



Benchmarking Dublin's Competitiveness

A NOTE ON DATA

The comparator cities included in this analysis were selected based on an assessment of a range of international rankings of competitiveness. A list of comparative international benchmarks included in the Dublin Economic Monitor was collated, and the most frequently occurring European cities were included in this analysis.

Where city or regional level data was not available, we have used national comparisons. All source material is drawn from reputable international agencies and corporations and is referenced throughout as relevant.

BACKDROP: IRELAND'S RECOVERING COMPETITIVENESS

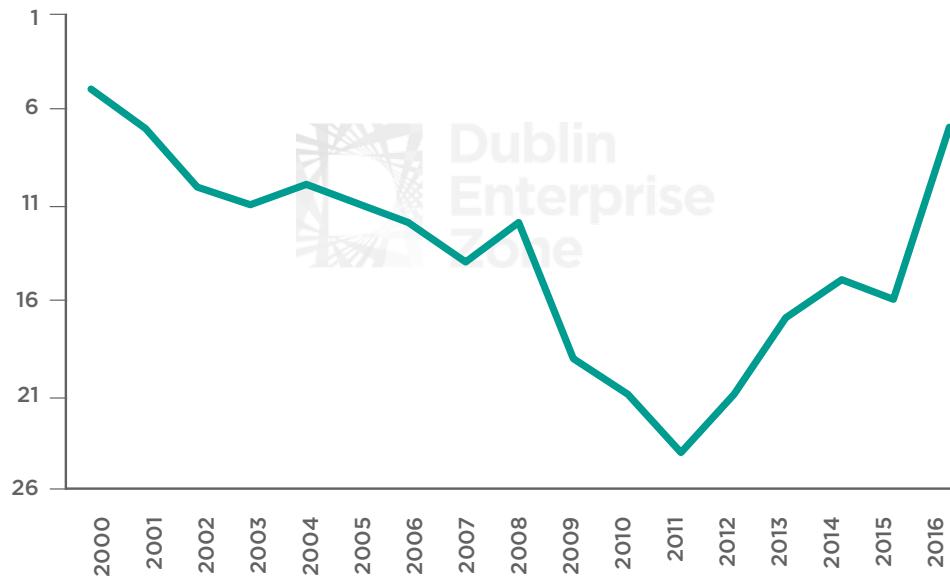
A country's competitiveness is a major determinant of its ability to compete in international markets. The analysis of competitiveness requires a multifaceted consideration of many different variables.

There is no one single definition of competitiveness: it is a complex mix of talent, technology, efficiency in markets, infrastructure, connectivity and policy agility.

Ireland's competitiveness has made a sustained recovery over the past five years and has regained much of the ground that was lost during the economic recession. In 2017, the IMD World Competitiveness Yearbook

ranked Ireland in 6th position in its international benchmarking exercise of national economies, the country's best performance in these rankings since 2001. This improvement in competitiveness has been driven by the fact that Ireland topped the international index for productivity and business efficiency, but also due to the dramatic improvement in the macroeconomic environment and sustained high levels of inward investment. Further to this, Ireland is now also the second most competitive economy in the European Union.

IRELAND'S IMD COMPETITIVENESS RANKING 2000-2017



Source: IMD Competitiveness Ranking 2000 - 2017

DUBLIN IN CONTEXT

Over the past number of years, the city region has made a strong recovery from the economic downturn. A key driver in this has been the region's ability to attract foreign direct investment, particularly in high value-adding sectors such as finance, technology and high-end manufacturing.

Dublin's performance in a number of key internationally published benchmarks has been very favourable, relative to various comparator cities. As can be seen from these independent rankings, Dublin performs extremely well in attracting FDI, building strong start-up and tech sector ecosystems and fostering connectivity.

DUBLIN'S INTERNATIONAL RANKINGS

| SOURCE/ BENCHMARK | RANKING |
|---|---------|
| FDI Intelligence Global Cities of the Future | 3 |
| Global Financial Centres Index | 31 |
| Index Ventures Location Rankings | 2 |
| PwC Emerging Trends in Real Estate Europe 2017 | 4 |
| JLL City Momentum Index | 3 |
| Mercer 2017 Quality of Living Survey | 34 |
| ACI Europe Fastest Growing Major European Airport | 1 |
| CBRE European Tech Ranking | 6 |
| City Reprak Study | 20 |

This report presents a detailed examination of Dublin's performance relative to a number of comparator cities, assessing macro conditions, cost competitiveness, the knowledge economy and infrastructure and connectivity.

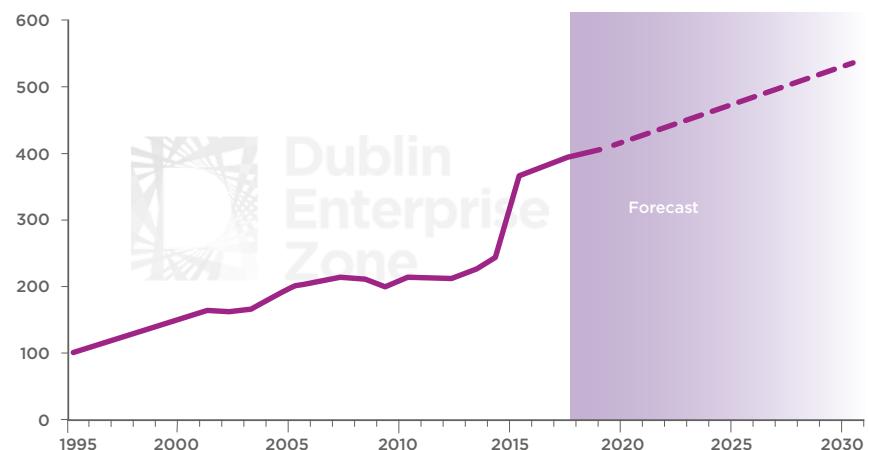
In some cases city-level intelligence is not available and instead national comparisons are used to assess Dublin's relative position.

A BEACON OF GROWTH AND PRODUCTIVITY

Ireland has been the fastest growing economy in the Eurozone for four successive years and Dublin has been the driving engine of this performance.

Despite the uncertainties in global macro conditions, the outlook for Dublin is positive: growth is forecast to continue into the medium term with regional GDP expected to double between 2015 and 2030.

DUBLIN'S GDP GROWTH 1995 – 2030 (INDEXED TO 1995)



Source: Fingal County Council analysis of Oxford Economics data

GVA PER CAPITA 2016 ACROSS EUROPE



This rapid growth performance has been spurred by robust productivity gains. Gross Value Added (GVA) per capita – a measure of the economic productivity of a region in relation to its population size – has continued to improve. Of the selected comparator cities, only Amsterdam, Frankfurt and Paris have higher GVA per capita.

Source: Fingal County Council analysis of OECD data

A further measure of productivity is average output per hour worked, a crucial ingredient of a region's competitiveness. Ireland has seen significant gains in productivity over the past generation and now has the third most productive workforce in Europe. These gains have been

underpinned by innovation and strong performances in high-end manufacturing, R&D and tech. Dublin has driven this with a range of success factors contributing including major improvements in connectivity and infrastructure, growth in business start-ups and the

pipeline of talent emerging from the city's universities each year.

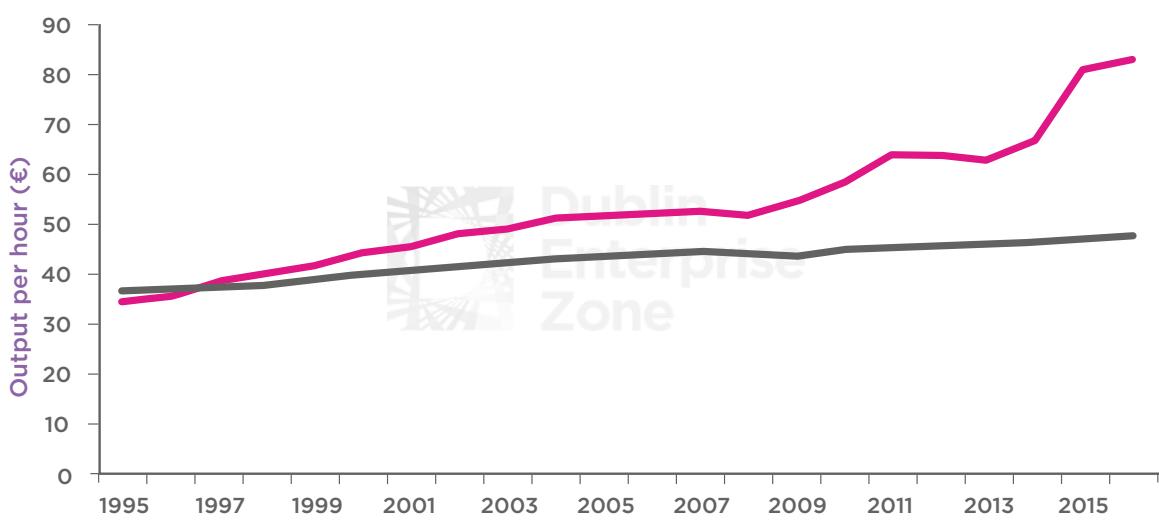
As shown below, the rate of growth in Ireland's productivity has far outweighed changes observed across the EU.

OUTPUT PER HOUR WORKED (€) ACROSS EUROPE, 2016



Source: Fingal County Council analysis of OECD data

PRODUCTIVITY CHANGE 1995 - 2016



Source: Fingal County Council analysis of OECD data

— EU 28 — Ireland

A BEACON OF JOBS GROWTH

Among the most pertinent data points for Dublin's recent economic performance is the scale of the reduction in regional unemployment achieved in recent years. Between 2011 and 2016, the unemployment rate has been

reduced by 7 percentage points. This is significantly higher than any of the other regional economies included in this analysis, many of which have actually experienced an increase in unemployment over this period. Across the EU, the unemployment

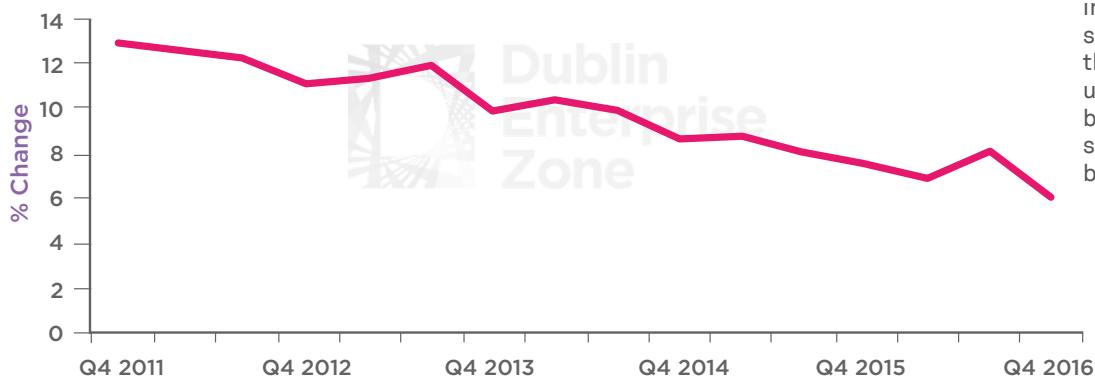
rate has reduced by 1.1 percentage points and even strong reductions in London (2.3pp) and Berlin (3.9pp) have not been of the same magnitude as that experienced in Dublin.

UNEMPLOYMENT CHANGE 2011 – 2016



Source: Fingal County Council analysis of Oxford Economics data

DUBLIN UNEMPLOYMENT CHANGE Q4 2011 – Q4 2016



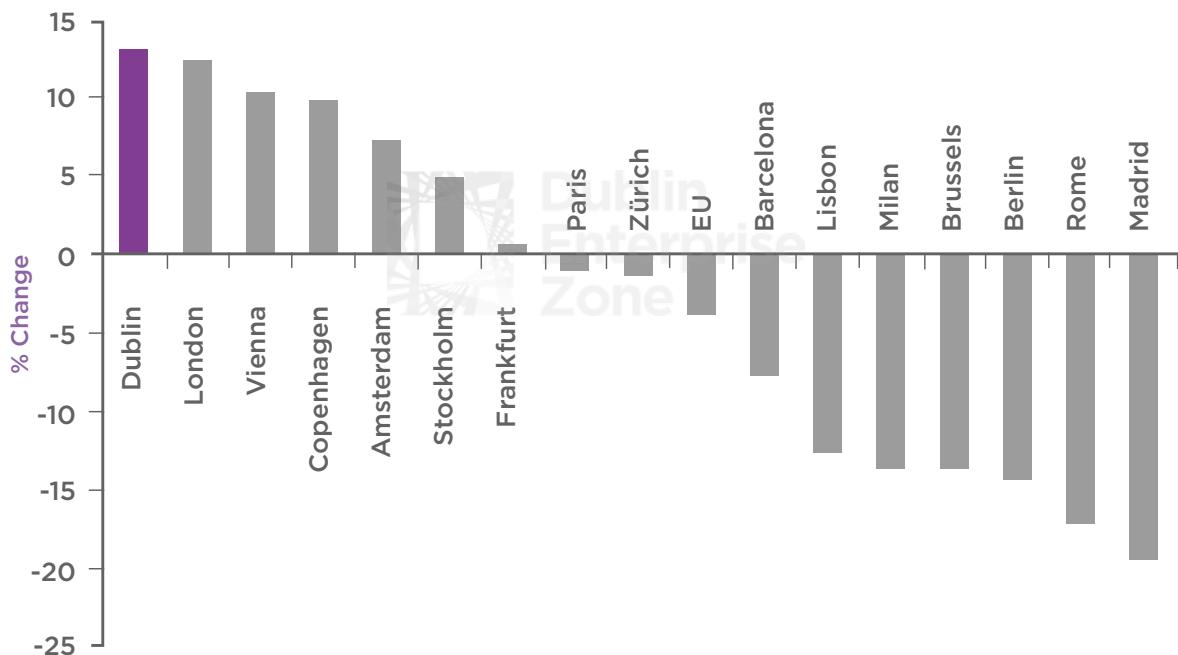
Our analysis plots the unemployment rate in Dublin as a time-series and shows that the reduction of unemployment has been particularly strong since the beginning of 2014.

Source: Fingal County Council analysis of Eurostat data

At present, Dublin has the fifth lowest unemployment rate amongst comparator cities. Driving this overall improvement was a major rate of job creation, supported by clear policy action from Government. Firms

in Dublin added 72,000 jobs – or 13.1% – between 2011 and 2016, beating all other comparators in this study. Across the EU as a whole, employment fell by 4%.

EMPLOYMENT CHANGE 2011 - 2016



Source: Fingal County Council analysis of OECD data

EFFICIENCY AND COST COMPETITIVENESS

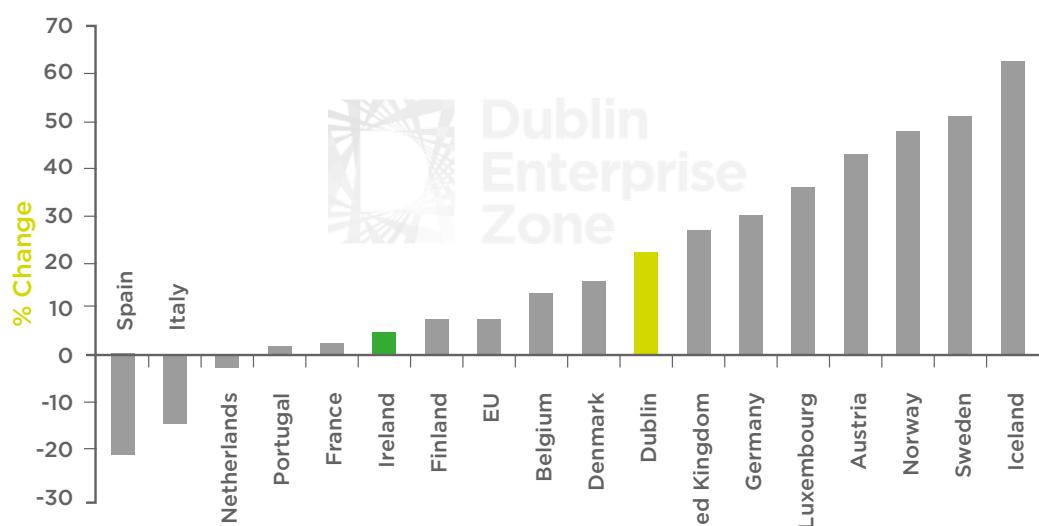
High business costs in a region can harm competitiveness and damage investment attractiveness. In a changing international environment where each year brings intensified competition for mobile investment, business costs are an important ingredient in the mix.

HOUSE PRICES

While policy makers in Ireland recognise the imperative of increasing housing supply, it is also the case that Irish house prices have increased at a slower rate than the average across the EU (4.76% vs 7.78% respectively). The increase in house prices has been considerably greater in Dublin, although they are nonetheless increasing at a slower rate than has been observed in many of the comparator cities.

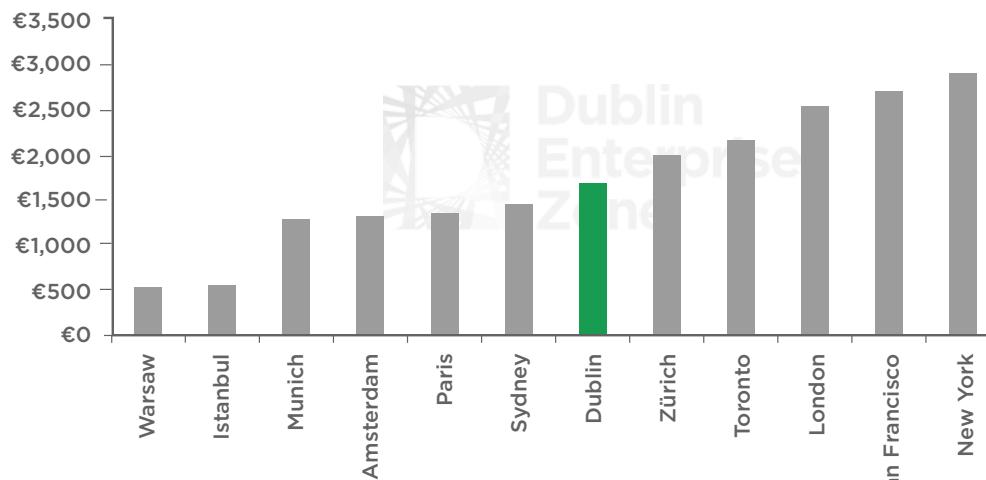
A number of policies have recently been introduced designed to unlock a major increase in housing supply. These are aimed at further relieving any pressure on the residential market.

HOUSE PRICE INCREASES ACROSS EUROPE 2010 - 2016



Source: Fingal County Council analysis of Eurostat data

COST OF CONSTRUCTING AN INDIVIDUAL DETACHED OR TERRACE STYLE HOUSE (\$ PER M²)



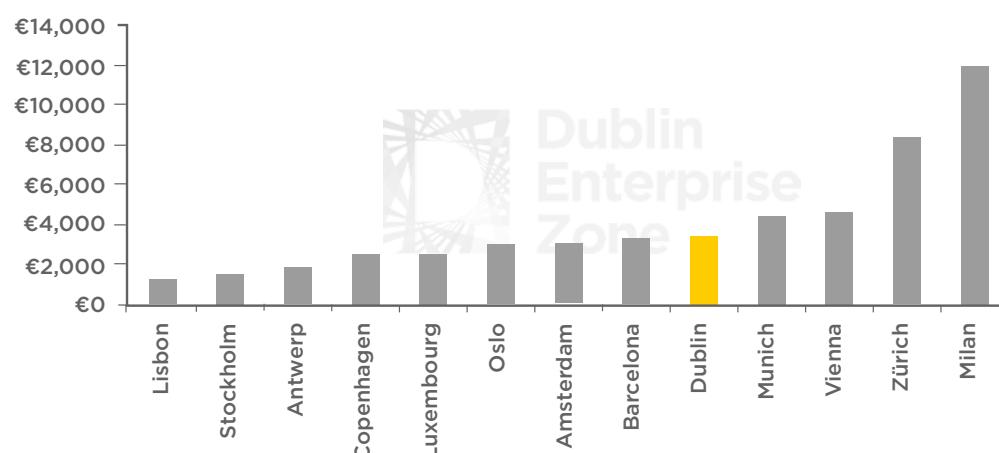
A number of policy initiatives are being implemented which are designed to further reduce housing construction costs. Nonetheless, construction costs compare well.

Source: Turner and Townsend: International Construction Market Survey 2016

THE MARKET FOR EXISTING OFFICE SPACE

A competitively priced commercial property market is crucial to ensuring the competitiveness of Dublin based, internationally trading firms. Despite recent growth, Dublin is still competitively priced at €3,327 per square metre, relative to other major European cities.

COST OF OFFICE SPACE (€ PER SQUARE METRE)



Source: Cushman and Wakefield, Office Space Across the World

COST OF CONSTRUCTING OFFICE AND COMMERCIAL BUILDINGS (\$ PER M²)



Source: Turner and Townsend: International Construction Market Survey 2016

The supply pipeline for commercial property in Dublin has increased greatly of late and at present there is over 4 million square feet of new office space in development. This expansion in supply will serve to moderate price pressures into the medium-term.

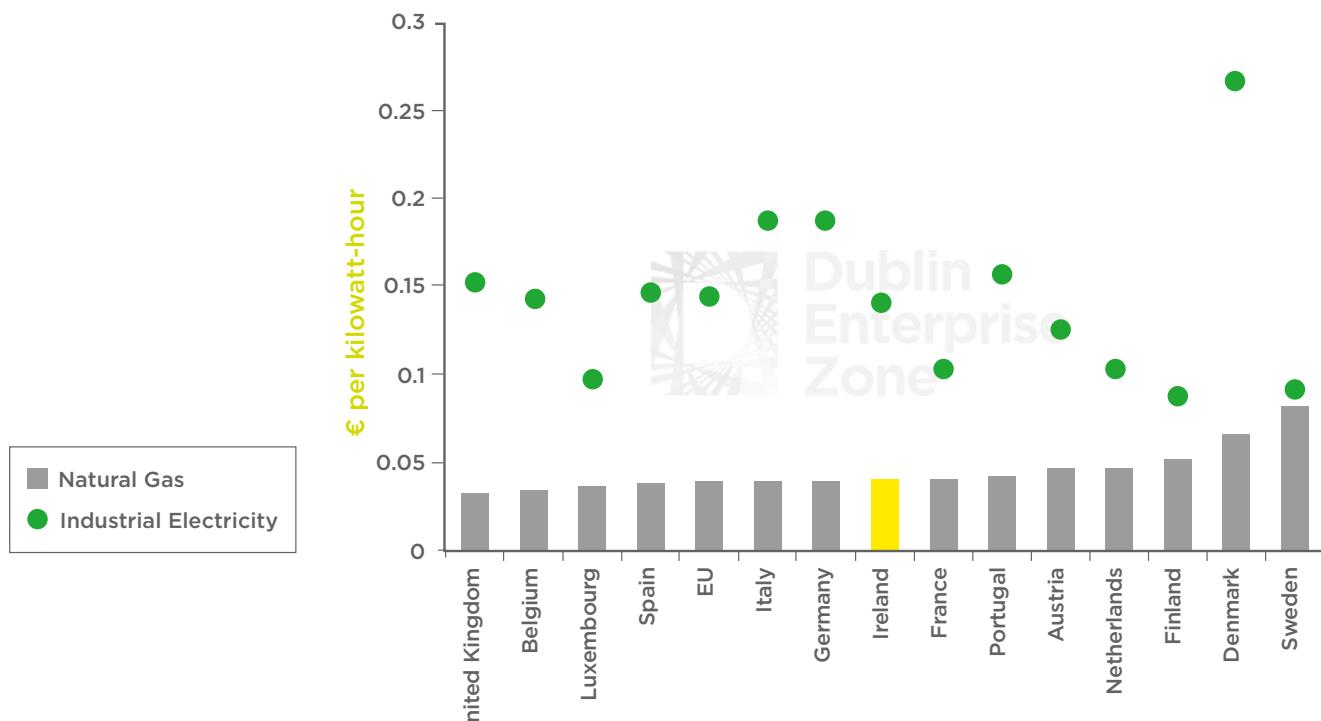
■ CBD ■ High-Tech

ENERGY COSTS

Key energy sources such as natural gas and industrial electricity are competitively priced in Ireland when viewed in a comparative European

context. On average, energy costs make up just 1.6% of total business costs in Ireland, but this can fluctuate up to 7% in other countries.

NATURAL GAS AND INDUSTRIAL ELECTRICITY PRICES ACROSS EUROPE



Source: Fingal County Council analysis of Eurostat data

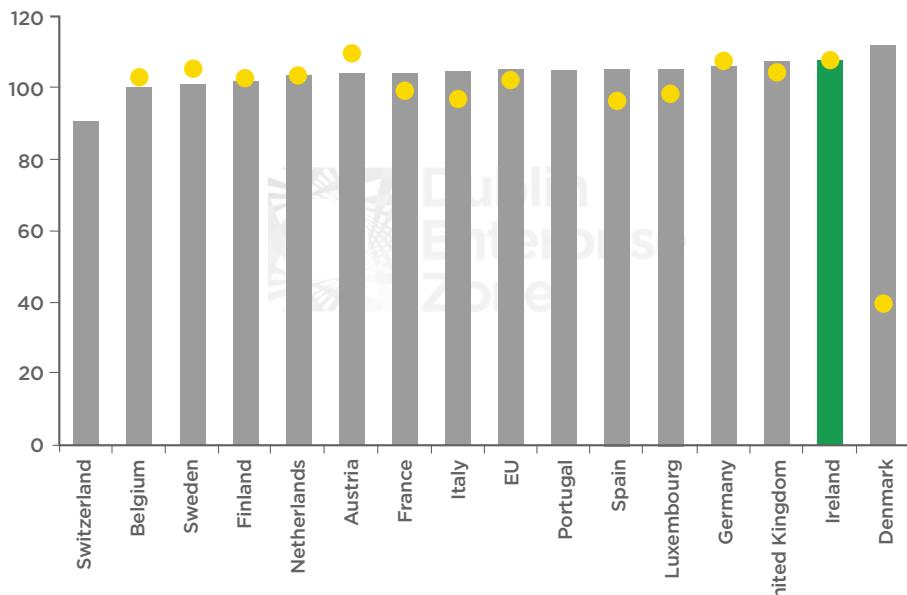
PRODUCER PRICE INDEX

Producer prices – the prices charged for business-to-business transactions – are a further ingredient of cost competitiveness.¹

Cost increases for businesses in Ireland are generally in line with other European countries. As of Q4 2016, costs were still below levels observed prior to the downturn.

 Industry  Services

PRODUCER PRICE INDEX FOR INDUSTRY AND SERVICES (2010 = 100)



Source: Fingal County Council analysis of Eurostat data

LABOUR COSTS & EMPLOYEE TAXES

Labour costs are a key component of the overall cost of doing business. Ireland performs very well and despite a tightening labour market, has managed to contain wage growth.

LABOUR COST PER HOUR



1. The experimental Producer Price Index (SPPI) measures changes in the average prices charged by domestic industry and service producers to other businesses for a selected range of goods and services. These indices cover business to business transactions rather than end purchases by consumers and such are a good reflection of input prices along the supply chain.

A BOOMING KNOWLEDGE ECONOMY

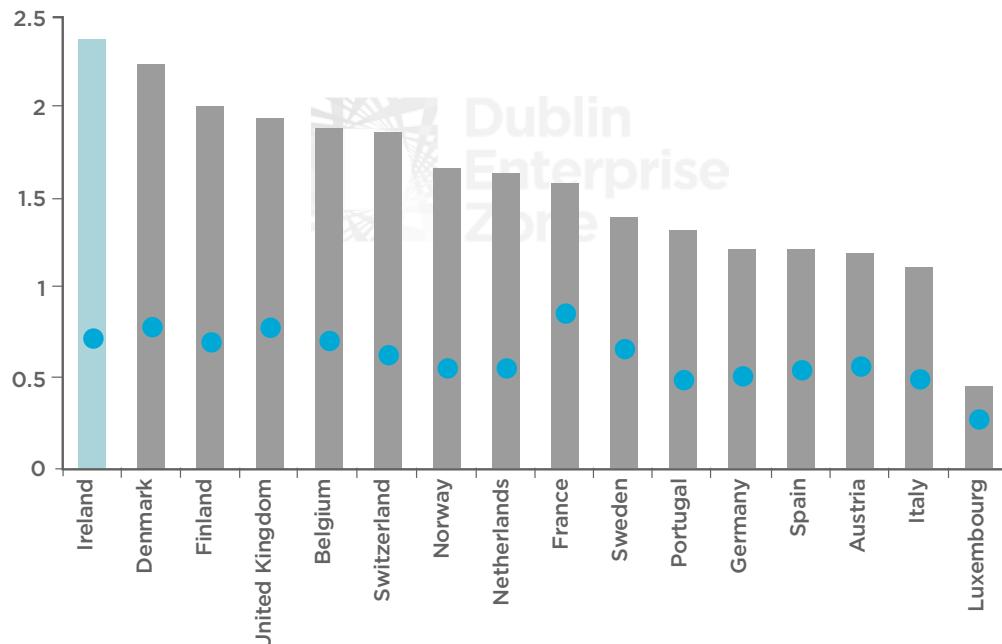
Ireland's well educated and adaptable workforce has been crucial to its economic recovery. 50.1% of people in Ireland between the ages of 25 and 45, who are no longer in education, have been educated to third level. As later analysis will show, a comparatively large portion of these qualifications are in high value adding fields, such as science, technology, engineering and medicine (STEM).

This educated workforce, aided by close collaboration between industry, academia, state agencies and regulatory authorities, has led to Ireland becoming an international leader in innovation and research and development. According to the Global Innovation Index 2017, Ireland is in the world's top 10 most innovative economies in the world, while the EU Innovation Scoreboard also positions Ireland ahead of the EU average.

A PIPELINE OF TALENT

Ireland has the highest concentration of degree level graduates in science, technology, engineering and maths in its workforce of all countries included in this analysis. Further, the portion of the workforce with a masters' degree or higher in a STEM subject is also relatively high. Amongst younger graduates, the popularity of STEM courses is even more pronounced, with 24% of students graduating between 2011 and 2016 coming from a STEM field.

PORTION OF STEM GRADUATES PER 25 – 65 POPULATION



Source: Fingal County Council analysis of Eurostat data

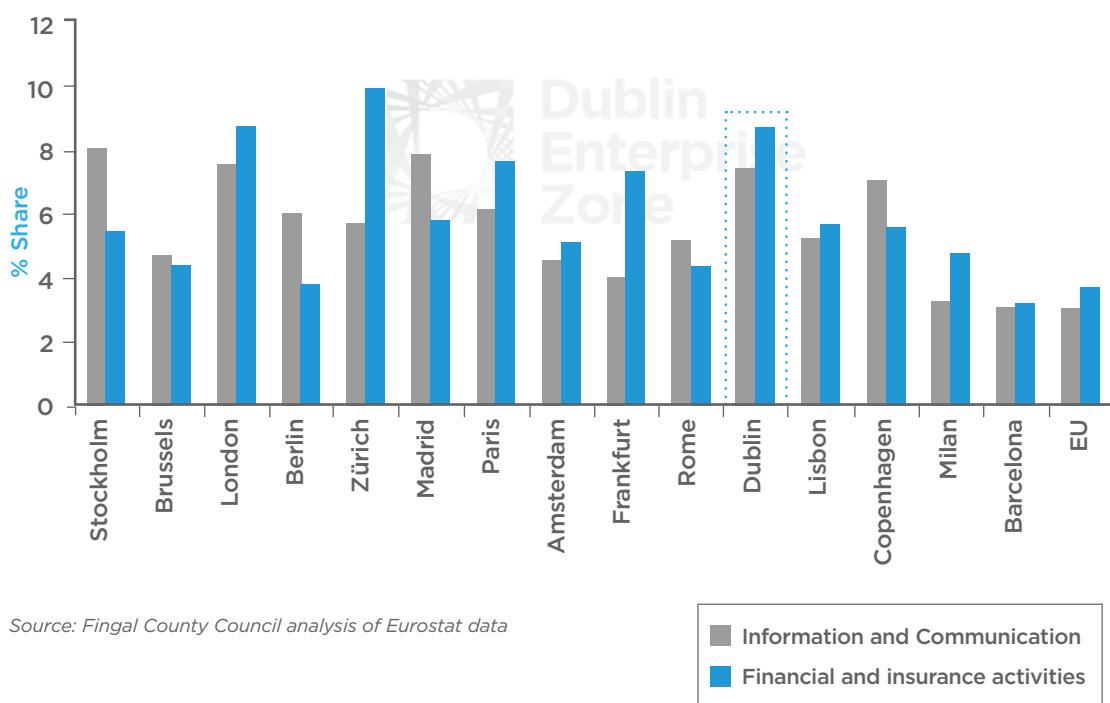
Bachelors or above
● Masters or above

WORKFORCE IN HIGH-VALUE ADDING SECTORS

The high level of educational attainment by Dublin's workforce is reflected in the concentration of the workforce employed in high-value adding sectors of the economy. Our analysis shows that 7.4% of people

are employed in ICT and 8.7% in financial and insurance services. These are significantly higher shares than in most comparator economies included in this analysis.

SHARE OF WORKFORCE EMPLOYED IN HIGH-VALUE ADDING SECTORS



INVESTING FOR THE FUTURE

Infrastructure and connectivity are crucial to facilitating rapid and low-cost access to markets and talent. These factors are a key influencer of investment decisions. The Irish Government has recently added €4 billion to its Public Infrastructure Programme. Continued growth of the capital stock of the region is recognised as being crucial to continued and sustained economic growth.

Dublin Airport is the fastest growing large airport in Europe, with both passenger numbers and cargo tonnage at peak levels. The airport is recognised as being a major airport in terms of direct and hub connectivity.

Both policy makers and private investors recognise the need to invest to safeguard Dublin's economic future. Following the necessary retrenchment of project delivery over the course of the recession, the supply of housing and infrastructure is now firmly in expansion mode.

INVESTMENT HIGHLIGHTS:

- A new light rail line - LUAS Cross City - to commence services in December 2017
- Construction is underway of a new runway at Dublin Airport
- The Government's housing strategy aims to boost housing supply by at least 25,000 per annum by 2020, including an investment of €200 million to support the development of large sites and measures to speed up the planning process for larger developments
- There are currently 27,000 outstanding residential planning permissions which have yet to commence in the region
- Design and planning is underway for a major new Metro Line serving the city centre, Dublin Airport and Swords
- The Alexandra Basin Redevelopment at Dublin Port is advancing, with the construction of approximately 3km of quay walls and the deepening of the harbour basin and channel to accommodate larger sea-going vessels.
- More than 65 new office scheme are under construction or planned in the Dublin Region with major schemes in Docklands, Molesworth St, the new National Concert Hall Quarter, Sandyford, Dublin Airport and other central and suburban locations.
- Planning permission is in place for an additional 4.6 million square foot of office space.

Together, these and other investments will unlock major new capacity in Dublin's economy, further strengthening its position as a beacon of growth in a European context.



Dublin
Enterprise
Zone

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