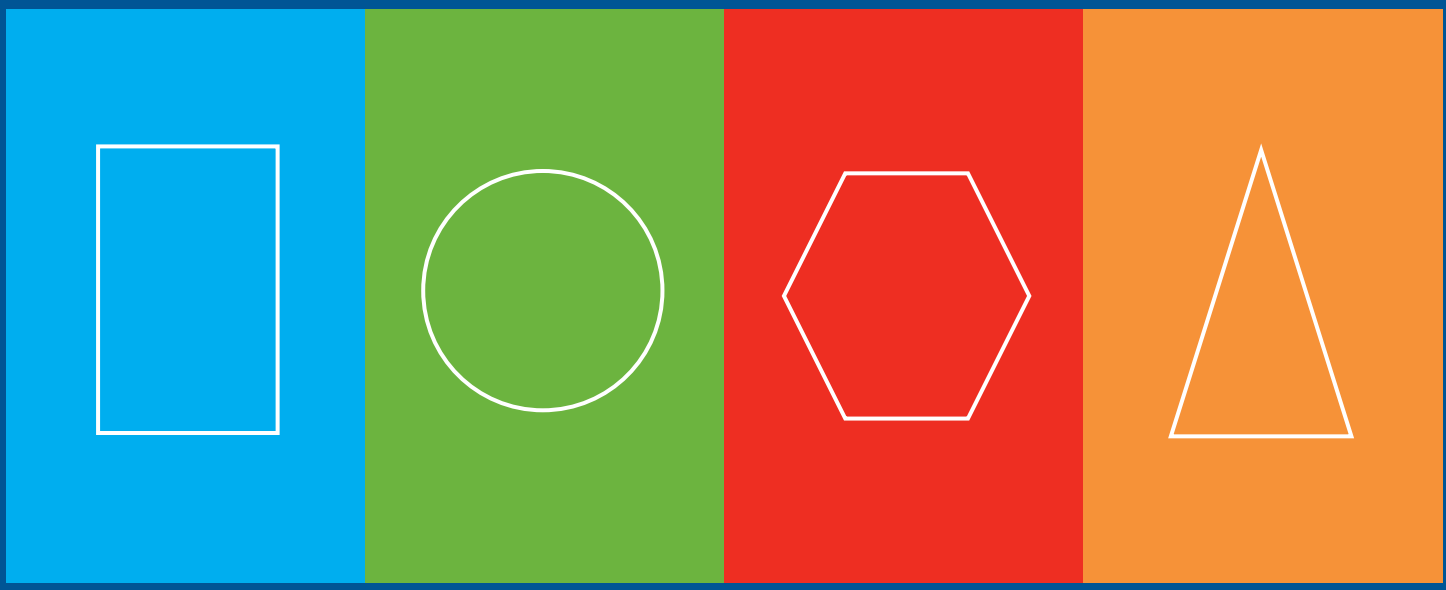


National Skills Bulletin 2016

September 2016

SOLAS
An tSeirbhís Oideachais Leanúnaigh agus Scileanna
Further Education and Training Authority

Expert Group on
Future Skills Needs

National Skills Bulletin 2016

A Report by the Skills and Labour Market Research Unit (SLMRU) in SOLAS for the Expert Group on Future Skills Needs

Authors
Jasmina Behan
Caroline Shally
Joan McNaboe
Nina Burke
Nora Condon

Research support
Anne Marie Hogan

Foreword

The National Skills Bulletin 2016 is the twelfth in an annual series of reports, which has been produced by the Skills and Labour Market Research Unit (SLMRU) in SOLAS on behalf of the Expert Group on Future Skills Needs (EGFSN).

The Bulletin outlines further improvements in the Irish labour market during 2015, which include increases in employment and labour force and declines in the number of unemployed, long-term unemployed and underemployed persons. Despite these improvements, challenges remain in relation to outward migration, new entrants to the labour market and persons with less than higher secondary education attainment.

With improved performance of all sectors of the economy, shortages are intensifying in the following areas: ICT, engineering, sales/customer care, logistics, health, business and finance. Strong growth in the construction sector has led to a sharp decline in the number of unemployed persons previously employed in this sector and an emergence of shortages of certain skills (project managers, surveyors and steel erectors/fixers).

As employment prospects continue to improve across all sectors of the economy, an increasing number of employers are experiencing issues with attracting and retaining employees. Higher than average employee turnover has been identified for a number of occupations, including care workers, sales workers, general clerks, elementary occupations (e.g. waiters, cleaners, catering assistants, security workers), as well as some highly skilled occupations (e.g. IT professionals).

The Bulletin provides an overview of the Irish labour market at occupational level, drawing on the data held in the National Skills Database (NSD). The information presented in the Bulletin, aims to support policy development in the areas of education and training, labour market activation, immigration, enterprise development and career guidance. It is an integral part of the annual suite of reports, including the Regional Labour Markets Bulletin 2016, Monitoring Ireland's Skills Supply 2016 and Vacancy Overview.

Una Halligan,

Chairperson, Expert Group on Future Skills Needs

Table of Contents

Executive Summary

The National Skills Bulletin 2016 is the twelfth in an annual series of reports produced by the Skills and Labour Market Research Unit (SLMRU) in SOLAS on behalf of the Expert Group on Future Skills Needs (EGFSN). The Bulletin provides an overview of the Irish labour market at occupational level, by examining a variety of indicators on demand and supply. The objective of the Bulletin is to inform policy formulation in the areas of employment, education/training, career guidance and immigration. The Bulletin also aims to assist students, job seekers, persons returning to the labour force, investors and employers in making labour market decisions.

Irish Labour Market in 2015

During 2015 there were further improvements in a number of labour market indicators:

- employment increased by 50,000 (annual average)
- the employment rate increased by 1.6 percentage points to 63.3% (annual average)
- the unemployment level declined by almost 40,000 (annual average)
- the unemployment rate declined by 1.8 percentage points to 9.5% (annual average)
- the long term unemployment rate declined to 4.7% (quarter 4)
- the broad unemployment measure (combining unemployed and part-time underemployed persons) declined to 13.5% (quarter 4)
- the labour force increased by 10,400 (annual average)
- the number of persons in part-time employment who were underemployed decreased by 11,000 (quarter 4)
- the total number of redundancies declined to 4,342, compared to 77,000 in 2009.

During 2015, many challenges still remained, as illustrated by the following indicators:

- net migration continued to be negative, with emigration exceeding immigration by 11,600; net migration for Irish nationals although negative, declined by 6,000 on 2014
- the unemployment rate remained high for certain segments of the labour market (e.g. persons with lower secondary or less education (15%), under 25s (19%), former construction workers (16%)).

Employment and Unemployment by Broad Occupation

Between 2014 and 2015, the strongest absolute employment growth (in annual average terms) was observed for personal services (10,700), followed by associate professional (9,300) and professional occupations (7,100). In relative terms, the strongest growth was observed for personal services occupations (7%).

Between quarter 4 2014 and quarter 4 2015, the unemployment rate declined for all occupational groups, except for administrators, which remained at 5%. The largest declines were observed for skilled trades (2.5 percentage points to 7.3%) and personal services occupations (two percentage points to 5.1%).

Sectoral Employment and Unemployment

Between quarter 4 2014 and quarter 4 2015 the strongest employment growth was observed in the construction sector (8.5%); over this period, employment increased in all sectors excluding financial (where it declined) and education and agriculture (where it remained almost unchanged).

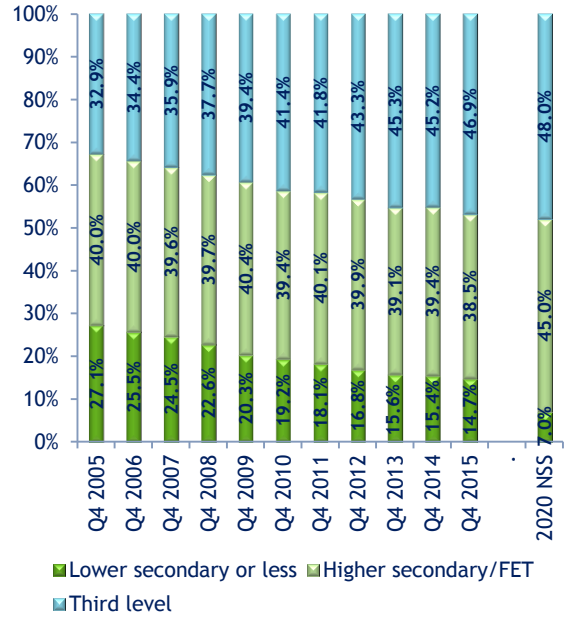
Compared to five years previously (quarter 4 2010 to quarter 4 2015), employment in agriculture, professional services, ICT and accommodation each grew by 20% or more; employment contracted in public administration and defence and transportation/storage sectors.

National Skills Strategy Progress

Figure A.1 presents the education attainment of the labour force (15-64 years) and the targets set out in the 2007 National Skills Strategy (NSS) and carried over in the new 2016 National Skills Strategy[1]. Over the period quarter 4 2014 and quarter 4 2015, the share of working age third level graduates in the labour force increased by 1.6 percentage points to 46.9%. An improvement was also observed at the lower end of the education scale, with the share of persons with lower secondary qualifications or less declining by 0.7 percentage points to 14.7%.

The gap to the 2020 target was reduced to 1.1 percentage points in relation to the third level graduate cohort, however, the gap was over seven percentage points for the cohort with less than higher secondary education (14.7% compared to 7%).

Figure A.1 Labour Force (15-64 years) by Education and the NSS Target



Source: SLMRU (SOLAS) analysis of CSO data

Labour Market Transitions

Based on quarterly flows, it was estimated that over 1 million transitions occurred in the Irish labour market in 2015: almost 200,000 between employment and unemployment, almost 280,000 between employment and inactivity and over 300,000 between unemployment and inactivity. In addition, almost 280,000 transitions occurred within employment, either due to a change of employer or change of occupation. The distribution of transitions is presented in Table A.1. While the distribution of movements in 2015 remained broadly in line with 2014, there was a decrease in the share of persons remaining in unemployment (68.1% to 66.7%) and an increase in the share of flows from unemployment to employment (from 13.4% to 14.1%) and inactivity to employment (2.5% to 3.1%)

[1] Ireland's National Skills Strategy 2025, January 2016

Table A.1 Average Quarterly Transitions by ILO Status (Persons aged 15-74), 2015

	ILO end quarter		
ILO start quarter	Employed	Unemployed	Inactive
Employed	97.2%	1.0%	1.7%
Unemployed	14.1%	66.7%	19.2%
Inactive	3.1%	3.0%	93.9%

Source: SLMRU (SOLAS) analysis of CSO data

Transitions analysis confirms other findings on improvements in the Irish labour market, with the number of transitions from employment to unemployment declining continuously over the period covered by the analysis (2012-2015).

Replacement - at occupational level, the highest replacement rates were observed for sales workers (sales, assistants, sales executives), carers (child-minders), hospitality workers (chefs, waiters, bar staff and catering assistants), hairdressers, clerks (general, receptionists, bank admin), labourers (agricultural, construction, cleaning), operatives (machine, food and construction operatives).

Turnover – at occupational level, change of employer was the most frequent for sales staff (sales accounts, sales assistants, customer service workers), hospitality workers (chefs, waiters, catering assistants and managers, bar staff), financial clerks, care workers (including child-care), construction workers (carpenters, plasterers, electricians and labourers), hairdressers, truck drivers and operatives (testers, assemblers); turnover was above average for some IT occupations (programmers, techincians and engineers); amongst other professionals, turnover was the highest for accountants and doctors.

Vacancies

In 2015, vacancies advertised through IrishJobs.ie were mostly concentrated in professional and associate professional occupations (Figure 8.5). Newly advertised vacancies through the Department of Social Protection (DSP) Jobs Ireland vacancy portal were concentrated in elementary, personal services and skilled trades occupations.

The most recent SLMRU Recruitment Agency Survey points to an increase in the number of mentions of difficult-to-fill (DTF) vacancies. Although a significant majority of all DTF mentions were for professional occupations (IT professionals, engineers, accountants, etc.), an increasing number of non-professional roles were mentioned as difficult to fill.

Sourcing of Skills from Outside the European Economic Area (EEA)

During 2015, employers continued to source skills from outside the EEA. Over 6,000 new employment permits were issued in 2015, an increase of 25% on 2014. Increases in recent years are primarily attributed to a rise in new permits issued in the health and ICT sectors.

The ICT sector accounted for 44% of all new employment permits issued in 2015, with the health sector accounting for almost a third. In terms of occupations, professionals accounted for 75% of all new permits issued, for positions including IT developers, doctors, nurses, engineers and business analysts. The type of permit issued and the salary scale varied by occupation.

Shortage[2]

During 2015, shortages were observed in an increasing number of occupations and sectors compared to recent years.

Science

The skills in short supply chiefly related to experienced candidates (e.g. five years or more) and niche scientific areas typically associated with the pharmaceutical, bio-pharma and food innovation industries. In particular, there was a demand for scientists with experience in compliance, regulatory affairs and new product development. Shortages in relation to the following job titles were identified:

- scientist: analytical development chemist; formulation scientist; microbiologist; R&D (especially with industry specific backgrounds); QC manager; QC analyst; QA specialist
- technician: QA/QC/validation technician; quality technician inspector.

There also appears to be an issue with geographic mobility and the attractiveness of some locations outside the greater Dublin area.

Engineering

At professional level, shortages of engineers, typically for roles in pharmaceutical and medical devices manufacturing, have been identified. The demand relates largely to those with significant experience (at least five years) in industry specific settings. Job titles in short supply include:

- process/bioprocess engineers with experience and specific skills sets, including
  - process analytical technology (PAT) and quality by design (QbD)
  - process safety
  - lean processes (Green Belt, Black Belt)
- automation/validation/commissioning engineers: with experience in CSV/CQV; lean processes
- quality/QC/QA engineers & other regulatory affairs professionals
- R&D engineers: development of new technologies and therapies (e.g. gene and stem cell therapy; biologics, etc.)
- chemical/chemical process engineers
- mechanical engineers: with skills and experience in polymer engineering and injection moulding
- electrical engineers
- global and industrial managers and engineers (10 years' experience): mostly for export-manufacturing sectors.

At technician level, shortages have been identified for:

- quality assurance technicians
- injection moulding technicians
- polymer engineering technicians
- biotechnology technicians
- extrusion technicians
- process technologists
- maintenance technicians.

There also appears to be an issue with geographical mobility and the ability to attract candidates to certain locations.

[2] The term 'shortage' in this report refers only to a situation where the supply of skills or labour from within the Irish labour force is insufficient to meet demand (which does not imply a shortage at the European Economic Area (EEA) level).

ICT

Shortages of the following skills have been identified:

- programming and software development: programming languages (Java, .net, C++, Python, PHP, Scala, AKKA, Ruby on Rails, VBA); operating systems (iOS, Linux); mobile applications development; web development (CSS, HTML)
- cloud computing: MS Azure, AWS (amazon web services), cloud architect
- InfoSec (IT security): IoT (internet of things), BYOD (bring your own device), data/information security; IT internal audit
- web design (niche areas only): particularly web related applications focusing on enhancing users' online experience (UX) and supporting user interaction (UI)
- DevOps engineering (developing/testing, process re-engineering and communication skills)
- IT project management
- networking and infrastructure: networking engineer
- IT business analysis: business intelligence and search engine optimisation
- database administration (DBA), big data analytics, data architecture (ETL[3]) and data warehousing: SQL, Hadoop , Hive, Apache, PIG and Cassandra
- testing and troubleshooting: software testers; automation test developers; automated performance testers
- technical support: user support with foreign language skills (German, Nordic).

Business and financial

Shortages have been identified in the following areas:

- accounting: accountants and tax analysts with experience (5 years+) in niche areas (e.g. cost, fixed assets, solvency, international and/or manufacturing settings, languages (German & Nordic))
- compliance & risk: experienced (5 years+) regulatory affairs and insurance compliance professionals; auditors
- FinTech: business and financial professionals with skills in specific software packages and experience (inc. international)
- business intelligence & data analytics: experienced (5 years+) statisticians; entry level and experienced revenue managers (specific sectors, e.g. hospitality); financial systems analysts; economists and data scientists (big data, data visualisations and quantitative modelling)
- financial management/financial analysis: trustee managers; deposit managers; payroll managers
- HR managers and recruitment specialists
- fund accounting/fund administration: mostly entry level or with some experience (<5 years), particularly in IFS sub-sectors (e.g. international payments, funds, asset management, aircraft leasing)
- multilingual financial clerks: credit controllers; accounts payable/receivable; payroll specialists; fund accounting and transfer pricing specialists.

[3] Extract, Transform and Load – a process in databse usage/ data warehousing

Construction professionals

Shortages of the following skills have been identified:

- construction and quantity surveyors with BIM (building information modelling, CAD)
- construction project managers with experience.

There is also evidence that part of the difficulty in recruiting construction skills at present is due to a lack of geographic mobility.

Construction craft

Shortages have been identified in relation to the following roles:

- curtain wallers
- glaziers
- steelfixer, steel erectors
- pipelayers
- shuttering carpentry
- shift managers and supervisors.

Other craft

A shortage of TIG/MIG welders continues to persist, with demand expected to remain strong particularly due to the growth in the construction and metal fabrication/machining (e.g. high tech manufacturing) industries. The new proposed apprenticeships - advanced craft welder - are expected to alleviate the shortage in the medium term.

A shortage of tradespersons with expertise in making highly complex precision tools continue to persist. A number of new courses and modules have been introduced in recent years, including new manufacturing apprenticeships proposed by the Irish Medical Devices Association (IMDA), which in addition to the increased in output from FET courses and apprenticeship is expected to alleviate the shortage in the medium term.

The problem with attracting and retaining skilled butchers/de-boners remains a challenge for the meat industry in Ireland, with the issue likely to be exacerbated by the greater availability of job opportunities across other growing sectors.

Arts, Sport and Tourism

A shortage of chefs continues to persist, although a recent increases in the training output and the proposed new apprenticeships are expected to alleviate the issue over the medium term.

While the supply is sufficient to meet the demand for lower skilled hospitality roles (waiters/bar staff and catering assistants), the availability of persons willing to take up those roles is expected to be negatively affected by the greater availability of job opportunities across other growing sectors.

Healthcare

Shortages continue to persist for the following occupations:

- medical practitioners (especially locum and non-consultant hospital doctors, registrars and medical specialists (e.g. general and emergency medicine, anaesthetists, paediatricians, consultant radiologists))
- nurses: advanced nursing practitioners (e.g. intensive care, operation theatre, theatre nurse managers), registered nurses (e.g. general nurse, cardiovascular care, elder persons' care, children's care; intellectual disability care, mental health care) and clinical nurses

- radiographers (clinical specialists, MRI and CT radiographers)
- niche area specialists (radiation therapists, audiologists, prosthetists, orthotists, cardio-technician)
- health service managers; nursing home directors.

Education

Although no shortage of teachers has been identified overall, issues continue to exist in relation to sourcing teachers (in both second and third level) with a high level of expertise in specific fields, such as science and mathematics. As the economy recovers further, the ability to attract persons with science and maths skills into teaching may become more challenging given that such skills are also in demand in other sectors (e.g. IT, biopharma, financial).

Transport

Shortages of skills relevant to supply chain management have been identified; these include transport management, warehouse management, materials management, raw materials forecasting/planning (junior roles), inventory control/planning, freight sales, and freight forwarding (air & ocean); the demand is particularly strong for those with experience, industry specific knowledge (e.g. high tech manufacturing, FMCG), foreign languages and relevant technical skills (e.g. SAP BI and analytics).

Difficulties have been identified in relation to sourcing suitable candidates for a number of driving skills including:

- fork lift drivers
- articulated truck drivers/heavy goods vehicle (HGV) drivers
- reach truck drivers
- rigid truck with Certificate of Professional Competence (CPC).

Social & Care

While there is no shortage of nursing aids and healthcare assistants, geographical mobility and a lack of attractiveness of the job have been identified as issues in relation to the availability of some healthcare skills.

Given the high level of turnover, as well as the high volume of job vacancies advertised and job ready job seekers, it is recognised that some employers may be experiencing difficulty in attracting and retaining qualified care and childcare workers.

Sales & Customer Care

Shortages of the following skills continue to persist:

- technical and product/service knowledge (e.g. pharmaceutical, medical devices, Software B2B, SaaS products, etc.)
- communication skills, cultural awareness and foreign languages (especially German, French and Nordic)
- marketing expertise required to lead product strategy development and management continues to exist.

Operatives

Shortages of the following operative skills have been identified:

- qualified CNC (computer numeric control) operatives, particularly in high technology manufacturing and engineering
- production operatives.

While there is currently no shortage of construction operatives, evidence points to an

increasing demand for experienced tower crane operatives and pipelayers.

Introduction

The National Skills Bulletin 2016 is the twelfth in an annual series of reports produced by the Skills and Labour Market Research Unit (SLMRU) in SOLAS on behalf of the Expert Group on Future Skills Needs (EGFSN). It presents an overview of the Irish labour market at occupational level.

The Bulletin aims to assist policy formulation in the areas of employment, education/training, immigration (particularly the sourcing of skills which are in short supply in the Irish and EU labour market from the EEA), as well as informing career guidance advisors, students and other individuals making career and educational choices.

The analysis presented in the Bulletin is based primarily on the data held in the SLMRU National Skills Database, although it also draws on information from the EGFSN's sectoral studies and other relevant research. Occupations are classified using the Standard Occupational Classification (SOC 2010). In cases where the number of persons employed in an occupation is too small to allow for meaningful statistical analysis, two or more occupations were merged to form an occupational group. The analysis covers over 130 occupations.

Each occupation is examined in terms of the following:

- employment level and recent employment trends; the analysis is based on the data from the Central Statistics Office (CSO) Quarterly National Household Survey (QNHS); when interpreting the employment data, the following should be borne in mind:
  - the employment level for each occupation is expressed as an annual average (i.e. the average of four quarters in a calendar year)
  - the trend analysis covers the five-year period 2010-2015, unless otherwise specified; growth over this period is calculated in terms of the annualised growth rate, sometimes referred to as the 'average annual growth rate' for ease of reading (although the two terms are not technically identical)
  - unless otherwise stated, annual changes on a year-on-year basis cover the period quarter 4 2014 - quarter 4 2015[4]
- an employment profile (i.e. age, gender, nationality, employment type and education level); the analysis is based on the QNHS data for quarter 4 2015
- expected medium term employment growth (Occupational Employment Projections 2020, SOLAS, February 2014)
- job ready job seekers registered with the Public Employment Service (PES) (Department of Social Protection (DSP)); these are persons seeking employment who were previously employed in a specific occupation and are self-declared as job ready
- unemployment rate; the analysis is based on the QNHS data for quarter 4 2015

[4] By examining the change in the level of employment one can assess the net result of total job creation and job losses. If an increase in the employment level was observed between two time points, it implies that more jobs were created than lost over that period – this is referred to as 'net job creation'; conversely, if a decrease in the employment level was observed, it implies that more jobs were lost than created.

- vacancies advertised through the Department of Social Protection's (DSP) Jobs Ireland vacancy portal (i.e. the Public Employment Service (PES)) and IrishJobs.ie (a private on-line vacancy advertising service)
- the level of difficulty in filling vacancies; the analysis is based on data from the SLMRU Recruitment Agency Survey conducted in April 2016
- the number of new employment permits issued to non-EEA nationals by the Department of Jobs, Enterprise and Innovation (DJEI)
- recent announcements of job creation and job losses in the media and job creation expected to arise from foreign direct investment supported by the Industrial Development Agency (IDA)
- replacement demand and turnover estimates are based on the analysis of labour market transitions (QNHS)
- the current balance between demand and supply[5]; the analysis is based on all of the above data and other available information; the occupations for which shortages[6] have been identified are highlighted and comments are made regarding the nature of the shortage (e.g. niche area); while the aim is to identify occupations for which shortages exist, further research is necessary to identify the cause and magnitude of these shortages and to recommend the appropriate (if any) policy response.

[5] Forecasts of shortages are not provided, unless implicit in the available data.

[6] The term 'shortage' in this report refers only to the situation where the supply of skills or labour from within the Irish labour force is insufficient to meet demand. It is possible that a sufficient supply of skills or labour for an occupation in question may be found within the European Economic Area (EEA).

The National Skills Bulletin 2016 is structured as follows:

- Section 1: sets the Irish labour market within the context of recent trends and developments in the macroeconomy and presents an overview of the economic and employment outlook for Ireland
- Section 2: examines trends in key labour market indicators (employment, unemployment and the labour force) and the composition of national employment (gender, age, nationality, education etc.)
- Section 3: examines employment trends in economic sectors (the final quarter of 2015 is compared with the same period in the previous year and five years previously)
- Section 4: analyses employment trends by broad occupational group (i.e. employment growth and the composition of employment)
- Section 5: examines recent trends in Irish unemployment (levels and rates) and the characteristics of the unemployed population (i.e. gender, age, educational attainment, nationality, occupation and sector)
- Section 6: presents analysis of labour market transitions between unemployment, employment and economic inactivity at occupational level
- Section 7: examines the inflow of labour from non-EEA countries through the various employment permit schemes
- Section 8: provides an overview of trends and the types of vacancies advertised through DSP Jobs Ireland vacancy portal and IrishJobs.ie; it also reports the findings of the April 2016 SLMRU Recruitment Agency Survey on difficult-to fill-vacancies

- Section 9: presents labour market indicators for over 130 occupations grouped into 17 occupational groups and highlights occupations in short supply.

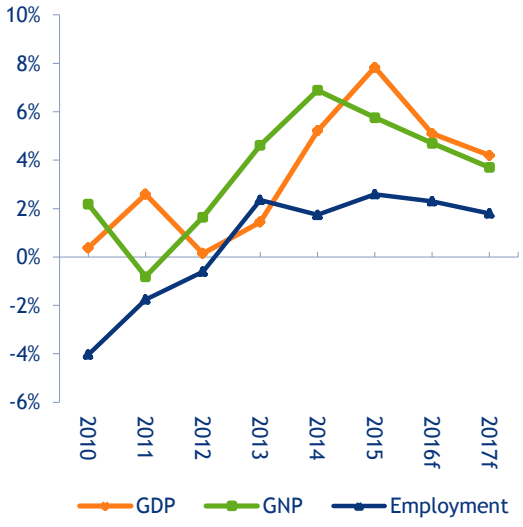
Section 1 Macroeconomic Context

Economic growth

Figure 1.1 presents economic output and employment growth in Ireland for the period 2010-2017. Between 2014 and 2015, the Irish economy grew by 7.8% in GDP terms and by 5.8% in GNP terms. Over this period, employment also increased by 2.6%.

Economic growth is expected to continue over the medium term, with strong GDP growth expected in 2016 (between 4.1% and 5.1% depending on the commentator) and 2017 (between 3.5% and 4.2%).[7] GNP is also expected to expand, with projected growth of 4.7% in 2016 and 3.7% in 2017.[8] Employment is expected to grow by 2.3% in 2016 and by a further 1.8% in 2017.[9]

Figure 1.1 GDP, GNP and Employment, Annual Change, 2010-2017



Source: SLMRU (SOLAS) analysis of CSO data; Central Bank of Ireland, Quarterly Bulletin Q2 2016

[7] Central Bank of Ireland, Quarterly Bulletin Q2 2016, OECD, IMF, EU Commission and Department of Finance (Monthly Economic Bulletin May 2016).
[8] Central Bank of Ireland, Quarterly Bulletin Q2 2016.
[9] *Ibid.*

Growth Components

Economic growth continues to be export and investment led, with exports growing by almost 14% in 2015 and gross fixed capital formation by 28%.[10] Growth was also supported by stronger domestic demand: there was a 3% increase in personal consumption of goods and services. The value and volume of retail sales (montly year-on-year indices) increased continuously during 2015. Net expenditure by central and local Government on goods and services declined by 1%.

Fiscal Position

Ireland is on a trajectory to reach its medium term budgetary objectives. In 2015, the general Government deficit was 2.3% of GDP - a reduction of 1.5 percentage points compared to 2014. The gross debt to GDP ratio also fell from 107.5% of GDP in 2014 to 93.8% in 2015.[11]

Enterprise Sector

In 2015, Ireland continued to be an attractive location for Foreign Direct Investment (FDI). Between 2014 and 2015, IDA client companies created almost 19,000 net jobs, bringing the total employment to just over 187,000.[12]

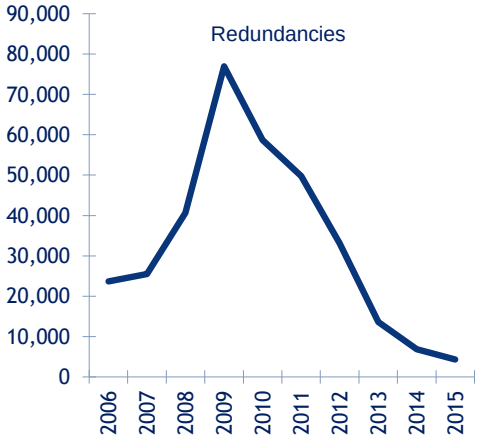
In 2015, strong performance was also recorded by the indigenous sector. Between 2014 and 2015, total employment in Enterprise Ireland (EI) client companies increased to over 192,000 - adding 10,000 net jobs to the economy.[13]

[10] CSO, Quarterly National Accounts, Quarter 4 2015.
[11] CSO, Government Finance Statistics, April 2016.
[12] http://www.idaireland.com/about-ida/achievements
[13] Enterprise Ireland, HPSU Investor Day Class of 2015.

Redundancies

In 2015, the number of redundancies registered with the DSP was at the lowest level since the peak of the crisis. The total number of redundancies was 4,342, which was also well below the Celtic Tiger levels (20,000 recorded in 2006 and 2007) (Figure 1.2).

Figure 1.2 Redundancies, 2006-2015



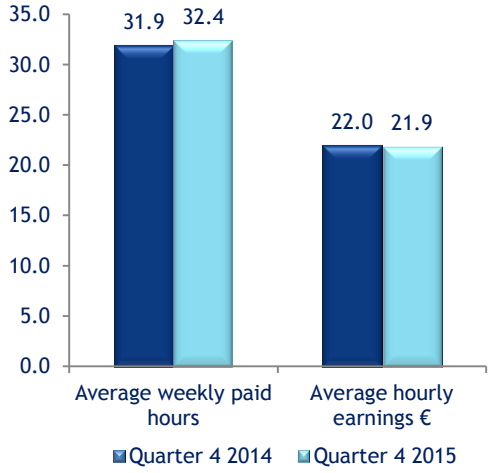
Source: DSP

Hours Worked and Earnings

Figure 1.3 presents the average weekly paid hours and average hourly earnings. In quarter 4 2015, the number of average weekly paid hours was 32.4, which was 30 minutes higher than one year previously.

In quarter 4 2015, average hourly earnings were €21.90, which was 10 cent less than in quarter 4 2014.

Figure 1.3 Average Weekly Paid Hours & Average Hourly Earnings

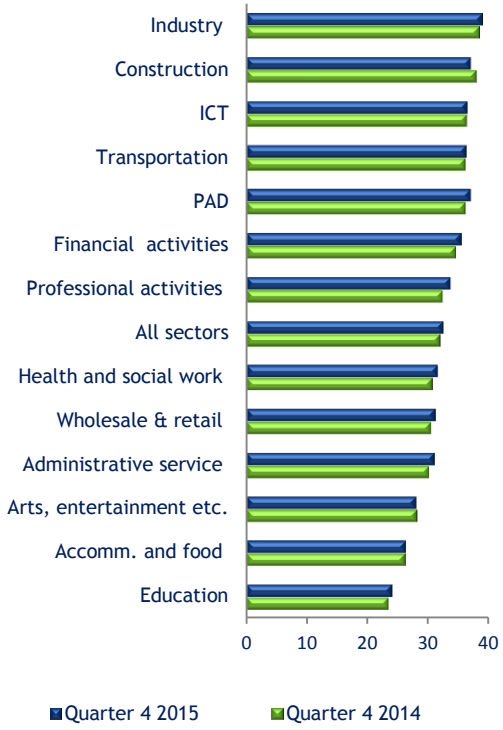


Source: CSO, Earnings, Hours and Employment Costs Survey

The average weekly paid hours by broad economic sector are presented in Figure 1.4. In quarter 4 2015, the average number of weekly paid hours worked was highest in industry (38.9) and lowest in education (24.0).

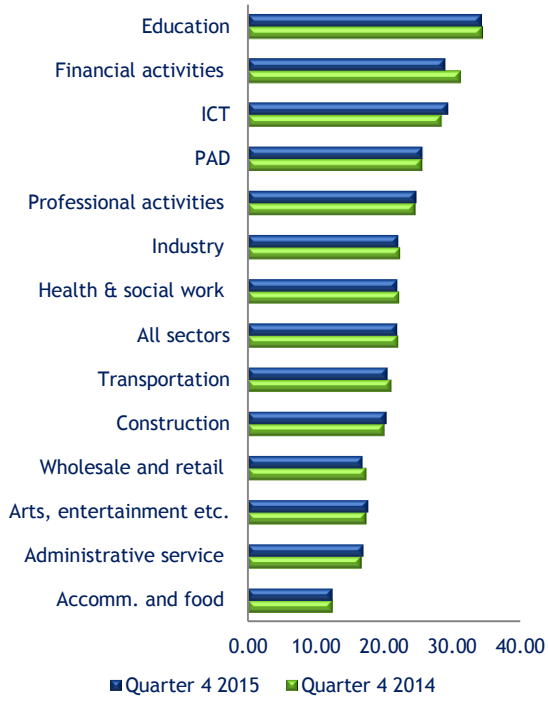
Between quarter 4 2014 and quarter 4 2015, the average number of weekly paid hours increased in all sectors, except for construction and arts, entertainment, recreation and other services. The greatest increase in average weekly paid hours was observed in professional services (1.3 hours).

Figure 1.4 Average Weekly Paid Hours by Sector



Source: CSO, Earnings, Hours and Employment Costs Survey

Figure 1.5 Average Hourly Earnings by Sector (€)



Source: CSO, Earnings, Hours and Employment Costs Survey

The average hourly earnings by sector are presented in Figure 1.5. In quarter 4 2015, as in the preceding year, the highest average hourly earnings were recorded in the education sector (€34.26), with the lowest in the accommodation and food sector (€12.42).

Between quarter 4 2014 and quarter 4 2015, average hourly earnings increased in ICT, administration, arts/entertainment, construction, professional activities, and PAD. In all other sectors, with the exception of accommodation and food where there was almost no change, the average hourly earnings decreased. As in the preceding year, the largest increase was in the ICT sector (just under €1).

Competitiveness

In May 2016, Ireland was ranked 7th most competitive country – an improvement from 9th place in 2015.[14] Despite the improved ranking, further advances are needed in relation to the following:

- physical and knowledge infrastructure (e.g. transport, telecommunications, broadband, housing, energy, waste)
- cost competitiveness (e.g. labour market participation and childcare costs, rental costs, energy costs, legal services costs, commercial insurance costs)
- skills development (better alignment of education and training provision with the needs of the economy)
- enterprise development (e.g. internationalisation, digital trade, export

[14] IMD World Competitiveness Yearbook.

diversification, female enterprenership, regulatory burden etc.)

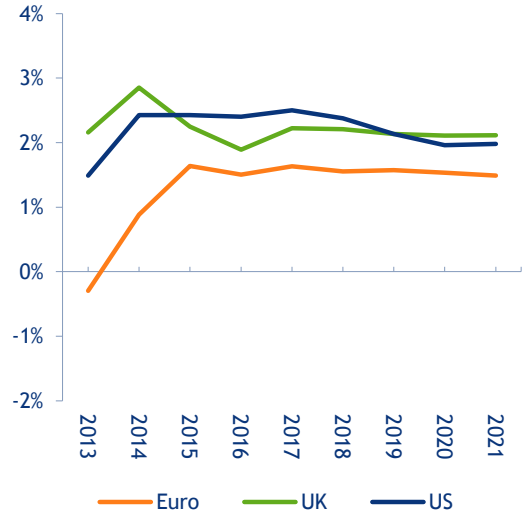
- access to finance (e.g. cost of credit, non-bank finance sources)
- productivity and innovation (e.g. new technologies, new business models, global links, R&D investment)
- fiscal policy (e.g. incentivising work, broadening tax base, counter-cyclical policy).[15]

Global Outlook

Global economic growth is expected to remain weak with a number of challenges identified over the short to medium term. These include: declining commodity prices (oil, gas, coal, metal, agricultural), declining investment, slowing growth in China and increasing geopolitical risks. Of particular concern is the ability of oil-exporting countries to neutralise the negative windfall effect from the declining oil prices, which have resulted from the increase in supply, weaker global demand and improved energy effiency.[16]

Figure 1.6 presents the IMF growth projections of the major trading partners for Ireland. The economies of the three main trading partners are expected to grow moderately over the medium term. The US economy is expected to grow the strongest of the three, with the annual GDP growth of over 2% expected in the medium term. The Euro area is expected to grow at an average of 1.6% over the period 2016-2021, however, it is unclear how the growth will be affected following the British vote to leave the EU.

Figure 1.6 GDP at Constant Prices



Source: IMF

In the US, in the short term, the negative effect of the strenthening dollar on exports, declines in energy investment and weaker manufacturing are expected to be offset by the strengthening balance sheet, fiscal stability and an improving housing market. Longer term growth of the US economy is expected to be negatively affected by the aging population and low total factor productivity growth.

In the Euro area, lower energy prices and fiscal and monetary stimuli are expected to be partially offset by the overhang from the crisis, including high public and private debt, low investment and negative implications on the skills base of long-term unemployment, with all of the challanges compounded by the increased uncertainty following the Brexit vote.

The UK economy is expected to benefit from low oil prices, however, tightening fiscal policy and the uncertainty in relation to the impact from the vote to exit the EU will have negative implications on growth.

[15] NCC, Ireland's Competitiveness Challenge 2015, December 2015.
[16] IMF, World Economic Outlook 2015, April 2016.

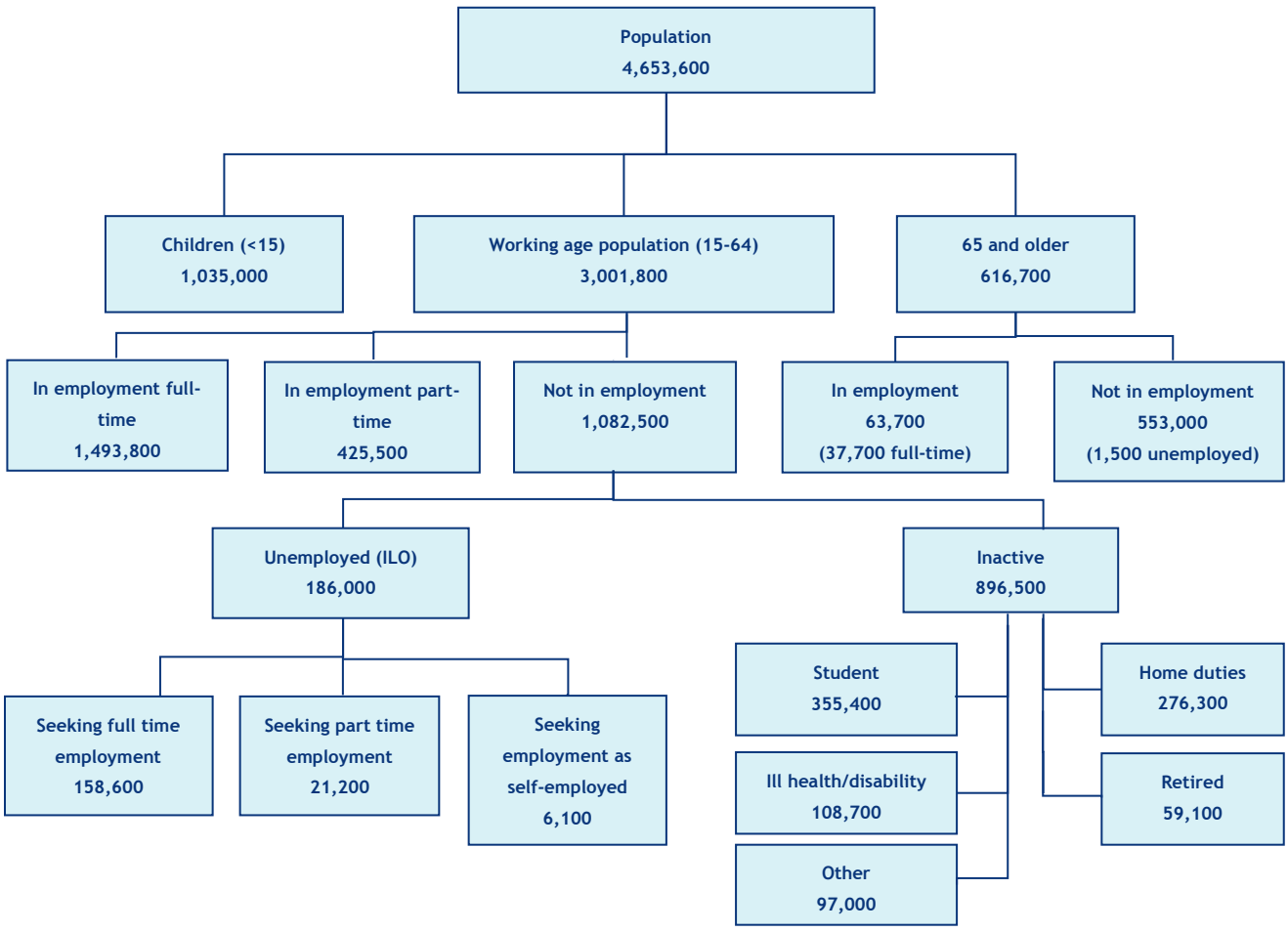
Section 2 Labour Market Overview

2.1 Population: Labour Market Status

In quarter 4 2015, there were an estimated 4.65 million persons living in Ireland, almost 30,000 more than in quarter 4 2014.

Figure 2.1 presents the labour market status of persons living in Ireland. In quarter 4 2015, the working age population (persons aged 15-64) was 3 million, which was almost 3,000 less compared to quarter 4 2014. The number of children (persons younger than 15) was 1.03 million (an increase of more than 13,000), while the number of persons aged 65 and over was 616,700 (an increase of almost 20,000). The cohort of persons aged 65 and over was the fastest growing, in both absolute and relative terms (over 3%).

Figure 2.1 Population by Labour Market Status (ILO defined), Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Note: Discrepancies are due to rounding.

In quarter 4 2015, the total age dependency rate[17] (youth and older age) was 55.0%, which was 1.1 percentage points higher than in quarter 4 2014. Over this period, the youth age dependency rate increased by 0.5 percentage points to 34.5%, while the older age dependency rate increased by 0.6 percentage points to 20.5% (Table 2.1).

In quarter 4 2015, 1.92 million persons of working age were in employment, which was 38,500 more than in quarter 4 2014. Approximately 1.08 million persons of working age were not in employment, which was 41,400 less than one year previously. Of the working age population not in employment, just over 186,000 were unemployed and 896,500 were economically inactive.[18] Compared to quarter 4 2014, the number of unemployed and economically inactive decreased by 26,700 and 14,700 respectively.

Within the economically inactive group, there were:

- 355,400 students – 1,700 more than in quarter 4 2014
- 276,300 persons engaged in home duties – 4,300 less than in quarter 4 2014
- 59,100 retired persons – 4,500 less than in quarter 4 2014
- 108,700 persons inactive due to ill health or disability – 2,900 more than in quarter 4 2014
- 97,000 persons were inactive for other reasons – 10,600 less than in quarter 4 2014; of those inactive for other reasons, 9,100 were discouraged workers – 4,500 less than the year previously.

[17] The age dependency rate compares the non-working age population to those of working age.
[18] Economically inactive are defined as persons who are not in employment or unemployed (actively seeking employment).

In quarter 4 2015, the inactivity rate of the working age population[19] was 29.9% - 0.4 percentage points lower compared to quarter 4 2014. The economic dependency ratio[20] was 1.14 – a decrease of 0.01 points (Table 2.1).

Table 2.1 Dependancy and inactivity rates

	2013	2014	2015
Total dependency rate (0-14 and 65+)	52.7%	53.9%	55.0%
Youth dependency rate (0-14)	33.6%	34.0%	34.5%
Old age dependency rate (65+)	19.1%	19.9%	20.5%
Inactivity rate (15-64)	30.0%	30.3%	29.9%
Economic dependency ratio	1.13	1.15	1.14

Source: SLMRU (SOLAS) analysis of CSO data

2.2 Labour Market and Related Indicators

In 2015, the number of persons in the labour force was 2.17 million (annual average). Compared to 2014, this represented an increase of 10,400 (0.3%) (Figure 2.2). The labour market participation rate was 60.0%, which was the same as one year previously. (Table 2.2). Further increases in the labour force are expected, with the labour force expected to reach 2.21 million in 2017 (Figure 2.2).

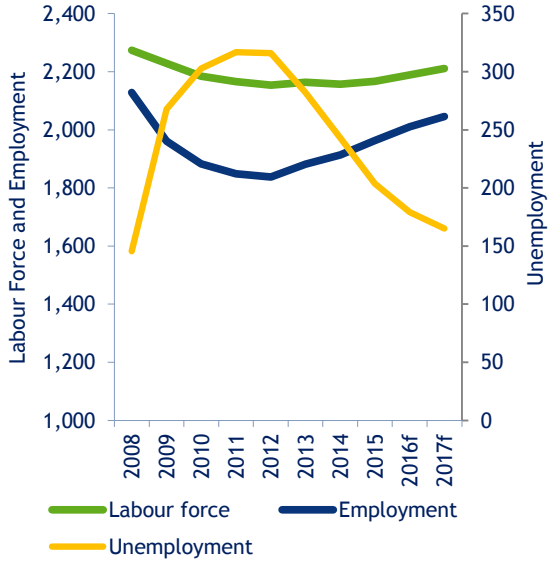
In 2015, there were 1.96 million persons in employment (annual average), which was almost 50,000 more compared to 2014. The employment rate was 63.3%, an increase of 1.6 percentage points compared to 2014 (Table 2.2). The growth is expected to

[19] The inactivity rate is the proportion of the population that is not in the labour force. The inactivity rate for the 15-64 age group (headline inactivity rate), is lower than the general inactivity rate.
[20] The economic dependency ratio compares the total population not in the labour force to the number of those who are in the labour force.

continue, with employment expected to exceed two million in 2016 and to further increase in 2017 (Figure 2.2).

In 2015, unemployment averaged at 203,600, which was almost 40,000 or 16% less than in 2014. The decline is expected to continue, with unemployment expected to average at 165,000 in 2017 (Figure 2.2).

Figure 2.2 Labour Force, Employment & Unemployment (000s), Annual Averages



Source: Analysis by SLMRU (SOLAS) based on CSO data; Central Bank of Ireland, Quarterly Bulletin (April 2016)

In 2015, the unemployment rate declined to one digit levels and averaged 9.5%, which was 1.9 percentage points below the rate recorded in 2014 (Table 2.2). By May 2016, seasonally adjusted monthly unemployment rate was estimated at 7.8%.

In quarter 4 2015, the long term unemployment rate was 4.7%, which was 1.1 percentage points lower than in quarter 4 2014 (Table 2.3).

Table 2.2 Participation, Employment and Unemployment Rates (Annual Averages)

	Participation rate (%) (15+)	Employment rate (%) (15-64)	Unemployment rate (%) (15-74)
2010	60.7	59.7	13.9
2011	60.2	58.9	14.7
2012	59.9	58.9	14.7
2013	60.2	60.5	13.1
2014	60.0	61.7	11.3
2015	60.0	63.3	9.5

Source: CSO

The broad unemployment measure, which combines unemployed and part-time underemployed, also declined from 15.4% in quarter 4 2014 to 13.5% in quarter 4 2015 (Table 2.3).

Youth unemployment rate declined from 20.3% in quarter 4 2014 to 18.8% in quarter 4 2015. Over this period, the NEET rate, which measures the share of 15-24 year old persons who are not in employment, education or training, also declined from from 12.9% to 12.3% (Table 2.3).

Table 2.3 Other unemployment indicators

	Long term UE rate (%) (15-74)	Broad UE rate (%) (15-74)	Youth UE rate (%) (15-24)	NEET* rate (%) (15-24)
Quarter 4 2014	5.8	15.4	20.3	12.9
Quarter 4 2015	4.7	13.5	18.8	12.3

*Not in employment, education or training; ILO defined; there is a discrepancy between ILO and PES (self-declared principal economic status) measure of participation in education with the former one used in the NEET rate potentially overstating the non-participation in the case of Ireland.

Source: Analysis by SLMRU (SOLAS) based on CSO data

Migration estimates for the period 2011 to 2015 are presented in Table 2.4. In 2015, net migration continued to be negative, with outward migration exceeding inward migration by 11,600. Inward migration increased by 8,700, while the outward migration declined by 1,000.

Table 2.4 Migration Estimates (000s)

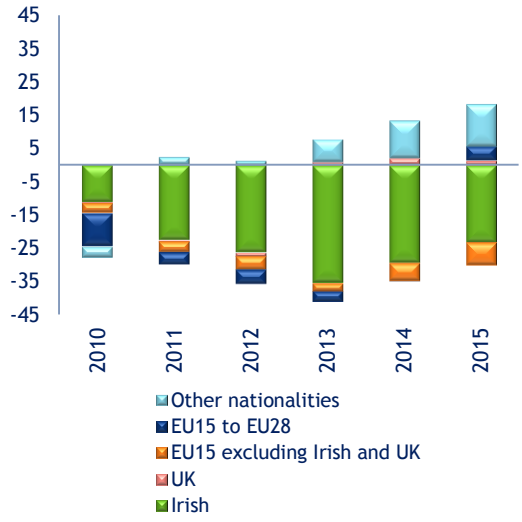
Year	Inward	Outward	Net migration
2011	53.3	80.6	-27.3
2012	52.7	87.1	-34.4
2013	55.9	89.0	-33.1
2014	60.6	81.9	-21.4
2015	69.3	80.9	-11.6

Source: CSO

Irish nationals accounted for 44% of all emigrants and 17% of immigrants. The opposite was the case of non-EU nationals who accounted for 44% of immigrants and 22% of emigrants.

Figure 2.3 presents net migration estimates by nationality. As in the preceding year, in 2015, net migration was positive for non-EU and UK nationals. In 2015, it also turned positive for nationals from EU15 to EU28 countries. Although negative, net outward migration for Irish nationals continued to decline: at 23,200, it was 6,000 lower than in 2014.

Figure 2.3 Net Migration Estimates 2010-2015 by Nationality (000s)

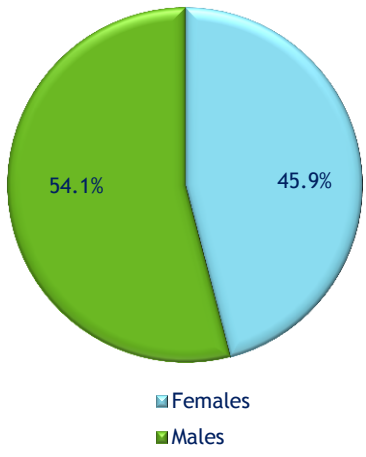


Source: SLMRU (SOLAS) analysis of CSO data

2.3 Employment Composition

In quarter 4 2015, there were 1.98 million persons in employment (aged 15+). Males accounted for 54.1% (1.07 million persons) (Figure 2.4). The gender distribution of employment was broadly in line with that observed in quarter 4 2014, with females gaining 0.2 percentage points.

Figure 2.4 Employment by Gender, Quarter 4 2015



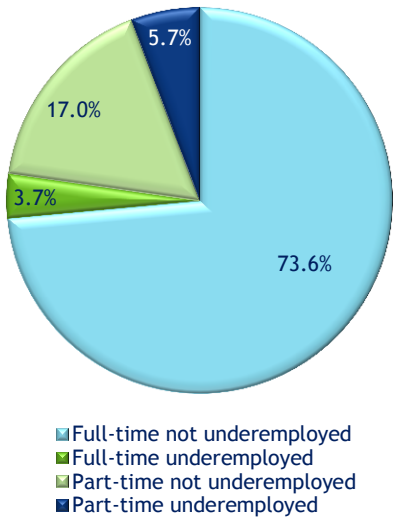
Source: SLMRU (SOLAS) analysis of CSO data

Figure 2.5 presents the distribution of employment between full-time and part-time employment. In quarter 4 2015, full-time employment accounted for 77.3% of the total employment. Of those working full-time, 4.8% were underemployed (wished to work more hours and were available). Of those working part-time, 23% were underemployed.

Compared to quarter 4 2014, the share of full-time employment increased by 0.2 percentage points, while the share of part-time employment declined.

Between quarter 4 2014 and quarter 4 2015, the number of persons in full-time and part-time employment who were underemployed decreased (by 23,000 and 11,000 respectively), while the number of persons in full-time and part-time employment who were not underemployed increased (by 62,000 and 16,000 respectively).

Figure 2.5 Employment by Employment Type, Quarter 4 2015



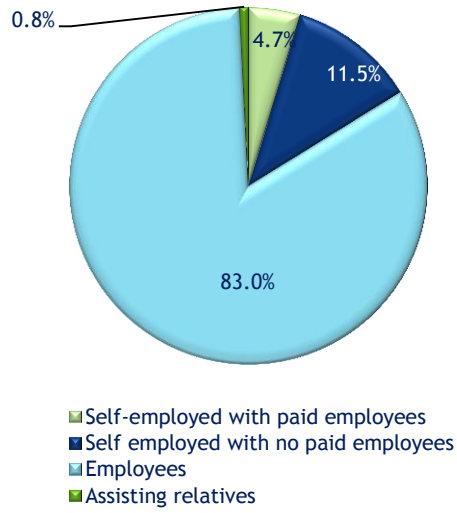
Source: SLMRU (SOLAS) analysis of CSO data

Figure 2.6 presents the distribution of employment by employment status. In quarter 4 2015, 83% of persons in employment were employees, of which 2.3% were employees on Government supported employment schemes. Self-employment accounted for 16.2% of total employment, of which 71.1% were self-employed with no paid employees.

Between quarter 4 2014 and quarter 4 2015, the share of employees increased by 0.2 percentage points.

Employment growth observed between quarter 4 2014 and quarter 4 2015 was primarily due to the increase in the number of employees – an increase of 41,000. Amongst employees, the number of persons employed on Government schemes declined by 1,600.

Figure 2.6 Employment by Employment Status, Quarter 4 2015

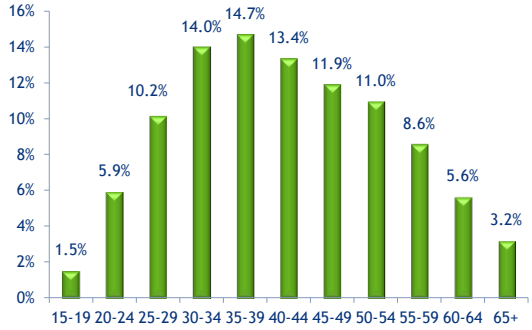


Source: SLMRU (SOLAS) analysis of CSO data

Figure 2.7 presents the age profile of employment. In quarter 4 2015, three quarters of employment was concentrated in the 25-54 age category; those aged under 25 accounted for 7.5% and those aged 55+ for 17.4%.

Between quarter 4 2014 and quarter 4 2015, the age distribution shifted towards the older age cohorts: the share of under 35s declined (from 33.0% to 31.6%) and the share aged 35 and over increased (from 67.0% to 68.4%).

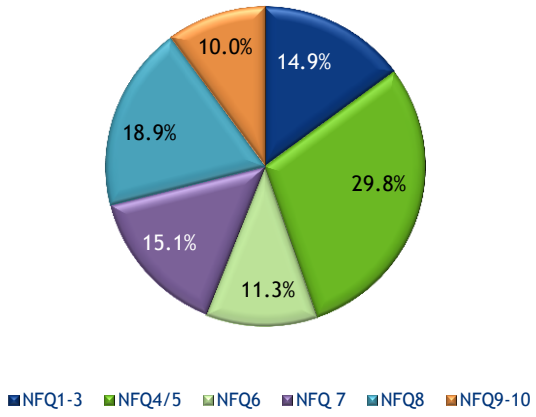
Figure 2.7 Employment by Age, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Figure 2.8 presents the education profile of those in employment in Ireland. In quarter 4 2015, 14.9% of persons in employment had at most qualifications at NFQ levels 1-3; 29.8% had qualifications at NFQ levels 4-5 (e.g. Leaving Certificate); 11.3% had qualifications at NFQ level 6, while the rest had the equivalent of ordinary degree level or higher.

Figure 2.8 Employment by Education (NFQ), Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

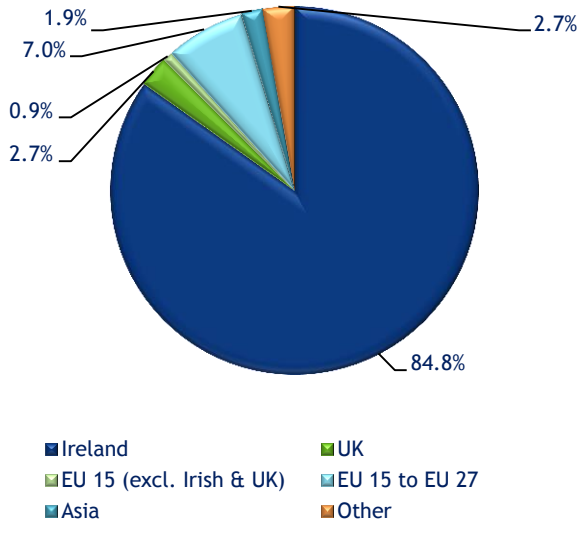
Note: excludes those who did not state their education level

Between quarter 4 2014 and quarter 4 2015, the education distribution of employment shifted towards higher education levels: the share holding qualifications at NFQ levels 7 and above increased by 1.4 percentage points, with the concomitant decline in the share of those with qualifications below NFQ level 7.

Employment by nationality is presented in Figure 2.9. In quarter 4 2015, non-Irish nationals accounted for 300,000 persons or 15.2% of total employment. EU nationals accounted for 69.4% of all non-Irish nationals.

Between quarter 4 2014 and quarter 4 2015, the distribution of employment by nationality remained broadly unchanged. The share of Irish declined by 0.4 pecentage points. The share of non-EU nationals increased by 0.4 percentage points to 4.6%.

Figure 2.9 Employment by Nationality, Quarter 4 2015



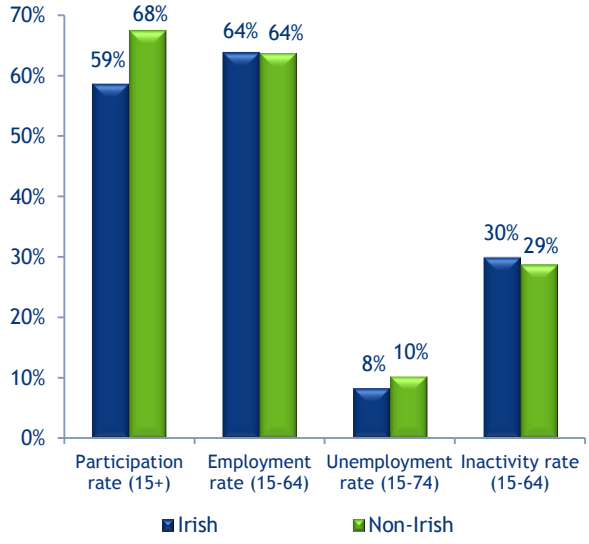
Source: SLMRU (SOLAS) analysis of CSO data

In quarter 4 2015, non-Irish nationals had higher participation and unemployment rates,

and a lower inactivity rate than Irish nationals (Figure 2.10).

Between quarter 4 2014 and quarter 4 2015, the unemployment rate of both Irish and non-Irish nationals declined, while the employment rates increased. Over this period, the participation rate of non-Irish nationals increased, while the inactivity rate decreased.

Figure 2.10 Participation, Employment, Unemployment and Inactivity Rates by Nationality, Quarter 4 2015



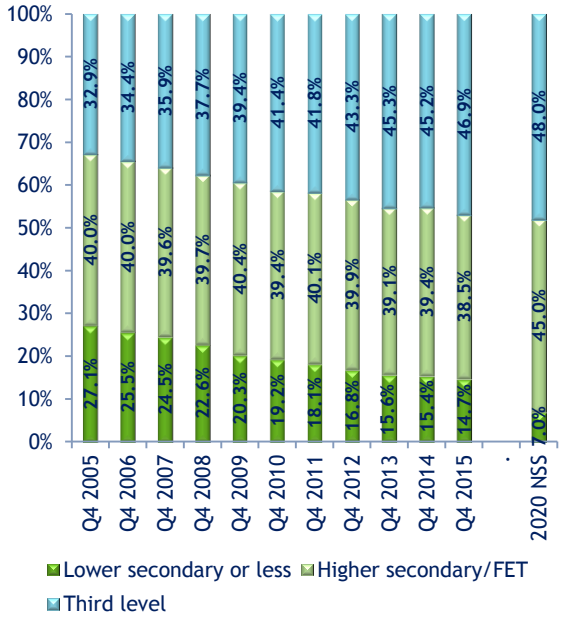
Source: SLMRU (SOLAS) analysis of CSO data

2.6 National Skills Strategy: Progress to Date

Figure 2.11 presents the educational attainment of the labour force (15-64 years) and the targets set out in the 2007 National Skills Strategy (NSS) and carried over in the new 2016 National Skills Strategy[21]. Over the period quarter 4 2014 and quarter 4 2015, the share of working age third level graduates in the labour force increased by 1.6 percentage points to 46.9%. An improvement was observed at the lower end of the education scale, with the share of persons with lower secondary qualifications or less declining by 0.7 percentage points to 14.7%.

The gap to the 2020 target was reduced to 1.1 percentage points in relation to the third level graduate cohort, however, the gap was over seven percentage points for the cohort with less than higher secondary education (14.7% compared to 7%).

Figure 2.11 Labour Force (15-64 years) by Education and the NSS Target



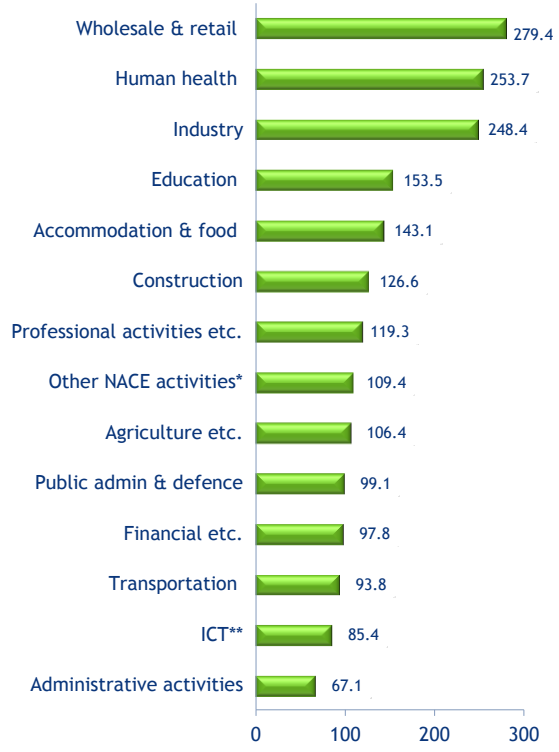
Source: SLMRU (SOLAS) analysis of CSO data

[21] Ireland's National Skills Strategy 2025, January 2016

Section 3 Employment by Economic Sector

The national employment by broad economic sector (NACE Rev 2 defined) is presented in Figure 3.1. In quarter 4 2015, wholesale/ retail, health and industry were the largest sectors in terms of employment levels, each employing a quarter of a million persons or more. These sectors accounted for 14.1%, 12.8% and 12.5% of national employment respectively. Their shares in national employment were broadly in line with those observed in quarter 4 2014.

Figure 3.1 Employment by Sector (000s), Quarter 4 2015



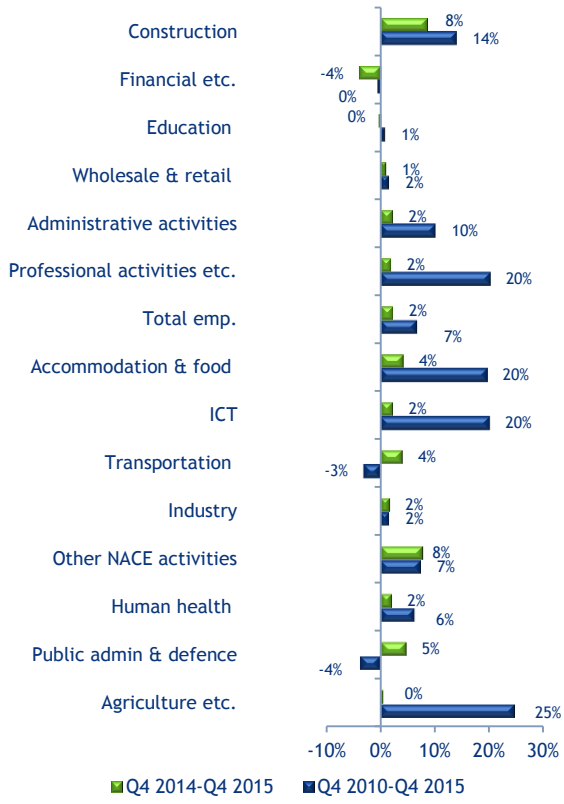
Source: SLMRU (SOLAS) analysis of CSO data

* Other NACE sectors include activities such as entertainment, repair of goods, a range of personal service activities, etc.

**The information and communication sector includes computer programming, telecommunications, information services, publishing and broadcasting; it does not include ICT equipment manufacturing or the wholesale of computers, computer peripheral equipment and software.

Figure 3.2 presents employment growth by sector. Between quarter 4 2014 and quarter 4 2015, employment increased in all sectors except education and agriculture (where it remained almost unchanged), as well as financial, insurance and real estate where it declined. Over this period, growth was the strongest in the construction sector (8.5%), however, despite strong growth, construction employment remained significantly below the levels recorded in 2007.

Figure 3.2 Employment Growth by Sector



Source: SLMRU (SOLAS) analysis of CSO data

*Note: Estimates of employment in the agriculture, forestry and fishing sector are sensitive to sample changes over time and growth rates in this sector should be interpreted with caution.

Compared to quarter 4 2010, the strongest growth was recorded in agriculture (although the CSO warned about sampling issues for this

sector during this period), professional services, ICT and accommodation, each growing by 20% or more. Lower levels of employment compared to five years previously were recorded for the public administration and defence (PAD) and transportation/storage sectors. Employment was broadly unchanged for the education and financial sectors.

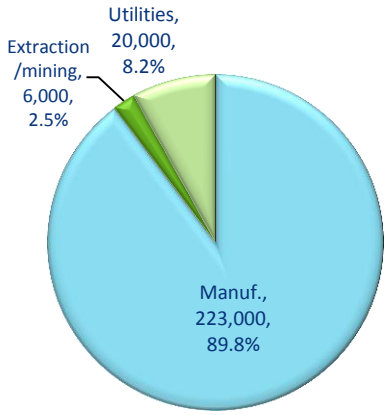
Industry

In quarter 4 2015, almost quarter of a million persons were employed in the industrial sector. Employment increased by 3,900 or 1.6% compared to quarter 4 2014. Between quarter 4 2014 and quarter 4 2015, the share of industrial employment in total national employment decreased marginally from 12.6% to 12.5%.

Compared to five years previously, industrial employment was 4,100 or 1.7% higher. In quarter 4 2010, industrial employment accounted for 13.2% of national employment – 0.7 percentage points more than in quarter 4 2015.

Figure 3.3 presents industrial employment by sub-sector. In quarter 4 2015, 89.8% of industrial employment was in manufacturing (223,000 persons), with utilities and extraction/mining accounting for 8.2% and 2.5% respectively. This was broadly in line with quarter 4 2014, with marginal gains recorded for manufacturing and losses for extraction and utilities.

Figure 3.3 Industrial Employment by Sector, Quarter 4 2015

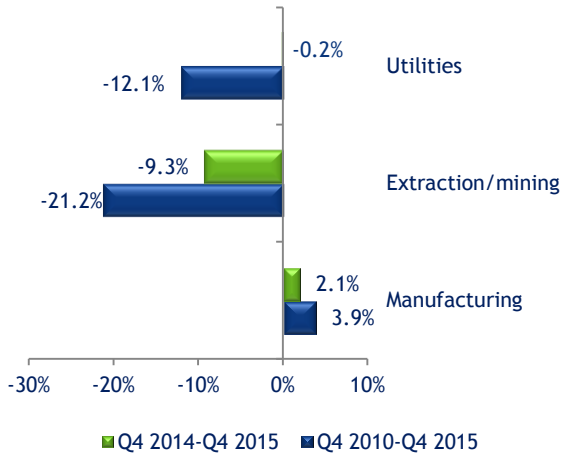


Source: SLMRU (SOLAS) analysis of CSO data

Figure 3.4 presents employment growth in industrial sub-sectors. Between quarter 4 2014 and quarter 4 2015, employment in utilities remained almost unchanged. Within this sub-sector, employment increased in electricity, gas, steam and air conditioning, while it decreased in waste collection activities. Over the same period, employment in extraction/mining declined, while manufacturing increased.

In quarter 4 2015, employment in manufacturing was 3.9% (or 8.300) higher than in quarter 4 2010. By contrast, employment in extraction and utilities was lower by 21.2% and 12.1%. In utilities, the decline was primarily in waste collection, while an increase was recorded for the water collection and related activities.

Figure 3.4 Industrial Employment Growth by Sub-Sector



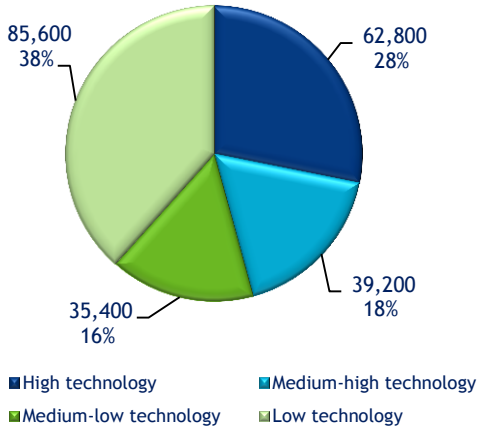
Source: SLMRU (SOLAS) analysis of CSO data

Figure 3.5 presents manufacturing employment by technological intensity. In quarter 4 2015, low technology manufacturing accounted for 38% of manufacturing employment, followed by high technology (28%), medium-high (18%) and medium-low (16%).[22] The technological intensity improved compared to quarter 4 2014, with the share of manufacturing employment in low technology declining by three percentage points.

Figure 3.6 presents employment growth in manufacturing employment by technological intensity. Between quarter 4 2014 and quarter 4 2015, employment decreased in the low technology sector by 4.2% (or 3,700), while it increased in high, medium-high and medium low manufacturing sectors. In absolute terms, the strongest growth was in high tech manufacturing which expanded by 3,700 over this period.

[22] High technology: pharmaceuticals, computers, etc. (NACE 21,26); Medium-high: chemicals, electrical equipment, machinery, medical instruments, etc. (NACE 20,27-30); Medium-low: petroleum products, rubber and plastic, other non-metallic mineral products, fabricated metal products etc. (NACE 19,22-25,33); Low technology: food, beverages, textiles, leather, wood, paper, printing, etc. (NACE 10-18,31,32).

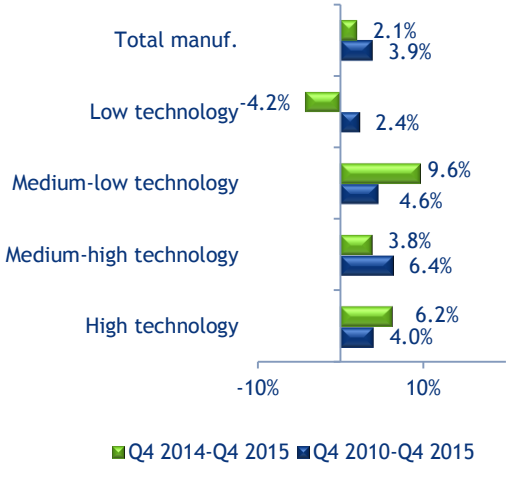
Figure 3.5 Manufacturing Employment by Technological Intensity, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

When compared to quarter 4 2010, manufacturing employment increased across all levels of technological intensity. Over the five year period, employment growth was the strongest in medium-high manufacturing (6.4%), followed by medium-low and high technology (4.6% and 4.0% respectively). In absolute terms, the strongest growth was observed in high and medium-high manufacturing (each increasing by 2,400).

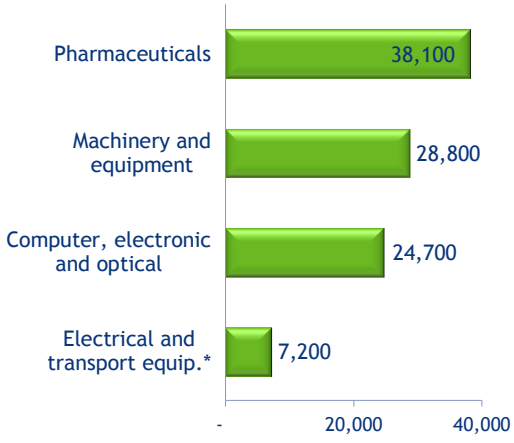
Figure 3.6 Manufacturing Employment Growth by Technological Intensity



Source: SLMRU (SOLAS) analysis of CSO data

Figure 3.7 presents employment in the high and medium-high technology manufacturing sub-sectors.[23] In quarter 4 2015, with over 100,000, employment in high or medium-high technology manufacturing accounted for 46% of manufacturing employment. Of this, employment in pharmaceuticals accounted for 39% (or 38,100). The share of pharmaceutical in high and medium-high manufacturing increased by five percentage points compared to quarter 4 2014.

Figure 3.7 High & Medium-High Tech Manufacturing Employment, Quarter 4 2015

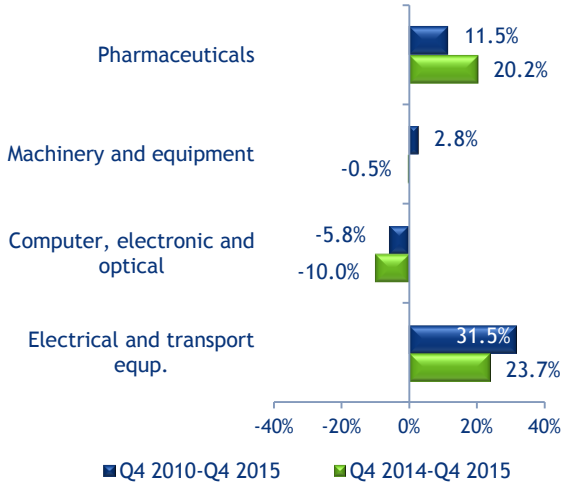


Source: SLMRU (SOLAS) analysis of CSO data

*NACE 27,29,30

Figure 3.8 presents employment growth in high and medium-high manufacturing. Between quarter 4 2014 and quarter 4 2015, employment increased in pharmaceutical and electrical equipment manufacturing, while it decreased in the other two sub-sectors. In absolute terms, employment in pharmaceutical manufacturing increased by 6,400. Compared to quarter 4 2010, employment was almost 4,000 higher in pharmaceuticals, 1,700 higher in electrical and transport equipment manufacturing, while it remained broadly at the same level in machinery manufacturing. Employment in computer and related manufacturing was 1,500 below the level recorded five years previously.

Figure 3.8 High and Medium-High Technology Intensive Manufacturing Employment



Source: SLMRU (SOLAS) analysis of CSO data

Construction

In quarter 4 2015, 126,600 persons were employed in the construction sector, accounting for 6.4% of national employment. Between quarter 4 2014 and quarter 4 2015, construction was the strongest growing sector of the economy, growing by 8.5% and adding almost 10,000 persons in employment. Over this period, employment increased in the construction of buildings and specialised construction activities (e.g. bricklaying, scaffolding, construction equipment renting), by approximately 5,000 each, while it remained broadly unchanged in civil engineering.

Employment in the construction sector increased by more than 15,000 (or 14.1%) over the period quarter 4 2010 to quarter 4 2015. In quarter 4 2015, employment levels in the construction of buildings was 13,800 (or

[23] Manufacturing of chemicals is not presented because figures are too small for statistical inference.

30.2%) higher compared to quarter 4 2010. Employment in civil engineering was 1,800 above the levels recorded five years previously, while there was little difference in employment level for specialised construction activities.

Agriculture

In quarter 4 2015, 106,400 persons were employed in agriculture, representing 5.4% of national employment. Of the total agricultural employment, 95% was in crop and animal production, with the remainder in forestry, fishing and aquaculture.

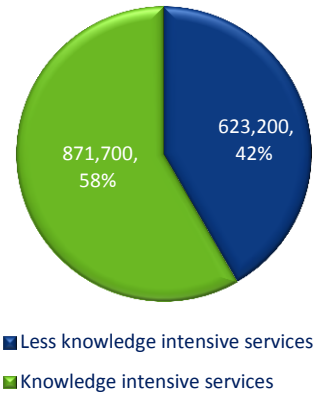
There was very little change in agricultural employment overall, as well as its sub-sectors, between quarter 4 2014 and quarter 4 2015. Compared to five years previously, employment was 21,000 higher.[24]

Services

In quarter 4 2015, just fewer than 1.5 million persons were employed in the services sector, accounting for three quarters of national employment. Between quarter 4 2014 and quarter 4 2015, employment in the services sector increased by almost 28,000 (or 1.8%), while it was 85,000 (or 6%) higher compared to quarter 4 2010.

Figure 3.9 presents the composition of employment in the services sector in terms of knowledge intensity. Of the total services sector employment, 58% (871,700) was in knowledge intensive services - KIS (ICT, financial, legal, accounting, engineering, R&D, education, health and arts),[25] and the remainder was in less knowledge intensive services – LKIS (wholesale & retail, warehousing & transport, accommodation & food, office administration, real estate, travel, etc.)[26]. The distribution of employment between KIS and LKIS has remained broadly unchanged compared to quarter 4 2014.

Figure 3.9 Services Sector Employment, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Between quarter 4 2014 and quarter 4 2015, employment increased in both sub-sectors, rising somewhat faster in less knowledge intensive services (2.8% compared to 1.2% for LKIS) (Figure 3.10). Over this period, an additional 16,800 persons were in employment in the LKIS sub-sector, with just fewer than 10,000 in the KIS sub-sector. In absolute terms, most of the employment increases in LKIS were in food and beverage activities, personal services and services to buildings, while in KIS in legal, public administration and health.

Over the 5-year period quarter 4 2010 to quarter 4 2015, employment increased in both sub-sectors: it was 6.8% (or almost 40,000)

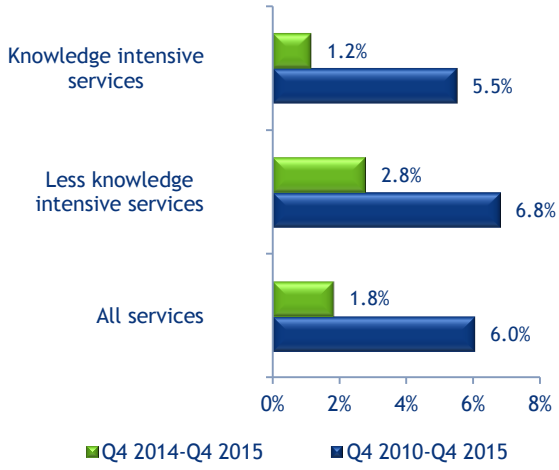
[24] Estimates of employment in the agriculture, forestry and fishing sector have been subject to sample changes over the last several years and growth rates in this sector should be interpreted with caution.

[25] NACE Rev. 2 50, 51, 58-66, 69-75, 78, 80, 84-93.

[26] NACE Rev. 2 45-47, 49, 52, 53, 55, 56, 68, 77, 79, 81, 82, 94-99.

higher in LKIS and 5.5% (or 45,400) in the KIS sub-sector. Over this period, the greatest absolute increase in LKIS was in accommodation, food and personal services. The greatest absolute increase in KIS was in computer programming, care/social work and engineering activities.

Figure 3.10 Services Sector Employment Growth by Knowledge Intensity



Source: SLMRU (SOLAS) analysis of CSO data

Wholesale and Retail Trade

In quarter 4 2015, 279,400 persons were employed in the wholesale and retail trade sector, accounting for 14.1% of national employment. Of these, 191,700 persons were employed in retail trade, 51,800 in wholesale and 35,900 in motor trade.

Over the period quarter 4 2014 to quarter 4 2015, employment in the retail sub-sector increased by 1.5% (or 2,800 persons) and wholesale trade by 5.8% (2,800). By contrast, employment in the motor trade contracted by 7.6% (or 2,900).

Compared to quarter 4 2010, employment was higher in themotor trade (by 5.4% or 1,800) and retail trade (by 1.9% or 3,600), while it was 1.8% (or 1,000) lower in the wholesale sub-sector.

Accommodation and Food Services

In quarter 4 2015, 143,100 persons were employed in accommodation and food services, accounting for 7.2% of national employment. Of this, food and beverage services accounted for 63%, with the remainder accounted for by the accommodation sub-sector.

Between quarter 4 2014 and quarter 4 2015, employment increased in the food and beverage services sub-sector (6.4% or 5,400), while it remained almost unchanged in the accommodation sub-sector.

Over the 5-year period quarter 4 2010 to quarter 4 2015, employment in both sub-sectors grew strongly, with accommodation growing by 17.6% (or 7,900) and food and beverages by 20.9% (or 15,600).

Professional, Scientific and Technical Activities

In quarter 4 2015, 119,300 persons were employed in professional, scientific and technical activities, accounting for 6% of national employment. Of this, 26% was in engineering activities (including architectural activities and technical testing), 27% was in legal and accounting services, 27% in scientific and technical activities, with the remainder spread across other services such as scientific R&D, market research and management consultancy.

Between quarter 4 2014 and quarter 4 2015, employment increased in legal/accounting activities (4,300 or 15.7%), scientific R&D (by 2,500 or 38.2%) and also marginally in

management consultancy (less than 1,000). Employment decreased in engineering/ architectural services (2,600 or 7.6%) and scientific/technical activities (2,000 or 5.8%), while other sectors remained broadly levelled.

Over the five-year period, quarter 4 2010 to quarter 4 2015, employment increased in all professional services sub-sectors, except for management consultancy. In absolute terms, the strongest growth over this period was observed for engineering/architectural services (7,600), scientific R&D (5,000), scientific/technical activities (4,600) and legal (3,800). In relative terms, employment growth was the strongest in scientific R&D (it more than doubled over this period).

Financial, Insurance and Real Estate Services

In quarter 4 2015, 97,900 persons were employed in the provision of financial, insurance and real estate services. This represented 4.9% of national employment. Of the total sectoral employment, 62% was in financial services (e.g. banking), 21% in insurance, with the remainder in auxiliary and real estate activities.

Between quarter 4 2014 and quarter 4 2015, employment decreased in banking and real estate (by 2,500 and 2,000 respectively), while it remained broadly levelled in insurance and activities auxiliary to financial services and insurance.

Between quarter 4 2010 by quarter 4 2015, employment increased in financial services (banking) (1,100) and decreased in activities auxiliary to financial services and insurance (1,200).

Transportation and Storage

In quarter 4 2015, 93,800 persons were employed in transportation and storage related activities, accounting for 4.7% of national employment. Land transport accounted for 54%, postal activities for 18%, warehousing for 17% and the remainder was accounted for by air and water transport.

Between quarter 4 2014 and quarter 4 2015, employment increased in land transport (2,800) and warehousing (2,700), while it decreased in air transport (2,300).

In quarter 4 2015, employment in water and air transport and postal activities was below the levels recorded five years previously. Over this period, employment increased by just over 1,000 in land transport, while it remained broadly unchanged in warehousing.

Information and Communications (ICT)

In quarter 4 2015, 85,400 persons were employed in the ICT sector, accounting for 4.3% of national employment. Of the total employment in the ICT sector, over three quarters were in computer programming and telecommunications. The remainder was spread across other ICT services, such as broadcasting, publishing and motion picture production.

Between quarter 4 2014 and quarter 4 2015, employment in the ICT sector increased by 2.2% (or 1,800). Within the ICT sector, almost all of the increase was due to employment growth in computer programming activities, which increased by 2,600, as other sectors either contracted or remained with employment levels broadly unchanged.

Between quarter 4 2010 and quarter 4 2015, employment in the ICT sector increased by 20% (14,300). During this period, employment increased in computer programming (12,100), information services (2,800), publishing (1,300) and motion picture activities. Over the same period, employment in telecommunications contracted by 8% (or 1,500).

Administrative and Support Service Activities

In quarter 4 2015, there were 67,100 persons employed in administrative and support services, accounting for 3.4% of national employment. Buildings and landscape services accounted for 40% of employment in this sector, office administrative activities (17%), security activities (15%) and the rest distributed between employment activities, travel services and renting/leasing.

Between quarter 4 2014 and quarter 4 2015, employment increased strongly in services to buildings and landscape activities (19% or 4,300), while it declined in travel, security and office support.

Compared to quarter 4 2010 employment increased in services to buildings and landscape activities and employment activities (each expanding by 20%), while it remained broadly levelled in other sub-sectors.

Healthcare and Social work

In quarter 4 2015, just over a quarter of a million persons were employed in human health and social work activities, accounting for 12.8% of national employment. Employment in human health activities accounted for 61%, social work activities for 28% and residential care activities accounted for the remaining 11% - an unchanged distribution compared to one year previously.

Between quarter 4 2014 and quarter 4 2015, the employment level in the overall health and social care sector increased by 2.0%. This increase was almost entirely due to the increase in employment in human health activities, while employment in the other two sub-sectors remained almost unchanged.

Compared to five years previously, the employment level recorded in quarter 4 2015 was higher in all healthcare sub-sector. In absolute and relative terms employment growth was strongest in social work activities (15.8% or 9,600), followed by residential care (11.1% or 2,800) and human health activities (1.7% or 2,600).

Education

In quarter 4 2015, 153,500 persons were employed in the education sector, accounting for 7.7% of national employment.

While there was very little change in employment in this sector between quarter 4 2014 and quarter 4 2015, employment levels were slightly above (1,300 or 0.8%) the levels recorded five years previously.

Public Administration and Defence (PAD)

In quarter 4 2015, there were 99,100 persons employed in PAD, accounting for 5.0% of national employment. While an increase in employment of 4.6% (4,400) was observed between quarter 4 2014 and quarter 4 2015, the employment level in public administration and defence was 3.7% (3,800) below the level recorded five years previously.

Other Sectors

In quarter 4 2015, employment in all other sectors of the economy was 109,400, representing 5.5% of national employment. Almost 30% of employment was in personal services activities, followed by 20% in sports activities, 15% in arts activities, with the remainder distributed between other activities, such as cultural, gambling, domestic etc.

Within this composite sector, between quarter 4 2014 and quarter 4 2015, employment increased in personal services (4,400), household personnel (3,700) and arts activities (2,300). In all other sub-sectors, employment remained broadly in line with that observed one year previously.

Compared to five years previously, employment in quarter 4 2015 was higher in personal services (6,700) and household personnel (3,400), with modest increases also observed in arts, gambling, repair of computers and cultural activities. Over the same period, employment declined in sports activities (2,000) and activities of membership organisations (3,000).

Section 4 Employment by Broad Occupation

4.1 Employment

Figure 4.1 presents employment by broad occupational group. In this section, farmers are presented as an occupation separate from other skilled trades. In quarter 4 2015, persons employed as managers, professionals, associate professionals and administrators accounted for almost half of the national workforce. Skilled tradespersons accounted for 11.6%, while elementary workers accounted for 10.9%. Farmers accounted for 4.3%.

Between quarter 4 2014 and quarter 4 2015, the share of managers, professionals and associate professionals increased by between 0.3 and 0.4 percentage points each, while the share of persons employed in elementary occupations decreased by 0.5 percentage points and the share of administrators by 0.4 percentage points.

Figure 4.1 Employment by Broad Occupational Group (%), Quarter 4 2015

Source: SLMRU (SOLAS) analysis of CSO data

Employment levels by occupational group are presented in Figure 4.2. In quarter 4 2015, at almost 360,000, the highest level of employment was in professional occupations, followed by associate professional occupations at 240,000. Skilled trades accounted for almost 230,000 persons with elementary and administrative occupations accounting for over 200,000 each.

Figure 4.2 Employment by Broad Occupational Group (000s), Quarter 4 2015

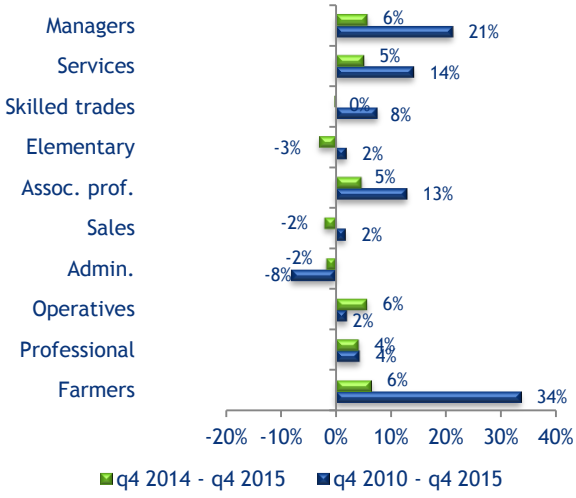
Source: SLMRU (SOLAS) analysis of CSO data

4.2 Employment Growth

Figure 4.3 presents employment growth by broad occupational group. Between quarter 4 2014 and quarter 4 2015, employment declined in elementary, sales and administrative occupations. With the exception of skilled tradespersons whose numbers remained static, all other occupations recorded an increase in employment. With a six percentage point increase each, managers, operatives and farmers recorded the highest relative growth in employment between quarter 4 2014 and quarter 4 2015.

Between quarter 4 2010 and quarter 2015, employment increased for all occupations, with the exception of administrative.

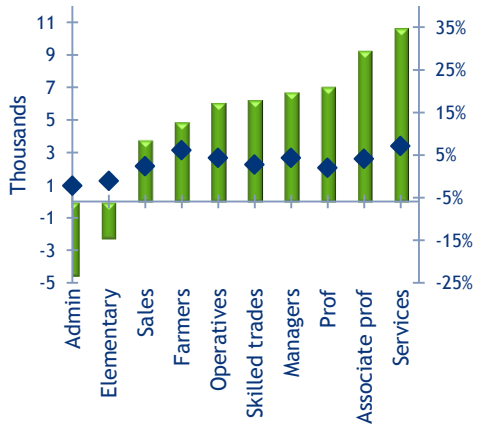
Figure 4.3 Employment Growth by Broad Occupational Group



Source: SLMRU (SOLAS) analysis of CSO data

The absolute and relative change in employment by broad occupational group is presented in Figure 4.4. Between 2014 and 2015 (annual average data), almost all occupations displayed absolute employment growth with the exception of administrative and elementary occupations. Services occupations and farmers recorded the strongest growth rates.

Figure 4.4 Employment Growth by Broad Occupational Group, Annualised Data, 2014-2015



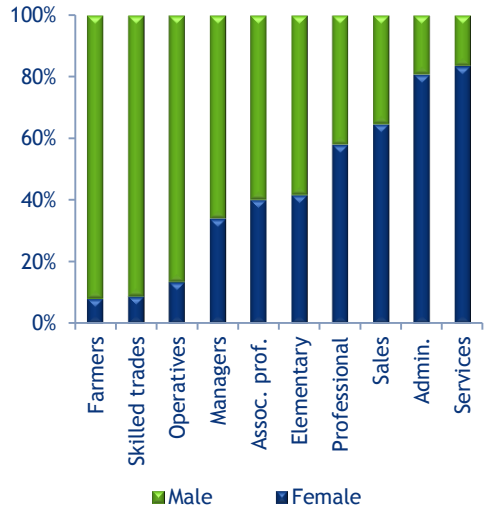
Source: SLMRU (SOLAS) analysis of CSO data

4.3 Employment by Gender

Figure 4.5 presents the distribution of employment by gender in broad occupational groups. In quarter 4 2015, farming, skilled trades and operative occupations had the highest share of males. In contrast, three out of every four employees working in administrative and services occupations were female. Broadly in line with previous years, the share of females and males was most evenly distributed in professional occupations.

Between quarter 4 2014 and quarter 4 2015, female managers gained two percentage points, while females working in administrative and services occupations gained one percentage point each. There was no change for both associate professional and elementary workers.

Figure 4.5 Employment by Gender and Broad Occupational Group (%), Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

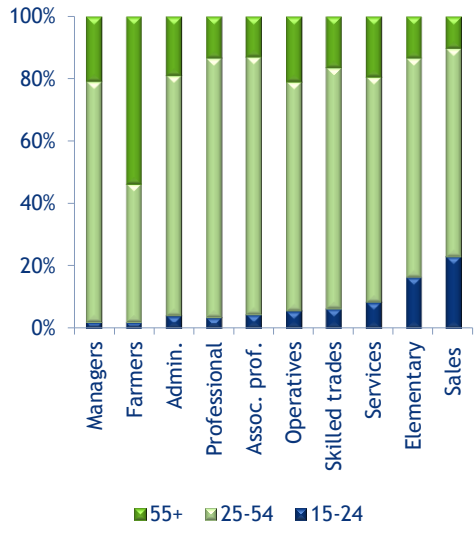
4.4 Employment by Age

Figure 4.6 presents the age distribution of employment in broad occupational groups. In quarter 4 2015, with the exception of

farmers, employment in all occupational groups, was concentrated in the 25-54 age cohort. Less than 2% of managers were aged between 15-24. One in every two farmers was aged over 55 years.

Between quarter 4 2014 and quarter 4 2015, the share of employment in the 15-24 age cohort declined for sales (two percentage points), services and elementary occupations (one percentage point each), while for all other occupations remained unchanged. Farmers and administrators observed the greatest increase in the share of those aged over 55 (two percentage points).

Figure 4.6 Employment by Age and Broad Occupational Group (%), Quarter 4 2015



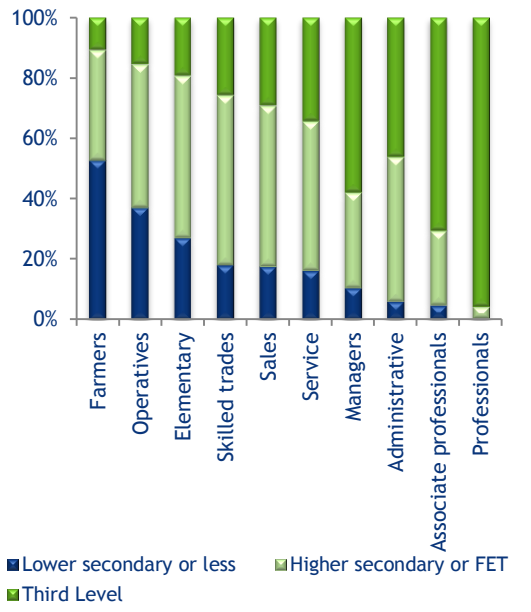
Source: SLMRU (SOLAS) analysis of CSO data

4.5 Employment by Education

Figure 4.7 presents the educational distribution of employment in broad occupational groups. In quarter 4 2015, professionals (95%) followed by associate professionals (69%) and managers (56%) had the greatest share of third level graduates. Farmers accounted for the greatest share of persons who had attained lower secondary education or less, followed by operatives and elementary workers.

Between quarter 4 2014 and quarter 4 2015, the share of third level graduates working as farmers and administrators observed the greatest increase (three percentage points). Operative workers with a third level education experienced a one percentage point decrease in their share. The share of persons with lower secondary education or less in elementary and administrative occupations decreased by three and one percentage point respectively.

Figure 4.7 Employment by Education and Broad Occupational Group (%), Quarter 4 2015



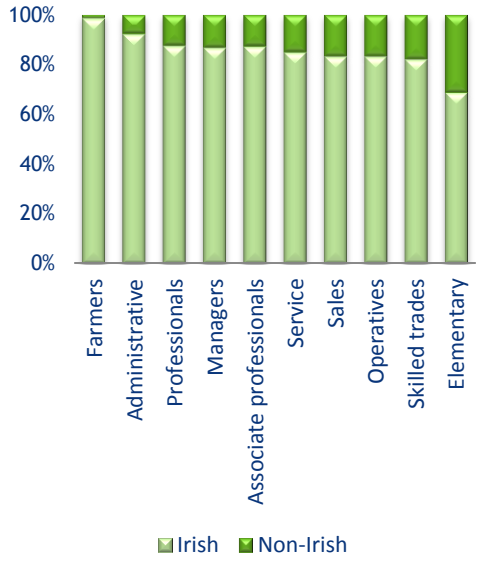
Source: SLMRU (SOLAS) analysis of CSO data

4.6 Employment by Nationality

The distribution of employment in broad occupational groups by nationality is presented in Figure 4.8. In quarter 4 2015, farmers had the lowest share of non-Irish nationals at 1%. In contrast, almost a third (31%) of those employed in elementary occupations were non-Irish nationals.

Between quarter 4 2014 and quarter 4 2015, there was an increase in the share of non-Irish nationals working as professionals (two percentage points) along with managers, associate professionals and service workers (one percentage point each). The share of Irish nationals working in sales increased by four percentage points.

Figure 4.8 Employment by Nationality and Broad Occupational Group (%), Quarter 4 2015



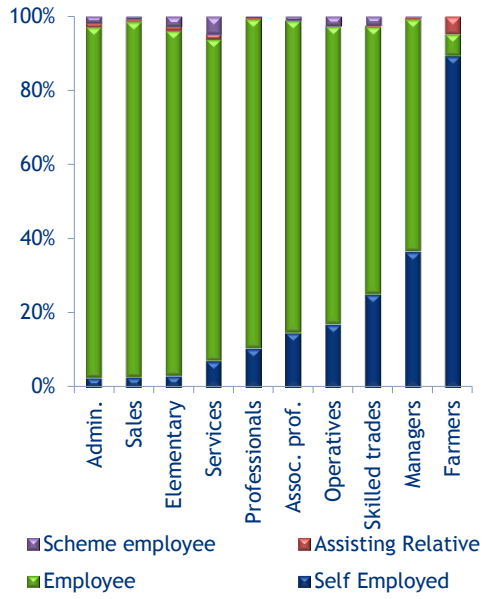
Source: SLMRU (SOLAS) analysis of CSO data

4.7 Employment Status

Figure 4.9 presents employment in broad occupational groups by employment status. In quarter 4 2015, across all occupations excluding farmers, employees accounted for the greatest share of persons in employment. Farmers observed the greatest share of self-employed persons (89%) followed by managers (37%) and skilled trades workers (25%). Sales and administrative occupations had the highest share of employees (96% and 95% respectively). Farmers observed the greatest share of those assisting a relative (5%).

Between quarter 4 2014 and quarter 4 2015, the share of persons assisting relatives and on Government schemes remained largely unchanged across occupations. The share of managers classified as self-employed decreased by three percentage points while the share of self-employed professionals, skilled tradespersons and operatives each decreased by one percentage point.

Figure 4.9 Employment by Employment Status and Broad Occupational Group (%), Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

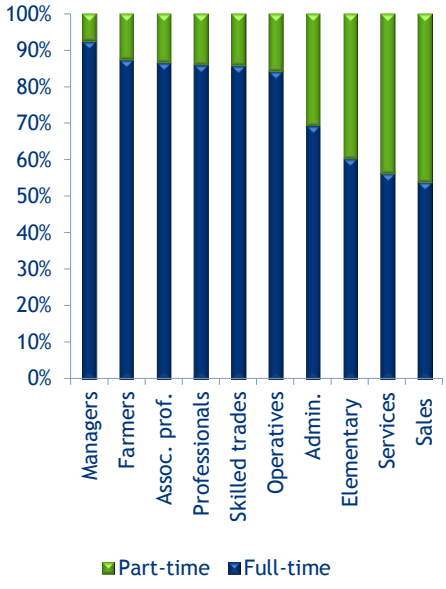
Note: The scheme employee refers to employees on community employment schemes (CES) and other employment schemes (e.g. Job Bridge and Work Placement) based on the CSO's standard employment status classification.

The breakdown of employment in broad occupational groups by full-time and part-time work is presented in Figure 4.10. In quarter 4 2015, for each occupational group, more than half of all workers were in full-time employment. The share of part-time workers was highest in sales (46%), services (44%) and elementary (40%) occupations.

Between quarter 4 2014 and quarter 4 2015, the share of full-time workers increased for

elementary workers (two percentage points) and operatives (one percentage point). In contrast, the share of full-time professionals, managers and associate professionals decreased by one percentage point each.

Figure 4.10 Full-Time and Part-Time Employment by Broad Occupational Group (%), Quarter 4 2015



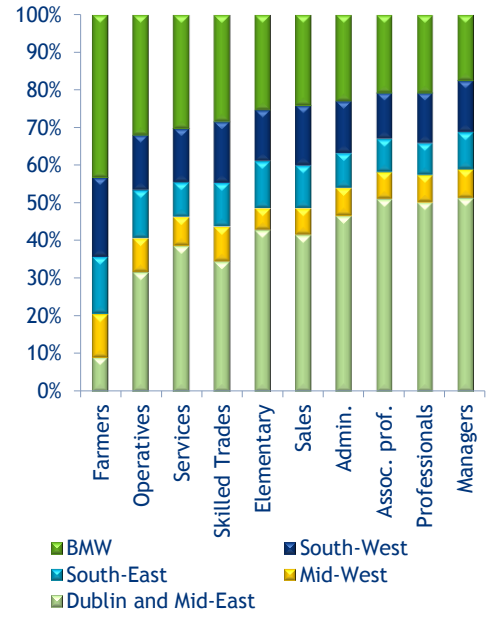
Source: SLMRU (SOLAS) analysis of CSO data

4.8 Employment by Region[27]

Figure 4.11 presents the regional distribution of employment in broad occupational groups. In quarter 4 2015, more than 30% of employment in each occupational group, excluding farmers, was located in Dublin. Over 50% of all white collar employment (managers, professionals, associate professionals) was based in Dublin. Over 40% of farmers and 30% of both operative and services workers were located in the Border, Midlands and West region.

Between quarter 4 2014 and quarter 4 2015, the share of employment in Dublin increased in all occupational groups with managers observing the greatest increase (four percentage points). The South-East region's share of sales, elementary and skilled trades workers increased by one percentage point each while the share of service workers decreased by three percentage points. The share of farmers decreased in the Border Midlands, West and South East regions.

Figure 4.11 Employment by Region and Broad Occupational Group (%), Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

[27] While regions are defined by NUTS3, for presentation purposes the Border, Midlands and Western Regions were grouped into the BMW region while the Dublin region and the Mid-East region were grouped to form the Dublin and Mid-East region.

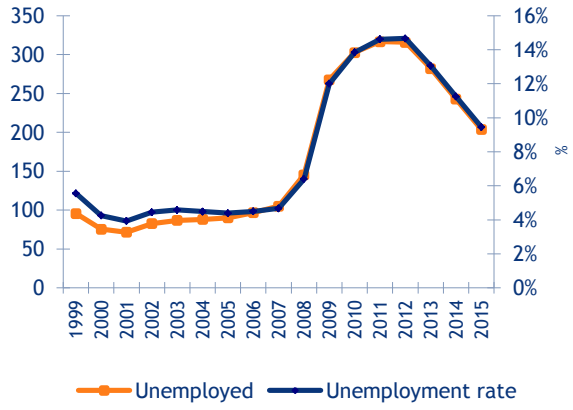
Section 5 Unemployment

5.1 Unemployment and Unemployment Rate

The average annual unemployment levels and unemployment rates for the period 1999-2015 are presented in Figure 5.1. In 2015, there were just over 200,000 persons looking for employment. This represents a continued decline in the number of unemployed persons which began in 2013. Between quarter 4 2014 and quarter 4 2015, there were 40,000 less persons seeking employment.

In 2015, the average annual unemployment rate was 9.5%, which was 1.8 percentage points below the rate recorded in 2014.

Figure 5.1 Annual Average Unemployment Level (000s) and Unemployment Rate (%)



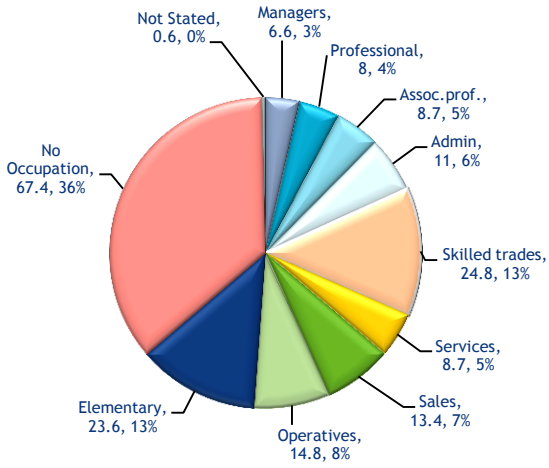
Source: SLMRU (SOLAS) analysis of CSO data

5.2 Unemployment by Occupation

Figure 5.2 presents the distribution of unemployment by broad occupational group. In quarter 4 2015, the greatest share of unemployed persons had previously worked in skilled trades (including farmers) (13%) and elementary (13%) occupations. Managers (3%) and professionals (4%) continued to have the lowest share of unemployment, followed by associate professionals and services workers (each with a 5% share). Unemployed persons who did not state their previous occupation (e.g. looking for work for the first time, entering employment from inactivity) accounted for just over one third of all persons.

Between quarter 4 2014 and quarter 4 2015, the numbers unemployed fell across all occupations, but was most pronounced for those previously employed in skilled trades, with a decline of 9,000, resulting in a three percentage point fall in their overall share of unemployed.

Figure 5.2 Unemployment by Previous Occupation (000s; %), Quarter 4 2015

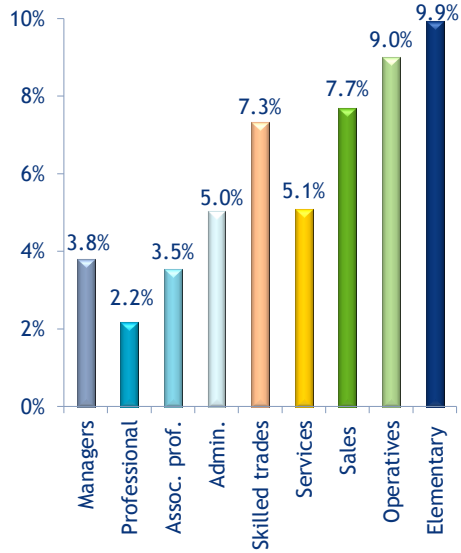


Source: SLMRU (SOLAS) analysis of CSO data

The unemployment rate by broad occupation is presented in Figure 5.3. In quarter 4 2015, elementary (9.9%) and operative (9%) occupations observed the highest rate of unemployment. In contrast, professionals (2.2%), managers (3.8%) and associate professionals (3.5%) recorded the lowest unemployment rates.

Between quarter 4 2014 and quarter 4 2015, the unemployment rate declined across all occupational groups with the rate for skilled trades falling by 2.5 percentage points.

Figure 5.3 Unemployment Rate by Occupation, Quarter 4 2015



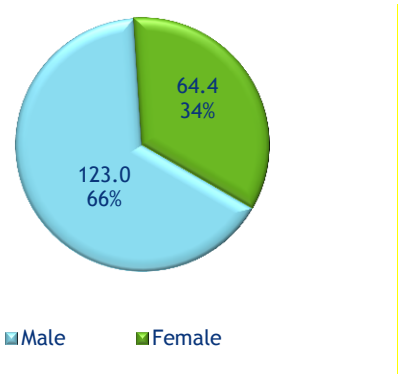
Source: SLMRU (SOLAS) analysis of CSO data

Note: Excludes persons who did not state their previous occupation.

5.3 Unemployment by Gender

The gender distribution of unemployed persons is presented in Figure 5.4. In quarter 4 2015, one third of all unemployed were male (66%). Between quarter 4 2014 and quarter 4 2015, the share of males increased by three percentage points despite an overall fall in the absolute numbers: while the number of unemployed males fell by 12,500, there was an even greater decline in the number of unemployed females (of 13,700).

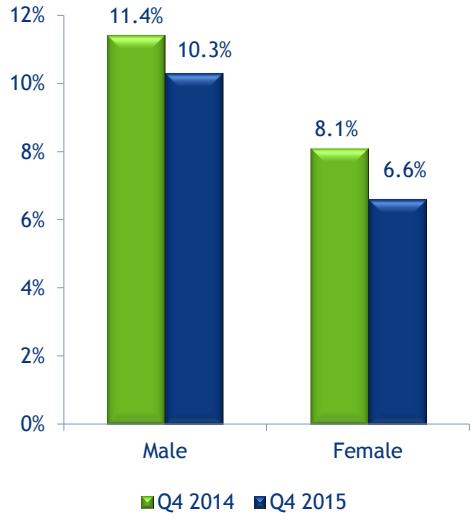
Figure 5.4 Unemployment by Gender, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

In quarter 4 2015, males had a higher unemployment rate than females. Between quarter 4 2014 and quarter 4 2015, the unemployment rate declined for both males and females, although it was higher for males in both time periods. The decline was greater for females at 3.7 percentage points, compared to a 3.3 percentage points decline for males, indicating that males continue to be at a greater risk of unemployment than females.

Figure 5.5 Unemployment Rate by Gender, Quarter 4 2014 & Quarter 4 2015



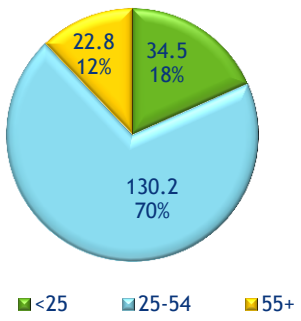
Source: SLMRU (SOLAS) analysis of CSO data

5.4 Unemployment by Age

Figure 5.6 presents the age distribution of unemployed persons. In quarter 4 2015, almost one in five unemployed persons was aged under 25 years, with the greatest share of unemployed persons aged 25-54.

Between quarter 4 2014 and quarter 4 2015, there was almost no change in the age distribution of the unemployed. However, in terms of absolute numbers, each age cohort experienced a decline in the number of unemployed persons, with those aged 25-54 recording the greatest decline at 18,600.

Figure 5.6 Unemployment by Age (000's, %), Quarter 4 2015

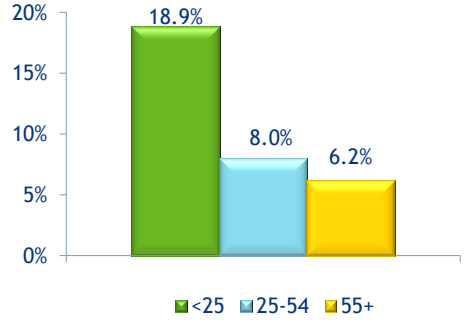


Source: SLMRU (SOLAS) analysis of CSO data

Figure 5.7 presents unemployment rates by age. In quarter 4 2015, the unemployment rate of those aged under 25 stood at 18.9% - over double the rate observed for those aged between 25- 54. Persons aged over 55 continue to have the lowest rate of unemployment.

Between quarter 4 2014 and quarter 4 2015, the unemployment rate for all age cohorts declined.

Figure 5.7 Unemployment Rate by Age, Quarter 4 2015



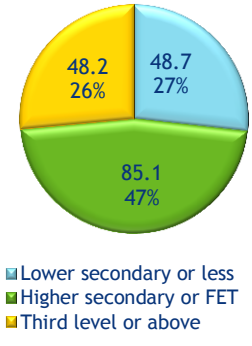
Source: SLMRU (SOLAS) analysis of CSO data

4.5 Unemployment by Education

Unemployment by education level is presented in Figure 5.8. In quarter 4 2015, almost half of all those unemployed had higher secondary or FET qualifications. An almost equal share of unemployed persons held either lower secondary education or less or third level qualifications.

Between quarter 4 2014 and quarter 4 2015, there was a fall in the absolute numbers of unemployed across all levels of education, although the greatest decline was for those with lower secondary education or less (at 12,400), resulting in a three percentage point decline in their share in total unemployment.

Figure 5.8 Unemployment by Education, Quarter 4 2015



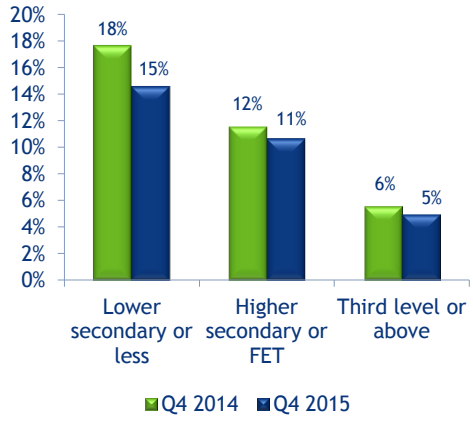
Source: SLMRU (SOLAS) analysis of CSO data

*Excludes not stated

Unemployment rates by education level are presented in Figure 5.9. In quarter 4 2015, persons with lower secondary education or less continue to have the highest unemployment rate (15%). Third level graduates had the lowest unemployment rate, at 5%.

Between quarter 4 2014 and quarter 4 2015, there was a decrease in the unemployment rates for all education levels. Persons with lower secondary or less education observed the greatest decrease of three percentage points.

Figure 5.9 Unemployment Rate by Education, Quarter 4 2014 & Quarter 4 2015



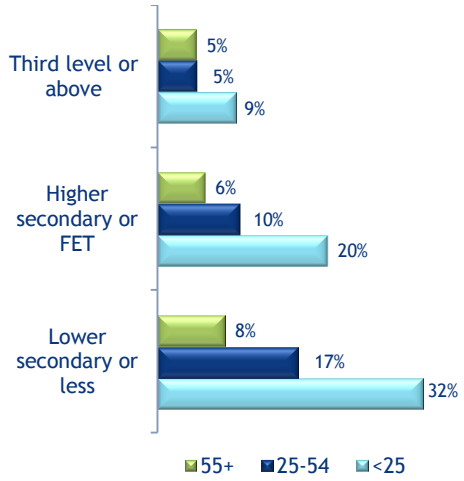
Source: SLMRU (SOLAS) analysis of CSO data

*Excludes not stated

Unemployment rates by education and age is presented in Figure 5.10. In quarter 4 2015, those aged under 25 with lower secondary education or less continued to be at the greatest risk of unemployment. Third level graduates were at the lowest risk of unemployment with those aged over 55 and 25-54 recording the lowest unemployment rates, at 5% each. In all education categories, persons aged under 25 had the highest rates of unemployment.

Between quarter 4 2014 and quarter 4 2015, for almost all age cohorts, the rate of unemployment decreased. The unemployment rate for persons aged under 25 with lower secondary or less education observed the greatest decline (five percentage points), while the rate for third level graduates aged under 25 recorded a decrease of two percentage points.

Figure 5.10 Unemployment Rate by Education and Age, Quarter 4 2015



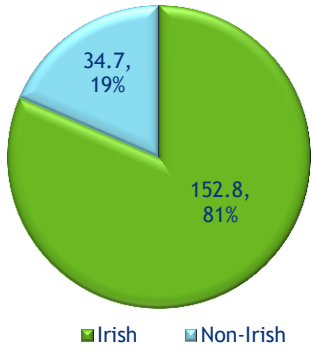
Source: SLMRU (SOLAS) analysis of CSO data

*Excludes not stated

5.6 Unemployment by Nationality

The distribution of unemployment by nationality is presented in Figure 5.11. The share of Irish nationals in total unemployment was 81%. Between quarter 4 2014 and quarter 4 2015, the number of unemployed Irish nationals declined by 23,600, whereas the population of unemployed non-Irish nationals fell more modestly by 2,500. As a result, the share of non-Irish nationals amongst unemployed grew by two percentage points.

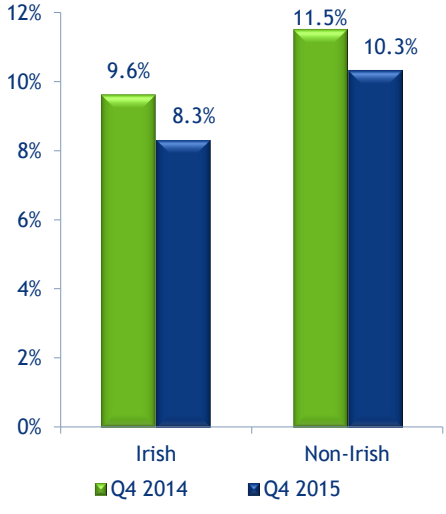
Figure 5.11 Unemployed by Nationality (%), Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Figure 5.12 presents the unemployment rates for Irish and non-Irish nationals. In quarter 4 2015, Irish nationals had a lower unemployment rate than non-Irish nationals (8.3% compared to 10.3%). Between quarter 4 2014 and quarter 4 2015, both Irish nationals and non-Irish nationals recorded a decrease in unemployment rates of 1.3 and 1.2 percentage points respectively.

Figure 5.12 Unemployment Rate by Nationality, Quarter 4 2014 & Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

5.7 Unemployment by Sector

Table 5.1 presents the unemployment levels and unemployment rates by sector. In quarter 4 2015, the higest number of unemployed had previously worked in construction, followed by the wholesale/retail sector. The highest unemployment rate was observed in construction (16.4%) which is considerably above the second highest rate for administration services (7.7%). At 2.5%, the education sector recorded the lowest unemployment rate.

Between quarter 4 2014 and quarter 4 2015, with the exception of agriculture, unemployment rates decreased for all sectors. Construction recorded the greatest decline (4.9 percentage points).

Table 5.1 Unemployment by Sector, Quarter 4 2015

Sector	Unemployed (000s)	Unemployment rate
Agriculture	3.4	3.1%
Industry	15.4	5.9%
Construction	24.9	16.4%
Wholesale/retail	20.8	6.9%
Transportation	4.9	5.0%
Accomm./food	10.1	6.6%
ICT	3.3	3.7%
Finance	3.3	3.2%
Prof. services	5.5	4.4%
Admin. service	5.6	7.7%
PAD	3.1	3.0%
Education	4.0	2.5%
Health	9.0	3.4%
Other	6.1	5.6%
Total	**187.5**	**8.6%**

Source: SLMRU (SOLAS) analysis of CSO data

Section 6 Labour Market Transitions

6.1 Overall Transitions

The change in the labour market status of individuals – employment, unemployment and economic inactivity – between two points in time is refered to as a 'labour market transition'. The analysis of labour market transitions is based on the QNHS data, which allows for examination of the labour market status of survey participants who remain on the survey panel in two subsequent quarters. On average, 70% of respondents reappeared from one quarter to another during the 2015 survey cycle.

Average quarterly labour market transitions for 2015 are presented in Table 6.1.[28] As observed in the preceding years, most individuals do not change their labour market status between successive quarters: in 2015, on average, 97.2% of individuals who were in employment, remained employed; 93.0% of those economically inactive, continued to be outside the labour force and 66.7% of those unemployed remained unemployed.

Nonetheless, some individuals changed their labour market status between quarters: 2.7% of individuals transitioned out of employment – 1.7% to inactivity and 1% to unemployment; 33.3% of individuals transitioned out of unemployment – 19.2% to inactivity and 14.1% to employment.

While the distribution of movements in 2015 remained broadly in line with 2014, there was a decrease in the share of persons remaining in unemployment (68.1% in 2014 to 66.7% in 2015) and an increase in the share of flows from unemployment to employment (from 13.4% to 14.1%) and inactivity to employment (2.5% to 3.1%).

Table 6.1 Labour Market Transitions by ILO Status (Persons Aged 15-74[29]), 2015

	ILO end Q		
ILO start Q	Employed	Unemployed	Inactive
Employed	97.2%	1.0%	1.7%
Unemployed	14.1%	66.7%	19.2%
Inactive	3.1%	3.0%	93.9%

Source: SLMRU (SOLAS) analysis of CSO data

Figure 6.1 shows estimated annual transitions[30] for 2015. Because a person can change their labour market status several times in a year, the term 'transitions' is used, rather than 'persons'.

[28] Each repeat respondent's weight was inflated proportionately, so that the sum of all repeat respondents corresponds to the population estimate of the ending quarter (this method implies that employment, unemployment and inactivity levels derived from transitions analysis do not equate to the actual levels reported by the CSO QNHS); Eurostat uses a method for estimation of labour market transitions which does not deal with individual record weight adjustments, but adjusts weights for gender and age group aggregate cohorts and uses iterative raking to achieve alignment with starting and ending quarter totals (estimates based on Eurostat method reported in brackets in the table below); given the level of granularity required for occupational analysis, Eurostat method is not used here.

Labour Market Transitions, 15-74, q1 2015 to q2 2015 (Eurostat method estimates in brackets)

	ILO end Q		
ILO start Q	Employed	Unemployed	Inactive
Employed	97.4% (97.6%)	1.0% (1.0%)	1.5% (1.4%)
Unemployed	16.2% (16.5%)	66.3% (67.5%)	17.5% (16.0%)
Inactive	3.1% (3.5%)	3.6% (3.9%)	93.3% (92.6%)

[29] The analysis focuses on persons aged 15-74, which is in line with the Eurostat approach; in previous Bulletins the focus was on persons aged 15+, however, the difference in findings is negligible given that there is very little movement between labour market status for persons aged 75 and over.

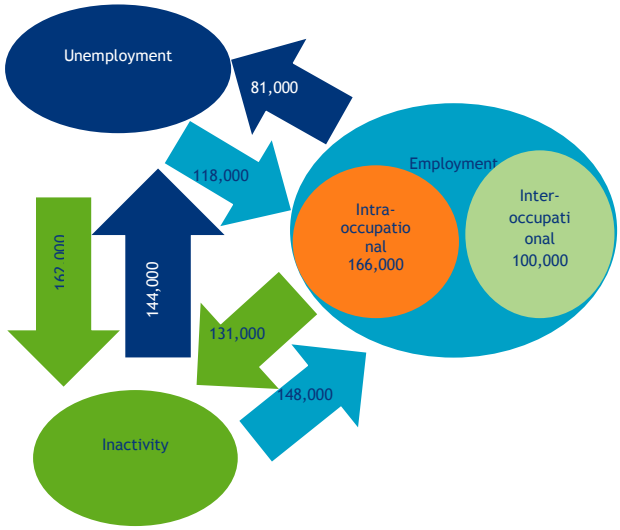
[30] Sum of transitions between quarter 4 2014 to quarter 1 2015, quarter 1 2015 to quarter 2 2015, quarter 2 2015 to quarter 3 2015, quarter 3 2015 to quarter 4 2015.

Based on quarterly flows, it is estimated that almost 1.1 million transitions occurred in the Irish labour market in 2015, which is broadly in line with 2014. Quarterly transitions represent an underestimation of the true volume of activity, because transitions can occur more frequently than on a quarterly basis.[31] Nonetheless, even quarterly transitions indicate a significant volume of movements in the Irish labour market during 2015.

There were almost 200,000 transitions between employment and unemployment; almost 280,000 between employment and inactivity and over 300,000 between unemployment and inactivity. In addition, almost 270,000 transitions occurred within employment, either due to a change of employer (intra-occupational transitions) or change of occupation (inter-occupational transitions).

The number of transitions into employment, from both unemployment and inactivity exceeded transitions out of employment. There were almost 40,000 more transitions from unemployment to employment than in the opposite direction. Similarly, there were almost 20,000 more transitions from inactivity to employment than in the opposite direction. There has been a decrease in flows between unemployment and inactivity of approximately 25,000 each way since 2014. By contrast, there has been an increase in inter occupational transitions of over 20,000 over the same time period.

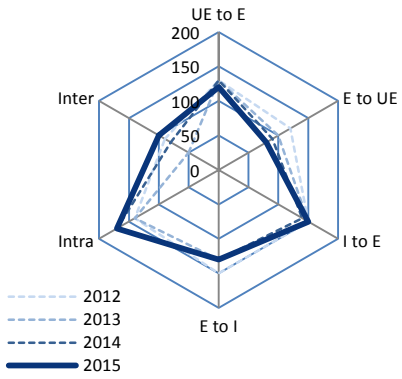
Figure 6.1 Labour Market Transitions, 2015 (Sum of Four Quarters)



Source: SLMRU (SOLAS) analysis of CSO data

Figure 6.2 presents how the volume of labour market transitions between the three labour market states changed over the period 2012-2015. There is a clear continuous decrease in the volume of transitions from employment to unemployment over this period, while there is an overall increase in the volume of inter and intra occupational movements.

Figure 6.2 Labour Market Transitions, 2012-2015



Source: SLMRU (SOLAS) analysis of CSO data

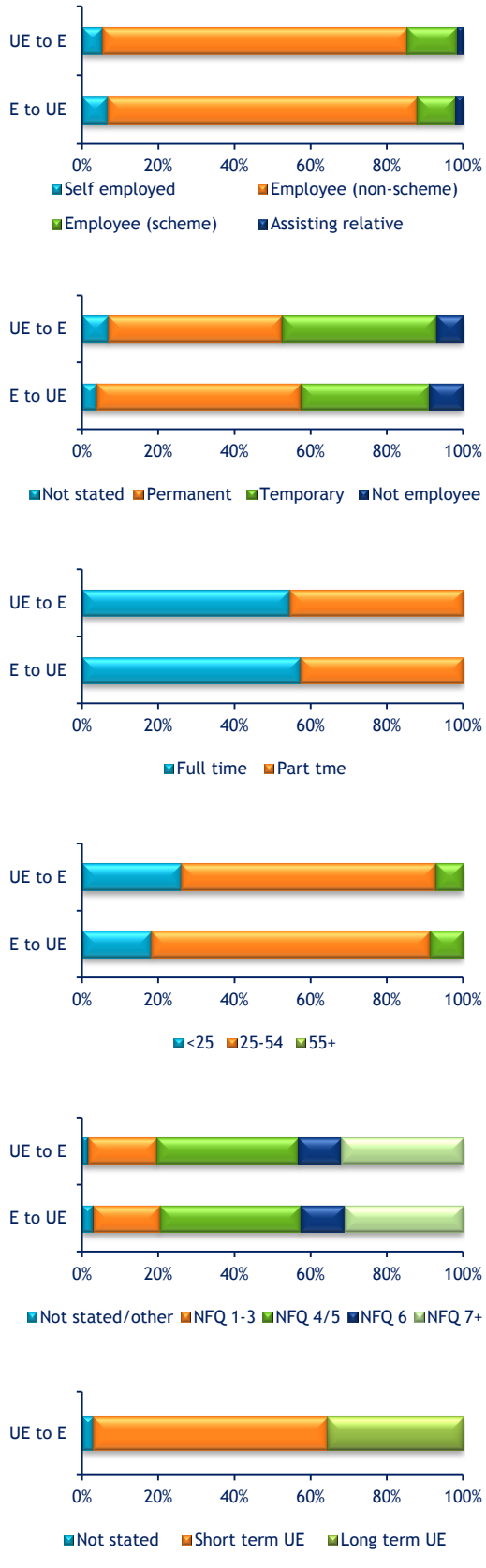
[31] CSO Job Churn analysis estimated 570,000 hirings for 2013, while the estimated number of labour market transitions to employment from all three ILO states (employment, unemployment and inactivity) was 480,000 for 2013; although the difference would be expected given the differences in methodology and focus of measurement, the discrepancy indicates that transitions are likely to underestimate the true volume of job finds.

6.2 Transitions between Employment and Unemployment

The composition of transitions between employment and unemployment is presented in Figure 6.3.

- Over 90% of transitions between employment and unemployment were within the employee category; of those transitioning from unemployment into employment as an employee, 13% were associated with State-sponsored employment schemes, which is in line with the share observed in 2014.
- In terms of permanency of tenure, 53% of exits to unemployment were from permanent jobs, compared to 46% of entries into permanent employment, which is in line with the pattern observed in 2014.
- Similar to 2014, the distribution of transitions between part-time and full-time jobs was almost evenly split, with full time accounting for 57% of transitions from employment to unemployment, while 55% of transitions from unemployment to employment.
- Similar to 2014, the share of persons under 25 was greater for transitions into employment, compared to their share in exits to unemployment (26% compared to 18%).
- 37% of transitions between employment and unemployment was associated with holders of NFQ4/5 qualifications; just under a third of transitions was associated with holders of qualifications at NFQ level 7 or above.
- 36% of transitions from unemployment to employment were from long-term unemployment, compared to 40% in 2014.

Figure 6.3 Transitions between Employment and Unemployment, 2015



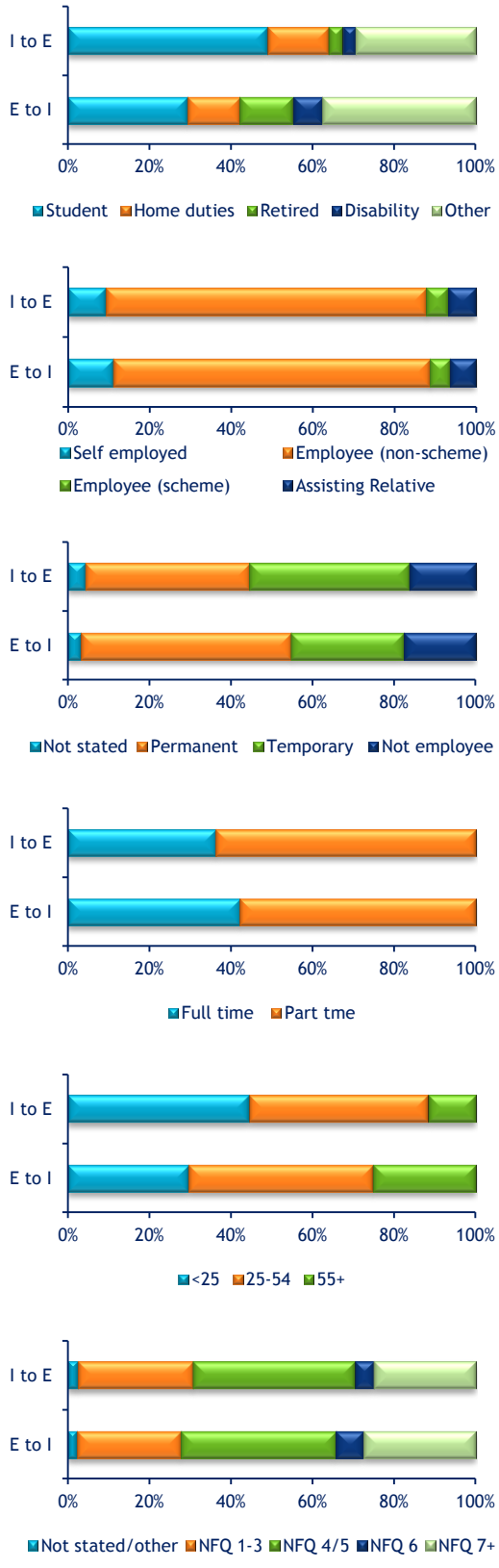
Source: SLMRU (SOLAS) analysis of CSO data

6.3 Transitions between Employment and Inactivity

The composition of transitions between employment and inactivity is presented in Figure 6.4.

- Of total transitions from employment into inactivity, 29% was to study, 13% to retirement[32], 13% to home duties, 7% was accounted for by exits due to disability and the remainder was for other reasons; in terms of transitions from inactivity to employment, almost a half (49%) was from study, 15% from home duties, with the remainder from other forms of inactivity; the distributions were broadly in line with those observed in 2014, with the exception of exits from employment to retirement where the share declined by six percentage point from 19% to 13%.
- As in previous years, in 2015, the significant majority (over 80%) of transitions between employment and inactivity were in the employee category (of which 6% was associated with Government employment schemes).
- 51% of transitions from employment to inactivity were from permanent employment, compared to 40% of transitions from inactivity into permanent employment; the share of transitions from inactivity to permanent employment decreased by five percentage points compared to 2014.
- Similar to preceding years, in 2015, almost two thirds of transitions between employment and unemployment were associated with part-time employment.

Figure 6.4 Transitions between Employment and Inactivity, 2015



Source: SLMRU (SOLAS) analysis of CSO data

[32] Total transitions to retirements were estimated at 27,000; however, not all retired persons became inactive (some continued to be employed, others were still actively looking for work (unemployed)).

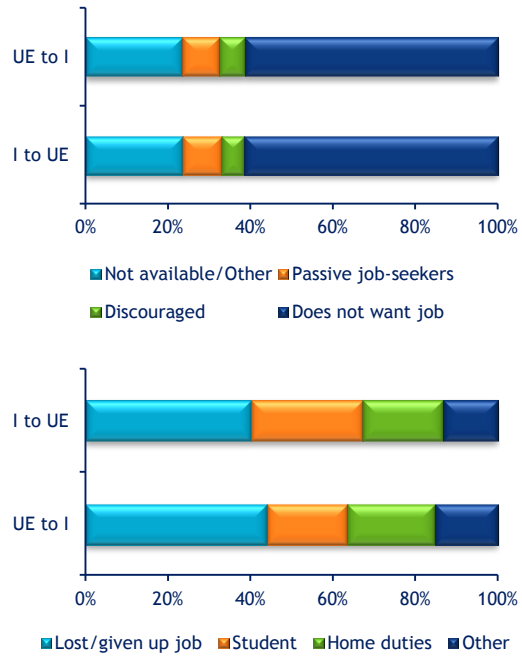
- As in preceding years, in 2015, the share of persons aged under 25 in transitions from inactivity to employment was greater than their share in exits from employment (44% compared to 30%); the opposite was the case for persons aged 55 and over (25% of transitions were to inactivity compared to 12% to employment).
- More than two thirds of transitions between employment and inactivity were associated with persons holding qualifications equivalent to NFQ level 5 or below; the share transitioning from employment to inactivity at NFQ level 6 and above was higher than the share transitioning from inactivity to employment at this education level (34% compared to 30%).

6.4 Transitions between Unemployment and Inactivity

The composition of transitions between unemployment and inactivity is presented in Figure 6.5.

- As in previous years, in 2015, just over 60% of flows between unemployment and inactivity was associated with persons who did not want a job for various reasons; however, a further 15% was associated with persons who did want a job but were passive in their job search or discouraged; the share of discouraged workers and passive job seekers was one percentage points lower than in 2014.
- 44% of transitions from unemployment to inactivity was associated with persons who had lost or given up employment; the share transitioning in the opposite direction was 40% (an increase of four percentage points compared to 2014); 19% of transitions from unemployment to inactivity were to education; transitions to home duties accounted for 21% of flows from unemployment to inactivity; the distributions were broadly in line with those observed in 2014.

Figure 6.5 Transitions between Unemployment and Inactivity, 2015



Source: SLMRU (SOLAS) analysis of CSO data

6.5 Transitions by Occupational Group

Labour market transitions by broad occupational group are presented in Table 6.2. In absolute terms, the highest number of transitions between employment and unemployment was observed for skilled trades, sales and elementary occupations. With the exception of associate professional and elementary occupations, the number of transitions from unemployment to employment exceeded exits to unemployment in all occupational groups, with the difference being greatest for craft occupations. In addition, there were 33,000 transitions from unemployment to employment related to persons with no previous occupation. Persons

with no previous occupation most frequently transitioned into employment as elementary and sales workers, accounting for 28% and 19% of transitions for those with no previous occupation respectively.

Table 6.2 Labour Market Transitions by Occupational Group (000s), 2015 (All Quarters)

	E to UE	UE to E*	E to I	I to E*	Inter out	Inter in	Intra
Managers	3.1	4.6	5.8	3.2	5.0	6.0	7.0
Prof	7.1	8.8	12.4	6.3	9.0	21.0	25.0
Assoc. prof.	7.8	5.9	11.8	5.3	23.0	9.0	18.0
Admin	7	7.9	11.2	5.9	11.0	9.0	15.0
Trades	13.1	17.4	16.8	7.3	8.0	9.0	24.0
Services	6.4	5.7	14	7.4	10.0	9.0	16.0
Sales	11.3	11	20.2	7.4	9.0	10.0	20.0
Operatives	8.1	9	8.9	3.3	7.0	7.0	15.0
Elementary	16.7	14.4	30.1	9.7	18.0	20.0	25.0
No occup.	0	33.3	0	92.3	0.0	0.0	0.0
Total	80.6	118.3	131.1	148.5	100.0	100.0	166.0

*Refers to previous occupation and excludes persons with no previous occupation (e.g. new entrants into the labour market).

Source: SLMRU (SOLAS) analysis of CSO data

The highest number of transitions from employment to inactivity was for elementary and sales occupations. Transitions from employment to inactivity exceeded transitions from inactivity into employment in all occupational groups, however, there were just over 90,000 transitions from inactivity to employment related to persons with no previous occupation. As a result, on balance, there were more transitions from inactivity to employment than the other way around. Of those, transitions to elementary and sales occupations accounted for 29% and 21% respectively.

The occupational distributions of flows between employment and unemployment were broadly similar, although the share of managers, professionals, clerks, tradespersons and operatives was greater in transitions from unemployment (previously held occupation) to employment than in transitions in the opposite direction. When occupational distributions of transitions between employment and inactivity were compared: there was a greater share of managers, professionals, associate professionals, clerks and services workers in transitions from inactivity (previously held occupation) to employment, when compared to their share in the flows from employment to inactivity.

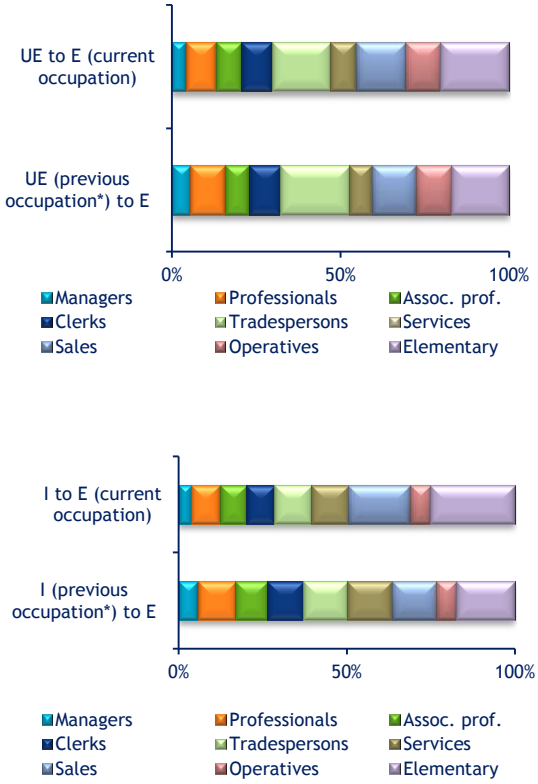
However, when observing occupational distributions of transitions into employment (both from unemployment and inactivity) there was a difference depending on whether the previously or currently held occupation was considered. For instance, the share of elementary and sales occupations in transitions into employment (from both unemployment and inactivity) was greater when the current rather than the previous occupation was considered (Figure 6.6), while the share of managerial, professional and craft was smaller.

The inter-occupational transitions[33] by occupational group are presented in Table 6.2. In absolute terms, in 2015, most of the inter-occupational movements were observed in elementary occupations. Transitions between occupations were neutral for most occupations, with small net gains recorded for clerical and services occupations and net losses for sales and elementary occupations. While a large volume of inter-occupational transitions was observed for professionals (significant net loss) and associate

[33] Persons who remained in employment between the two quarters, but changed occupation.

professionals (significant net gain), it is possible that some of the observed movements may be due to a difference in role classifications between quarters. A significant share (over 50%) of these transitions is associated with a move from IT/business analysts roles to business associate professional roles, as well as from architect/quantity surveyor to estimator/valuer roles.

Figure 6.6 Transitions by Previous and Current Occupation, 2015



* excludes persons with no previous occupation

Source: SLMRU (SOLAS) analysis of CSO data

Most frequent changes of employer (intra-occupational transitions[34]) were observed for professional, craft and elementary occupations, accounting for 15%, 14% and 15% of intra-occupational transitions respectively (Table 6.2).

6.6 Transitions by Occupation

Individual occupations within each broad occupational group for which the highest number of transitions across the different labour market states was observed is presented in Table 6.3.

Occupations with the highest number of transitions between employment and unemployment (both directions) included elementary occupations (cleaners, farm workers, waiters, catering assistants, construction and security), carpenters, customer service workers, sales assistants, services occupations (carers and child-care workers) and general administrators. Other occupations with high number of transitions from unemployment to employment included electricians, plasterers, hairdressers, accountants, truck drivers, payroll clerks, teachers and food operatives.

Occupations most frequently transitioning in and out of inactivity (both directions) included sales assistants, elementary occupations (waiters, bar staff and cleaners), business sales executives, services workers (care workers, child-minders and hairdressers), farmers, truck drivers, general administrators and teachers. Occupations with the highest number of transitions from employment to inactivity due to study were: sales assistants, general admin, waiters, catering assistants, cleaners and construction labourers. Those most frequently exiting employment to engage in home duties included sales assistants, general clerks, hairdressers and care workers. Farmers and sales assistants were associated with the

[34] Persons who remained employed in the same occupation between the two quarters, but who changed employer during the months of the starting quarter.

highest number of transitions into inactive retirement.

The highest number of inter-occupational transitions were observed for sales occupations (sales assistants and business sales executives), administrators (general and bank), elementary occupations (cleaners, waiters, bar staff, catering assistants, construction labourers), quality assurance technicians and professionals. Occupations which featured amongst those with the highest number of inter-occupational transitions in, but not the other way around included business associate professionals, estimators/valuers, laboratory technicians and accountants.

A high number of intra-occupational transitions was observed for many elementary occupations (waiters, cleaners, catering assistants, labourers in construction, security and storage); clerical occupations (general and financial administrators, personal assistants and receptionists, payroll clerks); skilled trades (chefs, carpenters, mechanics, electricians, plasterers, fitters, IT engineers, catering and bar managers); sales and customer care workers; technicians (IT and finance); services occupations (care and child-care workers, hairdressers); amongst professionals, teachers, nurses, doctors, programmers and accountants had the highest number of transitions between employers; amongst operatives, assemblers, testers, construction operatives and truck drivers.

As in previous years, several occupations have been identified as the most frequent movers in all directions and between all labour market states. These are primarily concentrated in elementary occupations (waiters, bar staff, cleaners, catering assistants, construction and security), care workers, sales occupations (sales assistants and business sales executives) and general clerks.

Table 6.3 Occupations with Most Frequent Transitions, 2015 (All quarters)

	Managers	Professionals	Associate prof.	Clerks	Tradespersons	Services	Sales	Operatives	Elementary
E to UE				General Chefs Construction	Carpenters	Care Child-minders	Sales assistants Customer care	Assemblers	Security Cleaners Catering Farm workers Waiters Construction
E to E prev occ		Teachers Accountants	Sales exec. Fin. accounts	General PA	Carpenters Construction Plumbers Gardeners Chefs Plasterers	Care Child-minders Hairdressers	Sales assistants	Construction Assemblers Truck drivers	Construction Waiters Storage Cleaners Bar staff
E to I	Functional	Nurses Teachers Accountants	Sales exec.	General Bank PA	Farmers Fitters Chefs	Care Child-minders Hairdressers	Sales assistants	Food Truck drivers Machine	Construction Waiters/bar staff Cleaners Storage Bar staff Farm workers
I to E prev occ		Teachers	Sales exec.	General	Farmers	Care Housekeepers Child-care Hairdressers	Sales assistants	Truck drivers	Waiters/bar staff Cleaners Construction Cleaners
E to study				General			Sales assistants		Waiters Bar staff Cleaners Catering Construction
E to home duty				General		Care Hairdressers	Sales assistants		
E to retirement					Farmers		Sales assistants		
Inter out		IT analysts Teachers Surveyors QA Bus. analysts	Sales exec.	General Bank	Chefs	Care Hairdressers Housekeepers	Sales assistants		Catering Bar staff Cleaners Construction Waiters Postal
Inter in		Accountants	Sales exec. Business Valuers	General Payroll Bank	Farmers Construction	Care Child-care Housekeepers	Sales assistants Customer care Customer care	Truck drivers Process	Construction Cleaners Waiters/bar staff Catering Storage Postal
Intra	Functional Retail	Doctors Teachers Accountants Programmers Nurses	Sales exec. Sales accounts IT technicians Fin. accounts Fin analysts HR	General Payroll PA Financial Government	Chefs Plasterers Electricians Carpenter IT engineer Mechanics Fitters Catering mgt	Care Child-minders Hairdressers	Sales assistants Customer care.	Testers Assemblers Truck drivers Construction	Construction Waiters Bar staff Catering Cleaners Storage Security

6.7 Replacement and Turnover

The estimates of replacement and turnover rates based on the labour market transitions are presented in Table 6.4.

Two estimates of replacement rates are presented: one based on transitions to inactive retirement and one based on all exits to economic inactivity (retirement, home duties, study, disability etc.) adjusted for net losses arising from inter-occupational movements.[35] While for some occupations, the inclusion of net losses from inter-occupational transitions increases replacement demand (transitions out of an occupation are greater than transitions in), for others it decreases replacement demand (transitions in are greater than transitions out).

Table 6.4 Employment, Replacement and Turnover Rates by Occupational Group, 2015 (All quarters)

		Replacement		Turnover	
	Emp.	Retirement	Exits to inactivity (including retirement) and net exits due to inter-occup. movement	Intra-occupational	Intra-occup. and neutral inter-occup. movement
Managers	161,800	1.1%	4.2%	4.3%	6.5%
Professionals	354,800	0.9%	6.8%	7.0%	8.4%
Assoc. prof.	232,100	0.7%	-0.9%	7.8%	10.5%
Admin.	206,900	0.5%	4.6%	7.2%	10.8%
Trades	314,000	1.0%	5.7%	7.7%	9.1%
Personal serv.	159,500	0.8%	8.0%	10.0%	14.6%
Sales	162,900	1.0%	13.4%	12.5%	17.2%
Operatives	146,700	0.7%	6.1%	10.2%	13.3%
Elementary	213,800	1.3%	14.1%	11.7%	18.6%
Total	1,963,600	0.9%	6.6%	8.4%	13.0%

[35] It is recognised that this approach has limitations: it overestimates demand where there is no intention to replace those who leave; it underestimates demand as it ignores emigration and deaths and assumes that exits to unemployment arise due to job closures only, rather than dismissals or voluntary exits.

In 2015, economically inactive retirements accounted for just over 17,000 or 0.9% of total employment (compared to 1.3% in 2014). Exit rates from employment due to economically inactive retirements were close to 1% for most occupations. The rates were the highest for elementary occupations and managers (over 1%) and the lowest for clerical (0.4%). In terms of individual occupations, the highest retirement rates were observed for farmers (Table 6.5).

When all exits to inactivity (adjusted for net losses from inter-occupational movements) (Table 6.4, column 4) were considered, the replacement rate was estimated at 6.6% - almost the same as in 2014. Above average replacement rates were observed for elementary, sales and services occupations; below average rates were observed for managers and tradespersons. Negative replacement rates for associate professionals and a slightly above average rate for professionals are likely to be due to the aforementioned classification issue with various business analysts and surveyor/valuer. At occupational level, the highest replacement rates were observed for sales workers (sales, assistants, sales executives), carers (child-minders), hospitality workers (chefs, waiters, bar staff and catering assistants), hairdressers, clerks (general, receptionists, bank), labourers (agricultural, construction, cleaning), operatives (machine, food and construction operatives).

In addition to replacement rate estimates, labour market transitions were used to estimate turnover rates. Two turnover rates are presented: one based on intra-occupational transitions (change of employer) (Table 6.4, column 5) and another based on intra-occupational transitions, as well as

neutral inter-occupational transitions (Table 6.4, column 6).

The turnover rate based on the intra-occupational movements was estimated at 8.4% for 2015 (broadly in line with 2014). A higher than average rate of intra-occupational movements was observed for sales, services, operative and elementary occupations; turnover rates was the lowest for managers. In terms of individual occupations, change of employer was the most frequent for sales staff (sales accounts, sales assistants, customer service workers), hospitality workers (chefs, waiters, catering assistants and managers, bar staff), financial clerks, care workers (including child-care), construction workers (carpenters, plasterers, electricians and labourers), hairdressers, truck drivers and operatives (testers, assemblers). Turnover was above average for some IT occupations (programmers, techincians and engineers). Amongst other professionals, turnover was the highest for accountants and doctors.

When the turnover estimates were adjusted to account for neutral inter-occupational transitions (transitions between occupations where exits from an occupation were compensated in full by entries to that occupation), the average turnover rate increased to 13% (broadly in line with 2014). Although the inclusion of neutral inter-occupational transitions to change of employer increases the estimated turnover rate for all occupational groups, the pattern is similar to that of the rate based on the inter-occupational transitions alone, with rates typically lower for white collar occupations and trades. The list of occupations with the highest replacement rates based on intra-occupational and neutral inter-occupational movements is presented in Table 6.5 (column 4).

Table 6.5 Occupations with Above Average Replacement and Turnover Rates, 2015

Replacement		Turnover	
Retirement	Inactivity plus net inter occupational	Intra-occupational	Intra-occupational plus neutral inter-occupational
Farmers	IT business analysts	Sales assistants	Catering managers
	Business analysts	Waiters	Doctors
	Quantity surveyors	Elementary construction	IT technicians
	Chartered surveyors	General admin	Fin. analysts
	QA professionals	Care workers	Fin. accounts
	Sales exec	Accountants	Marketing assoc.prof.
	Bank clerks	Child-minders	Sales accounts
	General admin	Carpenters	HR officers
	Receptionists	Payroll clerks	Bank clerks
	Chefs	Catering assistants	Financial admin.
	Child-minders	Bar staff	Welders
	Care	Elementary storage	IT engineers
	Hairdressers	Programmers	Carpenters
	Sales assistants	Hairdressers	Plasterers
	Food operatives	Doctors	Catering managers
	Construction operative	Customer service	Child-care
	Machine drivers	Plumbers	Hairdressers
	Farm workers	Education professionals	Housekeepers
	Elementary construction	Food operatives	Sales assistants
	Cleaners	Financial admin	Customer service
	Catering assistants	IT technicians	Assemblers
	Waiters	Educational assistants	Testers
	Bar staff	Receptionists	Construction operatives
		Farm workers	Truck drivers
		Financial accounts	Elementary constr.
		Contact centre	Postal workers
		IT engineers	Cleaners
			Security guards
			Catering assistants
			Waiters
			Bar staff

Section 7 Employment Permit

7.1 Introduction

In order to take up employment in Ireland, all non-EEA nationals are required to attain an employment permit. Analysing employment permit data highlights areas where employers are having difficulty in sourcing suitably qualified candidates from the Irish and EU labour market.

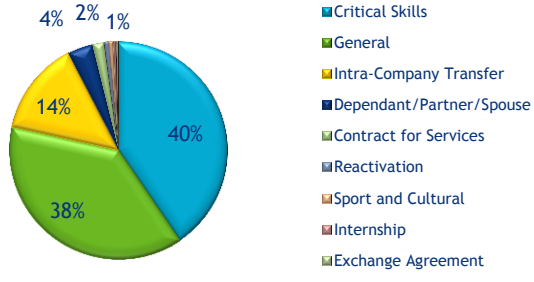
In order to attain an employment permit, an individual must have a valid job offer from a prospective Irish employer who has proved that there were no Irish or EEA nationals available to fill the post. A recent revision to the Employment Permit Act[36] introduced nine classes of employment permits as detailed below:

- **Critical skills:** replaces the green card and is designed to attract highly skilled people into the labour market
- **General:** replaces the old Work Permit utilised to attract non-EEA nationals for occupations which are experiencing a labour or skills shortage
- **Intra-company transfer:** facilitates the transfer of senior management, key personnel or trainees who are non-EEA nationals from an overseas branch of a multinational corporation to its Irish branch
- **Dependent/partner/spouse:** primarily used to support the attractiveness of Ireland as a location of employment for potential and current critical skills employment permit holders and researchers
- **Contract for services:** designed for situations where a foreign undertaking has won a contract to provide services to an Irish entity to facilitate the transfer of non-EEA employees to work on the contract in Ireland
- **Reactivation:** where a foreign national who entered the State on a valid Employment Permit but who fell out of the system or who has been badly treated or exploited in the workplace
- **Sport and cultural:** for the employment of foreign nationals with the relevant qualifications, skills, experience or knowledge for the development, operation and capacity of sporting and cultural activities
- **Internship:** facilitates the employment of foreign nationals who are full-time students, enrolled in a third level institution outside the State, for the purpose of gaining work experience
- **Exchange agreement:** facilitates the employment of foreign nationals pursuant to prescribed agreements or other international agreements to which the State is a party.

7.2 Overall Trends

Over 6,000 new employment permits were issued in 2015, a 25% increase on the previous year. New permits issued for critical skills accounted for 40% of all new permits in 2015, with a further 38% for general permits and 14% for intra-company transfers. A time series comparison is not possible as these permit types were only introduced in late 2014.

Figure 7.1 New Employment Permits by Type, 2015



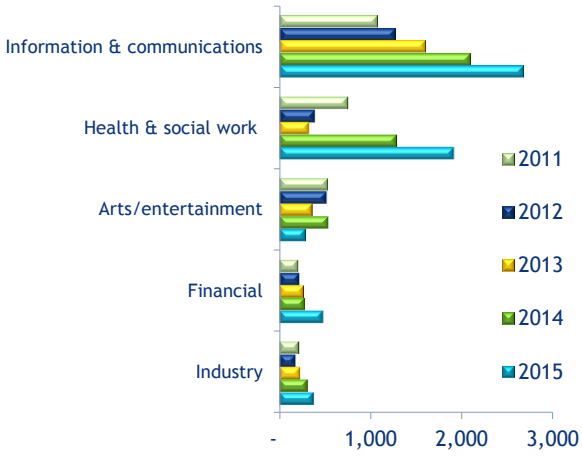
Source: DJEI

[36] The Employment Permits (Amendment) Act 2014 came into effect in October 2014.

7.3 Employment Permits by Sector

Figure 7.2 provides a breakdown of new employment permits issued by sector. The number of permits issued has been growing in recent years for most sectors, particularly in the health and ICT sectors. In 2015, the ICT sector accounted for 44% of all new permits issued with the health sector accounting for almost a third. The increase in the number of permits issued to the health sector since 2013 relates to the reintroduction of medical employment permits[37].

Figure 7.2: New Employment Permits for Selected Sectors*, 2011-2015



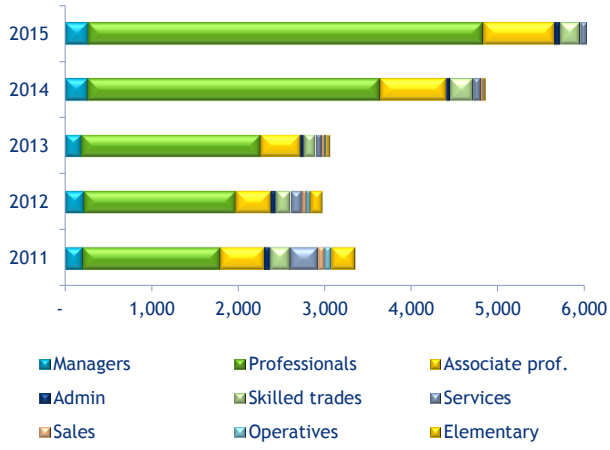
Source: DJEI

*in 2015, these five selected sectors account for 94% of all new permits issued

7.4 Permits by Occupation

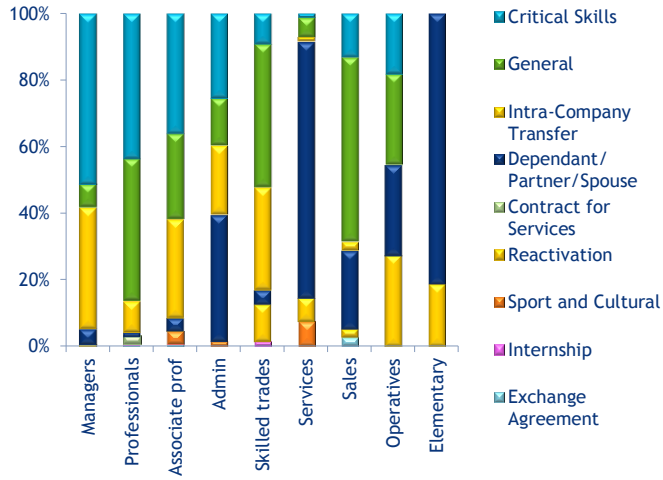
Over the period 2011 to 2015, the number of new permits issued almost doubled, primarily related to significant increases for permits issued for professional occupations, with growth also observed for associate professional occupations, albeit at a smaller scale (Figure 7.3). The type of permit issued varies across occupational group (Figure 7.4) as do the salary levels as detailed in Figure 7.5.

Figure 7.3 New Employment Permits by Broad Occupation, 2011-2015



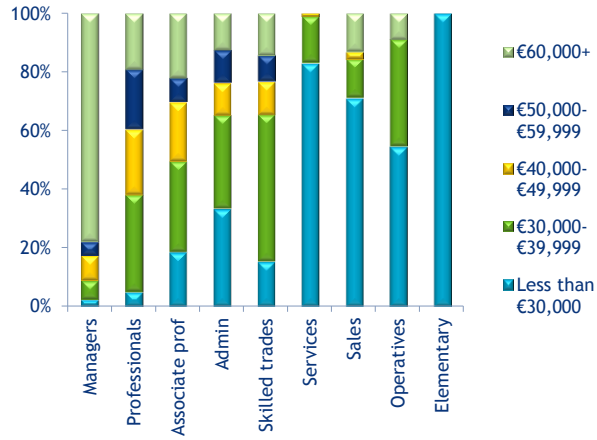
Source: DJEI

Figure 7.4 New Employment Permits by Permit Type, 2015



Source: DJEI

Figure 7.5 New Employment Permits by Salary, 2015



Source: DJEI

[37] Over the period 2010 to 2013, doctors entered the Irish labour market through channels other than the employment permit scheme.

Managers

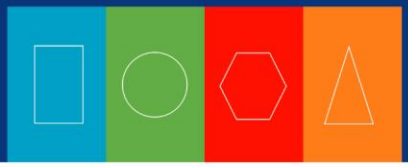
- **Overall:** new employment permits for managerial positions accounted for 4% of all permits issued in 2015
- **Type:** critical skills accounted for over a half (51%) of the new permits issued for this occupation with a further 36% for intra-company transfers
- **Salary:** 83% of new permits issued had a salary of €50,000 or more, by far the occupation with the largest share of permits offering salaries at this level
- **Sector:** employment permits were primarily issued for positions in IT (30%), financial activities (26%) and industry (20%)
- **Nationality:** almost a half (48%) of all permits issued for managers were for those originating from the USA
- **Occupations:** new employment permits were most frequently issued for:
  - vice presidents/CEOs/CFOs
  - general managers in manufacturing
  - operations managers
  - directors of supply chain.

Professionals

- **Overall:** new employment permits for professionals accounted for three quarters of total permits issued in 2015
- **Type:** permits were primarily related to critical skills (43%) and general permits (43%)
- **Salary:** a third of new permits issued were for a salary of between €30,000-39,999 with a further 40% with a salary of €50,000 or more
- **Sector:** permits were mainly issued for positions in IT (44%) and the health sector (40%)
- **Nationality:** a half of all new permits for professionals were issued to persons from India and Pakistan
- **Occupations:** new employment permits were most frequently issued for:
  - IT: software engineers/developers, network engineer, test (analyst, engineer, QA, manager), architects (software, systems, technical, solutions), QA analysts, systems administrator
  - health: medical doctors (registrars (primarily general but also in specialities including anaesthetics and emergency medicine) and senior house officers), nurses
  - financial: senior auditor, financial/risk analysts
  - industry: engineers (e.g. process, field service), chemists, quality and regulatory.

Associate Professionals & Technical

- **Overall:** new employment permits for associate professionals accounted for 14% of total permits issued in 2015
- **Type:** over a third (36%) of new permits issued were for critical skills permits, 29% for intra-company transfers and a further 26% were general permits; intra-company transfers for this occupational group accounted for almost a third (28%) of all intra-company transfers issued
- **Salary:** a half of new permits issued had a salary of less than €40,000
- **Sector:** new permits were primarily issued for the IT sector (60%), arts, entertainment and sport (12%), financial services (12%) and industry (9%)
- **Nationality:** persons from India, USA, Israel and Turkey accounted for over half of all new permits issued for this occupational group
- **Occupations:**
  - business and financial: account strategists/managers (with languages)



including online sales, business development, inside sales representatives, marketing executives, financial/data analysts, senior auditors
  - IT: systems/technology analysts, database/systems administrators
  - science/engineering: primarily manufacturing technicians, but also customer/field engineers
  - sports professionals.

Administrative and Secretarial

- **Overall**: with 63 permits, administrative positions accounted for 1% of total new permits issued in 2015
- **Type:** permits for this occupational group were spread across all types: over a third (38%) of new permits issued were for dependents/partner/spouses, a further quarter for critical skills and a fifth for intra-company transfers
- **Salary:** two thirds of new permits issued had a salary of less than €40,000
- **Sector:** new permits were primarily in the IT and financial services sectors
- **Occupations:** fund accounting, multilingual associate account strategists.

Skilled trades

- **Overall**: new employment permits issued for those in skilled trades accounted for 3.8% of total permits issued in 2015
- **Type**: 43% of new permits issued were general permits, with intra-company transfers accounting for a further 29%
- **Salary:** a half of new permits issued were for positions with a salary between €30,000 and €39,999
- **Sector:** almost a half (45%) of all new permits issued were for the accommodation and food services sector, a quarter for the IT sector and a further 18% in industry
- **Occupations:** new permits were most frequently issued for:
  - chefs: a half of new permits issued for skilled trades was for chefs, many in ethnic cuisine
  - electrical and electronic trades: field service engineer, telecoms test engineer, customer engineer
  - butchers/boners.

Caring, Leisure and Other Services

- **Overall:** new permits issued for those in caring occupations accounted for 1.3% of total permits in 2015
- **Type:** over three quarters (77%) of permits issued for this occupational group were issued for dependant/partner/ spouses
- **Salary:** over 80% of new permits issued had a salary of less than €30,000
- **Occupations:** permits were most frequently issued for healthcare assistants.

Sales and Customer Services

- **Overall:** new employment permits issued for those in sales related occupations accounted for 0.6% of total permits issued in 2015; permits were most frequently issued for customer service occupations.

Operatives

- **Overall:** at 11 permits issued, new employment permits for operatives accounted for 0.2% of total permits issued in 2015.

Elementary Occupations

- **Overall:** at 16 permits issued, new employment permits for elementary occupations accounted for 0.3% of total permits issued in 2015.

Section 8 Vacancies

Vacancies can occur for a number of reasons, whether it is expansion, replacement and churn. Determining the nature of the vacancies is important before detailing the type of vacancies that are occurring.[38] This section provides a summary of the vacancies that occurred most frequently in 2015 from two sources, namely:

- Public Employment Service (PES) vacancy data (from Department of Social Protection's vacancy portal Jobs Ireland)
- private recruitment agency (IrishJobs.ie).

An examination of a number of new data sources is also provided, including an analysis of persons recently hired and vacancy rates by sector.

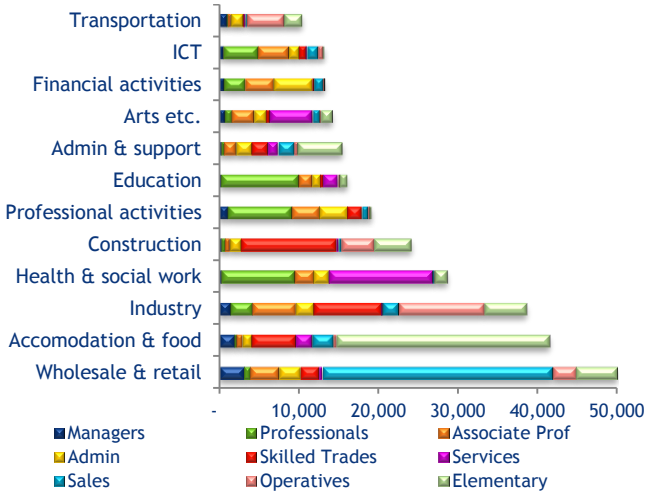
8.1 Recent job hires

Recent job hires refers to employees who were employed in a 'reference week' and had started working for their employer up to three months earlier. The analysis provided here is from the CSO's QNHS data; data from the four quarters in 2015 are summed to give an annual figure.

An analysis of recent job hires alone is not an indication of job opportunities but when combined with an examination of employment growth (Sections 3 & 4) and labour market transitions (Section 6), it can provide a clear indication of where job openings have been occurring, a profile of the persons taking up employment and the extent to which these openings are occurring due to expansion or churn.

In 2015, recent job hires were most frequent in wholesale and retail (mainly sales occupations) and accommodation and food (mostly elementary occupations), with churn considered the prevailing factor (Figure 8.1). Most of the recent job hires for professional occupations were in education, professional activities and the health sector.

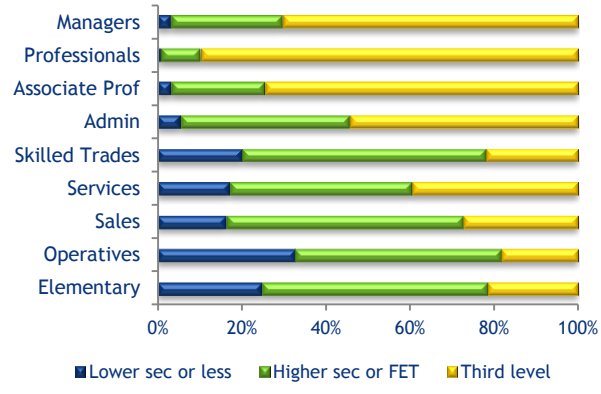
Figure 8.1 Recent job hires by sector and occupation, 2015



Source: SLMRU analysis of CSO QNHS data

In terms of education level (Figure 8.2), at 90%, those recently hired in professional occupations were most likely to have a third level qualification. Over half (58%) of persons recently hired in skilled trades held at most higher secondary or further education. Those recently hired as operatives had the highest share of persons with lower secondary education or less.

Figure 8.2 Recent job hires by occupation and education, 2015

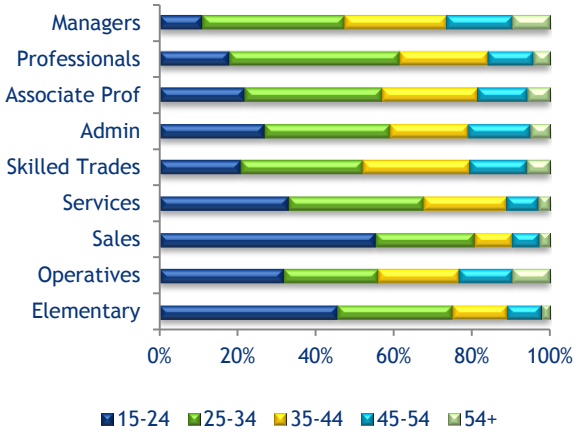


Source: SLMRU analysis of CSO QNHS data

[38] Detailed analysis of the vacancy data is published in the Vacancy Overview 2015, SOLAS/EGFSN 2016.

Figure 8.3 examines the occupation and age of those recently hired in 2015. Sales and elementary occupations had the highest share of young hires (i.e. those aged 15-24 years) with 55% and 46% respectively. Of those recently hired for professional occupations, 44% were aged 25-34, whereas managers and operatives had the highest shares of older workers (aged 45+) recently hired, with 27% and 24% respectively.

Figure 8.3 Recent job hires by occupation and age, 2015

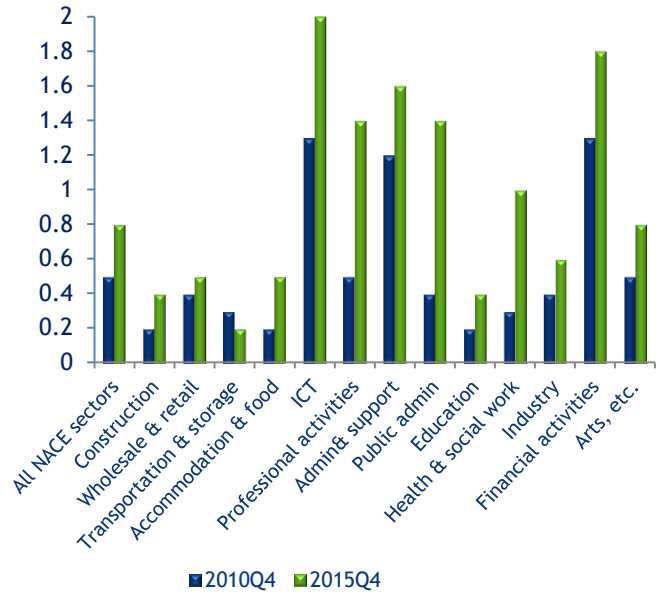


Source: SLMRU analysis of CSO QNHS data

8.2 CSO vacancy rates

The job vacancy rate, as detailed in the CSO Earnings, Hours and Employment Costs Survey (EHECS), measures the proportion of total posts that are vacant as a proportion of total occupied posts combined with job vacancies. In the fourth quarter of 2015, the overall vacancy rate stood at 0.8%. Figure 8.4 presents the vacancy rates by sector, with the highest rates recorded for the ICT and financial sectors in quarter 4 2015. The lowest vacancy rates were recorded for the transportation and storage, construction and education sectors. Since the fourth quarter of 2010, there was a rise in the vacancy rate for all sectors excluding transportation and storage.

Figure 8.4: CSO vacancy rate by sector, quarter 4 2010 and quarter 4 2015

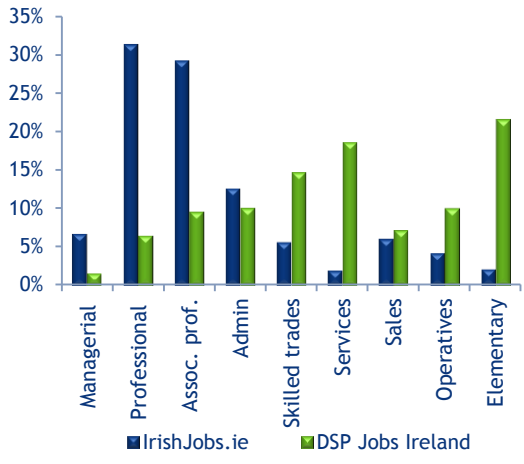


Source: CSO EHECS

8.3 Vacancies by Occupation

In 2015, vacancies advertised through IrishJobs.ie were mostly concentrated in professional and associate professional occupations (Figure 8.5). Newly advertised vacancies through DSP Jobs Ireland were concentrated in elementary, personal services and skilled trades occupations.

Figure 8.5 Vacancies by Occupational Group (%), 2015



Source: IrishJobs.ie and DSP Jobs Ireland

The main job titles that were notified through DSP Jobs Ireland in 2015 were as follows:

Managers	▪ Restaurant and hotel managers
Professionals	▪ Nurses (staff, registered, psychiatric/mental health services, elderly)
	▪ Higher education lecturers/tutors (e.g. in healthcare, horticulture, childcare)
	▪ Engineers: including manufacturing, mechanical, maintenance, process, quality, refrigeration and HVAC service engineers, civil/site engineers, quantity surveyors
	▪ Accountants (mainly financial but also management)
	▪ Software engineers/developers, games-related (testers, designers)
Associate professionals	▪ Sales and marketing (brand ambassadors/ promotional staff, sales executives)
	▪ IT technical support (with languages)
	▪ Youth workers
	▪ Logistics: inventory stock taker, purchasing/buyer, production manager
	▪ Other: Interpreters, recruitment consultants, CAD technicians, graphic designers
Administrative	▪ Census 2016 enumerators, administrator (office, accounts, sales), receptionist
	▪ Accounts technician, payroll administrator, credit controller, bookkeeper
Skilled trades	▪ Chefs: Chef de partie, commis, sous and head chefs; also breakfast chefs, pizza chefs; ethnic chefs, mainly Indian, Chinese and Thai
	▪ Electricians: including commercial, industrial and field service technicians
	▪ Carpenters: including 1st/2nd fix carpenters, shuttering and joiners
	▪ Butchers (retail and food processing), boners/trimmers
	▪ Mechanics (car, HGV), NCT testers, fitters (including tyres), panel beaters, spray painters, valeters
	▪ Plumbers: including industrial, domestic/commercial, pipe fitters
	▪ Fitters, welders (coded, stainless steel, MIG/TIG, butt/electric fusion), steel fabricators
	▪ Other trades: steel fixers, plasterers, bricklayers/stonemasons
Personal services	▪ Care workers: relates to both those providing care in the home and in nursing homes
	▪ Childcare workers
	▪ Air transport: cabin crew and ramp agents
	▪ Other personal services: hairdressers/barbers, beauty therapist, nail technician, fitness instructor, leisure centre attendant
Sales & customer service	▪ Sales assistants (retail (e.g. convenience stores, petrol stations, supermarkets), counter, including deli and pharmacy); over half were for part-time positions
	▪ Telesales, contact/call centre representatives, lead generation representatives (language skills required for all of these)
	▪ Fundraisers, field sales representatives and door to door salespersons, brand ambassadors (with a driving licence a requirement for many of these positions)
	▪ Merchandisers, inventory stock auditor
Operatives	▪ Process operatives, food production operatives
	▪ Drivers: artic, HGV, rigid, multidrop, machine drivers/operators, dumper (site/artic)
	▪ Other drivers: delivery, van, bus and coach drivers
	▪ Other operatives: roundworker/pipefitter, scaffolders (both basic and advanced)
Elementary	▪ Security guards: retail security guards were the most frequently mentioned but also door supervisors, event and static security
	▪ Cleaning: primarily part-time positions advertised
	▪ Kitchen and catering assistants: primarily in catering, but also for porters, deli/counter staff and baristas (two thirds were full-time positions; 70% required some experience)
	▪ Waiters/waitresses: over half were part-time positions and most required at least some experience
	▪ Other elementary: warehouse operatives, general operative, construction labourer, order picker, stock-takers.

The main job titles that were notified through IrishJobs.ie in 2015 were as follows:

Managers	▪ Production, operations, financial, HR, technical and supply chain
	▪ Retail/store managers
Professionals	▪ IT programmers (with Java, Oracle/SQL, .net)
	▪ Other IT (systems analysts/engineers, technical architects, test engineers, web developers, applications developers/support, IT/cyber security analyst)
	▪ Engineering: process, project, design, manufacturing, quality, regulatory affairs
	▪ Business: business/risk analysts, business intelligence, project managers
	▪ Finance – risk analysts, business analysts, project managers and financial accountants
	▪ Nurses (staff, clinical nurses, theatre and to a lesser extent, community, cancer, psychiatric, paediatric)
	▪ Medical practitioners (paediatric, oncology, orthopaedic), pharmacists, physiotherapists, psychologists, radiographers, speech and language therapist and medical scientists
Associate professionals	▪ Business/financial: analysts (business, financial, data), tax managers, audit/accounts manager, credit & collections agent, claims officers (with languages), underwriters, tax advisors, credit risk officers, transfer agents
	▪ Sales and marketing: product/brand management, business development, supply chain analyst, sales managers, inside sales (with languages), account managers, business development
	▪ Buyer, procurement officer

	▪ HR generalists, advisors, recruitment coordinators, health and safety officers
	▪ IT technicians – tech support (with language skills), administrators (database, systems, support)
	▪ Other technicians: laboratory, engineering (process, manufacturing, quality), quality assurance, field service, pharmacy
Administrative	▪ Financial - fund accountants, accounts payable/receivable, payroll, credit controller, pensions, claims
	▪ General administrator, receptionists, executive assistants, document controller, billing, HR
Skilled trades	▪ Validation and C&Q (commissioning & qualification) engineer
	▪ Maintenance technician/fitter, toolmaker
	▪ Chefs (head, chef de partie, sous, commis)
Personal services	▪ Care workers
Sales & customer service	▪ Customer service/care/representative and collections specialists (with languages)
	▪ Retail sales assistants, telesales advisors
Operatives	▪ Manufacturing, process, production
	▪ Drivers: artic, multi-drop, HGV
Elementary	▪ Warehouse operatives
	▪ Catering assistants.

Recruitment Agency Survey (April 2016)

Professional occupations accounted for two thirds of all difficult to fill mentions. The main job titles that were reported to be difficult to fill were as follows:

Managers	▪ Project managers in construction (especially with relevant experience)
	▪ Production managers - Director of Quality (Med/Tech)
	▪ Supply chain specialists (biopharma)
	▪ Business development manager
	▪ Hotel/accommodation sales manager
	▪ Restaurant manager
Professionals	▪ Programmers & software developers (UX/UI design, .net, Java, Cloud, Oracle/SQL)
	▪ Database architect/data centre/warehouse engineer, business intelligence/data analytics (e.g. Big Data, data visualisation)
	▪ IT system analyst, Internet protocol/networks engineer, cyber security analyst
	▪ IT QA & software testing
	▪ Engineering - process, project, design (including R&D), quality control (including standards, compliance & regulatory affairs), automation, validation/computer validation system (CVS)
	▪ Quantity surveyor, building services/structural engineer
	▪ Business & finance – business intelligence & risk analyst, financial & management accountants with expertise in solvency, taxation and regulatory compliance
	▪ Nurses (ANP in intensive care/theatre, clinical nursing management, RGN, elderly care nursing)
	▪ Medical practitioners (especially NCHDs/Registrars/Locum roles, emergency medicine, psychiatrist, oncology, orthopaedic, CT/MRI radiographers) and medical scientists
	▪ Scientists: chemists-analytical development and product formulation, quality control analyst
Associate professionals	▪ Business/financial: analysts (business, financial, data), accounts/payroll manager, credit and collections agent, claims officers (with languages), transfer agents, fund/trustee supervisor, digital marketing
	▪ Sales and marketing: product/brand management, technical sales (e.g. software B2B) business development, vendor managers/CRM, inside sales (with languages), account managers
	▪ Supply chain analysts (demand planning & forecasting, ERP)
	▪ HR recruitment consultants – generic and with specialist knowledge (e.g. rationalisation, on-site coordinators), health and safety officers
	▪ IT technicians: tech support (with language skills, especially German, Nordic and French), administrators (database, cloud support), troubleshooting & quality evaluation
	▪ Other technicians: quality assurance/control, process (e.g. injection moulding/polymer engineering)
Administrative	▪ Financial - fund administration, accounts payable (managers and administrators with languages), credit control, payroll management, admin roles in sales, procurement and freight forwarding
	▪ Admin secretaries, receptionists
Skilled trades	▪ Validation and C&Q (commissioning & qualification) technicians/engineers
	▪ Welders – TIG, MIG, ARC
	▪ Construction craft: steel erectors/fixers, electricians, telecommunication line installation/pipe laying, curtain waller (outer covering of buildings), shift managers/supervisors in construction, carpenters (niche – shutter)
	▪ Chefs (senior/head, new product development, pastry chef, chef de partie)
	▪ Butcher/deboner
	▪ Bar manager
	▪ Maintenance technician/fitter, toolmaker
Personal services	▪ Care/homecare roles
Sales & customer service	▪ Customer service/care/representative and collections specialists (with languages)
	▪ Retail sales assistants, telesales advisors
Operatives	▪ Manufacturing, process, production (in high tech manufacturing)
	▪ Drivers: artic, HGV (E+,CI licence), forklift drivers (e.g. with VNA and/or turret license, Reach Truck); crane operator -tower crane operator/banksman.

Section 9 Occupational Employment Profiles

This section provides a statistical analysis of employment at occupational level. Most of the indicators used in the analysis are presented in Table 9.1. Employment profiles are provided for over 130 occupations, which are grouped into 17 broad groups.

Column 1 (Table 9.1) contains occupational titles; the list of occupations was based on the Standard Occupational Classification (SOC) 2010. In cases where estimated employment was less than 3,000, two or more occupations were merged to form an occupational group. This was done in order to ensure that a sufficiently large number of observations was used for statistical inference.

Column 2 presents the employment level for each occupation. Employment figures represent the annual average of four quarters in 2015. Source: Analysis by SLMRU (SOLAS) based on data provided by the CSO (QNHS), quarter 1 to quarter 4 2015.

Column 3 shows the percentage of females employed in an occupation. Source: Analysis by SLMRU (SOLAS) based on data provided by the CSO (QNHS), quarter 4 2015.

Column 4 shows the percentage of persons who work part-time. Source: Analysis by SLMRU (SOLAS) based on data provided by the CSO (QNHS), quarter 4 2015.

Column 5 provides an indication of the unemployment level for an occupation. The unemployment rate is calculated by dividing the number of unemployed persons aged 15 and over in an occupation by the sum of the number of employed and unemployed persons aged 15 and over in that occupation. As only persons who stated their previous occupation were included in the calculations, the estimates may underestimate the true unemployment rate for an occupation.

The unemployment rate is indicated as follows:

- 'B.A.' for unemployment rates below the national average of 9.9% (quarter 4 2015)
- 'A.' for unemployment rates of 9.9% (quarter 4 2015)
- 'A.A.' for unemployment rates above the national average of 9.9% (quarter 4 2015)

To avoid issues with small sample size at this level of disaggregation, the unemployment rate could only be reported for occupations in which at least 1,000 persons were estimated to be unemployed. Source: Analysis by SLMRU (SOLAS) based on data provided by the CSO (QNHS), quarter 4 2015.

Column 6 shows the percentage of persons aged 55 and over in employment in an occupation. A higher than average share of persons aged 55 and over indicates a higher expected retirement rate in the short to medium-term. Source: Analysis by SLMRU (SOLAS) based on data provided by the CSO (QNHS), quarter 4 2015.

Column 7 shows the percentage of non-Irish nationals in employment. A higher than average proportion of non-Irish nationals in an occupation indicates employers' reliance on sourcing skills/labour from abroad to fill vacancies. Source: Analysis by SLMRU (SOLAS)

based on data provided by the CSO (QNHS), quarter 4 2015.

Column 8 shows the percentage of persons who have attained a third level qualification. Source: Analysis by SLMRU (SOLAS) based on data provided by the CSO (QNHS), quarter 4 2015.

Column 9 shows the annualised rate of employment growth for the period 2010-2015. Source: Analysis by SLMRU (SOLAS) based on data provided by the CSO (QNHS), 2010-2015.

Column 10 shows the number of new employment permits issued to non-EEA nationals in 2015. This is an indicator of the demand for skills that could not be met from domestic or EEA sources. Source: Department of Jobs, Enterprise and Innovation.

Column 11 presents the results of the SLMRU (SOLAS) Recruitment Agency Survey conducted in April 2016. The occupations with mentions of difficult-to-fill vacancies reported by recruitment agencies are indicated by an 'X'. Source: SLMRU (SOLAS) Recruitment Agency Survey, May 2016.

Column 12 presents the expected medium term employment growth rate by occupation. The growth rates are indicated as follows:

- 'B.A.' for employment growth below the expected national average of 19% for the period 2012-2020
- 'A.' for expected employment growth of 19% for the period 2012-2020
- 'A.A.' for employment growth above the expected national average of 19% for the period 2012-2020.

Source: Recovery and competitive manufacturing scenario, Occupational Employment Projections 2020, SLMRU (SOLAS), February 2014.

Column 13 shows the estimated replacement rate for each occupation. The replacement rate was based on the number of identified transitions from employment to inactivity (e.g. retirement, home duties, study, etc.) and net losses from inter-occupational movements. The rates were reported only for occupations for which the estimated number of transitions was above 1,000. Source: Analysis by SLMRU (SOLAS) based on data provided by the CSO (QNHS), quarter 4 2014 – quarter 4 2015.

Column 14 shows the estimated turnover rate for each occupation. The turnover rate was based on the number of identified intra-occupational transitions (changes of employer) and neutral intra-occupational movements (transitions between occupations where exits from an occupation were compensated in full by entries to that occupation). The rates were reported only for occupations for which the estimated number of transitions was above 1,000. Source: Analysis by SLMRU (SOLAS) based on data provided by the CSO (QNHS), quarter 4 2014 – quarter 4 2015.

Column 15 provides an indication of shortage for each occupation. The following categories were used:

● - for occupations for which there are no shortages

● - where there is an insufficient number of individuals who had the required level of educational attainment, skills set and/or experience to meet the required labour market demand and/or where there is an insufficient number of individuals available to

take up employment opportunities in a particular occupation

● - indicates that there is no overall shortage, but some issues have been identified (e.g. geographical mobility, high turnover).

For grouped occupations, an indication of shortage does not mean that all occupations in the grouping are in short supply.

The term 'shortage' within this report refers only to the situation whereby the supply of skills or labour from within the Irish workforce is insufficient to meet demand. It may be the case that there is a sufficient supply of skills or labour for the occupation in question within the EEA. Consequently, there may not be a shortage from a European perspective.

Column 16 provides some further elaboration on the shortages or issues identified for the relevant occupation.

Using data from Table 9.1, individual occupations were examined in detail. The analysis covers the following broad occupational groups:

- science occupations
- engineering occupations
- IT occupations
- business and financial occupations
- healthcare occupations
- education occupations
- social and care occupations
- legal and security occupations
- construction professional and associate professional occupations
- construction craft occupations
- other craft occupations
- arts, sports and tourism occupations
- transport and logistics occupations
- administrative and secretarial occupations
- sales and customer service occupations
- operatives
- elementary occupations (labourers).

In general, occupations that are associated with the same sector of employment or occupations with similar duties were grouped together. The following information was provided for each occupational group:

- the level of employment (expressed as an annual average figure for 2015)
- employment growth for the period 2010-2015 and 2014-2015
- age profile – employment was grouped as follows: persons aged 15-24, 25-54, and 55 years and older (quarter 4 2015)
- educational attainment – employment was grouped as follows: persons with lower secondary education or less; higher secondary or further education and training (FET); and third level education (quarter 4 2015).

A summary of the balance between the demand and supply is provided for each occupational group. The estimated recruitment requirement was derived by combining expected expansion and replacement demand. Replacement demand was based on the replacement rates presented in Section 6.

The supply of skills was approximated using the expected output from the formal education and training system.[39] [40] The

[39] It should be noted that it is possible that individuals do not work in the occupations for which they are educated/trained.

[40] A detailed analysis of the supply from the education and training system is published in Monitoring Ireland's Skills Supply: Trends in Educaiton and Training Outputs 2015, EGFSN.

expected output was derived using third level enrolment and graduation data, as well as any available data on further education and training enrolments and certifications. In addition, estimates of supply also included job ready job seekers.

Supply data at occupational level is not reported due to the complexity of linking course output to specific occupations (e.g. business courses can be a source of supply for numerous occupations). In addition, for the majority of occupations, there are no mandatory qualification requirements. Thus, the intention is not to provide an exact quantification of the supply for each occupation but rather to obtain a general approximation.

By comparing estimates of demand and supply, an indication of potential shortage was derived. In addition, the other shortage indicators (e.g. employment permits, difficult-to-fill vacancies, etc.) were examined to reinforce the findings. The results also drew on conclusions from previous reports produced by the EGFSN and other qualitative information. The objective was to identify areas of shortages, without quantifying them.

Where possible, a distinction is made between skill or labour shortages. In some cases, an indication of the persistence of shortages is also discussed. Given that the findings are based on current data, future shortages are only indicated in cases where there is clear evidence that the shortages will persist or if current trends in education provision indicate that future shortages will emerge.

A skills shortage may arise for a number of different reasons. For example, the shortage may reflect a temporary or a sustained increase in the demand for a particular skill, or a reduction in the number of students who are acquiring the relevant qualifications. The most effective way to alleviate a shortage will depend on the reason for which the shortage has arisen. For example, if the shortage is of a temporary nature, it may be more effective to source the scarce skills from abroad, rather than to increase the number of student places in the relevant disciplines.

The purpose of this bulletin is solely to identify occupations for which shortages exist. The identification of the cause of these shortages and the appropriate (if any) policy response requires further research. The EGFSN's research programme includes a number of such studies.

Table 9.1 Demand and Shortage Indicators for Selected Occupations

Occupation	Number Employed, 2015 (Annual Average - '000s)	% Female	% Part-Time	Unemployment Rate (%)	% Aged 55 years and over	% Non-Irish Nationals	% Third Level Graduates	Annualised Employment Growth Rate, 2010-2015 (%)	New Employment Permits Issued, 2015 (Number)	SLMRU Recruitment Agency Survey	Projected Medium-Term Growth Rate (%)	Replacement Rate (%)	Turnover Rate (%)	Shortage Indicator	Comment
Functional managers & directors	47.1	20.1%	6.7%		27.4%	10.6%	62.7%	6.1%	69		A.A.	3.9%	3.9%		
Production managers in manufacturing, mining & energy	13.1	15.1%	3.7%	B.A.	10.6%	11.6%	66.9%	3.3%	35	X	A.A.	2.7%	9.9%		
Financial managers & directors	5.6	43.3%	10.3%		11.9%	11.8%	83.2%	3.5%	35		A.		7.7%		
Advertising, marketing & sales directors	5.3	35.8%	5.2%		1.5%	13.2%	81.6%	7.4%	34		A.A.	8.4%			
Human resource managers	5.6	73.7%	7.3%		15.1%	7.5%	88.5%	10.8%	18	X	A.A.				Niche areas
ICT specialist & project managers	13.6	23.5%	0.0%		7.7%	14.5%	88.5%	1.0%	170	X	A.A.		7.4%		
Financial institution managers & directors	6.3	47.7%	3.0%		12.8%	8.8%	77.7%	3.2%	15		A.A.				
Managers & directors in transport & logistics	6.9	15.6%	9.5%		17.1%	10.0%	43.0%	-3.7%	8	X	A.A.	8.5%	17.0%		Multilingual Niche areas
Managers & directors in retail & wholesale	19.5	47.1%	4.5%	B.A.	14.0%	18.7%	38.2%	0.5%	22		A.A.	5.4%	7.7%		
Hotel & accommodation managers	6.8	59.1%	22.9%		28.8%	28.2%	45.7%	1.6%	1	X	A.	11.8%	7.5%		
Restaurant managers	6.9	49.9%	7.1%		6.5%	34.6%	49.2%	1.8%	2	X	A.A.		20.8%		

Occupation	Number Employed, 2015 (Annual Average - '000s)	% Female	% Part-Time	Unemployment Rate (%)	% Aged 55 years and over	% Non-Irish Nationals	% Third Level Graduates	Annualised Employment Growth Rate, 2010-2015 (%)	New Employment Permits Issued, 2015 (Number)	SLMRU Recruitment Agency Survey	Projected Medium-Term Growth Rate (%)	Replacement Rate (%)	Turnover Rate (%)	Shortage Indicator	Comment
Publicans	4.2	19.9%	0.0%		42.9%	8.3%	17.2%	-7.6%	0		B.A.				
Leisure & sports managers	2.8	30.0%	11.1%		11.2%	8.4%	61.6%	-4.8%	1		A.				
Managers & proprietors in other services	27.0	38.2%	10.6%		29.2%	10.0%	45.6%	2.8%	5		A.A.	4.4%	4.3%		
Chemical, biological & physical scientists	7.0	55.1%	2.7%		8.1%	12.0%	95.4%	-2.1%	46	X	B.A.	15.6%	4.5%		Niche areas
Other natural & social scientists; R&D managers	6.3	46.1%	4.2%		8.7%	12.8%	93.8%	-1.0%	16		B.A.	6.9%	14.7%		Niche areas
Civil engineers	8.1	10.4%	8.0%		15.7%	1.4%	97.7%	-2.1%	5	X	B.A.	5.7%	5.7%		
Electrical & electronic engineers	3.5	6.3%	3.1%		13.9%	9.1%	95.3%	1.2%	62	X	A.A.		10.9%		
Production, process, design & development engineers	4.9	4.3%	2.4%		11.2%	15.2%	97.4%	8.9%	82	X	A.A.		15.1%		
Quality control engineers; other regulatory professionals	5.1	51.8%	15.8%		7.7%	0.0%	84.6%	9.9%	54	X	A.A.	22.8%	17.7%		
Engineering professionals n.e.c.	4.6	16.9%	8.2%		4.5%	21.6%	96.1%	1.4%	70	X	A.A.				
IT Business analysts & systems designers	2.9	14.3%	0.0%		10.0%	35.2%	100.0%	0.7%	438	X	A.A.				
Programmers & software developers	18.9	20.8%	1.8%		3.0%	37.5%	93.7%	7.2%	979	X	A.A.	2.9%	12.2%		

Occupation	Number Employed, 2015 (Annual Average - '000s)	% Female	% Part-Time	Unemployment Rate (%)	% Aged 55 years and over	% Non-Irish Nationals	% Third Level Graduates	Annualised Employment Growth Rate, 2010-2015 (%)	New Employment Permits Issued, 2015 (Number)	SLMRU Recruitment Agency Survey	Projected Medium-Term Growth Rate (%)	Replacement Rate (%)	Turnover Rate (%)	Shortage Indicator	Comment
ICT professionals n.e.c.	8.0	17.5%	8.3%		4.1%	31.2%	90.3%	-2.5%	401	X	A.A.	4.8%	10.5%		
Medical practitioners	12.3	49.6%	10.5%		17.1%	25.7%	100.0%	0.1%	1,513	X	B.A.	6.7%	16.4%		
Pharmacists	3.6	82.9%	21.3%		8.2%	4.6%	94.5%	1.5%	2		A.A.		21.1%		
Physiotherapists	2.8	65.0%	36.2%		14.0%	16.7%	100.0%	-0.7%	0		A.A.				
Occupational & other therapy professionals	5.4	86.6%	24.6%		14.0%	15.3%	92.8%	3.8%	1		B.A.	8.3%	7.3%		
Nurses & midwives	55.7	91.0%	24.0%		17.1%	12.4%	97.3%	-1.1%	282	X	B.A.	3.4%	7.2%		
Other health professionals n.e.c.	11.4	67.7%	17.1%		19.5%	17.2%	98.5%	0.0%	25	X	B.A.		11.4%		Niche areas
Higher & further education teaching profs.	11.5	50.1%	11.8%		25.4%	10.7%	100.0%	-1.5%	18		B.A.	5.6%	4.1%		
Secondary teachers	29.8	72.6%	13.2%		10.5%	3.0%	99.2%	3.1%	0		B.A.	3.3%	7.6%		
Primary & nursery teachers	42.1	85.6%	8.9%		8.2%	2.2%	96.0%	1.6%	1		B.A.	4.5%	6.7%		
Teaching & other educational professionals	14.3	71.2%	35.0%		28.1%	12.1%	86.5%	0.2%	5		B.A.	10.0%	7.5%		
Barristers, judges, solicitors & related professionals	10.7	46.2%	4.9%		24.2%	0.8%	100.0%	-2.4%	12	X	A.A.	5.3%	8.5%		

Occupation	Number Employed, 2015 (Annual Average - '000s)	% Female	% Part-Time	Unemployment Rate (%)	% Aged 55 years and over	% Non-Irish Nationals	% Third Level Graduates	Annualised Employment Growth Rate, 2010-2015 (%)	New Employment Permits Issued, 2015 (Number)	SLMRU Recruitment Agency Survey	Projected Medium-Term Growth Rate (%)	Replacement Rate (%)	Turnover Rate (%)	Shortage Indicator	Comment
Accountants & tax experts	37.9	48.6%	8.5%		12.0%	12.7%	96.6%	-1.6%	111	X	A.A.	0.9%	8.9%		
Mgt. consultants, business analysts & project managers	9.6	46.2%	8.9%		15.0%	10.0%	92.7%	7.9%	232	X	A.A.		5.5%		
Actuaries, economists & statisticians; other business professionals	7.4	54.2%	5.0%		19.4%	17.3%	91.0%	3.6%	43	X	A.A.	12.3%			
Architects & town planners	4.7	30.7%	10.3%		16.4%	6.5%	98.7%	2.6%	5		B.A.				
Architectural technologists, construction project managers & surveyors	3.3	0.0%	5.9%		5.5%	0.0%	66.6%	-9.4%	4	X	A.A.		16.4%		
Social workers & welfare professionals	6.5	65.5%	14.1%		27.3%	6.4%	96.8%	-1.7%	0		B.A.				
Media professionals	6.0	46.6%	12.6%		5.7%	19.7%	95.0%	0.7%	5		A.A.		11.0%		
Laboratory technicians	7.4	52.4%	12.1%		9.9%	9.9%	84.8%	4.3%	5		B.A.		4.1%		
Electrical, electronic & engineering technicians	5.8	11.2%	3.9%		23.5%	7.8%	60.8%	2.5%	50		A.A.		5.2%		Niche areas
Process & quality assurance technicians	6.7	39.9%	6.4%		3.6%	20.4%	77.4%	12.7%	10	X	A.A.		12.5%		
Other technicians n.e.c.	5.5	22.9%	8.2%		21.4%	10.8%	74.8%	6.5%	62	X	A.A.	18.4%	21.2%		

Occupation	Number Employed, 2015 (Annual Average - '000s)	% Female	% Part-Time	Unemployment Rate (%)	% Aged 55 years and over	% Non-Irish Nationals	% Third Level Graduates	Annualised Employment Growth Rate, 2010-2015 (%)	New Employment Permits Issued, 2015 (Number)	SLMRU Recruitment Agency Survey	Projected Medium-Term Growth Rate (%)	Replacement Rate (%)	Turnover Rate (%)	Shortage Indicator	Comment
IT operations technicians	10.2	23.6%	5.2%		11.4%	18.2%	71.1%	4.5%	90	X	A.A.		14.5%		Multilingual
IT user support technicians	5.0	22.1%	3.8%		4.6%	29.3%	70.0%	12.0%	29	X	A.A.		18.6%		Multilingual
Health associate professionals	12.4	71.2%	26.9%		15.9%	7.9%	71.0%	5.0%	3		B.A.		6.1%		
Youth & community workers	4.9	60.7%	43.2%		19.8%	15.7%	60.6%	-5.9%	0		B.A.		19.5%		
Welfare & housing associate professionals	4.7	66.9%	16.0%		26.4%	9.8%	80.0%	1.1%	0		B.A.				
Army personnel	5.3	8.9%	0.0%		7.7%	0.0%	32.0%	-8.9%	0		B.A.	7.9%			
Gardaí	12.3	24.3%	1.7%		6.8%	0.0%	84.9%	-3.7%	0		B.A.				
Protective service occupations	7.2	7.6%	11.5%		9.0%	8.0%	42.7%	-0.7%	0		B.A.		6.4%		
Artistic, literary & media occupations	15.9	44.9%	34.3%		16.5%	25.3%	72.7%	1.2%	13		A.A.	12.5%	10.3%		
Design occupations	6.6	55.7%	13.1%		9.1%	19.7%	76.5%	3.4%	14		B.A.		6.4%		
Sports & fitness occupations	8.1	39.3%	39.2%		9.9%	10.2%	60.1%	1.2%	30		A.A.		10.3%		
Aircraft pilots, ship officers, air traffic controllers	2.6	8.5%	8.5%		16.1%	26.7%	88.6%	3.2%	0		A.A.	15.5%			

Occupation	Number Employed, 2015 (Annual Average - '000s)	% Female	% Part-Time	Unemployment Rate (%)	% Aged 55 years and over	% Non-Irish Nationals	% Third Level Graduates	Annualised Employment Growth Rate, 2010-2015 (%)	New Employment Permits Issued, 2015 (Number)	SLMRU Recruitment Agency Survey	Projected Medium-Term Growth Rate (%)	Replacement Rate (%)	Turnover Rate (%)	Shortage Indicator	Comment
Brokers & insurance underwriters	4.3	40.4%	15.0%		20.0%	11.1%	83.6%	-3.7%	3		A.A.				
Finance & investment analysts	9.4	43.7%	8.6%		13.3%	10.4%	89.7%	4.7%	44	X	A.A.	8.4%	13.8%		
Financial & accounting technicians	3.5	74.5%	29.5%		24.6%	9.9%	78.9%	0.0%	21		A.A.		13.7%		
Financial accounts managers	8.8	57.4%	10.0%		14.4%	7.9%	77.1%	8.9%	24	X	A.A.		24.4%		
Other business associate profs.	11.9	39.0%	8.4%		10.1%	12.7%	85.4%	15.5%	55		A.A.		3.2%		
Buyers & procurement officers	3.7	48.2%	8.3%		22.4%	0.0%	57.6%	0.6%	7	X	A.A.	10.9%			
Business sales executives	21.8	26.0%	10.9%		14.8%	12.6%	45.6%	-1.3%	226	X	A.A.	16.2%	9.7%		Multilingual
Marketing associate professionals	5.3	62.4%	11.2%		4.0%	16.6%	82.0%	-1.5%	45	X	A.A.	9.5%	19.1%		Multilingual
Sales accounts & bus. dev. managers	18.5	36.4%	4.3%		8.5%	14.5%	69.2%	5.3%	74	X	A.A.		16.7%		Multilingual
Estate agents etc.; conference & exhibition managers	5.5	59.2%	17.7%		19.9%	16.6%	67.1%	2.9%	0		B.A.		7.0%		
Environmental & other public services associate professionals	4.9	55.5%	12.6%		23.0%	5.7%	52.1%	3.0%	0		B.A.	6.7%			
Human resources & industrial relations officers	6.3	69.5%	17.6%		8.3%	10.2%	90.9%	3.4%	6	X	B.A.		26.6%		Niche areas

Occupation	Number Employed, 2015 (Annual Average - '000s)	% Female	% Part-Time	Unemployment Rate (%)	% Aged 55 years and over	% Non-Irish Nationals	% Third Level Graduates	Annualised Employment Growth Rate, 2010-2015 (%)	New Employment Permits Issued, 2015 (Number)	SLMRU Recruitment Agency Survey	Projected Medium-Term Growth Rate (%)	Replacement Rate (%)	Turnover Rate (%)	Shortage Indicator	Comment
Vocational & industrial trainers & instructors	8.3	46.3%	12.3%		15.8%	18.1%	70.1%	5.1%	5		B.A.	9.9%	6.3%		
Regulations inspectors; health & safety officers	4.0	48.4%	11.3%		24.8%	0.0%	78.5%	0.1%	0		A.A.	9.9%			
Government admin. occupations	34.3	80.4%	18.5%		22.1%	2.9%	41.5%	-6.6%	1		B.A.		4.9%		
Financial admin. occupations	53.1	75.2%	26.9%	B.A.	17.4%	9.4%	55.1%	-4.9%	38	X	A.A.	2.7%	14.2%		Multilingual Niche areas
Records & library clerks etc.	4.2	91.6%	36.7%		25.7%	0.0%	49.2%	6.6%	0		B.A.	10.9%	11.2%		
Stock control, transport & distribution admin. occupations	5.4	37.4%	17.0%		7.1%	24.8%	38.5%	0.9%	2	X	A.A.		23.6%		
Other administrators n.e.c.	60.2	82.8%	38.6%	B.A.	17.4%	7.2%	46.8%	0.8%	12		B.A.	8.0%	12.6%		
Office managers & supervisors admin. occupations	9.6	73.8%	22.8%		18.0%	10.7%	57.4%	12.1%	4		A.A.	6.5%	7.4%		
P.A.s & other secretaries, etc.	30.1	94.1%	38.2%	B.A.	22.1%	5.4%	36.0%	-3.6%	2		B.A.	2.0%	8.2%		
Receptionists	9.9	93.0%	41.2%		21.3%	14.3%	34.4%	-1.0%	4		B.A.	12.5%	6.6%		
Farmers	84.5	8.1%	14.2%		53.5%	1.3%	10.7%	5.9%	0		B.A.	4.3%	1.8%		
Horticultural, agricultural & fishing trades n.e.c.	15.3	5.0%	27.8%	A.A.	26.0%	8.2%	24.5%	2.2%	0		B.A.	14.5%	9.2%		

Occupation	Number Employed, 2015 (Annual Average - '000s)	% Female	% Part-Time	Unemployment Rate (%)	% Aged 55 years and over	% Non-Irish Nationals	% Third Level Graduates	Annualised Employment Growth Rate, 2010-2015 (%)	New Employment Permits Issued, 2015 (Number)	SLMRU Recruitment Agency Survey	Projected Medium-Term Growth Rate (%)	Replacement Rate (%)	Turnover Rate (%)	Shortage Indicator	Comment
Metal forming, welding & related trades	10.5	2.0%	5.5%		18.9%	9.1%	12.8%	6.0%	0	X	A.A.	4.8%	17.9%		Niche areas
Metal machining, fitting & instrument making trades	28.4	3.0%	6.0%	B.A.	18.1%	10.1%	36.4%	6.5%	12		A.A.	4.0%	7.7%		
Vehicle trades	18.7	1.6%	10.3%	B.A.	13.2%	21.0%	18.1%	-0.5%	1		B.A.	6.0%	10.6%		
Electrical & electronic trades, etc.	34.3	2.0%	5.8%	B.A.	17.9%	8.7%	38.1%	-3.5%	87		A.A.	2.8%	12.8%		
Bricklayers	4.1	0.0%	12.9%	A.A.	20.6%	15.7%	9.0%	-2.2%	0		B.A.				
Plumbers	9.4	1.1%	10.5%		13.8%	6.3%	10.9%	-0.8%	0		A.A.	8.0%	5.9%		
Carpenters & joiners	18.1	0.0%	9.6%	A.A.	11.0%	14.5%	6.1%	-0.2%	1		A.A.		16.1%		
Plasterers	3.0	0.0%	27.7%	A.A.	22.7%	15.2%	11.8%	-8.4%	0		A.A.		46.4%		
Painters & decorators	7.7	4.0%	19.8%	A.A.	13.4%	25.5%	5.9%	2.2%	0		A.A.		11.5%		
Other construction trades	23.4	1.2%	13.2%	A.A.	22.7%	13.2%	15.4%	-1.0%	3	X	A.A.		7.8%		Niche areas
Printing trades	3.2	15.2%	5.5%		13.2%	17.6%	13.4%	-6.9%	0		B.A.		22.0%		
Butchers, fishmongers, etc.	7.8	1.2%	23.0%		12.2%	28.9%	7.2%	-1.4%	9	X	A.A.	12.1%	5.4%		

Occupation	Number Employed, 2015 (Annual Average - '000s)	% Female	% Part-Time	Unemployment Rate (%)	% Aged 55 years and over	% Non-Irish Nationals	% Third Level Graduates	Annualised Employment Growth Rate, 2010-2015 (%)	New Employment Permits Issued, 2015 (Number)	SLMRU Recruitment Agency Survey	Projected Medium-Term Growth Rate (%)	Replacement Rate (%)	Turnover Rate (%)	Shortage Indicator	Comment
Bakers & flour confectioners	2.6	40.7%	30.8%		10.1%	46.7%	28.2%	5.3%	1		B.A.	17.2%	25.9%		
Chefs & cooks	28.2	34.1%	25.2%	B.A.	8.4%	43.3%	45.9%	5.2%	113	X	A.	15.7%	12.2%		Niche areas
Catering & bar managers	5.1	46.9%	16.0%		16.8%	17.8%	32.8%	-3.4%	1	X	A.	11.2%	22.7%		
Other skilled trades	9.5	29.6%	24.9%		23.0%	23.2%	29.1%	-0.4%	0		B.A.	6.7%	10.4%		
Nursery nurses & assistants	4.9	95.7%	67.2%		7.0%	5.4%	38.5%	-2.1%	6		B.A.		11.1%		
Child-minders, etc.	21.5	97.5%	43.2%	B.A.	10.3%	24.2%	38.9%	5.7%	0		B.A.	10.9%	15.1%		
Educational support assistants	13.5	99.4%	28.4%		15.7%	5.8%	54.7%	0.0%	0		B.A.	5.3%	9.7%		
Animal carers & pest controllers	1.9	64.5%	28.1%		11.2%	8.2%	47.8%	2.6%	2		B.A.				
Caring personal service occupations	12.1	74.0%	25.9%		23.4%	11.9%	31.9%	5.2%	10		B.A.	4.3%	10.8%		
Care workers, home carers, etc.	57.2	85.1%	45.4%	B.A.	26.9%	12.4%	31.8%	1.6%	56	X	B.A.	7.3%	10.7%		
Leisure & travel service occupations	7.9	62.2%	35.2%		6.8%	6.2%	40.9%	-1.4%	1		A.	15.6%	13.8%		
Hairdressers & beauticians, etc.	22.8	89.9%	50.5%		3.5%	19.3%	31.0%	1.1%	4		A.	14.1%	15.7%		

Occupation	Number Employed, 2015 (Annual Average - '000s)	% Female	% Part-Time	Unemployment Rate (%)	% Aged 55 years and over	% Non-Irish Nationals	% Third Level Graduates	Annualised Employment Growth Rate, 2010-2015 (%)	New Employment Permits Issued, 2015 (Number)	SLMRU Recruitment Agency Survey	Projected Medium-Term Growth Rate (%)	Replacement Rate (%)	Turnover Rate (%)	Shortage Indicator	Comment
Housekeepers & caretakers, etc.	14.9	50.7%	55.1%	A.A.	37.4%	25.7%	13.1%	4.4%	2		B.A.	6.1%	38.3%		
Sales assistants	124.9	68.2%	54.2%	B.A.	9.7%	16.2%	22.2%	-0.1%	5	X	A.A.	15.0%	18.2%		
Sales related occupations	11.5	34.4%	16.0%		21.5%	7.2%	47.1%	-2.2%	5		A.A.	10.9%	12.5%		
Sales supervisors	5.0	49.0%	14.6%		3.0%	39.7%	54.3%	6.3%	2		A.A.	14.1%			
Customer service occupations	21.5	62.9%	20.1%	B.A.	11.1%	18.4%	54.3%	7.1%	26	X	A.A.	5.6%	17.5%		Multilingual
Food, drink & tobacco process operatives	13.3	26.6%	12.2%	B.A.	11.6%	37.8%	17.6%	5.2%	2		A.A.	12.5%	10.5%		Retention issues
Chemical & related process operatives	5.7	34.8%	5.2%		15.0%	5.0%	33.2%	-5.9%	1		A.A.	8.1%	10.9%		CNC
Other process operatives	4.2	12.7%	8.5%		11.8%	18.2%	19.7%	4.9%	1	X	A.A.	14.2%	11.7%		CNC
Plant & machine operatives	7.0	17.2%	11.6%		9.6%	10.7%	18.6%	-2.3%	1		B.A.	4.8%	15.2%		CNC
Assemblers	7.1	41.5%	9.3%		7.9%	11.9%	27.6%	3.9%	2		A.A.	4.3%	18.7%		
Routine operatives	20.0	39.3%	14.9%	B.A.	12.4%	19.7%	28.0%	2.4%	2		A.A.	6.8%	17.2%		
Construction operatives	12.1	0.0%	22.6%	A.A.	20.3%	21.7%	8.6%	6.1%	0		A.A.	9.6%	24.6%		

Occupation	Number Employed, 2015 (Annual Average - '000s)	% Female	% Part-Time	Unemployment Rate (%)	% Aged 55 years and over	% Non-Irish Nationals	% Third Level Graduates	Annualised Employment Growth Rate, 2010-2015 (%)	New Employment Permits Issued, 2015 (Number)	SLMRU Recruitment Agency Survey	Projected Medium-Term Growth Rate (%)	Replacement Rate (%)	Turnover Rate (%)	Shortage Indicator	Comment
Road transport operatives	61.4	3.0%	19.8%	B.A.	32.0%	13.6%	10.6%	-0.1%	0	X	A.A.	2.7%	9.3%		Niche areas
Mobile machine drivers & operatives	11.7	1.8%	7.6%	A.A.	9.0%	12.7%	6.8%	1.6%	0	X	A.A.	12.8%	19.1%		Niche areas
Other drivers & transport operatives	4.1	2.4%	7.5%		19.0%	4.8%	14.7%	-5.2%	2		A.A.				
Elementary agricultural occupations	12.8	21.6%	28.2%	A.A.	14.5%	29.5%	18.5%	-2.6%	0		B.A.	23.5%	9.0%		
Elementary construction occupations	30.3	15.9%	24.4%	A.A.	13.9%	18.9%	12.3%	-4.2%	0		B.A.	19.2%	19.7%		
Elementary process plant occupations	11.9	31.2%	13.7%	A.A.	12.8%	43.1%	21.9%	-3.4%	2		B.A.	4.0%	12.1%		
Elementary administration occupations	9.3	13.5%	11.8%		27.1%	3.3%	14.6%	-4.0%	0		B.A.	6.4%	18.9%		
Elementary cleaning occupations	41.6	67.5%	59.0%	B.A.	17.4%	46.7%	15.3%	3.5%	3		B.A.	13.3%	17.7%		
Elementary security occupations	13.5	14.2%	24.0%	A.A.	19.9%	20.6%	21.2%	-0.6%	0		B.A.	3.2%	19.5%		
Elementary sales & storage occupations	21.4	9.9%	17.3%	A.A.	15.6%	19.1%	16.8%	-0.1%	0		B.A.	7.1%	12.9%		
Kitchen & catering assistants	27.6	61.1%	49.5%	B.A.	10.0%	42.5%	21.3%	4.9%	8			18.6%	21.3%		
Waiters & waitresses	24.6	78.3%	54.7%	B.A.	5.3%	40.1%	31.1%	2.2%	2			16.5%	23.7%		

Occupation	Number Employed, 2015 (Annual Average - '000s)	% Female	% Part-Time	Unemployment Rate (%)	% Aged 55 years and over	% Non-Irish Nationals	% Third Level Graduates	Annualised Employment Growth Rate, 2010-2015 (%)	New Employment Permits Issued, 2015 (Number)	SLMRU Recruitment Agency Survey	Projected Medium-Term Growth Rate (%)	Replacement Rate (%)	Turnover Rate (%)	Shortage Indicator	Comment
Bar staff	16.6	30.1%	56.3%	A.A.	6.7%	12.6%	20.7%	-4.9%	1		B.A.	18.5%	24.7%		
Other elementary occupations	4.1	20.1%	35.0%		10.6%	15.7%	18.0%	-5.3%	1		B.A.	13.7%	22.9%		
Other/not stated	10.9	45.0%	13.4%		9.5%	27.2%	53.2%	8.6%	0			0.0%	0.0%		
Total	**1,963.6**	**45.9%**	**22.8%**	**National Average**	**17.4%**	**15.2%**	**48.0%**	**0.8%**	**6,080**		**National Average**	**6.6%**	**13.0%**		

Table 9.2 Occupation by Sector: Employment Distribution

Occupation/sector	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	Total
Functional managers & directors	*	*	12%	*	*	14%	18%	5%	5%	8%	*	*	11%	*	*	*	6%	*	*	*	*	100%
Production managers in manufacturing, mining & energy	*	*	49%	*	*	6%	7%	*	*	12%	*	*	6%	*	*	*	*	*	*	*	*	100%
Financial managers & directors	*	*	10%	*	*	6%	12%	*	*	6%	42%	*	8%	*	*	*	*	*	*	*	*	100%
Advertising, marketing & sales directors	*	*	24%	*	*	*	23%	5%	*	14%	*	*	12%	*	*	5%	*	*	*	*	*	100%
Human resource managers	*	*	20%	*	*	*	19%	*	*	5%	9%	*	*	14%	5%	6%	9%	*	5%	*	*	100%
ICT specialist & project managers	*	*	11%	*	*	*	*	*	*	44%	20%	*	4%	*	*	*	*	*	*	*	*	100%
Financial institution managers & directors	*	*	*	*	*	*	*	*	*	*	93%	*	*	*	*	*	*	*	*	*	*	100%
Managers & directors in transport & logistics	*	*	12%	*	*	*	32%	37%	*	5%	*	*	*	*	*	*	*	*	*	*	*	100%
Managers & directors in retail & wholesale	*	*	5%	*	*	*	84%	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100%
Hotel & accommodation managers	*	*	*	*	*	*	9%	*	82%	*	*	*	*	*	*	*	*	*	*	*	*	100%
Restaurant managers	*	*	*	*	*	*	*	*	96%	*	*	*	*	*	*	*	*	*	*	*	*	100%
Publicans	*	*	*	*	*	*	*	*	94%	*	*	*	*	*	*	*	*	*	*	*	*	100%
Leisure & sports managers	*	*	*	*	*	*	*	*	7%	6%	*	*	*	*	*	10%	6%	64%	*	*	*	100%
Managers & proprietors in other services	5%	*	6%	*	*	5%	43%	*	*	*	*	*	*	*	7%	*	5%	*	7%	*	*	100%
Chemical, biological & physical scientists	*	*	39%	*	*	*	7%	*	*	*	*	*	18%	*	8%	*	19%	*	*	*	*	100%
Other natural & social scientists; R&D managers	*	*	16%	*	*	*	*	*	*	*	*	*	36%	*	21%	*	*	*	*	*	*	100%
Civil engineers	*	*	*	*	*	19%	*	*	*	*	*	*	44%	*	24%	*	*	*	*	*	*	100%
Electrical & electronic engineers	*	*	15%	11%	*	*	10%	*	*	9%	*	*	44%	*	8%	*	*	*	*	*	*	100%
Production, process, design & development engineers	*	*	64%	*	*	*	5%	*	*	*	*	*	29%	*	*	*	*	*	*	*	*	100%
Quality control engineers; other regulatory professionals	*	*	56%	*	*	*	8%	*	*	5%	*	*	7%	*	11%	*	7%	*	*	*	*	100%
Engineering professionals n.e.c.	*	*	37%	*	*	*	5%	*	*	25%	*	*	20%	*	*	*	5%	*	*	*	*	100%

Occupation/sector	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	Total
IT Business analysts & systems designers	*	*	9%	*	*	*	8%	*	*	36%	22%	*	14%	*	11%	*	*	*	*	*	*	100%
Programmers & software developers	*	*	13%	*	*	*	*	*	*	65%	10%	*	*	*	*	*	*	*	*	*	*	100%
Web designers & developers	*	*	10%	*	*	*	15%	*	*	65%	*	*	*	*	*	*	*	*	10%	*	*	100%
ICT professionals n.e.c.	*	*	6%	*	*	*	*	*	*	67%	10%	*	6%	*	*	*	*	*	*	*	*	100%
Medical practitioners	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	99%	*	*	*	*	100%
Pharmacists	*	*	8%	*	*	*	83%	*	*	*	*	*	*	*	*	*	9%	*	*	*	*	100%
Physiotherapists	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	5%	95%	*	*	*	*	100%
Occupational & other therapy professionals	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	7%	85%	*	*	*	*	100%
Nurses & midwives	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	98%	*	*	*	*	100%
Other health professionals n.e.c.	*	*	*	*	*	*	*	*	*	*	*	*	10%	*	7%	*	77%	*	*	*	*	100%
Higher & further education teaching profs.	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	99%	*	*	*	*	*	100%
Secondary teachers	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	99%	*	*	*	*	*	100%
Primary & nursery teachers	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	98%	*	*	*	*	*	100%
Teaching & other educational professionals	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	81%	10%	*	*	*	*	100%
Barristers, judges, solicitors & related professionals	*	*	*	*	*	*	*	*	*	*	*	*	86%	*	5%	*	*	*	*	*	*	100%
Accountants & tax experts	*	*	6%	*	*	*	5%	*	*	*	18%	*	50%	*	*	*	*	*	*	*	*	100%
Mgt. consultants, business analysts & project managers	*	*	8%	*	*	*	*	*	*	6%	28%	*	36%	*	*	*	*	*	*	*	*	100%
Actuaries, economists & statisticians; other business professionals	*	*	6%	*	*	*	*	*	*	*	18%	*	19%	*	11%	14%	*	22%	*	*	*	100%
Architects & town planners	*	*	*	*	*	*	*	*	*	*	*	*	80%	*	12%	*	*	*	*	*	*	100%
Architectural technologists, construction project managers & surveyors	*	*	18%	*	*	25%	6%	*	*	*	*	*	35%	*	*	5%	*	7%	*	*	*	100%
Social workers & welfare professionals	*	*	*	*	*	*	*	*	*	*	*	*	*	*	5%	*	69%	*	22%	*	*	100%
Media professionals	*	*	9%	*	*	*	5%	*	*	44%	*	*	11%	*	*	*	*	18%	*	*	*	100%
Laboratory technicians	*	*	57%	*	*	*	*	*	*	*	*	*	12%	*	*	*	20%	*	*	*	*	100%
Electrical, electronic & engineering technicians	*	*	41%	9%	*	5%	7%	*	*	11%	*	*	13%	*	7%	*	*	*	*	*	*	100%

Occupation/sector	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	Total
Process & quality assurance technicians	*	*	62%	*	*	*	*	*	*	13%	*	*	5%	*	*	5%	6%	*	*	*	*	100%
Other technicians n.e.c.	*	*	21%	*	*	10%	5%	*	*	*	*	*	31%	*	14%	*	*	*	*	*	*	100%
IT operations technicians	*	*	29%	5%	*	*	6%	*	*	35%	5%	*	*	*	*	*	6%	*	*	*	*	100%
IT user support technicians	*	*	19%	5%	*	*	8%	*	*	37%	16%	*	*	*	*	*	*	*	*	*	*	100%
Health associate professionals	*	*	7%	*	*	*	24%	*	*	*	*	*	*	*	*	*	59%	*	8%	*	*	100%
Youth & community workers	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	6%	77%	*	8%	*	*	100%
Welfare & housing associate professionals	*	*	*	*	*	*	*	*	5%	*	*	*	*	*	26%	6%	56%	*	5%	*	*	100%
Army personnel	*	*	*	*	*	*	*	*	*	*	*	*	*	*	99%	*	*	*	*	*	*	100%
Gardaí	*	*	*	*	*	*	*	*	*	*	*	*	*	*	99%	*	*	*	*	*	*	100%
Protective service occupations	*	*	*	*	*	*	*	6%	*	*	*	*	*	*	85%	*	*	*	*	*	*	100%
Artistic, literary & media occupations	*	*	6%	*	*	*	*	*	*	19%	*	*	13%	*	*	6%	*	49%	*	*	*	100%
Design occupations	*	*	28%	*	*	*	5%	*	*	5%	*	*	54%	*	*	*	*	*	*	*	*	100%
Sports & fitness occupations	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	23%	*	66%	*	*	*	100%
Aircraft pilots, ship officers, air traffic controllers	13%	*	*	*	*	*	*	71%	*	*	*	*	*	*	16%	*	*	*	*	*	*	100%
Brokers & insurance underwriters	*	*	*	*	*	*	*	*	*	*	98%	*	*	*	*	*	*	*	*	*	*	100%
Finance & investment analysts	*	*	8%	*	*	*	*	*	*	8%	66%	*	12%	*	*	*	*	*	*	*	*	100%
Financial & accounting technicians	*	*	13%	*	*	9%	6%	*	*	5%	15%	8%	26%	*	*	6%	*	*	*	*	*	100%
Financial accounts managers	*	*	8%	*	*	*	10%	7%	*	7%	39%	*	13%	*	*	*	*	*	*	*	*	100%
Other business associate profs.	*	*	12%	*	*	9%	*	5%	*	9%	24%	*	25%	*	*	*	*	*	*	*	*	100%
Buyers & procurement officers	*	*	36%	*	*	*	38%	*	*	5%	*	*	*	*	9%	*	*	*	*	*	*	100%
Business sales executives	*	*	17%	*	*	*	58%	*	*	6%	*	*	*	*	*	*	*	*	*	*	*	100%
Marketing associate professionals	*	*	14%	*	*	*	*	*	*	20%	12%	*	23%	*	*	*	12%	*	*	*	*	100%
Sales accounts & bus. dev. managers	*	*	11%	*	*	*	47%	*	*	13%	*	*	8%	*	*	*	*	*	*	*	*	100%
Estate agents etc.; conference & exhibition managers	*	*	*	*	*	*	*	*	14%	*	*	44%	19%	*	*	6%	6%	*	*	*	*	100%
Environmental & other public services associate professionals	*	*	*	*	*	*	*	*	*	*	*	*	*	*	77%	*	9%	*	*	*	*	100%

Occupation/sector	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	Total
Human resources & industrial relations officers	*	*	14%	*	*	*	5%	*	*	15%	*	*	8%	25%	*	*	15%	*	*	*	*	100%
Vocational & industrial trainers & instructors	*	*	17%	*	*	*	10%	*	8%	6%	*	*	*	8%	8%	17%	11%	*	*	*	*	100%
Regulations inspectors; health & safety officers	5%	*	15%	*	*	8%	*	*	*	*	*	*	*	*	29%	12%	20%	*	*	*	*	100%
Government admin. occupations	*	*	*	*	*	*	*	*	*	*	*	*	*	*	73%	*	14%	*	*	*	*	100%
Financial administrative occupations	*	*	5%	*	*	*	14%	7%	*	*	39%	*	13%	*	*	*	*	*	*	*	*	100%
Records & library clerks etc.	*	*	5%	*	*	6%	5%	*	*	*	*	*	7%	*	5%	7%	50%	16%	*	*	*	100%
Stock control, transport & distribution admin. occupations	*	*	20%	*	*	*	24%	30%	*	7%	*	*	5%	*	8%	*	*	*	*	*	*	100%
Other administrators n.e.c.	*	*	11%	*	*	*	12%	5%	*	*	6%	*	5%	6%	12%	8%	12%	*	*	*	*	100%
Office managers & supervisors admin. occupations	*	*	14%	*	*	6%	12%	*	*	*	13%	*	14%	6%	*	*	13%	*	*	*	*	100%
PAs & other secretaries, etc.	*	*	7%	*	*	*	5%	*	*	*	*	*	7%	15%	5%	13%	24%	*	*	*	*	100%
Receptionists	*	*	7%	*	*	*	6%	*	27%	*	*	*	8%	*	5%	*	21%	*	*	*	*	100%
Farmers	99%	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100%
Horticultural, agricultural & fishing trades n.e.c.	25%	*	*	*	*	6%	*	*	*	*	*	*	*	36%	*	*	*	18%	*	*	*	100%
Metal forming, welding & related trades	*	*	71%	*	*	9%	*	*	*	*	*	*	11%	*	*	*	*	*	*	*	*	100%
Metal machining, fitting & instrument making trades	*	*	49%	*	*	11%	9%	*	*	*	*	*	13%	*	*	*	*	*	*	*	*	100%
Vehicle trades	*	*	9%	*	*	*	60%	13%	*	*	*	*	*	*	*	*	*	*	*	*	*	100%
Electrical & electronic trades, etc.	*	*	22%	5%	*	30%	6%	*	*	19%	*	*	9%	*	*	*	*	*	*	*	*	100%
Bricklayers	*	*	16%	*	*	77%	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100%
Plumbers	*	*	*	*	*	85%	*	*	*	*	*	*	5%	*	*	*	*	*	*	*	*	100%
Carpenters & joiners	*	*	14%	*	*	81%	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100%
Plasterers	*	*	5%	*	*	90%	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100%
Painters & decorators	*	*	*	*	*	91%	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100%
Other construction trades	*	*	11%	*	*	73%	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100%

Occupation/sector	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	Total
Printing trades	*	*	84%	*	*	*	*	*	*	10%	*	*	*	*	*	*	*	*	*	*	*	100%
Butchers, fishmongers, etc.	*	*	42%	*	*	*	56%	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100%
Bakers & flour confectioners	*	*	79%	*	*	*	17%	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100%
Chefs & cooks	*	*	*	*	*	*	*	*	76%	*	*	*	*	*	*	*	10%	*	*	*	*	100%
Catering & bar managers	*	*	*	*	*	*	*	*	84%	*	*	*	*	*	*	*	7%	*	*	*	*	100%
Other skilled trades	*	*	61%	*	*	*	19%	*	*	*	*	*	*	*	*	*	*	*	11%	*	*	100%
Nursery nurses & assistants	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	33%	57%	*	*	*	*	100%
Child-minders, etc.	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	67%	*	*	27%	*	100%
Educational support assistants	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	96%	*	*	*	*	*	100%
Animal carers & pest controllers	18%	*	*	*	*	*	*	*	*	*	*	*	39%	*	*	*	*	6%	32%	*	*	100%
Caring personal services occupations	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	92%	*	*	*	*	100%
Care workers, home workers, etc.	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	90%	*	*	5%	*	100%
Leisure & travel service occupations	*	*	*	*	*	*	*	24%	*	*	*	*	*	35%	*	*	*	31%	*	*	*	100%
Hairdressers & beauticians, etc.	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	92%	*	*	100%
Housekeepers & caretakers, etc.	*	*	*	*	*	12%	*	*	32%	*	*	*	*	6%	*	19%	7%	6%	6%	*	*	100%
Sales assistants	*	*	*	*	*	*	88%	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100%
Sales related occupations	*	*	*	*	*	8%	29%	*	*	7%	12%	13%	8%	*	*	*	*	*	*	*	*	100%
Sales supervisors	*	*	*	*	*	*	84%	*	7%	*	*	*	*	*	*	*	*	*	*	*	*	100%
Customer service occupations	*	*	6%	*	*	*	14%	6%	*	12%	18%	*	*	19%	*	*	5%	*	*	*	*	100%
Food, drink & tobacco process operatives	*	*	87%	*	*	*	6%	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100%
Chemical & related process operatives	*	*	89%	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100%
Other process operatives	*	*	86%	*	*	7%	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100%
Plant & machine operatives	*	5%	64%	6%	*	7%	*	*	*	*	*	*	5%	*	*	*	*	*	*	*	*	100%
Assemblers	*	*	85%	*	*	*	9%	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100%
Routine operatives	*	*	71%	*	*	*	13%	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100%

Occupation/sector	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	Total
Construction operatives	*	*	5%	*	*	64%	*	5%	*	*	*	*	*	5%	*	*	*	*	*	*	*	100%
Road transport operatives	*	*	7%	*	*	*	10%	64%	*	*	*	*	*	*	*	*	*	*	*	*	*	100%
Mobile machine drivers & operatives	7%	8%	17%	*	*	39%	13%	10%	*	*	*	*	*	*	*	*	*	*	*	*	*	100%
Other drivers & transport operatives	*	*	*	*	*	*	*	84%	*	*	*	*	8%	*	*	*	*	*	*	*	*	100%
Elementary agricultural occupations	78%	*	*	*	*	*	7%	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100%
Elementary construction occupations	*	*	28%	*	*	39%	9%	*	*	*	*	*	*	*	5%	*	*	*	*	*	*	100%
Elementary process plant occupations	*	*	61%	*	*	*	10%	*	*	*	*	*	5%	9%	*	*	*	*	*	*	*	100%
Elementary administration occupations	*	*	*	*	*	*	5%	89%	*	*	*	*	*	*	*	*	*	*	*	*	*	100%
Elementary cleaning occupations	*	*	*	*	*	*	9%	*	10%	*	*	*	*	36%	*	9%	10%	*	7%	*	*	100%
Elementary security occupations	*	*	*	*	*	*	*	6%	*	*	*	*	*	55%	7%	5%	5%	*	*	*	*	100%
Elementary sales & storage occupations	*	*	23%	*	*	*	35%	20%	*	*	*	*	*	*	*	*	*	*	*	*	*	100%
Kitchen & catering assistants	*	*	*	*	*	*	7%	*	69%	*	*	*	*	*	*	5%	13%	*	*	*	*	100%
Waiters & waitresses	*	*	*	*	*	*	*	*	95%	*	*	*	*	*	*	*	*	*	*	*	*	100%
Bar staff	*	*	*	*	*	*	*	*	91%	*	*	*	*	*	*	*	*	*	*	*	*	100%
Other elementary services occupations	*	*	*	*	*	8%	*	*	32%	*	*	*	*	*	*	*	39%	5%	*	*	*	100%
Grand total	**5.4%**	**0.3%**	**11.2%**	**0.5%**	**0.5%**	**6.4%**	**14.1%**	**4.7%**	**7.2%**	**4.3%**	**4.4%**	**0.5%**	**6.0%**	**3.4%**	**5.0%**	**7.7%**	**12.8%**	**2.2%**	**2.4%**	**0.5%**	**0.1%**	**100%**

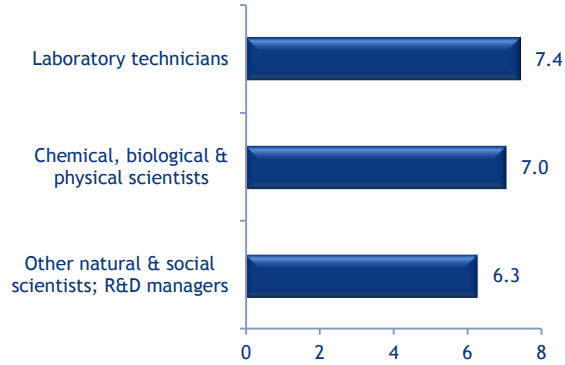
*less than 5%

A: agriculture, forestry and fishing	H: transportation and storage	O: public admin and defence
B: mining and quarrying	I: accommodation and food service activities	P: education
C: manufacturing	J: information and communication	Q: human health and social work activities
D: electricity, gas, steam and air conditioning supply	K: financial and insurance activities	R: arts, entertainment and recreation
E: water supply, sewerage, waste management and remediation activities	L: real estate activities	S: other service activities
F: construction	M: professional, scientific and technical activities	T: activities of households as employers
G: wholesale and retail trade; repair of motor vehicles and motorcycles	N: administrative and support service activities	U: activities of extra territorial organisations and bodies

9.1 Science Occupations

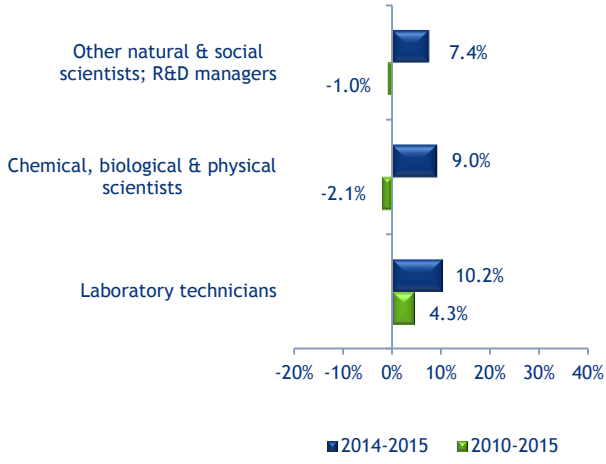
- In 2015, there were approximately 21,000 persons employed in the selected science occupations, representing 1.1% of national employment (Figure 9.1.1)
- Three quarters of employment was concentrated in three sectors: manufacturing (predominantly pharamaceuticals), professional, scientific and technical activities (mostly scientific R&D) and human health activities
- Almost two thirds of total employment in the selected occupations was at professional level; the remainder was at technician level
- Over the period 2010 to 2015, overall employment levels increased very modestly, 0.3% (compared with 0.8% nationally); employment of laboratory technicians expanded (4.3% on average annually); in contrast, negative growth rates were observed for chemical, biological & physical scientstists (2.1% on average annually), and for other natural and social scientists and R&D managers, although modest (1% on average annually)
- Over the period 2014 to 2015, overall employment expanded by 8.9% (or almost 2,000); while growth above the national average rate of 2.6% was observed for all occupations, employment levels of other natural and social scientists and R&D managers remained relatively static (Figure 9.1.2)
- Almost 90% of science professionals were aged 25-54; the corresponding share was just over 80% for laboratory technicians (Figure 9.1.3)
- At 95%, the majority of science professionals had attained third level qualifications; the corresponding share was 85% for laboratory technicians (Figure 9.1.4)
- The overall workforce of science professionals was gender balanced, while this was almost the case for laboratory technicians
- The majority of employed science professionals and technicians worked full-time and were Irish-nationals.

Figure 9.1.1 Numbers Employed (000s) in Selected Science Occupations, 2015



Source: SLMRU (SOLAS) analysis of CSO data

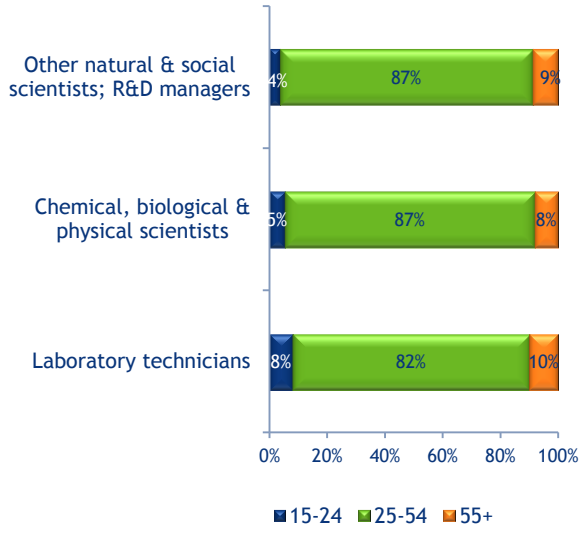
Figure 9.1.2 Average Annual Growth (%) in Selected Science Occupations



Source: SLMRU (SOLAS) analysis of CSO data

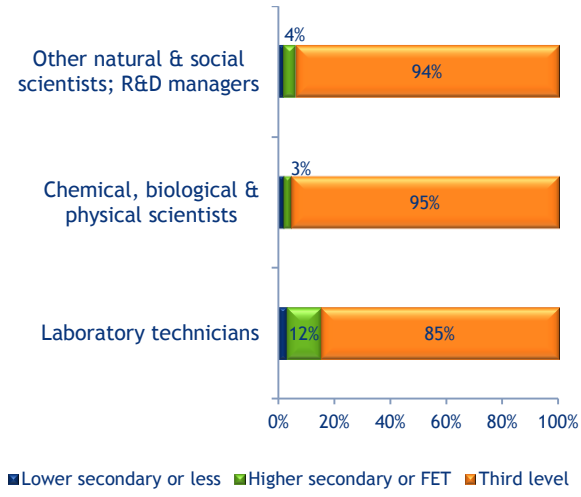
Note: Growth rates associated with occupations where employment is comparatively small are less reliable due to a greater risk of sampling error.

Figure 9.1.3 Age Profile of Selected Science Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Figure 9.1.4 Education Profile of Selected Science Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Shortage Indicators

While the number of people working in science occupations is comparatively small (approximately 1% of national employment), they play a critical role in the performance and future growth of the high value added and exporting sectors of the economy. The availability of scientists is crucial as Ireland looks to continue to attract knowledge-intensive R&D and manufacturing activities in areas such as pharmaceuticals/biologics, medical devices, and food & beverage processing. Government and EU initiatives (e.g. Horizon 2020) are expected to further drive the demand for these crucial skills.

Since the share of scientists aged 55 years and over is less than 10%, the number of retirements is estimated to be comparatively small. However, the replacement demand arising from other exits to economic inactivity (full-time study, caring duties etc.) is higher than what would normally be expected for professional and associate professional occupations.

In addition, sectors employing scientists are expected to perform strongly in the short-medium term and a further move within these sectors to higher value added activities will also increase the annual recruitment requirement for scientists and scientific technicians. Recent job announcements relating to the recruitment of science skills were numerous and included Alexion Pharmaceuticals, Eurofins Lancaster Laboratories, Horizon Pharma, Pfizer, Mallinckrodt, Amneal, Regeneron and Zimmer.

The potential skills supply from the third level education system is comparatively large: the latest data shows that there were almost 4,600 science graduates at level 8 and above in 2014/15, of which over 60% were in life sciences (e.g. biology, biochemistry, environmental sciences etc.). In addition, there were over 900 graduates at levels 6 and 7. Increases in graduate output are expected in the short-medium term, as CAO acceptance data for level 8 science programmes has been

growing annually in recent years (+15% in 2015 when compared to 2010). Nonetheless, it should be borne in mind that science graduates may opt to enter careers other than science occupations (e.g. education) and that their technical and analytical skills are highly transferable, making them highly sought after in other occupations (e.g. business, finance, IT) and sectors (almost a third (31%) of chemical, biological and physical scientists work in the public sector (typically in health)).

Despite the available graduate supply and the supply from unemployment (in May 2016, there were over 100 chemical, biological and physical scientists and almost 300 laboratory technicians (most holding third level qualifications) job ready job seekers), a shortage of science skills have been identified. The skills in short supply chiefly related to experienced candidates (e.g. five years or more) and niche scientific areas typically associated with the pharmaceutical, bio-pharma and food innovation industries. In particular, there was a demand for scientists with experience in compliance, regulatory affairs and new product development. Shortages in relation to the following job titles were identified:

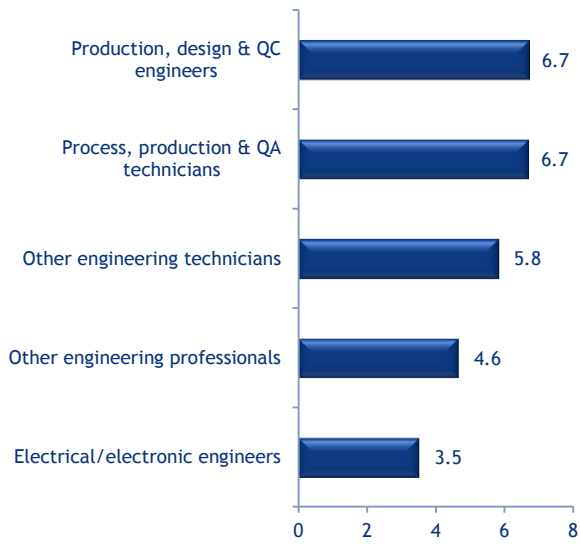
- scientist: analytical development chemist; formulation scientist; microbiologist; R&D (especially with industry specific backgrounds); QC manager; QC analyst; QA specialist
- technician: QA/QC/validation technician; quality technician inspector.

There also appears to be an issue with geographic mobility and the attractiveness of some locations outside the greater Dublin area.

9.2 Engineering Occupations

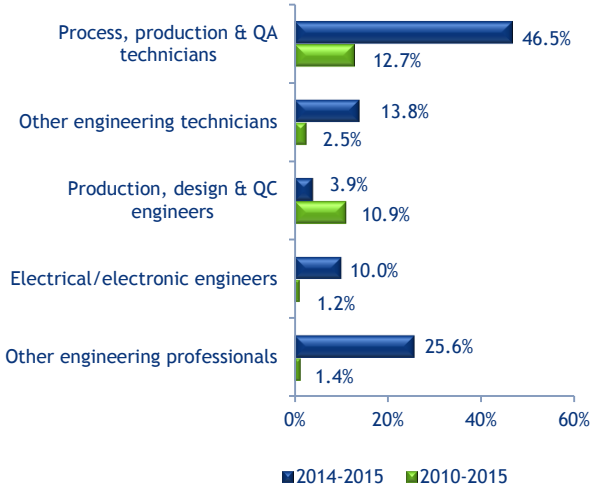
- In 2015, there were approximately 27,000 persons employed in the selected engineering occupations, representing 1.4% of national employment (Figure 9.2.1)
- Almost 80% of overall employment was concentrated in three sectors: 50% in manufacturing (mostly pharmaceuticals and machinery/equipment), with almost an additional 20% in professional, scientific and technical activities (mostly architectural/engineering activities), and 11% in information and communication
- Just over 50% of total employment was at professional level (i.e. engineers); the remainder was at technician level
- Between 2010 and 2015, employment growth in engineering occupations was the strongest recorded amongst the 17 broad occupational groups examined (6% on average annually); the strongest growth rates were observed for process, production and QA technicians (12.7% on average annually) and production, design and QC engineers (10.9%); in contrast, the weakest growth rates were observed for electrical/electronic engineers and other engineering professionals (each at just over 1% on average annually) (Figure 9.2.2)
- Over the same five year period, in absolute terms, employment expanded by approximately 7,000; the largest increases were observed for process, production and QA technicians and production, design and QC engineers (each by approximately 3,000); in contrast, employment levels of electrical/electronic engineers and other engineering professionals remained static
- Between 2014 and 2015, overall employment in engineering occupations expanded by 18.9% (compared with 2.6% nationally), or approximately 4,000; the largest increases were observed for process, production and QA technicians
- With the exception of other engineering professionals, over four fifths of persons employed in each occupation was aged 25-54 (Figure 9.2.3); almost a quarter of those employed as other engineering professionals was aged 55 or older
- Over 90% of employed engineering professionals were third level graduates; the share was 70% for engineering technicians (Figure 9.2.4)
- Over four fifths of those employed in engineering professional occupations were male; the share was just over 70% for technicians; two fifths of employed process, production and QA techicians were female – the highest share of females among the selected occupations
- The majority of employed engineering professionals and technicians worked full-time and were Irish-nationals.

Figure 9.2.1 Numbers Employed (000s) in Selected Engineering Occupations, 2015



Source: SLMRU (SOLAS) analysis of CSO data

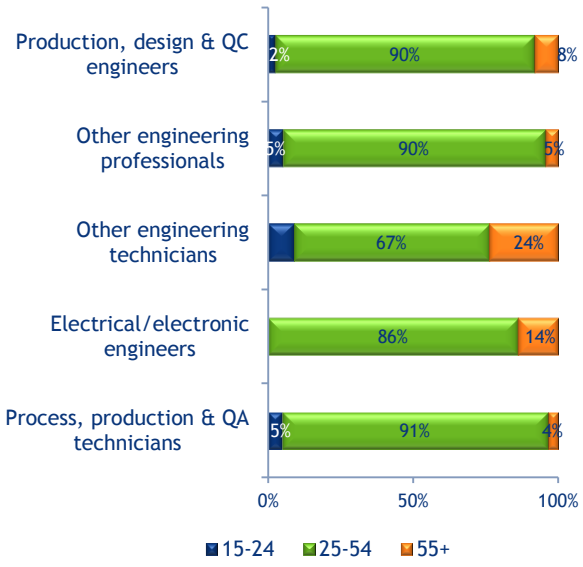
Figure 9.2.2 Average Annual Growth (%) in Selected Engineering Occupations



Source: SLMRU (SOLAS) analysis of CSO data

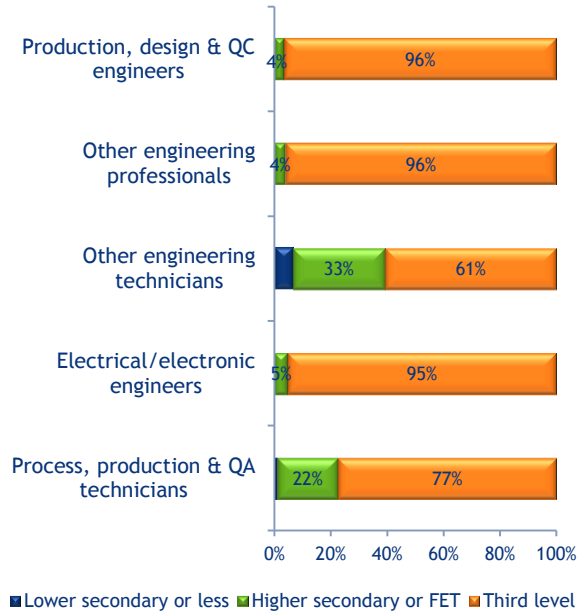
*Note: Growth rates associated with occupations where employment is comparatively small are less reliable due to a greater risk of sampling error.

Figure 9.2.3 Age Profile of Selected Engineering Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Figure 9.2.4 Education Profile of Selected Engineering Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Shortage Indicators

The majority of the 27,000 people working in engineering occupations in 2015 were employed in the manufacturing or professional, scientific and technical activities sectors. The age profile of those in engineering occupations is younger than the national average and exits to retirement are therefore expected to be relatively small; this, combined with the fact that exits to other economic inactivity (e.g. home duties) are also small, means that total replacement demand for engineering professionals is estimated to be less than 2,000 annually. However, the expected strong performance of the professional, scientific and technical activates sector, as well as the move to higher value added activities in industry, is likely to bring the annual recruitment requirement to well over 2,000.

Strong demand for engineering skills is confirmed in numerous job announcements including Shire (biotechnology), Merck

(pharma), Grant Engineering (heating equipment), DePuy (medical devices), CRI Medical Devices and Chanelle Group (human/vet pharma). The vacancy data for 2015 supports this finding (there were almost 3,000 engineering professional vacancies advertised on the PES and Irishjobs.ie portals alone). It should be borne in mind, however, that some vacancies for professional engineering occupations arise due to turnover, which is somewhat more pronounced in the area of quality control.

The number of third level engineering graduates is estimated at 4,800, more than half of which were at NFQ 8 or higher; not only has graduate output increased in recent years (up by more than a half since 2010), further increases are also expected in the short-medium term due to the increase in CAO acceptances for engineering courses (NFQ 8) as well as additional provision in both the FET and higher education sectors (e.g. new proposed apprenticeships in polymer processing and manufacturing; Springboard+ courses (with almost 1,300 places) in manufacturing, many of which are in the areas of process technology, pharmaceutical and medical devices manufacturing and operations, food science and technology, among others).

In addition, in May 2016, there were 280 engineers and 220 engineering technicians (with at least a degree-level (NFQ 7) qualifications) who were job ready job seekers.

Despite a significant supply of engineering skills emerging from the education system and a number of unemployed persons with engineering skillss, shortages continue to exist. In 2015, 328 engineers/engineering technicians were recruited from outside the EEA. The reliance on skills from abroad should be, in part, alleviated by the increased number of graduates expected from new courses in the FET and higher education systems.

At professional level, shortages have been identified for engineers, typically for roles in pharmaceutical and medical devices manufacturing. The demand relates largely to those with significant experience (at least five years) in industry specific settings. Job titles include:

- process/bioprocess engineers: experience and specific skills sets, including
- process analytical technology (PAT) and quality by design (QbD)
- process safety
- lean processes (Green Belt, Black Belt)
- automation/validation/commissioning engineers: with experience in CSV/CQV; lean processes
- quality/QC/QA engineers & other regulatory affairs professionals
- R&D engineers: development of new technologies and therapies (e.g. gene and stem cell therapy; biologics, etc.)
- chemical/chemical process engineers
- mechanical engineers: with skills and experience in polymer engineering and injection moulding
- electrical engineers
- global and industrial managers and engineers (10 years' experience): mostly for export-manufacturing sectors.

At technician level, shortages have been identified for:

- quality assurance technicians
- injection moulding technicians
- polymer engineering technicians

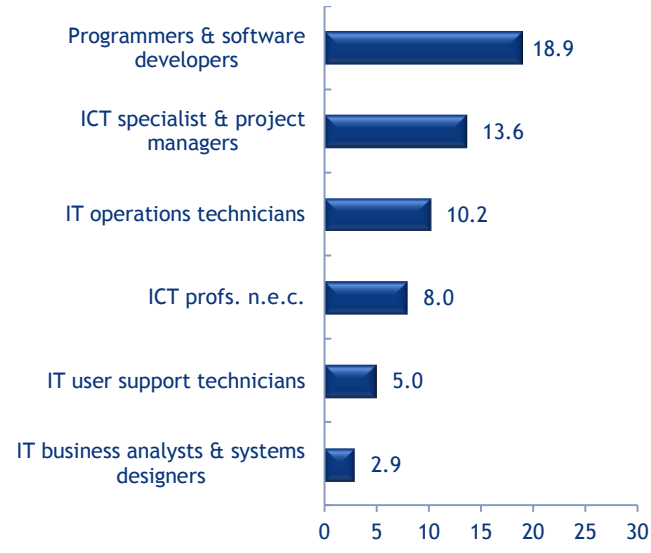
- biotechnology technicians
- extrusion technicians
- process technologists
- maintenance technicians.

There also appears to be an issue with geographical mobility and the ability to attract candidates to certain locations.

9.3 IT Occupations

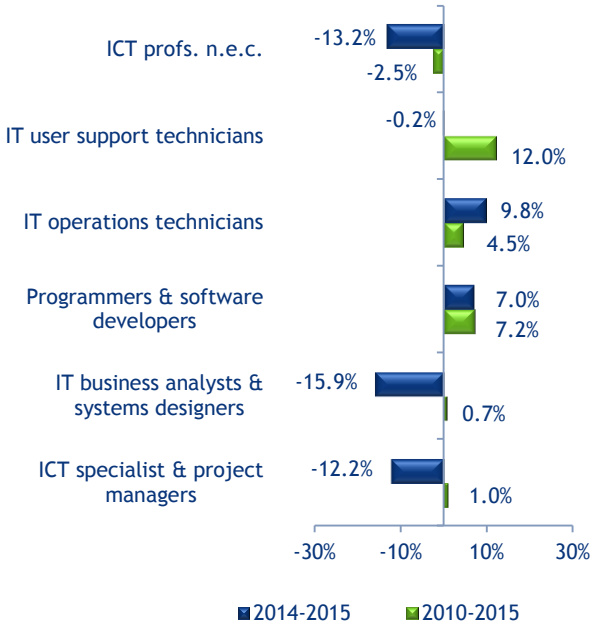
- In 2015, there were approximately 59,000 persons employed in the selected IT occupations, representing 2.5% of national employment (Figure 9.3.1)
- Four fifths of overall employment was concentrated in three sectors: just over a half in IT (mostly in computer programming and consultancy), with almost an additional one-fifth in industry (mostly in computer, electronic and optical manufacturing) and just over 10% in financial, insurance and real estate
- Just over half of overall employment was concentrated in the IT sector, with almost an additional one fifth in industry (mostly computer, electronic and optical manufacturing)
- Three quarters of total employment was in professional level occupations (of which, two fifths were programmers and software developers); the remainder was at technician level (mostly IT operations technicians)
- Between 2010 and 2015, total employment in IT occupations expanded – by 3.6% on average annually – the second strongest average annual rate of growth amongst the 17 occupational groups examined; growth was observed for most occupations, with the strongest rates observed for IT user support technicians (12% on average annually) and programmers & software developers (7.2% on average annually) (Figure 9.3.2)
- Over the same five year period, a net 9,500 additional jobs were created; the largest employment increases (in absolute terms) were observed for programmers & software developers (5,500) and ICT operations technicians (2,000)
- Between 2014 and 2015, however, overall employment contracted by 2.5%, with a 1,500 decline; the change in employment varied by occupation, with the largest decreases observed for ICT specialist & project managers
- The majority of those employed in IT occupations were aged 25-54 (Figure 9.3.3)
- Just over 90% of employed IT professionals had third level qualifications; the corresponding share was 70% for technicians (Figure 9.3.4)
- Most of those employed in IT occupations were male and worked full-time; one-quarter of employed ICT specialist & project managers and IT operations technicians were female
- Almost 40% of employed programmers & software developers were non-Irish nationals – over double the national average share of 15%; at 35%, the share of non-Irish IT business analysts & systems designers was also relatively high
- In quarter 4 2015, the overall unemployment rate (15-74 year olds) for IT occupations was well below the national rate (3.4% compared to 8.7%).

Figure 9.3.1 Numbers Employed (000s) in Selected IT Occupations, 2015



Source: SLMRU (SOLAS) analysis of CSO data

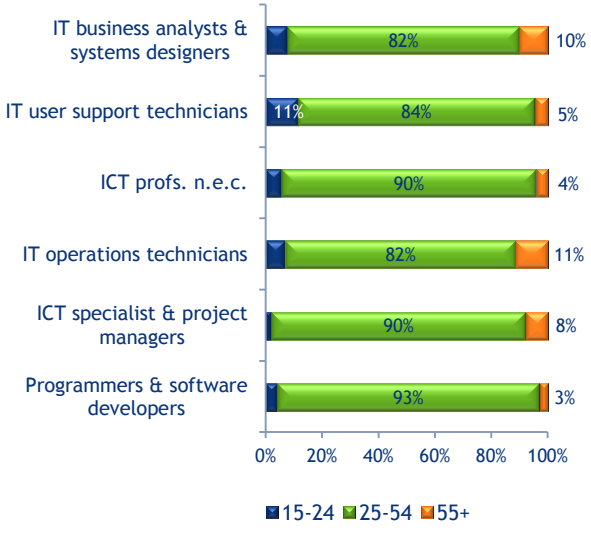
Figure 9.3.2 Average Annual Growth (%) in Selected IT Occupations



Source: SLMRU (SOLAS) analysis of CSO data

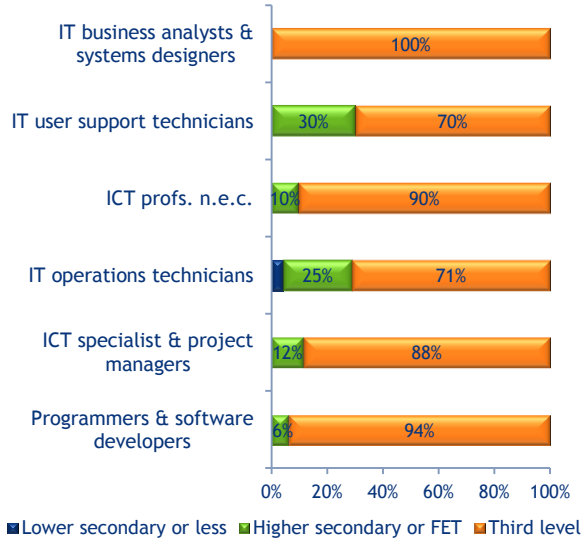
Note: Growth rates associated with occupations where employment is comparatively small are less reliable due to a greater risk of sampling error.

Figure 9.3.3 Age Profile of Selected IT Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Figure 9.3.4 Education Profile of Selected IT Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Shortage Indicators

Although the number of those working in IT occupations is relatively small (2.5% of the workforce), the availability of IT skills is crucial to the Irish economy. IT skills are playing an increasingly significant role across a variety of sectors (only just over half of all IT workers actually work in the ICT sector, with others mainly in industry, finance and the public sector). Not only are skills for IT roles (e.g. software developer, IT manager) growing in importance, other non-IT occupations require ever more sophisticated technological competencies. This has led to the emergence of hybrid sectors such as FinTech (a convergence between ICT and financial services), MedTech (medical devices and technology) and programmatics (digital advertising/marketing and ICT) and a need for advanced skills in what have traditionally been separate disciplines (i.e. IT and industry specific skills).

Government initiatives such as the ICT Skills Action Plan 2014-2018 (2014) recognise the growing importance of technical skills for the

economy. The Action Plan aims to incentivise an increase in the intake of new ICT students and facilitate the transfer and progression of existing students from other domains to ICT. In addition, the IFS 2020 Strategy for the international financial services (IFS) recognises that an enhanced IFS-ICT sectoral collaboration is crucial for the sector, further underlining the need for IT skills in other sectors of the economy.

Over the period 2010-2015, employment in IT occupations grew strongly, at 3.6% on average annually outpacing growth in most occupational groups. There were almost 7,300 IT jobs advertised through the PES and Irishjobs.ie portals alone in 2015. The Recruitment Agency Survey in May 2016 also found that there were difficulties in filling IT vacancies, with approximately one third of all difficult to fill mentions being for IT-related posts. In addition, over 2,100 employment permits were issued to IT workers from outside the EEA, of which 1,800 were for professionals and the remainder for managers or technicians.

The relatively young age profile of IT workers (just 6% are aged 55 or over) means that exits to retirement are comparatively low, although attrition is somewhat higher when all exits to inactivity (e.g. home duties, study etc.) are taken into account. In contrast, turnover estimates for IT workers tend to be higher than for professionals and associate professional occupations in general, indicating that a share of the vacancies advertised for IT workers are arising due to intra- or inter-occupational movements, rather than pointing exclusively towards additional jobs. For example, it is estimated that 12% of programmers changed employer or occupation in 2015.

The combined estimates of expansion demand and replacement demand are expected to result in a total annual recruitment requirement of over 6,000. Many of the job announcements in the media in recent months relate to job creation for IT workers, both within the ICT sector, as well as for IT roles in other sectors; job announcements include those made by Amazon, Kaseya (IT management software), Zeltiq Aesthetis (med-tech), Sportlomo (sports software), Compliance and Risks (financial services), Brown Bag Films (animation studio), Qstream, Microsoft, Malwarebytes (online security), VMWare, Technopath Clinical Diagnostics (software company), Aspira, CBE (retail software), Hortonworks(software provider), Perception Consulting (data analytics), OneView (medical software), Fortuity (cloud technology and data analytics), Accenture and Boxever (data analysis software).

In 2014/15, there were more than 4,600 third level graduates (comprised of HEA and private/ independent third level institutions); of these, almost three quarters were at levels 8-10. Provision is set to increase further, as the number of CAO acceptances for computing courses has increased annually for several years at level 8. In the FET sector, there are three new proposed apprenticeships (2 years' duration): network engineer, software developer and telecommunications field technician, all at levels 5-6 on the NFQ; total ICT apprenticeship enrolment over the 2 years is expected to be 280. In addition in May 2016, there were 780 job ready job seekers with previous experience in IT professional or managerial roles; of these, almost a half held at least a degree (NFQ 7); a further 1,000 job seekers had previous experience in IT technician roles.

Despite significant graduate supply and a number of job seekers with IT skills (many of whom, given the comparatively high turnover estimates, are likely to be only in frictional unemployment), shortages of IT skills continue to exist. IT skills are in demand across all economic sectors. Furthermore, the situation is not unique to Ireland as there is a shortage of IT skills internationally.

Shortages of the following skills have been identified:

- programming and software development: programming languages (Java, .net, C++, Python, PHP, Scala, AKKA, Ruby on Rails, VBA); operating systems (iOS, Linux); mobile applications development; web development (CSS, HTML)
- cloud computing: MS Azure, AWS (amazon web services), cloud architect
- InfoSec (IT security): IoT (internet of things), BYOD (bring your own device), data/information security; IT internal audit
- web design (niche areas only): particularly web related applications focusing on enhancing users' online experience (UX) and supporting user interaction (UI)
- DevOps engineering (developing/testing, process re-engineering and communication skills)
- IT project management
- networking and infrastructure: networking engineer
- IT business analysis: business intelligence and search engine optimisation
- database administration (DBA), big data analytics, data architecture (ETL[41]) and data warehousing: SQL, Hadoop , Hive, Apache, PIG and Cassandra
- testing and troubleshooting: software testers; automation test developers; automated performance testers
- technical support: user support with foreign language skills (German, Nordic).

[41] Extract, Transform and Load – a process in databse usage/ data warehousing

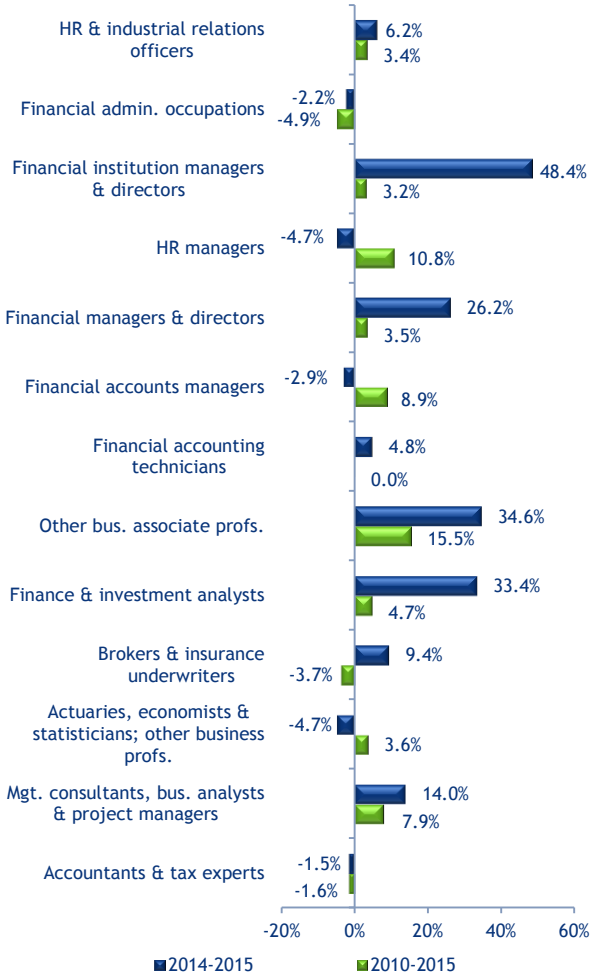
9.4 Business and Financial Occupations

- In 2015, approximately 170,000 persons were employed in the selected business and financial occupations, representing 8.6% of Ireland's workforce (Figure 9.4.1)
- Almost 60% of overall employment was concentrated in two sectors: financial, insurance and real estate activities (35%), and professional, scientific and technical activities (23%)
- Almost one third of overall employment was at administrative level (mostly book-keepers, payroll managers and wages clerks; bank and post office clerks); an additional one third was at professional level (mostly accountants and tax experts), while one quarter was at associate professional level and the remainder was at managerial level
- While between 2010 and 2015, overall employment in business and financial occupations increased very modestly (0.2% on average annually), strong growth rates were observed for other business associate professionals (15.5% on average annually), HR managers (10.8% on average annually) and financial accounts managers (8.9% on average annually); in contrast, negative growth rates were observed for financial administrative occupations (4.9% on average annually), brokers and insurance underwriters (3.7% on average annually) and accountants and tax experts (1.6% on average annually) (Figure 9.4.2)
- Between 2014 and 2015, overall employment expanded by 5% (a net 8,000 additional jobs were created); the largest employment increases were observed for other business associate professionals; finance & investment analysts and financial institution managers & directors
- Over four fifths of persons employed in business and financial occupations were aged 25-54; with one quarter employed aged 55 or older, financial accounting technicians had the most mature workforce (Figure 9.4.3)
- Over 90% of those employed at professional level and 85% at associate professional level were third level graduates; the share was 55% for those employed in administrative occupations
- Three quarters of those employed in financial administrative occupations and as financial accounting technicians and HR managers were female – the highest share of females among the selected occupations; those employed in the former two occupations had the highest propensity to work part-time
- In quarter 4 2015, the overall unemployment rate (15-74 year olds) for the selected occupations (3.3%) was below the national rate (8.7%).

Figure 9.4.1 Numbers Employed (000s) in Selected Business and Financial Occupations, 2015

Source: SLMRU (SOLAS) analysis of CSO data

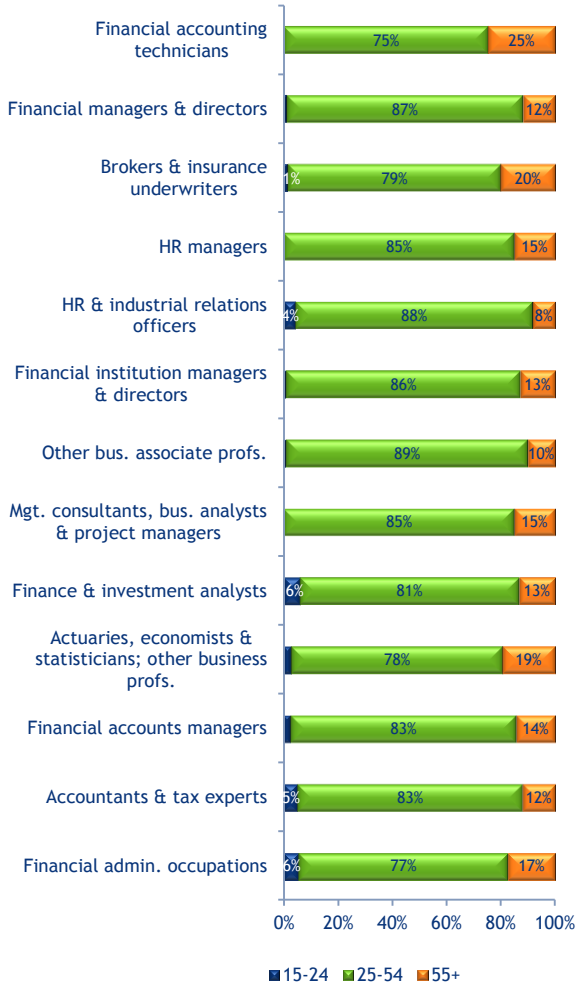
Figure 9.4.2 Average Annual Growth (%) in Selected Business and Financial Occupations



Source: SLMRU (SOLAS) analysis of CSO data

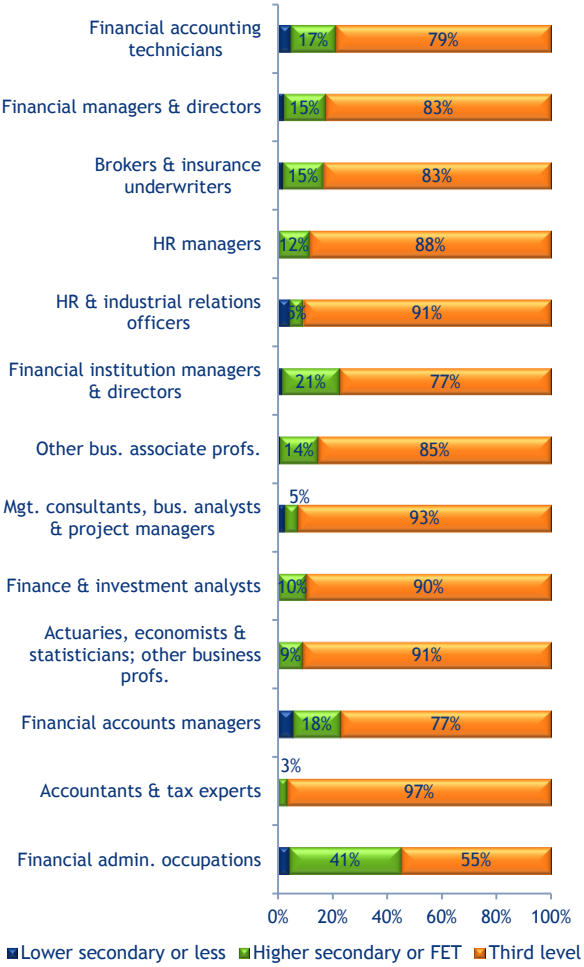
Note: Growth rates associated with occupations where employment is comparatively small are less reliable due to a greater risk of sampling error.

Figure 9.4.3 Age Profile of Selected Business and Financial Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Figure 9.4.4 Education Profile of Selected Business and Financial Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Shortage Indicators

Financial and business skills are needed by almost all sectors of the economy, although many are employed directly in the financial and professional and scientific activities sectors. In addition, the Government's Strategy for the International Financial Services sector (IFS 2020) is expected to lead to further job creation in the IFS sector. As Ireland continues to compete globally as a location for IFS, the skills required to develop business models and products will be shaped by technological innovation, changing regulatory environments, and the increasingly international nature of business. Business skills will be required, but will also need to be enhanced and complemented with other skills sets including IT, data analytics and business intelligence skills as well as knowledge of the relevant compliance and regulatory environments for specific industries.

In 2015, newly advertised vacancies for persons with financial and business skills were numerous. For instance, on the DSP and Irishjobs.ie vacancy portals alone, there were 3,100 vacancies for financial professionals (accountants, business analysts, actuaries and economists), 1,200 for financial technicians (accounting, insurance and investment) and 3,100 for financial clerks.

Many of the vacancies have arisen due to the need to replace those who leave employment. In 2015, for instance, 4,400 financial professionals (accountants, business analysts etc.), almost 1,000 financial technicians (accounting, investment and insurance), and 1,400 financial clerks transitioned from employment into economic inactivity (e.g. retirement, study, home duties, etc.), creating replacement demand. There was also significant turnover in financial occupations, particularly in relation to financial accounts managers and other technician occupations.

Expansion demand for financial skills is expected to remain strong. This is illustrated in recent job announcements for these skills in the financial and accounting services sector (e.g. Northern Trust, Credit Suisse, Pepper Ireland, EY, Deloitte, Fidelity Insurance, Davy Stockbrokers, Mazars, and Baker Tilly Ryan Glennon). In addition, job announcements in other sectors also included roles for financial and business skills, including software development (e.g. Microsoft, Sage, and

VMWare) and industry (e.g. Biomarin Manufacturing, Horizon Pharma, and GlaxoSmithKline). Demand for HR skills is also expected to continue to grow as illustrated by the jobs creation announcements by various HR specialists (e.g. Sigmar Recruitment, Next Generation Recruitment, Harvey Nash, and CPL Resources).

The supply of skills from the education and training system is significant: in 2014/15, there were almost 22,500 further and higher education graduates from business & admin courses, of which 13,700 were at level 8 or above. In addition, there are five new proposed apprenticeships in international financial services, insurance and accountancy, spanning levels 6-8 on the NFQ, and an estimated 390 annual registrations when fully rolled out. A further 300 financial professionals and 100 financial technicians with level 8 qualifications or higher were registered with the DSP in May 2016 as job ready job seekers, which is not excessive when the size of the workforce and frictional unemployment is taken into account.

Despite significant education and training output, shortages in the areas of business and finance continue to exist. There were 513 new employment permits issued to non-EEA nationals for work in financial occupations (as managers, professionals and technicians) in 2015.

Shortages have been identified in the following areas:

- accounting: accountants and tax analysts with experience (5 years+) in niche areas (e.g. cost, fixed assets, solvency, international and/or manufacturing settings, languages (German & Nordic))
- compliance & risk: experienced (5 years+) regulatory affairs and insurance compliance professionals; auditors
- FinTech: business and financial professionals with skills in specific software packages and experience (inc. international)
- business intelligence & data analytics: experienced (5 years+) statisticians; entry level and experienced revenue managers (specific sectors, e.g. hospitality); financial systems analysts; economists and data scientists (big data, data visualisations and quantitative modelling)
- financial management/financial analysis: trustee managers; deposit managers; payroll managers
- HR managers and recruitment specialists
- fund accounting/fund administration: mostly entry level or with some experience (<5 years), particularly in IFS sub-sectors (e.g. international payments, funds, asset management, aircraft leasing)
- multilingual financial clerks: credit controllers; accounts payable/receivable; payroll specialists; fund accounting and transfer pricing specialists.

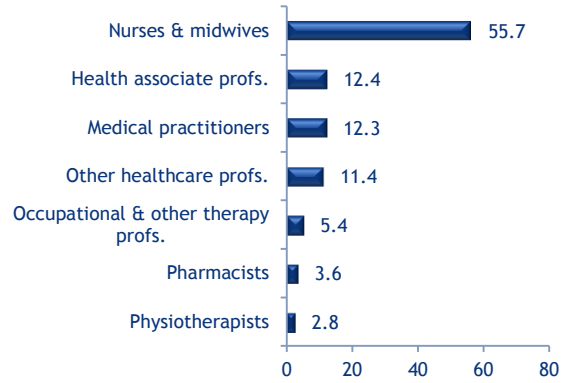
Overall, the demand at professional and managerial level is strongest for those with a combination of varied technical skills, business skills and industry experience, although there is some evidence that a shortage of newly qualified and part-qualified accountants is beginning to emerge. While the IFS Strategy seeks to develop the industry outside of Dublin (and is reflected in the Regional Action Plans for Jobs), there is evidence that geographical mobility of skilled candidates is proving difficult in some instances.

Finally, the extent to which the demand for skills will change in light of the forthcoming Brexit is, as yet, unclear. Exporting businesses may be negatively affected in terms of access to the UK market for their goods; at the same time, however, Dublin (along with other EU capitals, such as Paris) may benefit as some international companies relocate their operations from London to ensure access to EU markets. Should such relocations occur, the demand for financial and accounting skills, especially for EU and international transactions, may be even greater.

9.5 Healthcare Occupations

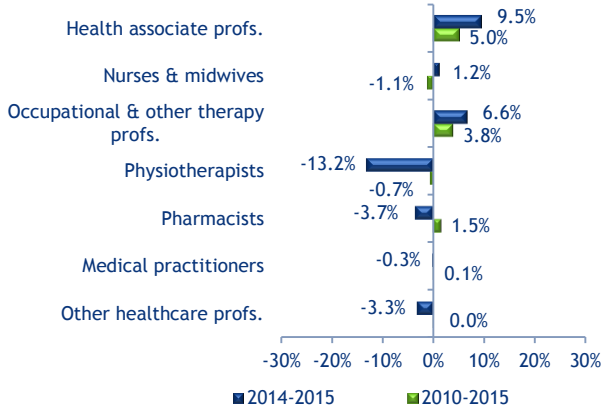
- In 2015, there were approximately 103,000 persons employed in healthcare occupations, representing 5.3% of Ireland's workforce (Figure 9.5.1)
- Almost 90% of overall employment was at professional level (approximately 91,000 persons)
- There were 55,000 employed nurses and midwives, accounting for half of overall employment in healthcare occupations; this was the largest professional workforce nationally and the fourth largest nationally, after sales assistants, farmers, care workers (home and other)
- Over the period 2010 to 2015, overall employment levels in the selected occupations remained relatively static; however, employment growth was observed for health associate professionals (5% on average annually); occupational and other therapy professionals (3.8% on average annually) and pharmacists (1.5% on average annually); in contrast, very modest rates of contraction were observed for nurses and midwives (1.1% on average annually) and physiotherapists (0.7% on average annually)
- Between 2014 and 2015, overall employment expanded by 1%, below the national average rate of 2.6%; employment levels remained relatively static for most occupations (Figure 9.5.2)
- Four fifths of those employed in healthcare occupations was aged 25-54; one fifth of other healthcare professionals in employment was 55 years or older (Figure 9.5.3); the share of mature workers was almost one fifth for both medical practitioners and nurses and midwives
- Over 90% of employed healthcare professionals had attained third level qualifications; the share was just over 70% for associate professionals
- While most persons employed in healthcare occupations were female, employment of medical practitioners was gender balanced
- Physiotherapists had the highest share of persons in healthcare occupations working part-time, at just over one third
- One quarter of employed medical practitioners were non-Irish nationals, above the national average share of 15%.

Figure 9.5.1 Numbers Employed (000s) in Selected Healthcare Occupations, 2015



Source: SLMRU (SOLAS) analysis of CSO data

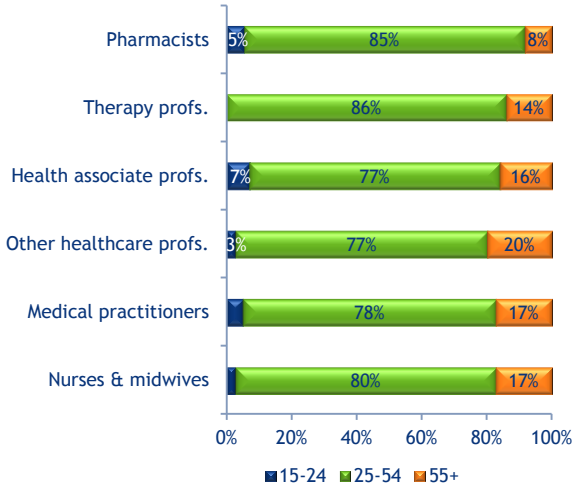
Figure 9.5.2 Average Annual Growth (%) in Selected Healthcare Occupations



Source: SLMRU (SOLAS) analysis of CSO data

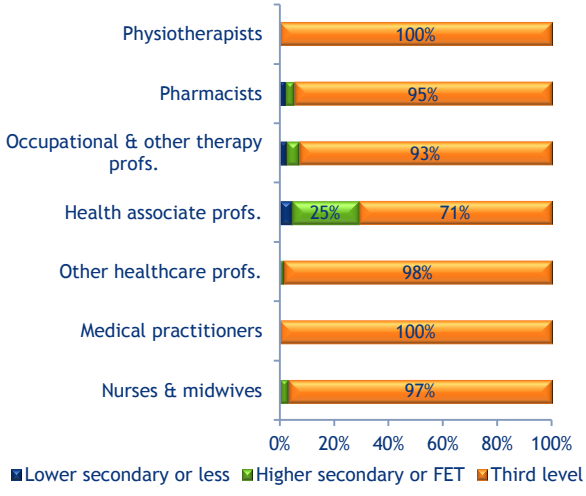
Note: Growth rates associated with occupations where employment is comparatively small are less reliable due to a greater risk of sampling error.

Figure 9.5.3 Age Profile of Selected Healthcare Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Figure 9.5.4 Education Profile of Selected Healthcare Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Shortage Indicators

Despite the recent removal of the recruitment ban in publicly funded healthcare, lower than average growth in employment is expected in publicly funded services, including health in light of the requirements for further fiscal consolidation.

Employment growth is expected to be a fraction of the total recruitment requirement which will mostly be driven by the replacement demand. Exits to inactivity are estimated at 1,900 for nurses and 1,500 for other healthcare professionals and associate professionals. As a result, the total annual recruitment requirement for healthcare professionals and associate professionals is estimated at over 4,000 annually, just over half of which is for nurses.

Previously imposed recruitment controls in relation to permanent employment contracts in the publicly funded healthcare sector resulted in frequent movements of doctors and nurses between employers, which were still visible in 2015: 2,000 intra-occupational transitions were identified for medical practitioners and 4,000 for nurses. The removal of the recruitment ban should result in less intra occupational movement (excluding standard hospital rotations during training).

Ireland, as is the case with most developed countries, suffers from an acute shortage of doctors. The number of unemployed qualified healthcare workers is negligible while reliance on importing healthcare skills has been an important part of HR practices: in 2015, over 1,500 employment permits were issued to non-EEA doctors and a further 282 to nurses/midwives.

Shortages continue to persist for the following occupations:

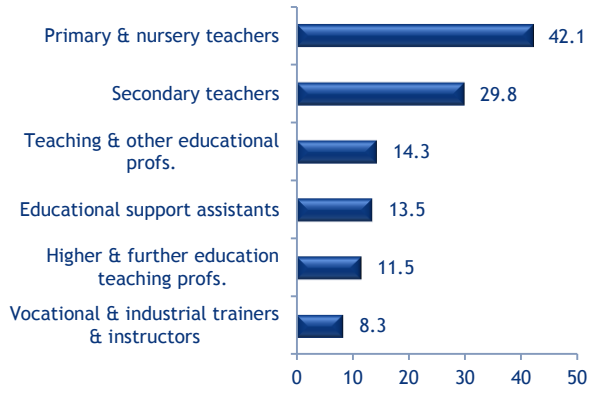
- medical practitioners (especially locum and non-consultant hospital doctors, registrars and medical specialists (e.g. general and emergency medicine, anaesthetists, paediatricians, consultant radiologists))

- nurses – advanced nursing practitioners (e.g. intensive care, operation theatre, theatre nurse managers), registered nurses (e.g. general nurse, cardiovascular care, elder persons' care, children's care; intellectual disability care, mental health care) and clinical nurses
- radiographers (clinical specialists; MRI and CT radiographers)
- niche area specialists (radiation therapists, audiologists, prosthetists, orthotists, cardio-technician)
- health service managers; nursing home directors.

9.6 Education Occupations

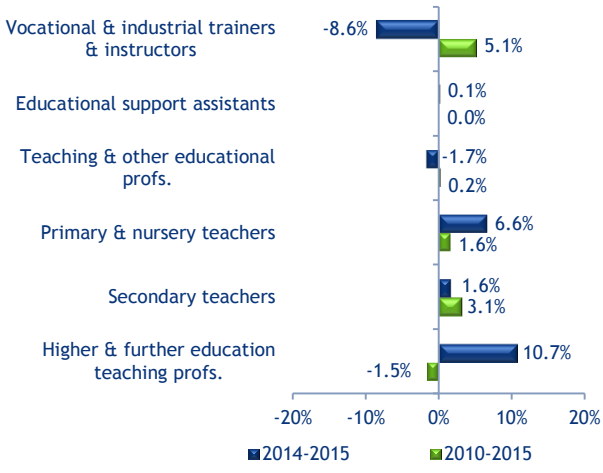
- In 2015, there were approximately 120,000 persons employed in the selected education occupations, representing 6.1% of national employment (Figure 9.6.1)
- Just over four fifths of overall employment was at professional level (mostly in primary/nursery and secondary school teaching)
- Between 2010 and 2015, while overall employment expanded very modestly (1.5% on average annually), the change in employment varied by occupation; growth was observed for vocational & industrial trainers/instructors (5.1% on average annually), secondary teachers (3.1% on average annually) and primary & nursery teachers (1.6% on average annually), while modest decreases were observed for higher & further education teaching professionals (1.5% on average annually)
- Over the same five year period, there were a net 8,500 additional jobs created; the largest employment increases were observed for secondary and primary/nursery teachers (Figure 9.6.2)
- Between 2014 and 2015, overall employment expanded by 2.8% (similar to the national average rate), with a net 3,000 additional jobs; the largest increase (in absolute terms) was observed for primary/nursery teachers
- At least one quarter of employed higher & further, teaching and other education professionals were aged 55 or older – above the national average (Figure 9.6.3)
- Over 90% of persons employed in professional occupations were third level graduates; the share was 70% for associate professionals (i.e. vocational & industrial trainers/instructors); just over half of employed educational assistants were third level graduates
- Females accounted for the highest share in all educational occupations, excluding higher & further education teaching professionals (gender balanced) and vocational & industrial trainers/instructors (46% female)
- Teaching and other educational professionals along with educational support assistants had the highest shares of persons working part-time at35% and 28% respectively.

Figure 9.6.1 Numbers Employed (000s) in Selected Education Occupations, 2015



Source: SLMRU (SOLAS) analysis of CSO data

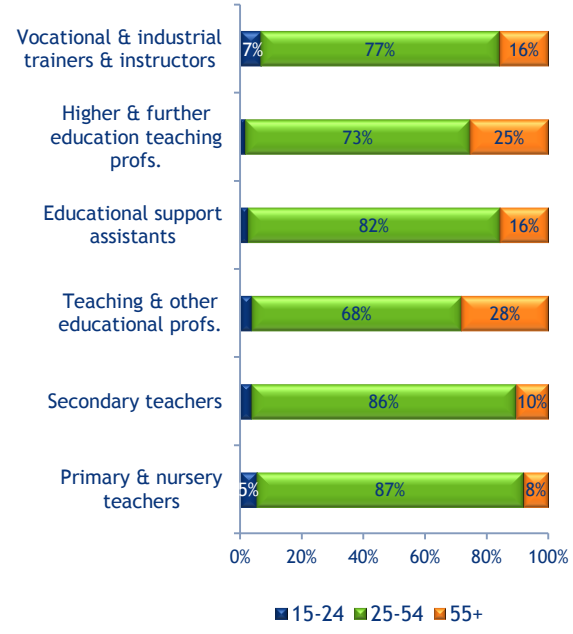
Figure 9.6.2 Average Annual Growth (%) in Selected Education Occupations



Source: SLMRU (SOLAS) analysis of CSO data

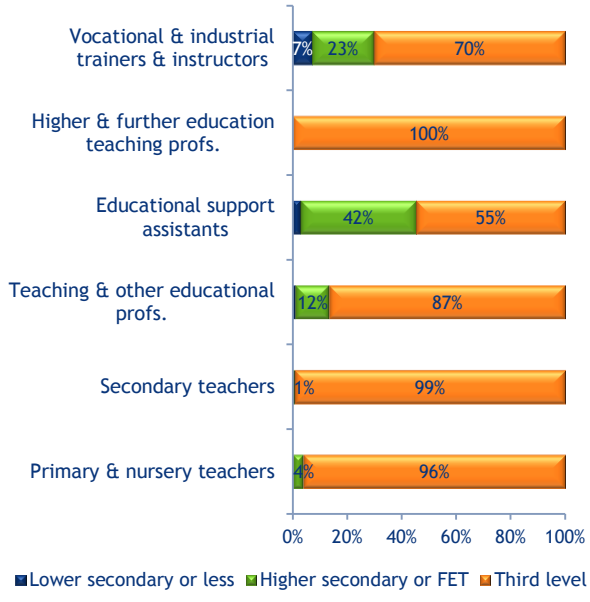
Note: Growth rates associated with occupations where employment is comparatively small are less reliable due to a greater risk of sampling error.

Figure 9.6.3 Age Profile of Selected Education Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Figure 9.6.4 Education Profile of Selected Education Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Shortage Indicators

As the public sector resumes recruitment, employment growth is expected, primarily to address demographic demand: the DES estimates that, following an increased number of births from the late 1990s onwards, enrolments will continue to increase until 2018 (primary level) and 2025 (second level). In Budget 2016, the Government announced the creation of over 1,400 additional teaching posts for September 2016 to deal with demographic demand alone; it also announced the creation of over 800 additional teaching posts to reduce class size at primary level and to enhance guidance and leadership at second level.[42] In addition, a significant share of the total recruitment requirement is also expected to arise due to replacement demand. In 2015, almost 3,000 transitions to economic inactivity (i.e. retirement, home duty etc.) were identified for primary and secondary teachers.

In 2015, graduate output from education courses at NFQ levels 8 and above was 6,000 (including private colleges). The extent to which this will meet the recruitment requirement will depend on Government policy regarding public expenditure on education.

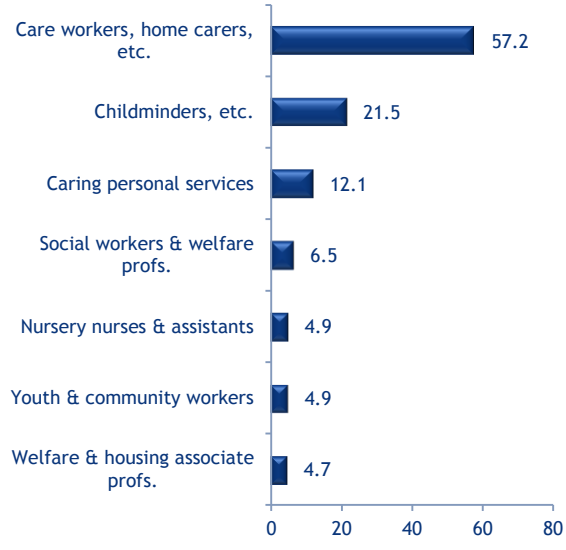
Although no shortage of teachers has been identified overall, (in May 2016, there were 460 job ready job seekers with third level qualifications), issues continue to exist in relation to sourcing teachers (in both second and third level) with a high level of expertise in specific fields, such as science and mathematics. As the economy recovers, the ability to attract persons with science and maths skills into teaching may become more challenging given that such skills are also in demand in other sectors (e.g. IT, financial).

[42] http://www.education.ie/en/Press-Events/Press-Releases/2015-Press-Releases/PR15-10-13A.html

9.7 Social and Care Occupations

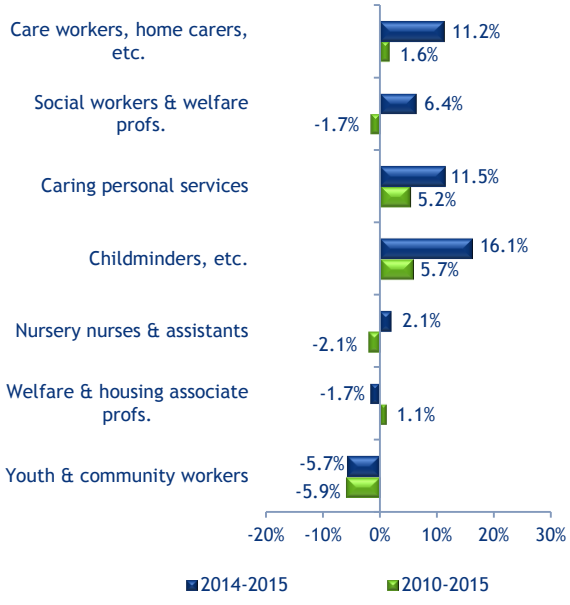
- In 2015, there were 112,000 persons employed in the selected social and care occupations, representing 5.7% of national employment (Figure 9.7.1)
- Approximately 57,000 persons were employed as care workers/home carers, accounting for just over 50% of total employment in the selected occupations
- Four fifths of total employment was concentrated in human health and social work activities
- Between 2010 and 2015, overall employment levels increased by 1.8% (above the very modest national average rate of 0.8%); the strongest employment growth rates were observed for child-minders (5.7% on average annually) and caring personal services (5.2% on average annually); in contrast, the strongest rate of contraction was observed for youth and community workers (5.9% on average annually) (Figure 9.7.2)
- Over that same period, there were almost a net 10,000 additional jobs created; the largest employment increases (in absolute terms) were observed for childminders and care workers/home workers; the largest decrease was observed for youth and community workers; employment levels of nursery nurses and assistants and social workers and welfare professionals remained relatively unchanged, although negative growth rates were observed
- Between 2014 and 2015, overall employment expanded by 9.9% (approximately 10,000)
- Approximately one quarter of the overall workforce of most occupations was 55 years or older (Figure 9.7.3)
- Almost all employed social workers and welfare professionals had attained third level qualifications; almost one third of both care workers/home carers and caring personal services workers were third level graduates; just over one fifth of care workers/home carers had attained lower secondary or less qualifications (Figure 9.7.4)
- The share of females employed in each occupation was well above the national average; almost all employed child-minders and nursery nurses and assistants were female
- There was a higher than national average share of persons in part-time employment in most occupations; two thirds of employed nursery nurses and assistants worked part-time (one of the highest shares nationally)
- One quarter of employed child-minders were non-Irish nationals – above the national average of 15%.

Figure 9.7.1 Numbers Employed (000s) in Selected Social and Care Occupations, 2015



Source: SLMRU (SOLAS) analysis of CSO data

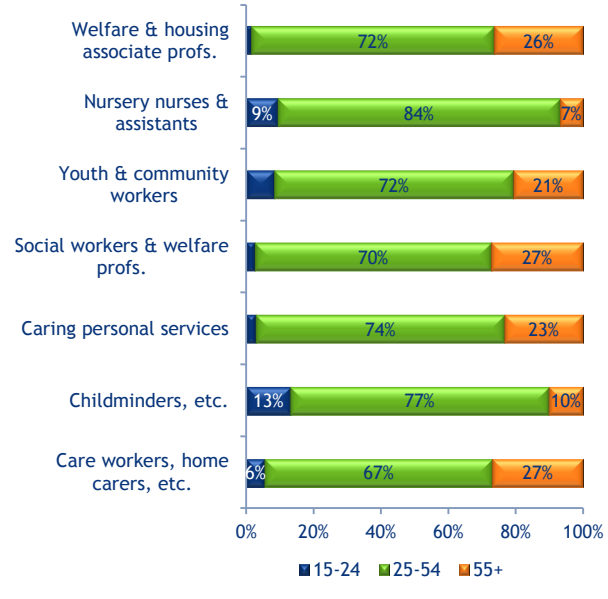
Figure 9.7.2 Average Annual Growth (%) in Selected Social and Care Occupations



Source: SLMRU (SOLAS) analysis of CSO data

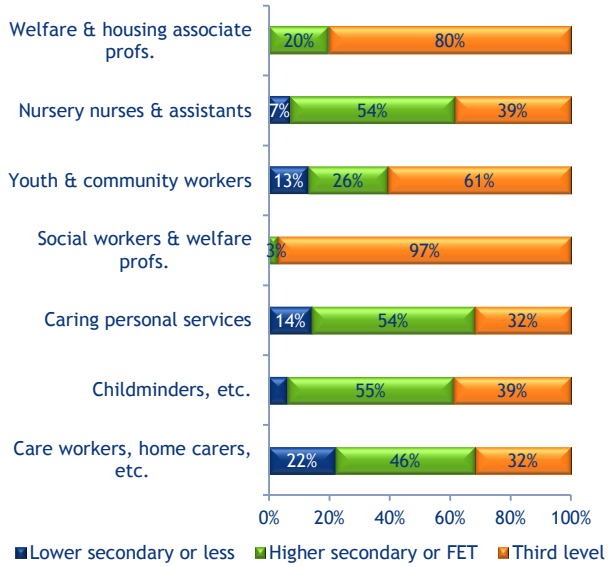
Note: Growth rates associated with occupations where employment is comparatively small are less reliable due to a greater risk of sampling error.

Figure 9.7.3 Age Profile of Selected Social and Care Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Figure 9.7.4 Education Profile of Selected Social and Care Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Shortage Indicators

In 2015, there were 57,200 care workers and 21,500 child-minders, of whom approximately one half worked part-time and the overwhelming majority was female.

These two occupations are characterised by high turnover rates, with 6,100 and 3,300 transitions due to a change of employer identified in 2015, respectively. In addition, these were among occupations with the highest number of transitions between employment, unemployment and economic inactivity. Given the high level of turnover, as well as the high volume of job vacancies advertised (approximately 15,000 in May 2016), it is recognised that some employers may be experiencing difficulty in attracting and retaining qualified care and childcare workers.

In 2015, there were 6,000 caring/nursing major awards at NFQ level 5 and 5,000 in childcare at NFQ levels 5 and 6. In addition,

there were 4,200 job ready carers and 400 child-minders seeking employment in May 2016.

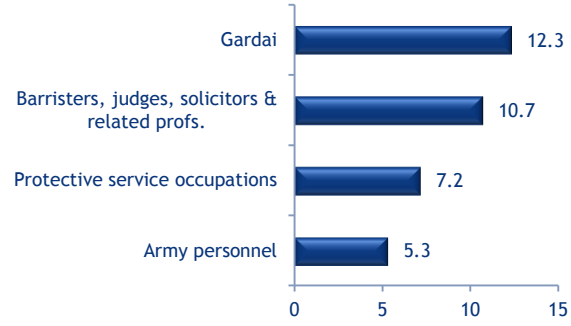
Ireland's ageing population will be a key driver of the future demand for care workers, while any increases in the labour force participation will result in the increase in the need for child-care workers. The extent to which this requirement translates into employment growth will partly depend on Government policy, given that a significant share of the care services and an increasing share of child-care services are publicly funded. Some employment expansion was already evident in recent job announcements including those by Carechoice, Comfort Keepers Homecare, TTM Healthcare, Nua Healthcare and Ardmore Care.

While there is no shortage of nursing aids and healthcare assistants, geographical mobility and a lack of attractiveness of the job (e.g. temporary contract) have been identified as issues in relation to the availability of some healthcare skills.

9.8 Legal and Security Occupations

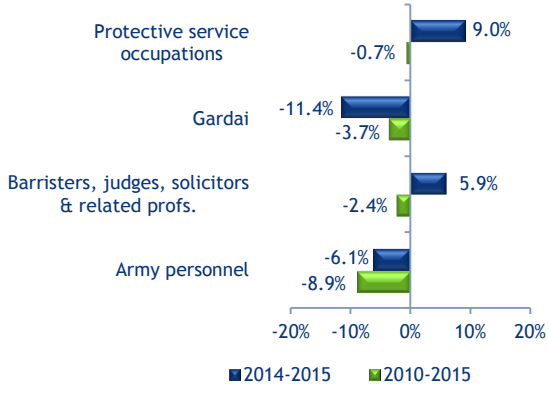
- In 2015, there were approximately 35,000 persons employed in legal and security occupations, representing 1.8% of Ireland's workforce (Figure 9.8.1)
- Almost 70% of overall employment was concentrated in public administration and defence, while almost a further 30% was in professional, scientific and technical activities
- Over the period 2010 to 2015, overall employment levels in legal and security occupations contracted (by 3.7% on average annually, or 7,500 persons); this was the strongest rate of decline of the 17 occupational groups examined, and was in contrast to the very modest growth of 0.8% nationally
- Over that five year period, employment contracted in all occupations, although it was negligible for protective service occupations; the strongest declines (in absolute and relative terms) were observed for army personnel (8.9% on average annually) and Gardaí (3.7% on average annually) (Figure 9.8.2)
- Between 2014 and 2015, employment contracted by 2.1% (compared to a 2.6% increase nationally), with less than 1,000 net job losses; employment levels for most occupations remained relatively unchanged over the period
- Just over four fifths of persons employed in legal and security occupations was aged 25-54; one quarter of employed barristers, judges, solicitors & related professionals was 55 or older – the most mature workforce (Figure 9.8.3)
- All persons employed as legal professionals (i.e. barristers, judges, solicitors and related legal professionals) had attained third level qualifications; the corresponding share was almost one third for employed army personnel and two fifths for protective service workers; almost three fifths of employed army personnel had attained higher secondary/FET qualifications, while the share was almost a half for protective services workers (Figure 9.8.4)
- While employment in most legal and security occupations was predominantly male, it was almost gender balanced for the combined group (barristers, judges, solicitors & related professionals)
- Most persons employed in the selected occupations worked full-time and were Irish-nationals.

Figure 9.8.1 Numbers Employed (000s) in Selected Legal and Security Occupations, 2015



Source: SLMRU (SOLAS) analysis of CSO data

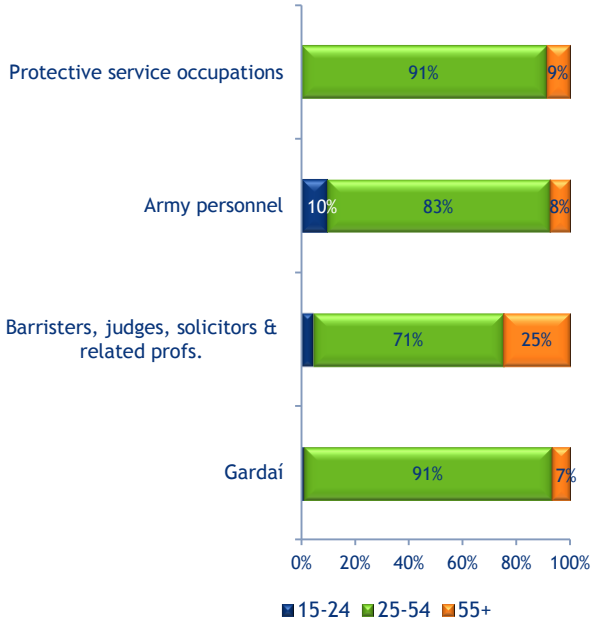
Figure 9.8.2 Average Annual Growth (%) in Selected Legal and Security Occupations



Source: SLMRU (SOLAS) analysis of CSO data

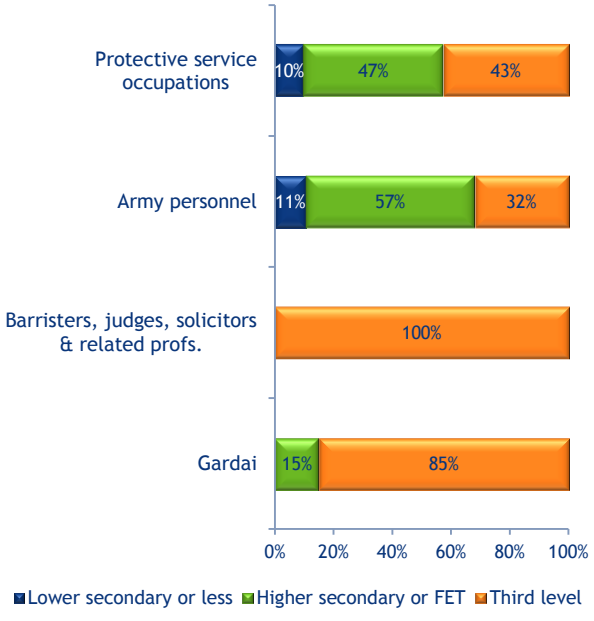
Note: Growth rates associated with occupations where employment is comparatively small are less reliable due to a greater risk of sampling error.

Figure 9.8.3 Age Profile of Selected Legal and Security Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Figure 9.8.4 Education Profile of Selected Legal and Security Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

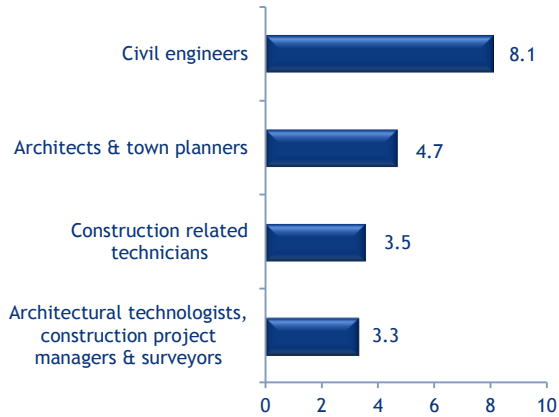
Shortage Indicators

There were 10,700 legal professionals (including judges, barristers and solicitors) employed in Ireland in 2015. With over 1,500 law graduates from NFQ level 8 and above courses in 2015, the supply from the education and training system appears to be sufficient to meet the recruitment requirement (which is estimated at approximately than a 1,000). However, the demand for law graduates is not confined to the legal profession alone and there is a need for legal expertise across various business and industry sectors, particularly in relation to compliance in sectors such as aviation, finance (anti-fraud), security and data analytics/protection issues.

9.9 Construction Professional and Associate Professional Occupations

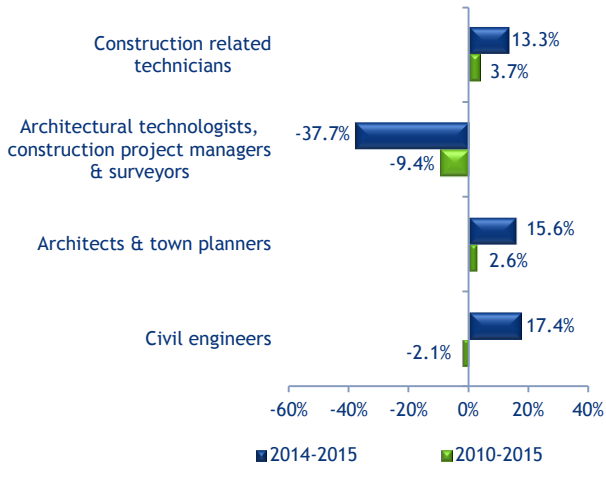
- In 2015, there were approximately 20,000 persons employed in the selected construction professional and associate professional occupations, representing 1% of total national employment (Figure 9.9.1)
- Just over 50% of overall employment was concentrated in professional, scientific and technical activities (mostly architectural and engineering), a further 18% was in public administration and defence, while only 15% was in construction
- Between 2010 and 2015, overall employment in the selected occupations contracted (1.8% on average annually), compared to a national average increase of 0.8%; employment contracted for the combined group: architectural technologists, construction project managers & surveyors (9.4% on average annually) and civil engineers (2.1% on average annually); on the other hand, employment expanded for construction related technicians (3.7% on average annually) and architects & town planners (2.6% on average annually), although the absolute increases were small in magnitude
- Between 2014 and 2015, while overall employment levels remained relatively unchanged, the largest increase was observed for civil engineers
- Approximately 80% of all employed construction professionals were aged 25-54; the share was 75% for construction associate professionals; the most mature age profile was for construction related technicians, with 25% aged 55 or older
- Approximately 95% of construction professionals in employment were third level graduates; the share was 86% for construction associate professionals
- Most persons employed in each occupation were male; the workforce of architects & town planners had the highest representation of females, at almost one third.

Figure 9.9.1 Numbers Employed (000s) in Selected Construction Professional and Associate Professional Occupations, 2015



Source: SLMRU (SOLAS) Analysis of CSO data

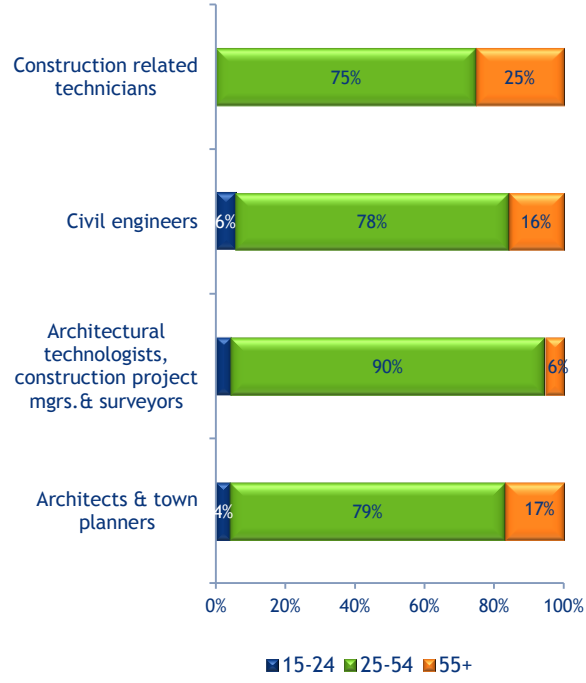
Figure 9.9.2 Average Annual Growth (%) in Selected Construction Professional and Associate Professional Occupations



Source: SLMRU (SOLAS) Analysis of CSO data

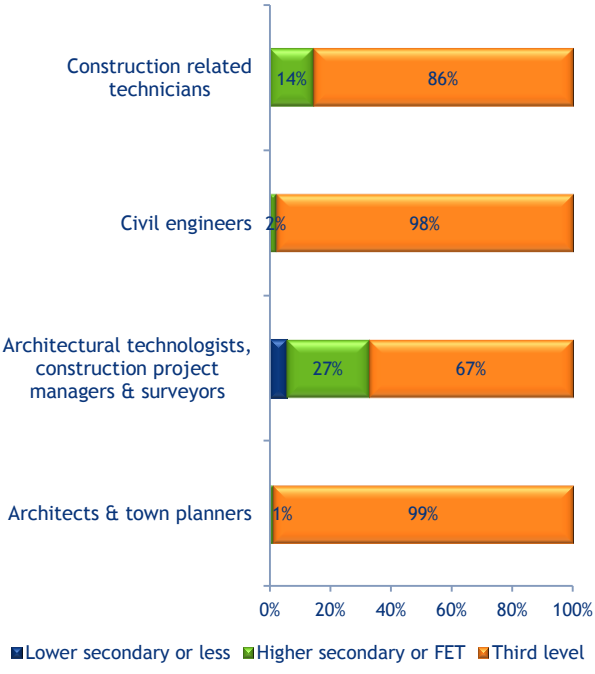
Note: Growth rates associated with occupations where employment is comparatively small are less reliable due to a greater risk of sampling error.

Figure 9.9.3 Age Profile of Selected Construction Professional and Associate Professional Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Figure 9.9.4 Education Profile of Selected Construction Professional and Associate Professional Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Shortage Indicators

Recent growth in economic activity has also been translated into greater demand for construction professional and associate professional occupations. The seasonally adjusted volume of production index in building and construction has been gradually increasing since 2012. In fact, growth is expected to accelerate in absolute and relative terms over the medium term, as the sector gathers further momentum.

Although growth in residential construction has been gathering pace (the monthly residential property price index has been increasing in the main since March 2013), the initial growth has been concentrated in commercial construction and resulted from expansion in other sectors, namely, ICT, utilities and infrastructure, and high-tech & food manufacturing. Further growth in commercial building is confirmed by recent job announcements (e.g. Microsoft, Facebook, Apple, University of Limerick, Dublin Airport, Shire, Glanbia and O'Brien Fine Foods).

Although the number of graduates declined (as a result of the reduced intake during the recession), there is significant graduate output from construction related courses (almost 1,500 in 2014/15 at level 8 or above). In addition, there remains some overhang of construction skills, with 420 job ready civil engineers, almost 140 architects, and 120 architectural technologists/construction project managers seeking employment in May 2016. Nonetheless, signs of tightening in the labour market have been observed, in particular in relation to surveyors, architects and civil engineers. Moreover, shortages of the following skills have already been identified:

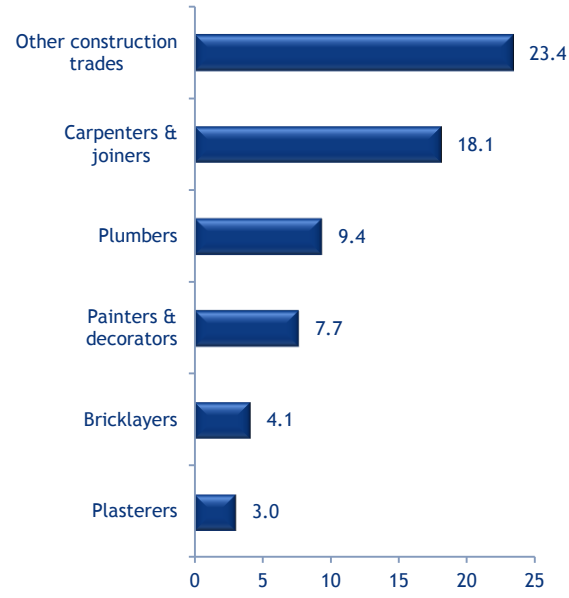
- construction and quantity surveyors with BIM (building information modelling, CAD)
- construction project managers with experience.

There is also evidence that part of the difficulty in recruiting construction skills at present is due to a lack of geographic mobility.

9.10 Construction Craft Occupations

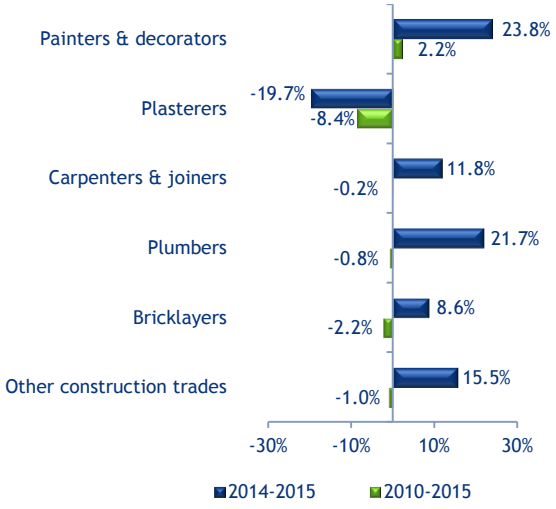
- In 2015, there were approximately 66,000 persons employed in the selected construction craft occupations (Figure 9.10.1), representing 3.3% of the national workforce
- Four fifths of overall employment was concentrated in construction
- In 2015, overall employment had broadly recovered to the 2010 level; since 2012, employment has been increasing, particularly in the last year (by 13.4%, with a net 8,000 additional jobs created)
- Between 2010 and 2015, negative employment growth rates were observed for all occupations (excluding painters & decorators), although very modest for some occupations; in 2015, the numbers employed in most occupations were similar to those observed in 2010; the most pronounced decline (in both absolute and relative terms) was observed for plasterers (8.4% on average annually, or almost 2,000 persons) (Figure 9.10.2)
- Between 2014 and 2015, employment expanded for most occupations; the largest absolute increases were observed for other construction trades, carpenters & joiners and plumbers; in contrast, decreases were observed for plasterers
- At 66% and over, the majority of those employed in each occupation was aged 25-54; the age profile of employed plasterers, bricklayers and other construction trades workers was the most mature, with almost one quarter aged 55 or older (Figure 9.10.3)
- The share of persons employed in the selected construction craft occupations who had attained higher secondary/FET qualifications (at almost 65%) and lower secondary or less qualifications (at almost 25%) was well above the respective national average share of 37% and 15%; the share who had attained third level qualifications (at 11%) was considerably below the national average share (48%) (Figure 9.10.4)
- Employment in most occupations was almost exclusively male
- Most construction craft workers were in full-time employment; however, the share in part-time employment was above the national average for plasterers, at almost 30%
- While the share of non-Irish national workers in most occupations was similar to the national average (15%), it was above average for plasterers, at almost 30%
- In quarter 4 2015, the overall unemployment rate for construction craft workers (aged 15-74) measured 17% (almost double the national average rate).

Figure 9.10.1 Numbers Employed (000s) in Selected Construction Craft Occupations, 2015



Source: SLMRU (SOLAS) analysis of CSO data

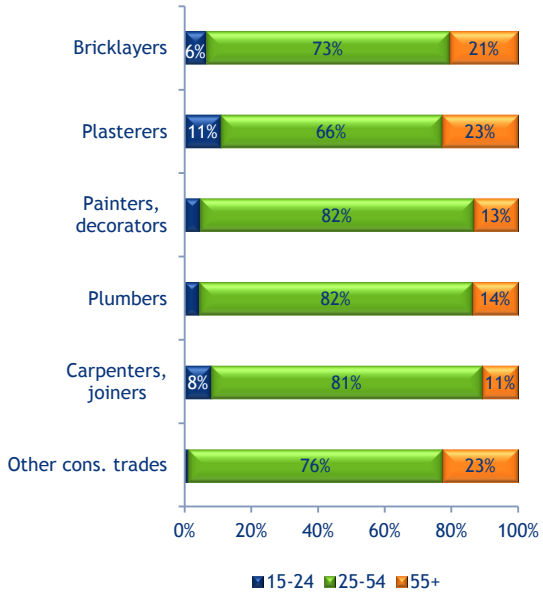
Figure 9.10.2 Average Annual Growth (%) in Selected Construction Craft Occupations



Source: SLMRU (SOLAS) analysis of CSO data

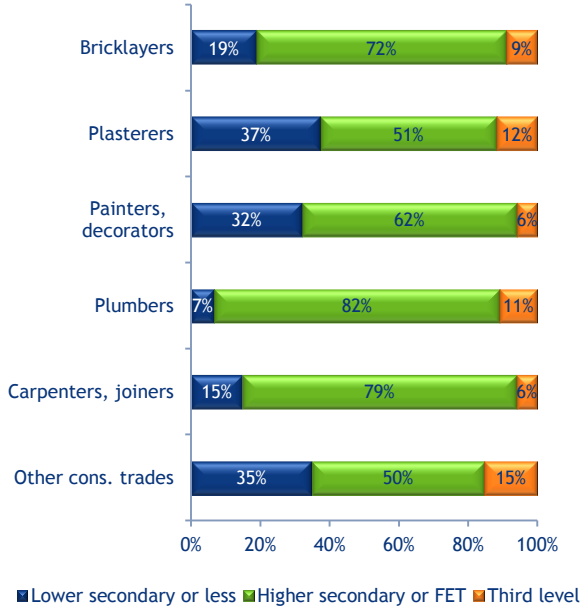
Note: Growth rates associated with occupations where employment is comparatively small are less reliable due to a greater risk of sampling error.

Figure 9.10.3 Age Profile of Selected Construction Craft Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Figure 9.10.4 Education Profile of Selected Construction Craft Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Shortage Indicators

Over the last year, recovery in the construction sector has been extending from commercial to the more labour-intensive residential building, resulting in employment growth in most construction craft occupations. There was a noticeable increase in construction related job vacancies advertised in 2015, albeit with a significant share for temporary contracts. While some of the notified vacancies were arising due to replacement, as well as due to changes of employers (high turnover has been identified for a number of construction craft occupations), expansion demand was also a contributor.

There is still a considerable overhang of construction skills in the Irish labour market: in May 2016, there were over 1,600 bricklayers, 1,100 plumbers, 3,100 carpenters, 1,600 plasterers and 2,100 painters/decorators seeking employment

through the Public Employment Service (PES). It should be noted, however, that a significant number of job seekers in each of these occupations has a Leaving Certificate or lower level of qualification. As a result, the availability of qualified tradespersons (i.e. NFQ 6 advanced certificate) may become an issue as the recovery accelerates. Indeed, despite the excess supply of most construction skills at present, a shortage of skills has been identified for the following occupations:

- curtain wallers
- glaziers
- steelfixer, steel erectors
- pipelayers
- shuttering carpentry
- shift managers and supervisors.

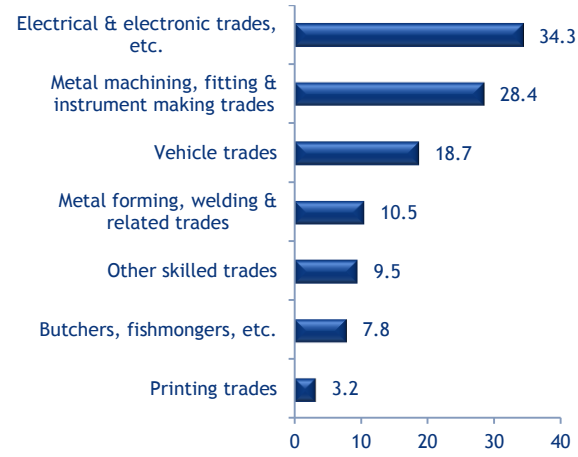
As the recovery in the construction industry extends beyond the larger urban areas, location and geographic mobility are expected to emerge as factors in rendering some construction skills difficult to source.

In addition, the current level of apprentice intake, particularly in wet-trades, is low. As it takes four years for an apprentice to fully qualify, the training output is likely to lag behind the demand arising from the anticipated strong growth in residential development. This may lead to shortages in the medium term.

9.11 Other Craft Occupations

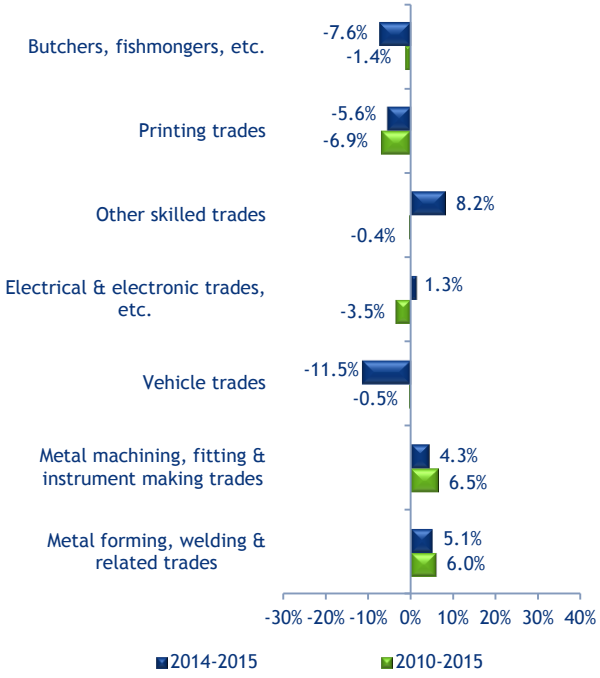
- In 2015, there were approximately 113,000 persons employed in other craft occupations, representing 5.7% of the national workforce (Figure 9.11.1)
- Approximately 70% of overall employment was concentrated in three sectors: manufacturing (almost 40%), wholesale and retail (18%) and construction (14%)
- Almost 75% of overall employment was concentrated in three trades: electrical & electronic (31%), metal machining, fitting and instrument making (25%) and vehicle (17%)
- In 2015, overall employment levels were very similar to the 2010 level (average annual growth was only 0.2%)
- Over the five year period, however, the change in employment varied by occupation, with growth observed for metal machining, fitting & instrument making trades (6.5% on average annually) and metal forming, welding & related trades (6% on average annually); the former group of trades experienced the largest increase in the numbers employed (approximately 8,000); in contrast, the strongest rates of decline were observed for printing trades (6.9% on average annually) and electrical & electronic trades (3.5% on average annually) (Figure 9.11.2)
- Between 2014 and 2015, employment levels in most occuptions did not change significantly, with the most pronounced change observed for vehicle trades (with a 2,500 decrease)
- Approximately 75% of all persons employed in the selected occupations was aged 25-54; metal forming, welding & related trades had the youngest workforce, with 17% aged 15-24 – above the national average share (Figure 9.11.3)
- Approximately 57% of all persons employed in the selected occupations had attained higher secondary/FET qualifications, considerably above the national average of 37%; in contrast, the share with third level qualifications (almost 30%) was below the national average; however, the share with third level qualifications varied by occupation: almost 40% of employed electrical & electronic engineers had attained this level of education (within this category, the share was just over 80% for computer repair and maintenance engineers); in contrast, the corresponding share was only 7% for butchers, fishmongers and related trades(Figure 9.11.4)
- Approximately 30% of all employed butchers, fishmongers and related trades were non-Irish nationals – the highest share and above the national average
- The majority of other craftspersons in employment were male and worked full-time; the workforce of other skilled trades workers had the highest female representation, at 30%.

Figure 9.11.1 Numbers Employed (000s) in Selected Other Craft Occupations, 2015



Source: SLMRU (SOLAS) analysis of CSO data

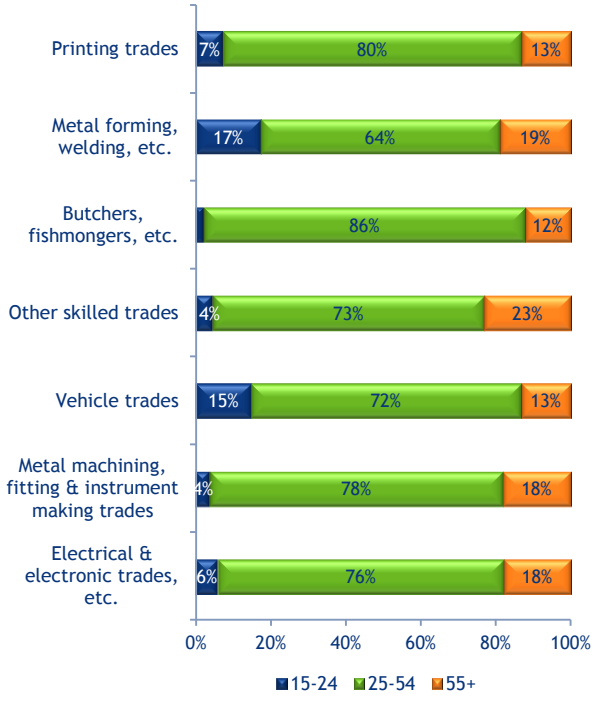
Figure 9.11.2 Average Annual Growth (%) in Selected Other Craft Occupations



Source: SLMRU (SOLAS) analysis of CSO data

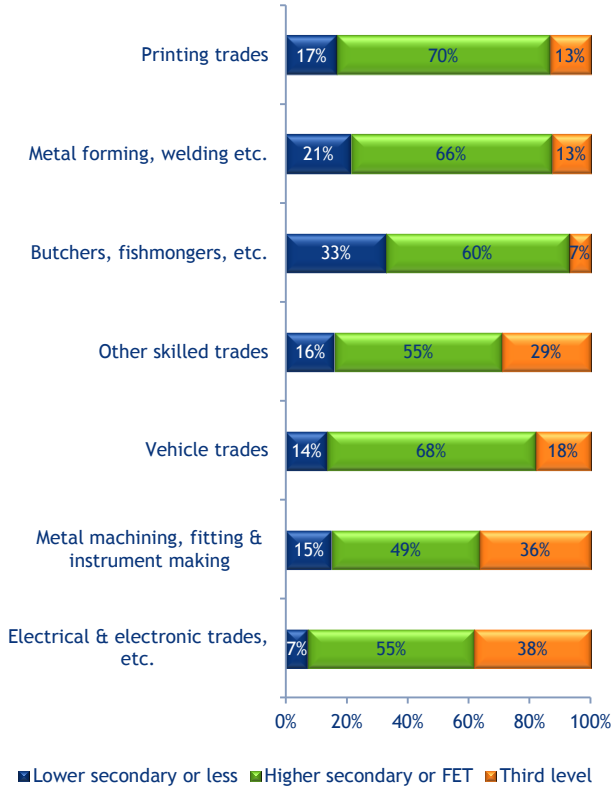
Note: Growth rates associated with occupations where employment is comparatively small are less reliable due to a greater risk of sampling error.

Figure 9.11.3 Age Profile of Selected Other Craft Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Figure 9.11.4 Education Profile of Selected Other Craft Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Shortage Indicators

Electricians – the evidence points to a growing demand for electricians, which is reflected in the increased number of job vacancies advertised in 2015, as well as the fact that employers are experiencing difficulty in sourcing these skills from within the EEA area (approximately 90 employment permits were issued in 2015); a simultaneous presence of a large number of job seekers (2,000 in May 2016) and vacancies (3,400 in May 2016), coupled with transitions data, point at a higher than average turnover rate; a significant portion of job seekers (electricians) hold at most Junior Certificate qualifications, indicating that sourcing suitably qualified electricians may be an issue for employers; supply from the apprenticeship system has declined sharply in recent times

(from almost 1,000 in 2010 to less than 400 in 2015) and recent increases in intake (including a new field service engineer apprenticeship) will require a number of years before being reflected in higher output; with growth emerging in construction and accelerating in other sectors, the demand for electricians is expected to increase.

Welders – in 2015, there were many vacancies for welders with TIG/MIG, ARC, butt/electric fusion skills; many of these vacancies were airing due to turnover (1,900 movements between employers were identified in 2015); in May 2016, there were 1,325 job ready welders who were seeking employment through the PES; on the supply side, 283 FET awards were made in 2015 in manual arc and oxy-acetylene welding; nonetheless, a shortage of TIG/MIG welders continues to persist, with demand expected to remain strong particularly due to the growth in the construction and metal fabrication/machining (e.g. high tech manufacturing) industries; the new proposed apprenticeships at levels 5 and 6 on the NFQ (advanced craft welder) may help alleviate the shortage once apprentices qualify (courses are 3-4 years in duration).

Tool makers/fitters – the strong performance of the high tech manufacturing sector is driving the demand for tool making skills; in response to the growing demand, a number of new courses and modules have been introduced in recent years, including new manufacturing apprenticeships proposed by the Irish Medical Devices Association (IMDA), with an anticipated 100 enrolments annually over the 3-4 years of the programme; this is in addition to the 32 awards made through FET courses in 2015 (an increase from 10 in 2013) and an increase in apprentice intake; nonetheless, shortages of tradespersons with expertise in making highly complex precision tools are expected to persist in the short run.

Butchers/de-boners – demand for butchers/de-boners has been driven by the strong performance of the meat processing industry; the industry has been reliant on non-EEA workers (the share of non-Irish nationals in the workforce was 29% in 2015); supply will be increased through the proposed new apprenticeship in butchery and fresh food retail (with an expected 60 annual registrations per annum); however, the problem with attracting and retaining skilled butchers/de-boners following completion of their training is expected to remain a challenge for the meat industry in Ireland, with the issue likely to be exacerbated by the greater availability of job opportunities across other growting sectors of the economy.

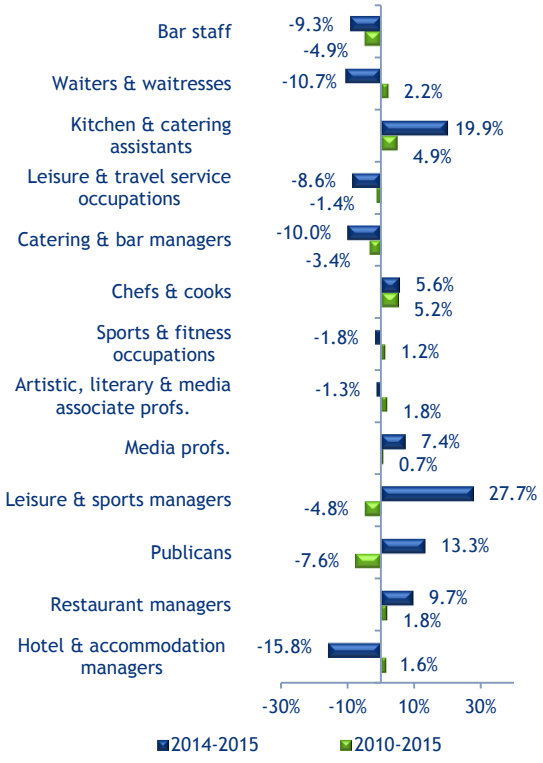
9.12 Arts, Sports and Tourism Occupations

- In 2015, approximately 167,000 persons were employed in the selected arts, sports and tourism occupations (Figure 9.12.1), representing 8.5% of Ireland's workforce
- There were 120,000 persons employed in hotel, restaurant & publican related occupations, 29,000 persons in artistic, literary & media occupations and 19,000 persons in leisure, sports & travel service occupations
- Between 2010 and 2015, overall employment expanded by 1.2% on average annually, similar to the national average growth rate of 0.8%; in 2015, employment was 9,000 above the 2010 level of 158,000
- Over the five-year period, the most pronounced employment growth (in both absolute and relative terms) was observed for chefs & cooks and kitchen & catering assistants (jointly at 5% on average annually, or approximately 6,000 each); in contrast, the strongest rates of decline were observed for publicans (7.6% on average annually), bar staff and leisure & sports managers (jointly at 5% on average annually) and catering & bar managers (3.4% on average annually); the largest absolute decreases were observed for bar staff (5,000) and publicans (2,000) (Figure 9.12.2)
- Between 2014 and 2015, overall employment levels remained virtually static
- The workforce of both waiting and bar staff was the youngest among the selected occupations, with over a third employed in both occupations aged 15-24; in contrast, publicans had the most mature workforce, with two fifths aged 55 or older (Figure 9.12.3)
- At 95%, the overall workforce of media professionals had the highest share of third level graduates; on the other hand, 17% of employed publicans were third level graduates (Figure 9.12.4)
- While the overall workforce of the selected occupations was gender balanced, there was a higher representation of females in the workforce of waiting staff (at 78%), leisure & travel service occupations, kitchen & catering assistants and hotel & accommodation managers (with 60% of each respective workforce female); in contrast, the workforce of publicans had the highest share of males, at 80%
- At least half of waiting and bar staff, and kitchen & catering assistants worked part-time – among the highest shares across all occupations in the national workforce
- Approximately 40% of those employed as chefs & cooks, kitchen & catering assistants and waiting staff were non-Irish nationals, far exceeding the national rate of 15%.

Figure 9.12.1 Numbers Employed (000s) in Selected Arts, Sports and Tourism Occupations, 2015

Source: SLMRU (SOLAS) analysis of CSO data

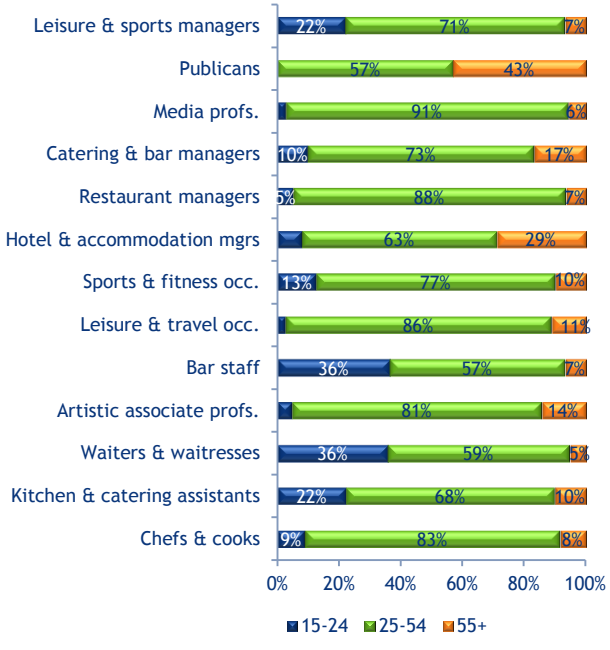
Figure 9.12.2 Average Annual Growth (%) in Selected Arts, Sports and Tourism Occupations



Source: SLMRU (SOLAS) analysis of CSO data

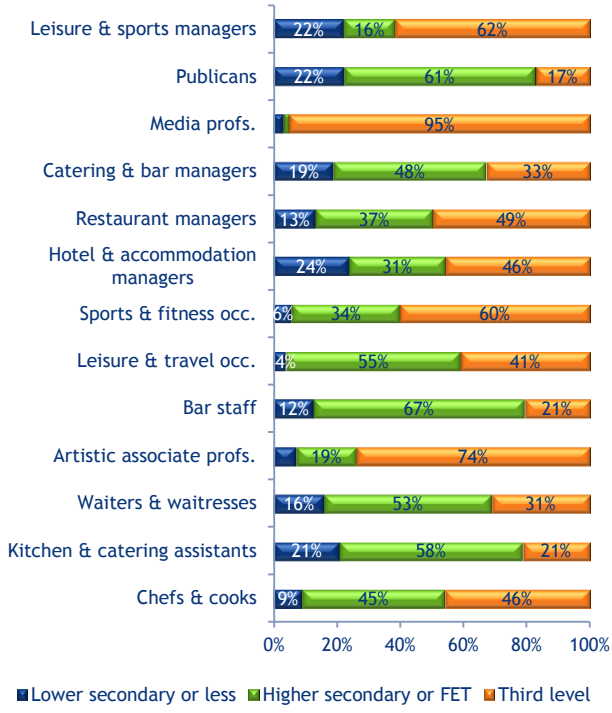
Note: Growth rates associated with occupations where employment is comparatively small are less reliable due to a greater risk of sampling error.

Figure 9.12.3 Age Profile of Selected Arts, Sports and Tourism Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Figure 9.12.4 Education Profile of Selected Arts, Sports and Tourism Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Shortage Indicators

In 2015, there were approximately 120,000 persons employed in occupations providing hospitality services, such as hotels and restaurant managers, chefs, catering assistants and waiters. These occupations are characterised by a higher than average volume of transitions between employment, unemployment and inactivity. For example, for chefs, there were 3,500 transitions between employers and 4,400 transitions into inactivity (including retirement) in 2015; even higher volumes of movements were observed for catering assistants and waiting/bar staff: there were 5,900 and 9,900 transitions between employment for these occupations respectively and a further 5,100 and 7,200 transitions into inactivity in 2015. Such high levels of transitions suggests that employment in many hospitality roles is casual in nature; this is supported by (a) the fact that the share of part-time workers in these occupations is

more than twice the national average (50% for catering assistants and above 55% for waiters/bar staff) and (b) the simultaneous presence of a large number of job seekers (2,200 catering assistants and 2,700 waiters/bar staff in May 2016) and a large number of vacancies (in 2015, there were several thousand vacancies advertised on the DSP and Irishjobs.ie portals alone).

The demand for hospitality, sports and leisure services has been increasing with the recovery of the economy and a shortage of qualified chefs has already been identified. Although there were 1,200 job ready chefs looking for work in May 2016, two thirds hold at most a Leaving Certificate, indicating that the majority are not qualified chefs. The number of chefs qualifying from courses at NFQ levels 5-8 was almost 800 in 2014/15, up from 600 in 2013/2014; future supply will be further augmented once the five new proposed apprenticeships for chefs (commis (x 2), de partie, sous and executive), with over 100 registrations expected annually, come on stream.

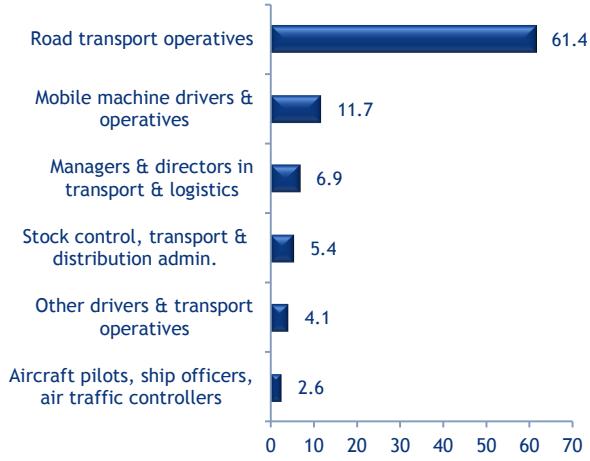
While the supply is sufficient to meet the demand for lower skilled hospitality roles (waiters/bar staff and catering assistants), the availability of persons willing to take up those roles is expected to be negatively affected by the greater availability of job opportunities across other growing sectors.

The economic recovery is expected to positively impact on the demand for artistic, literary and media skills. In May 2016, there were 1,200 third level graduates (NFQ 7+) who were job-ready artistic, literary, media and design associate professionals. Given that these occupations can contribute significantly in driving innovation across a variety of sectors, they are an important resource for growth. However, augmenting artistic abilities with business and entrepreneurial skills is necessary in order to translate creativity into commercial opportunity within the creative arts sector (e.g. fine art, film industry), as well as other sectors (e.g. product development in manufacturing, sales and marketing etc.).

9.13 Transport and Logistics Occupations

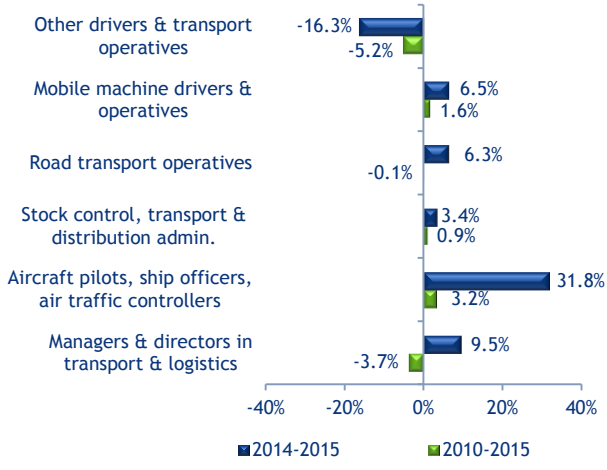
- In 2015, there were approximately 92,000 persons employed in transport and logistics occupations, representing 4.7% of the national workforce
- Two thirds of those employed (61,000 persons) were road transport operatives (predominantly large goods vehicle and taxi drivers) (Figure 9.13.1)
- In 2015, overall employment levels were just below the 2010 levels, but 5.6% higher than in 2014 (with almost a net 5,000 additional jobs created in the last year)
- Between 2014 and 2015, positive employment growth rates were observed for most occupations, with the strongest rate (31.8%) for aircraft pilots, ship officers & air traffic controllers (although from a very low base); in contrast, employment contracted for other drivers & transport operatives (16.3%); however, employment levels did not change significantly for most occupations; the most pronounced increase in absolute numbers was observed road transport operatives (particularly, large goods vehicle drivers) (Figure 9.13.2)
- Almost one third of all employed road transport operatives was aged 55 or older (half of all employed bus & coach drivers was in this age cohort (one of the most mature workforces nationally) (Figure 9.13.3)
- Overall, the education profile of those employed in the selected occupations was skewed towards lower attainment levels: almost 40% had lower secondary or less qualifications – compared to the national average of 15%; only 16% had third level qualifications, considerably below the national average of 48%
- The majority of those employed in transport occupations were male; most worked full-time
- Approximately a quarter employed in administrative occupations in stock control, transport & distribution and as aircraft pilots, ship officers, air traffic controllers were non-Irish; the share of non-Irish in the remaining occupations was less than the national average of 15%.

Figure 9.13.1 Numbers Employed (000s) in Selected Transport and Logistics Occupations, 2015



Source: SLMRU (SOLAS) analysis of CSO data

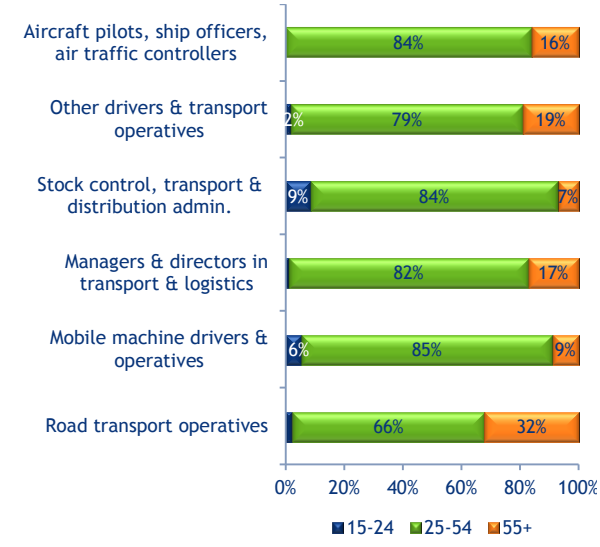
Figure 9.13.2 Average Annual Growth (%) in Selected Transport and Logistics Occupations



Source: SLMRU (SOLAS) analysis of CSO data

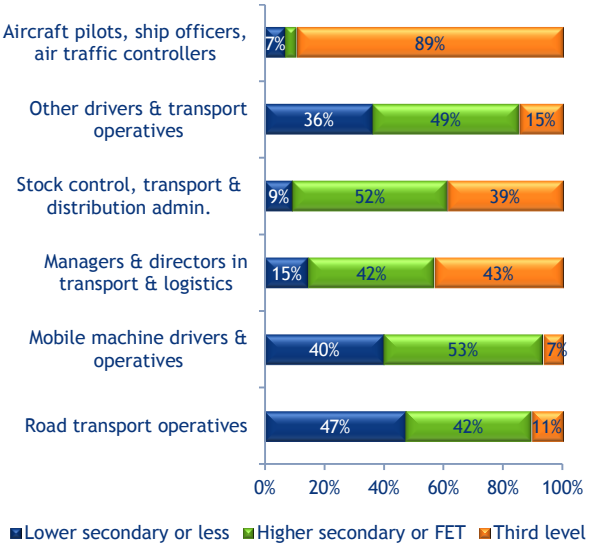
Note: Growth rates associated with occupations where employment is comparatively small are less reliable due to a greater risk of sampling error.

Figure 9.13.3 Age Profile of Selected Transport and Logistics Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Figure 9.13.4 Education Profile of Selected Transport and Logistics Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Shortage Indicators

The transport sector will benefit from the economic recovery domestically and globally, as it enables the movement of goods nationally and internationally. However, the extent to which Brexit will impact on the international haulage sector is as yet unclear and, as well as uncertainty regarding the demand for Irish products in the UK (especially food & beverages), changes to customs and freight forwarding procedures may require different skills sets. However, these changes, if any, are not expected in the short-medium term.

Logistics and supply chain: in 2015, shortages of skills relevant to supply chain management were identified; these include transport management, warehouse management, materials management, raw materials forecasting/planning (junior roles), inventory control/planning, freight sales, and freight forwarding (air & ocean); the demand was particularly strong for those with experience, industry specific knowledge (e.g. high tech manufacturing, FMCG), foreign languages and relevant technical skills (e.g. SAP BI and analytics). In 2015, there were almost 90 major awards in logistics and distribution made at NFQ level 5 and 130 third level graduates (NFQ 6-9) from transport/logistics courses in 2014/15.

Drivers: a shortage of drivers has also been identified; although there is a large number of job ready drivers seeking employment (5,400 road transport operatives and 2,900 machine drivers in May 2016), some recruitment difficulties are arising due to issues such as age related insurance costs and the lack of experience in relation to the new entrants; in 2015, an estimated 1,700 truck drivers transitioned to inactivity (mostly to retirement, given that almost one in three truck drivers was over 55); in addition, retention is also identified as an issue, with 5,700 intra-occupational transitions identified in 2015 for truck drivers and 2,200 for machine drivers; difficulty has been identified in relation to sourcing suitable candidates for a number of driving skills including:

- fork lift drivers
- articulated truck drivers/ heavy goods vehicle (HGV) drivers
- reach truck drivers
- rigid truck with Certificate of Professional Competence (CPC).

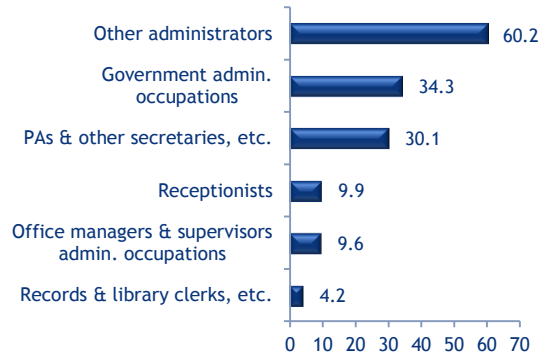
Within FET, the Road Safety Authority awarded over 600 Driver CPC certificates and the Chartered Institute of Logistics and Transport awarded 265 ADR[43] driving certificates to learners on SOLAS funded courses in 2015. The estimates in the FET service plan for 2016 suggest that almost 4,300 beneficiaries will avail of training in the area of transport and logistics courses (including driving, as well as supply chain administration). If achieved, graduate output from these courses will contribute to closing the existing gap between demand and supply.

[43] ADR is a French acronym for international agreement concerning the carriage of dangerous goods by road.

9.14 Administrative and Secretarial Occupations

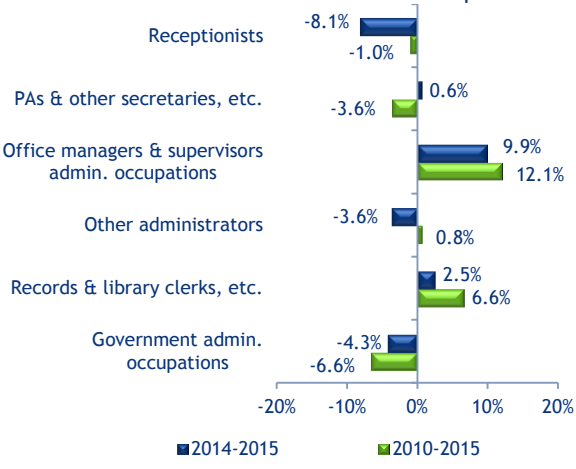
- In 2015, there were approximately 148,000 persons employed in administrative and secretarial occupations, accounting for 7.6% of Ireland's workforce (Figure 9.14.1)
- Between 2010 and 2015, overall employment in the selected occupations contracted by 1.6% on average annually (in contrast to a 0.8% increase observed nationally); there were almost a net 13,000 job losses
- Over the period 2010 to 2015, the change in employment varied by occupation; the strongest increase (expressed in both rates and levels) was observed for office managers & supervisors; in contrast, the strongest declines (both rates and levels) were observed for government administrative occupations (6.6% on average annually) and PAs & other secretaries (3.6% on average annually) (Figure 9.14.2)
- Between 2014 and 2015, employment contracted by 2.3% (translating into 3,500 net job losses); there was no significant change in employment levels for most occupations
- At least two thirds of those employed in each occupation was aged 25-54; the age profile of employed receptionists was the youngest, with 13% aged 15-24; in contrast, it was the most mature for records & library clerks, with one quarter aged 55 or older (Figure 9.14.3)
- Overall, the share of persons employed in administrative and secretarial occupations who had attained higher secondary/FET qualifications was well above the national average (50% compared to 37%), with the share for each occupation exceeding the national average; in contrast, the share with third level qualifications was below the national average (43% compared to 48%); however, the share was higher than the national average for office managers & supervisors (57%), and for records & library clerks (49%) (Figure 9.14.4)
- At least 70% of persons employed in each occupation was female
- The share of persons in part-time employment was above the national average for most occupations, while the share of non-Irish nationals was below average across all occupations.

Figure 9.14.1 Numbers Employed (000s) in Selected Administrative and Secretarial Occupations, 2015



Source: SLMRU (SOLAS) analysis of CSO data

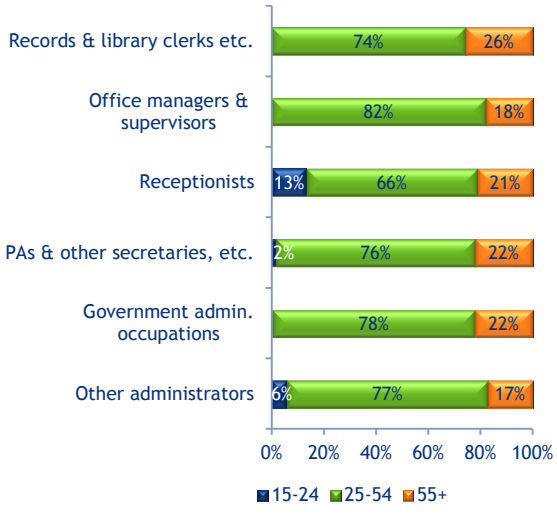
Figure 9.14.2 Average Annual Growth (%) in Selected Administrative & Secretarial Occupations



Source: SLMRU (SOLAS) analysis of CSO data

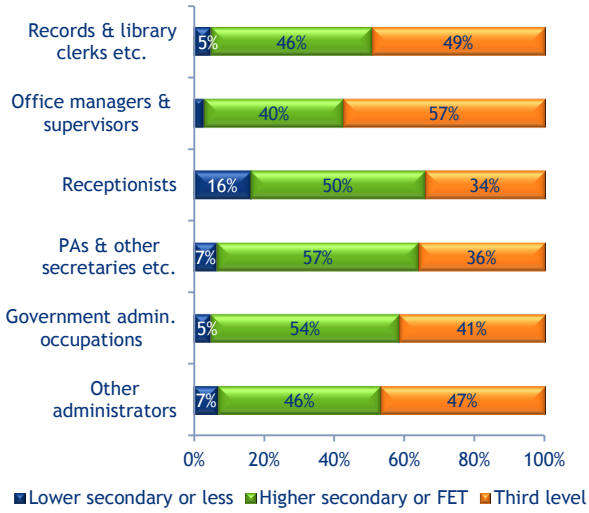
Note: Growth rates associated with occupations where employment is comparatively small are less reliable due to a greater risk of sampling error.

Figure 9.14.3 Age Profile of Selected Administrative and Secretarial Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Figure 9.14.4 Education Profile of Selected Administrative and Secretarial Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Shortage Indicators

In 2015, there were many vacancies for administrative and secretarial roles. However, many of the clerical vacancies were arising due to replacement (7,800 transitions to inactivity were identified for clerks, in 2015) and turnover (13,700 transitions between employers). The incidence of high churn is further underlined by the presence of both a high number of vacancies (11,000) at the same time as a comparably high number of job seekers (11,600 job ready clerks looking for work in May 2016). In addition, there were over 5,800 QQI awards in business and administration made to FET learners in 2015, mostly at NFQ level 6. Supply is estimated to be sufficient to meet the recruitment requirement and no shortages exist at present.

While there is no shortage of general administrative skills, there is evidence that demand for specific administrative skills is increasing, particularly for procurement agents/officers (especially indirect procurement).

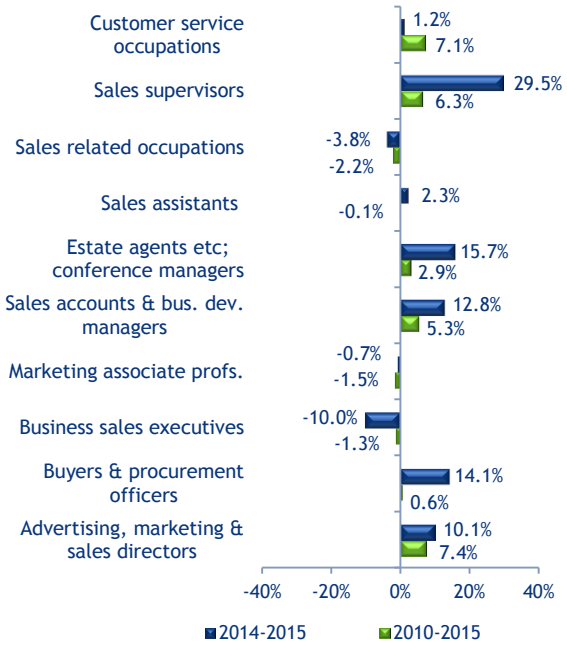
9.15 Sales and Customer Service Occupations

- In 2015, there were approximately 223,000 persons employed in sales and customer service occupations, representing 11.4% of Ireland's workforce
- There were 125,000 persons employed as sales assistants – the largest workforce nationally (Figure 9.15.1)
- Between 2010 and 2015, overall employment in the selected occupations increased very modestly (by 0.9% on average annually – almost identical to the national average rate)
- Over the five year period, there were approximately a net 10,500 additional jobs created; in 2015, while employment levels for most occupations were similar to those observed in 2010, the most pronounced increases were observed for customer service occupations (6,500) and sales accounts & business development managers (4,000); meanwhile, the largest decreases were observed for business sales executive, and sales related occupations (approximately 1,500 each)
- Between 2014 and 2015, overall employment expanded by 2.3% (similar to the national average, with a net 5,000 additional jobs created); the largest absolute increases were observed for sales assistants (3,000) and sales accounts & business development managers (2,000), while the largest decrease was observed for business sales executives (2,500) (Figure 9.15.2)
- Most persons employed in each occupation was aged 25-54; the age profile of employed sales assistants was the youngest amongst the selected occupations, with one quarter aged 15-24 (Figure 9.15.3)
- Most persons employed in sales and customer services occupations had a higher share with third level qualifications than the national average, with sales assistants the main exception to this with only a 22% share with third level qualifications (Figure 9.15.4)
- Almost 70% of persons employed as sales assistants was female, the highest share among the selected occupations and above the national average share; the share was also relatively high for marketing associate professionals, and customer service occupations (with two fifths employed in both groups female)
- Over a half (55%) of all employed sales assistants worked part-time – one of the highest shares among all occupations in the national workforce
- Two fifths of employed sales supervisors were non-Irish nationals (over double the national average); the corresponding share was almost one fifth for customer service occupations.

Figure 9.15.1 Numbers Employed (000s) in Selected Sales and Customer Service Occupations, 2015

Source: SLMRU (SOLAS) analysis of CSO data

Figure 9.15.2 Average Annual Growth (%) in Selected Sales and Customer Service Occupations



Source: SLMRU (SOLAS) analysis of CSO data

Note: Growth rates associated with occupations where employment is comparatively small are less reliable due to a greater risk of sampling error.

Figure 9.15.3 Age Profile of Selected Sales and Customer Service Occupations, Quarter 4 2015

Source: SLMRU (SOLAS) analysis of CSO data

Figure 9.15.4 Education Profile of Selected Sales and Customer Service Occupations, Quarter 4 2015

Source: SLMRU (SOLAS) analysis of CSO data

Shortage Indicators

With over 223,000 persons employed, a high volume of exits to inactivity and frequent changes of employer for those in sales-related occupations, it is not surprising that sales-related occupations accounted for 14% of all new hires in 2015. This is reflected in the 7,500 vacancies for sales roles at associate professional level and 9,200 vacancies for sales assistants and customer care roles advertised in May 2016 through the PES and Irishjobs.ie portals alone. While most of these vacancies were likely due to replacement and turnover demand, expansion demand across all sales roles is expected to continue to increase as the economy, along with both global and domestic sales, recovers.

Sales assistants: sales assistants account for the bulk of those employed in sales-related occupations; employment of many sales assistants is casual in nature: 54% of employment is part-time, over a quarter are

aged less than 25, and there is a large volume of transitions in all directions (between employment, unemployment, economic inactivity (mostly study), as well as between and within occupations) and a simultaneous presence of a large number of job seekers and vacancies; while the transitory nature of employment for sales assistants may not represent an issue for employers, sourcing for management roles in retail may be a greater challenge; however, the availability of business graduates is likely to help in meeting employer requirements in this regard.

Associate professional sales and customer service roles: while those employed as sales assistants work primarily in the wholesale and retail sector, business sales executives and those in customer service occupations are employed across a range of sectors including finance, IT and industry, in addition to wholesale and retail. Although there are no shortages of sales assistants, shortages of the following sales and customer care skills continue to persist:

- technical and product/service knowledge (e.g. pharmaceutical, medical devices, Software B2B, SaaS products, etc.)
- communication skills, cultural awareness and foreign languages (especially German, French and Nordic).

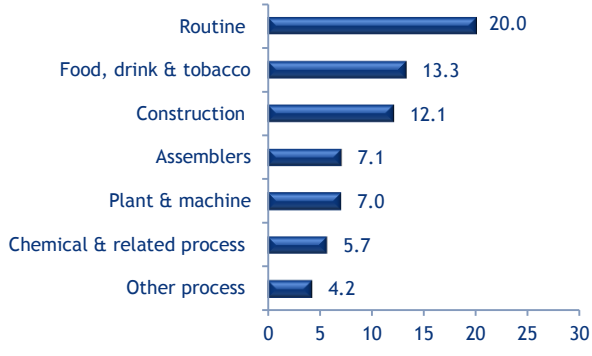
Marketing experts: despite the third level graduate output of 1,600 from sales and marketing courses at levels 6 and above (HEA and non-HEA sectors), a shortage of marketing experts required to lead product strategy development and management continues to exist.

Associate professional sales, customer service and marketing skills are critical in Ireland's efforts to increase the global market share for its exports. Almost all job announcements in 2015 have sales and/or customer care roles mentioned as part of their overall recruitment requirement (e.g. Apple, Microsoft, Vodafone, Zimmer, indeed.com, Sage, Dairymaster, Slane Distillery, O'Hara's Brewery, LinenCare). Proficiency in foreign languages is becoming an important part of the skill set in relation to sales and other roles, with German, French and Nordic languages being most frequently cited as a requirement by both indigenous and multinational companies.

9.16 Operatives

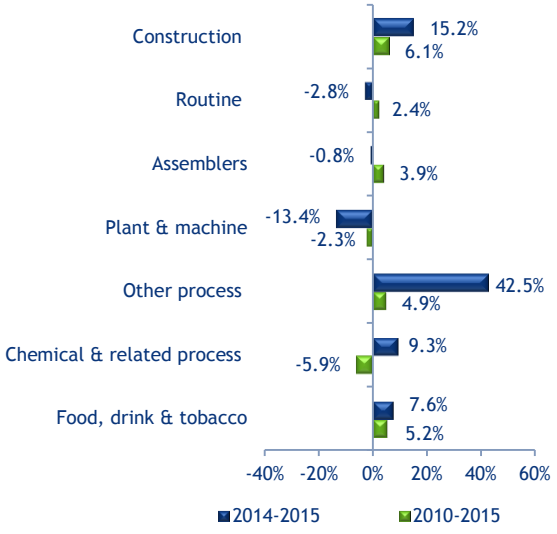
- In 2015, there were approximately 70,000 persons employed in operative occupations, representing 3.5% of Ireland's workforce (Figure 9.16.1)
- Almost two thirds of total employment of operatives (45,000 persons) was concentrated in manufacturing (mostly food; machinery and equipment; pharmaceuticals; computer, electronic and optical products)
- Between 2010 and 2015, overall employment expanded by 2.3% on average annually (compared to 0.8% nationally); employment expanded in all occupations excluding chemical & related process operatives and plant & machine (contracting by 5.9% and 2.3% on average annually respectively); the strongest growth was observed for construction operatives (6.1% on average annually), followed by food, drink & tobacco and other process operatives (each by 5% on average annually) (Figure 9.16.1)
- Over the five-year period, overall employment expanded by 7,600; the largest increases were observed for construction operatives, and food, drink & tobacco operatives (each by 3,000), while the largest decrease was observed for chemical & related process operatives (2,000)
- Between 2014 and 2015, employment expanded by 3.8% (above the 2.6% increase recorded nationally), or 2,500 persons; the largest increase was observed for construction operatives (1,500), while the largest decrease was observed for plant & machine operatives (1,000)
- At least three quarters of those employed in each operative occupation was aged 25-54; one fifth of employed construction operatives was aged 55 or older, the most mature workforce among operative occupations; in contrast, the youngest workforces were for plant & machine, and food, drink & tobacco operatives (Figure 9.16.3)
- The education profile of employed operatives was skewed towards lower educational attainment levels; the share employed in all occupations (excluding chemical & related process operatives) who had attained lower secondary or less qualifications was above the national average, with the highest share for construction operatives (at almost a half); the share who had attained higher secondary/FET qualifications was above the national average for all occupations; in contrast, the share with third level qualifications was well below the national average for all occupations (Figure 9.16.4)
- Almost two fifths of food, drink & tobacco operatives in employment were non-Irish nationals – one of the highest shares among occupations in the national workforce; the share was at or close to one fifth for construction, other process and routine operatives
- The workforce of most occupations was predominantly male who worked full-time.

Figure 9.16.1 Numbers Employed (000s) in Selected Operatives and Related Occupations, 2015



Source: SLMRU (SOLAS) analysis of CSO data

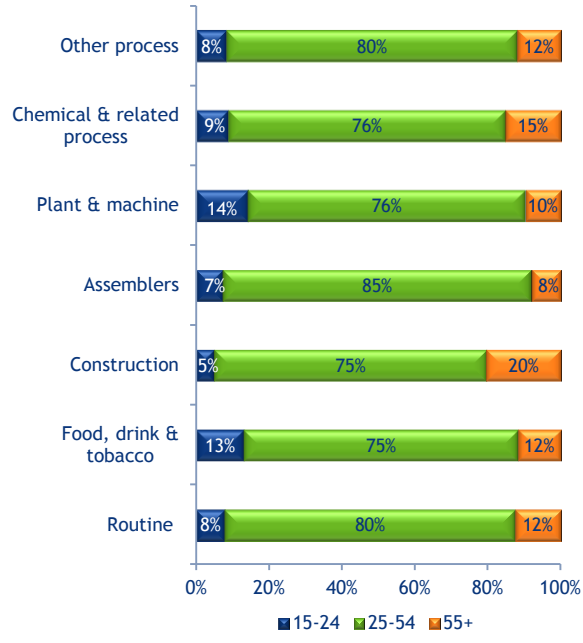
Figure 9.16.2 Average Annual Growth (%) in Selected Operatives and Related Occupations



Source: SLMRU (SOLAS) analysis of CSO data

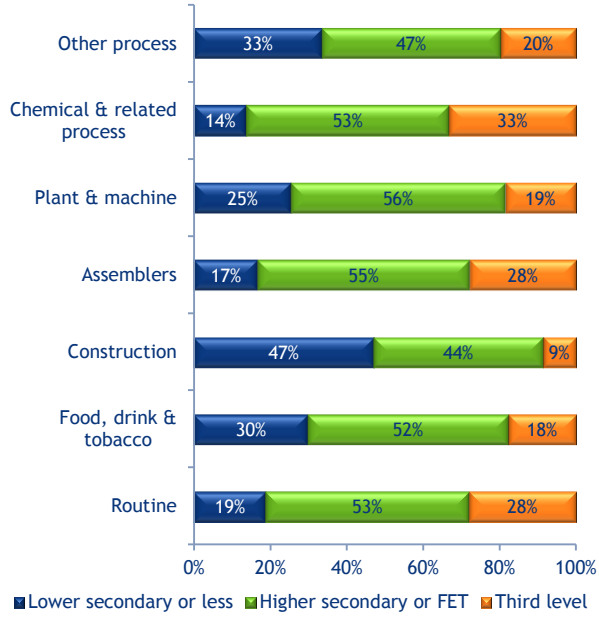
Note: Growth rates associated with occupations where employment is comparatively small are less reliable due to a greater risk of sampling error.

Figure 9.16.3 Age Profile of Selected Operatives and Related Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Figure 9.16.4 Education Profile of Selected Operatives and Related Occupations, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Shortage Indicators

While over 6,400 vacancies were advertised for operatives through the PES and Irishjobs.ie portals alone in 2015, there were over 9,000 operatives (mostly process and construction) seeking employment through the PES in May 2016. Many vacancies are arising due to turnover, with frequent changes of employers observed in 2015 for all types of operatives, including food, process and construction operatives.

Nonetheless, shortages of the following operative skills have been identified:

- qualified CNC (computer numeric control) operatives: particularly in high technology manufacturing (e.g. medical devices and pharmaceuticals) and engineering; many unemployed operatives have been trained in traditional operative skills and lack the technical and digital competencies required for high technology automated manufacturing

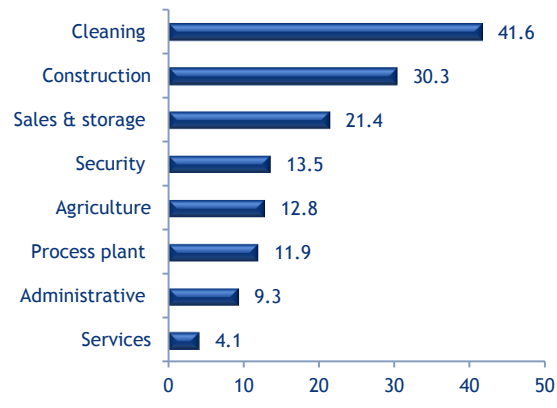
- production operatives: vacancies, particularly in the high-tech manufacturing sector, are proving difficult to fill and given the high churn rates, it is possible that retention issues may arise as job opportunities in other sectors improve, resulting in a labour shortage for operative occupations.

While there is currently no shortage of construction operatives (in May 2016 there were over 1,000 job ready job seekers for this occupation), evidence points to an increasing demand for experienced tower crane operatives and pipelayers in line with the upturn in the construction industry.

9.17 Elementary occupations[44]

- In 2015, approximately 145,000 persons were employed in elementary occupations, representing 7.4% of total employment nationally
- Almost two thirds (or 93,000 persons) were employed in elementary cleaning, construction and sales & storage occupations (Figure 9.17.1)
- Between 2010 and 2015, overall employment contracted by 1.1% on average annually (in contrast to average annual growth of 0.8% nationally); there were 8,500 net job losses over that period
- Over the five-year period, employment contracted for most occupations, with the strongest rates of decline observed for elementary services occupations (5.3% on average annually), elementary construction and administrative occupations (each by 4% on average annually), and process plant (3.4% on average annually); the largest absolute declines were observed for elementary construction occupations (7,000), process plant and administrative occupations (2,000 each); in contrast, employment of cleaners expanded (3.5% on average annually, or 6,500 persons)
- Between 2014 and 2015, overall employment contracted by 1.5% (in contrast to a 2.6% increase nationally); there were 2,000 net job losses over that period; the largest declines were for elementary construction occupations
- The age profile of those employed in elementary administrative (i.e. postal workers, mail sorters) and security occupations was the most mature, with 27% and 20% aged 55 or older respectively (exceeding the national average share)
- The overall education profile of persons employed in elementary occupations was skewed towards the lower end of the educational attainment spectrum; one third had attained lower secondary or less qualifications (double the national average share); 50% had attained higher secondary/FET qualifications (compared to the national average share of 37%), and 16% had third level qualifications (a third of the national average share)
- Employment in most occupations was predominantly male; however, almost 70% of employed cleaners and 30% of elementary process plant workers were female
- At almost 60%, the prevalence of part-time work was the highest for cleaners – one of the highest shares among all occupations in the national workforce
- Almost 50% of employed cleaners were non-Irish nationals – one of the highest shares among all occupations in the national workforce; the share was also relatively high for elementary process plant workers (43%) and agriculture occupations (30%).

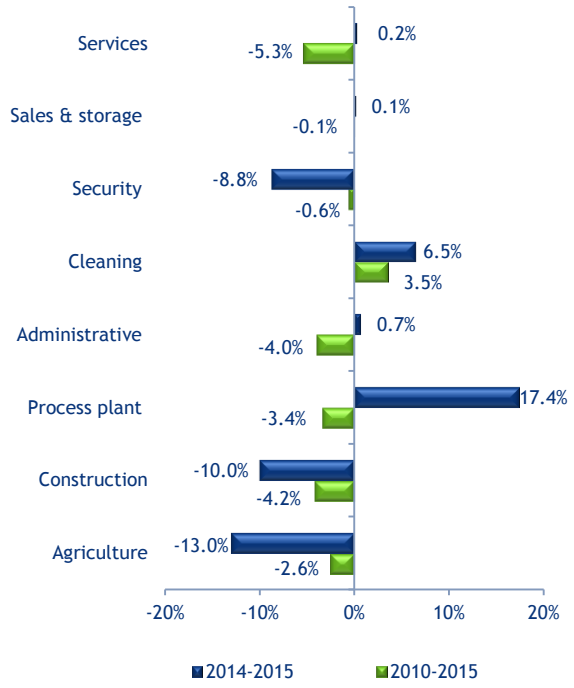
Figure 9.17.1 Numbers Employed (000s) as Labourers, 2015



Source: SLMRU (SOLAS) analysis of CSO data

[44] There are a number of occupations discussed in this section which, for simplicity purposes, are referred to as labourers; these include cleaners, porters, sorters, various types of mates and other occupations not elsewhere classified.

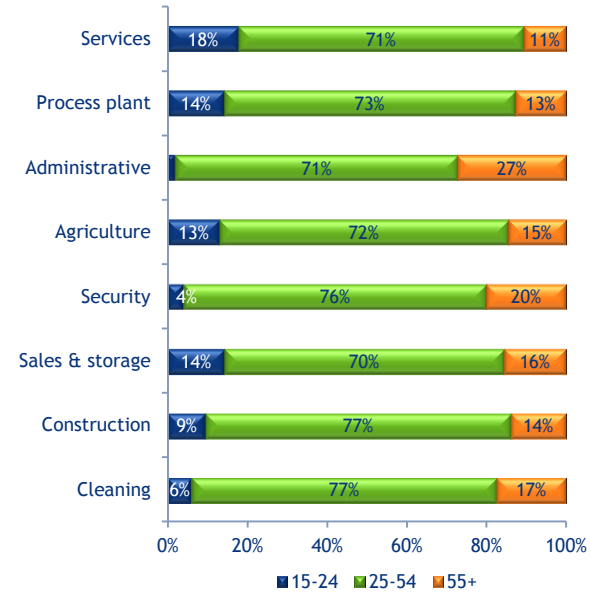
Figure 9.17.2 Average Annual Growth (%) of Labourers



Source: SLMRU (SOLAS) analysis of CSO data

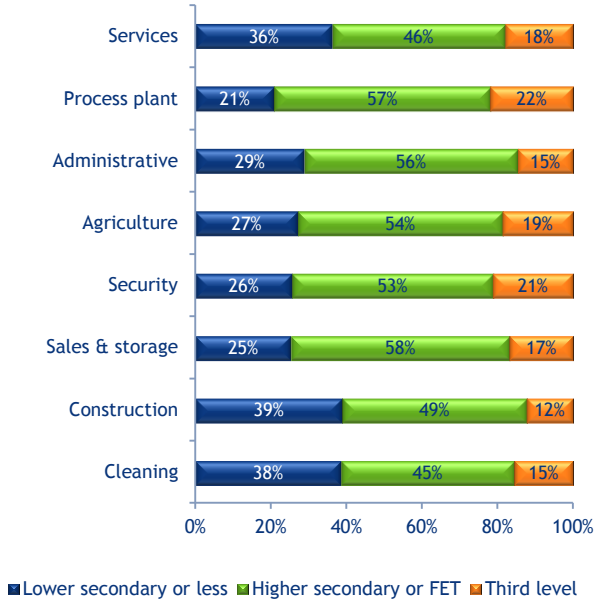
Note: Growth rates associated with occupations where employment is comparatively small are less reliable due to a greater risk of sampling error.

Figure 9.17.3 Age Profile of Labourers, Quarter 4 2015



Source: SLMRU (SOLAS) analysis of CSO data

Figure 9.17.4 Education Profile of Labourers, Quarter 4, 2015



Source: SLMRU (SOLAS) analysis of CSO data

Shortage Indicators

The data on labour market transitions, job seekers and vacancies highlights the transitory nature of employment in elementary occupations (e.g. cleaners, security guards, routine testers, elementary construction workers, agricultural labourers etc.). There is a higher than average share of non-Irish nationals employed in elementary occupations. Attracting and retaining elementary workers will become increasingly challenging as job opportunities increase across all sectors of the economy, although there is currently no evidence of shortage of labourers in Ireland.

APPENDIX A Members of the Expert Group on Future Skills Needs

Una Halligan	**Chairperson**
Inez Bailey	Director, National Adult Literacy Agency
Peter Baldwin	Assistant Secretary, Department of Education and Skills
Ray Bowe	IDA Ireland
John Burke	Principal Officer, Department of Public Expenditure and Reform
Liz Carroll	Training and Development Manager, ISME
Mark Christal	Manager, Client Development, Mentoring and Skills, Enterprise Ireland
Ned Costello	Chief Executive, Irish Universities Association
Margaret Cox	Managing Director, I.C.E. Group
Bill Doherty	Executive Vice President, EMEA, Cook Medical
Tony Donohoe	Head of Education, Social and Innovation Policy, IBEC
Dr. Bryan Fields	Director, Strategy, Research and Evaluation, SOLAS
Paul Healy	CEO, Skillnets
Joe Hogan	Founder, Chief Technology Officer & VP Openet Labs & IP Management
Declan Hughes	Assistant Secretary, Department of Jobs, Enterprise and Innovation
Dr. Brendan Murphy	President, Cork Institute of Technology
Dr. Vivienne Patterson	Head of Skils and Engagement, Higher Education Authority
Dr. Peter Rigney	Industrial Officer, ICTU

APPENDIX B Recent Publications by the EGFSN

Report	Published
Future Skills Needs of the Biopharma Industry in Ireland	August 2016
Lifelong Learning Participation Among Adults in Ireland, Quarter 4 2015	July 2016
Vacancy Overview 2015	May 2016
Guidance for HE Providers on Current and Future Skills Needs of Enterprise: Springboard+ 2016 including ICT Skills Conversion	Feb 2016
Assessment of Future Skills Requirements in the Hospitality Sector in Ireland 2015-2020	Nov 2015
Regional Labour Markets Bulletin 2015	Oct 2015
Monitoring Ireland's Skills Supply – Trends in Education and Training Ouptuts	Jul 2015
National Skills Bulletin 2015	Jul 2015
Vacancy Overview 2014	May 2015
Lifelong Learning among Adults in Ireland, Quarter 4 2014	May 2015
A Study of the Current and Future Skills Requirements of the Marine/Maritime Economy to 2020	Apr 2015
The Expert Group on Future Skills Needs Statement of Activity 2014	Apr 2015
Addressing the Demand for Skills in the Freight Transport, Distribution and Logistics Sector in Ireland 2015 -20	Feb 2015
Guidance for Higher Education Providers on Current and Future Skills Needs of Enterprise: Springboard 2015	Jan 2015
Regional Labour Markets Bulletin 2014	Sep 2014
Monitoring Ireland's Skills Supply: Trends in Education and Training Outputs 2014	Aug 2014
National Skills Bulletin 2014	Jul 2014
Vacancy Overview 2013	May 2014
Assessing the Demand for Big Data and Analytics Skills, 2013 - 2020	May 2014
The Expert Group on Future Skills Needs Statement of Activity 2013	Mar 2014
Regional Labour Markets Bulletin 2013	Mar 2014
Guidance for Higher Education Providers on Current and Future Skills Needs of Enterprise: Springboard 2014	Feb2014
Addressing Future Demand for High-Level ICT Skills	Nov 2013
Monitoring Ireland's Skills Supply: Trends in Education and Training Outputs 2013	Jul 2013
National Skills Bulletin 2013	Jul 2013
Future Skills Requirements of the Manufacturing Sector to 2020	Apr 2013
The Expert Group on Future Skills Needs Statement of Activity 2012	Apr 2013
Guidance for Higher Education Providers on Current and Future Skills Needs of Enterprise: Springboard 2013	Feb 2013
Vacancy Overview 2012	Feb 2013

Regional Labour Markets Bulletin 2012	Jan 2013
Monitoring Ireland's Skills Supply: Trends in Education and Training Outputs 2012	Jul 2012

Expert Group on Future Skills Needs
c/o Skills and Labour Market Research Unit
(SLMRU)

SOLAS
Castleforbes House
Castleforbes Road
Dublin 1, Ireland

Tel: +353 1 5332464
Email: annemarie.hogan@solas.ie
www.skillsireland.ie

SOLAS
An tSeirbhís Oideachais Leanúnaigh agus Scileanna
Further Education and Training Authority