces economic accounts statistics. These consist of national accounts which provide a quantitative view of US domestic production and investment, of exports and imports, national and domestic income and saving, and regional accounts which provide detailed data on economic activity by region, state and county.
http://www.bea.gov/

Appendix 2: Glossary of Terms

BERD	**Business Expenditure on Research and Development**
CPI	**Consumer Price Index** Index which measures the price that consumers pay for a representative basket of goods.
Enterprise Ireland	State agency with primary responsibility for the development of Irish-owned business in manufacturing and internationally-traded services.
EPO	**European Patent Office**
ESRI	**Economic and Social Research Institute** Ireland's national independent think-tank undertaking economic and social research, with the aim of informing policy formation and societal understanding.
FDI	**Foreign Direct Investment** Investment by a multinational company in establishing production, distribution or marketing facilities abroad.
Forfás	State agency responsible for providing policy advice on enterprise, trade, science, technology and innovation and for advising and co-ordinating the functions of IDA Ireland, Enterprise Ireland and Science Foundation Ireland.
GDP	**Gross Domestic Product** The total money value of all final goods and services produced in an economy over a defined period.
General Government Gross Fixed capital Formation	This consists of resident producer's acquisitions, less disposals of fixed assets during a given period plus certain additions to the value of non-produced assets realized by the productive activity of government producer or units.
GERD	**Gross Expenditure on Research and Development** Total public and private expenditure on R&D
Gini Coefficient	The Gini Coefficient is a measure of income distribution whereby a score of zero indicates perfect equality, and 100 indicates that all national income in enjoyed by one person.
GNP	**Gross National Product** The value of all final goods and services produced within a nation in a given year, plus income earned by its citizens abroad, minus income earned by foreigners from domestic production.
Greenfield Projects	The setting up of a new activity as opposed to the acquisition of one that already exists.
Gross Fixed capital Formation by the Private Sector	This consists of resident producer's acquisitions, less disposals of fixed assets plus certain additions to the value of non-produced assets realised by productive activity. The private sector consists of non-financial and financial corporations, households and non-profit organisations serving households.
HEA	**Higher Education Authority** The statutory body responsible for the funding of universities and designated third-level education institutions. Its functions include the development of third level education to meet the needs of the community and to advise in relation to all higher-level education.
HERD	**Higher Education Expenditure on Research and Development**
HDI	**Human Development Index** Composite index which combines measures of life expectancy, school enrolment, literacy and income.
ICT	**Information and Communications Technology**
IDA Ireland	State agency responsible for attracting inward investment in manufacturing and internationally-traded services sectors.

IP	**Intellectual Property** The asset which arises where innovation or creative activities lead to an invention, design or process sufficiently unique or original to be considered confidential or valuable or both.
Labour Costs	Labour costs cover all market economic activities except agriculture, fisheries, fostery, education, health, entertainment, information and personal services activities. Labour costs include gross wages and salaries, employer's social contributions and taxes net of subsidies connected to employment.
Labour Force	The total number of people, aged 15 years and over, employed and unemployed and seeking employment.
NDP	**National Development Plan** The NDP 2007-2013 is a 184 billion seven year spending plan across five priority areas; economic infrastructure, enterprise, science and innovation, human capital, social instrastructure and social inclusion.
PPP	**Purchasing Power Parity** PPP is a method of measuring the relative purchasing power of different countries' currencies over the same types of goods and services. Goods and services may cost more in one country than in another one, hence PPP allows us to make more accurate comparisons of standards of living across countries.
Productivity	The relationship between the output of an economic unit and the factor inputs that have gone into producing that output. Productivity is usually measured in terms of output per hour worked, also known as value added per hour worked.
R&D	**Research and Development** Creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications. (OECD)
SFI	**Science Foundation Ireland** Established by the Government in July 2003 to invest €648 million between 2000 and 2006 in academic researchers and research teams to generate knowledge, leading-edge technologies and competitive enterprises in the fields underpinning biotechnology and information and communications technology.
Sustainable Development	Development that meets the needs of the present population without compromising the ability of future generations to meet their own needs (UN definition).
ULC	**Unit Labour Cost** Measures the cost of labour required to produce one unit of a good. Changes in unit labour costs occur due to changes in productivity (output per hour worked) or changes in earnings/wages.
VAT	**Value Added Tax** An indirect tax levied on the sale of goods and services.

Appendix 3: NCC Publications

Publication	Date
Annual Competitiveness Report, 1998	March 1998
The Competitiveness Challenge Summary Statement	March 1998
Statement on Telecommunications: A Key Factor in Electronic Commerce and Competitiveness	November 1998
Statement on Skills	December 1998
Annual Competitiveness Report, 1999	May 1999
Report on Costs	June 1999
Statement on Social Partnership	September 1999
Proposals on Transport Infrastructure, the Planning Process and Public Transport	March 2000
The Competitiveness Challenge	May 2000
Annual Competitiveness Report, 2000	May 2000
Statement on Telecommunications, e-Business and the Information Society	July 2000
Statement on Regulatory Reform	July 2000
Statement on Labour Supply and Skills	September 2000
The Competitiveness Challenge, 2001	December 2001
Annual Competitiveness Report, 2001	December 2001
The Competitiveness Challenge, 2002	November 2002
Annual Competitiveness Report, 2002	November 2002
Statement on Inflation	May 2003
The Competitiveness Challenge, 2003	November 2003
Annual Competitiveness Report, 2003	November 2003
Statement on Prices and Costs	September 2004
The Competitiveness Challenge, 2004	October 2004
Annual Competitiveness Report, 2004	October 2004
Annual Competitiveness Report, 2005	September 2005
The Competitiveness Challenge, 2005	November 2005
Annual Competitiveness Report 2006, Volume 1: Benchmarking Ireland's Performance	October 2006
Overview of Ireland's Productivity Performance, 1980-2005	October 2006
Statement on the Costs of Doing Business in Ireland, 2006	October 2006
Annual Competitiveness Report 2006, Volume 2: Ireland's Competitiveness Challenge	February 2007