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This Survey is published on the responsibility of the Economic and Development Review Committee of the OECD, which is charged with the examination of the economic situation of member countries.

The economic situation and policies of Ireland were reviewed by the Committee on 11 July 2013. The draft report was then revised in the light of the discussions and given final approval as the agreed report of the whole Committee on 31 July 2013.

The Secretariat's draft report was prepared for the Committee by David Haugh and Alberto Gonzalez Pandiella under the supervision of Patrick Lenain. Research assistance was provided by Josette Rabesona.

The previous Survey of Ireland was issued in October 2011.

BASIC STATISTICS OF IRELAND, 2012

Numbers in parentheses refer to the OECD average[a]

LAND, PEOPLE AND ELECTORAL CYCLE

Population (million, 2011)	4.4		Population density per km² (2011)	62.5	(34.3)
Under 15 (%)	21.0	(18.4)	Life expectancy (years, 2011)	80.6	(80.0)
Over 65 (%)	12.1	(14.9)	Males	78.3	(77.3)
Foreign-born (%, 2010)	17.1		Females	82.8	(82.8)
Latest 5-year average growth (%)	0.6	(0.5)	Last general election	February 2011	

ECONOMY

Gross domestic product (GDP)			Value added shares[b] (%)		
In current prices (billion USD)	210.4		Primary	2.0	(2.6)
In current prices (billion EUR)	163.6		Industry including construction	26.2	(27.7)
Latest 5-year average real growth (%)	–1.2	(0.5)	Services	71.7	(69.7)
Per capita, PPP (thousand USD, 2011)	43.3	(35.5)			

GENERAL GOVERNMENT

	Per cent of GDP				
Expenditure[b]	42.1	(43.0)	Gross financial debt[b]	123.1	(103.4)
Revenue[b]	34.6	(36.6)	Net financial debt[b]	82.4	(66.1)

EXTERNAL ACCOUNTS

Exchange rate (USD per EUR)	1.286		Main exports (% of total merchandise exports)		
PPP exchange rate (USA = 1)	0.836		Chemicals and related products, n.e.s.	59.6	
In per cent of GDP			Miscellaneous manufactured articles	11.9	
Exports of goods and services	108.3	(53.5)	Machinery and transport equipment	11.3	
Imports of goods and services	84.1	(50.1)	Main imports (% of total merchandise imports)		
Current account balance	4.9	(-0.5)	Machinery and transport equipment	25.5	
Net international investment position (2010)	–96.3		Chemicals and related products, n.e.s.	20.8	
			Mineral fuels, lubricants and related materials	14.3	

LABOUR MARKET, SKILLS AND INNOVATION

Employment rate (%) for 15-64 year olds	58.9	(65.0)	Unemployment rate (%)		
Males	62.7	(73.1)	Total (age 15+)	14.7	(7.9)
Females	55.1	(57.0)	Youth (age 15-24)	30.4	(16.2)
Average worked hours per year	1 529	(1 765)	Long-term unemployed (> 1 year)	9.0	(2.7)
Gross domestic expenditure on R&D (% of GDP, 2011)	1.7	(2.4)	Tertiary educational attainment 25-64 year-olds (%, 2010)	37.3	(30.7)

ENVIRONMENT

Total primary energy supply per capita (toe, 2011)	3.1	(4.3)	CO_2 emissions from fuel combustion per capita (tonnes, 2010)	8.6	(10.1)
Renewables (%, 2011)	5.9	(8.2)	Water abstractions per capita (1 000 m^3, 2007)	0.2	
Fine particulate matter concentration (urban, PM10, μg/m^3, 2008)	12.5	(22.0)	Municipal waste per capita (tonnes, 2010)	0.6	(0.5)

SOCIETY

Income inequality (Gini coefficient, late 2000s)	0.293	(0.314)	Education outcomes (PISA score, 2009)		
Relative poverty rate (%, late 2000s)	16.8	(17.7)	Reading	496	(493)
Public and private spending (% of GDP)			Mathematics	487	(496)
Health care (2010)	9.2	(9.7)	Science	508	(501)
Pensions (2009)	5.1	(8.2)	Share of women in parliament (%, February 2013)	19.0	(25.3)
Education (excluding tertiary, 2009)	4.7	(4.0)	Net official development assistance (% of GNI)	0.5	(0.4)

Better life index: *www.oecdbetterlifeindex.org*

a) Where the OECD aggregate is not provided in the source database, a simple OECD average of latest available data is calculated where data exists for at least 29 member countries.

b) 2011 for the OECD.

Source: Calculations based on data extracted from the databases of the following organisations: OECD, International Energy Agency, World Bank, International Monetary Fund and Inter-Parliamentary Union.

Executive summary

Main findings

Rebalancing the economy

One of the first euro area countries to have been hit by a large financial crisis, Ireland is now emerging from its difficulties and gradually regaining access to market financing. Activity is slowly recovering, the unemployment rate has started a gradual decline, cost-competitiveness has improved, and strong exports have helped to eliminate the external deficit. Recapitalisation of the banking system, determined and sustained fiscal policy action and growth-enhancing reforms along with strong political and social buy-in have helped to restore market confidence and reduce sovereign borrowing costs. The debt-to-GDP ratio, which has been rising sharply, is now approaching a turning point and, at somewhat above 120%, the budget strategy rightly aims at putting it on a sustained downward path.

A strategic agenda to reinvigorate growth

Reinvigorating long-term growth will be essential to ease the burden left behind by the crisis. Despite gradual improvement, unemployment remains high, emigration has resumed, and poverty has increased, adding to heavy debts and financial distress. Ireland is endowed with a well-qualified workforce, flexible labour and product markets, a low and stable corporate tax rate and access to the EU single market, all of which attracts significant new foreign investment and will contribute to lifting growth. However, even in areas of relative strength, such as the business environment, there is still room for improvement.

Pathways to jobs

Although the recovery is reducing unemployment, this is likely to be a gradual process, and people having been unemployed for a long time risk being marginalised and discouraged. Skills mismatches are also an issue that needs to be addressed. Those previously working in the construction sector, many of them young, need retraining, if they are to participate in a more knowledge-intensive economy. Welfare support has helped to prevent worse poverty outcomes, and labour market policy is moving in the right direction, but these new policies still do not focus enough on long-term unemployment.

Boosting innovation in Irish firms

Ireland offers a supportive environment for innovation, according to international scoreboards, but this largely reflects the presence of high-tech multinational firms, while "indigenous" (domestic) enterprises are characterised by low productivity. Raising SME capacity to innovate and to build greater linkages between enterprises and the higher education sector would provide a new engine of growth. Government support for innovation has grown too complicated for firms to access it easily or for efficient evaluation. Insolvency costs are too high and SME access to non-bank sources of finance remains too low; increasing non-bank finance for SME remains a priority.

Key recommendations

Rebalancing the economy

- To retain access to financial markets under sustainable and affordable terms, further reduce the public debt-to-GDP ratio. If growth projections are not met and if financial markets conditions are appropriate, the automatic stabilisers should be allowed to operate around the structural consolidation path.
- Fully implement the strategy to reduce non-performing loans taking account of the steps taken to date, so as to sustain on-going balance sheet adjustments, improve bank health and foster the gradual recovery of domestic demand.
- After exit from the current EU-IMF programme, consider international backstop options to provide support in the event of an unexpected shock.

A strategic agenda to reinvigorate growth

- While Ireland is generally business friendly, there is a need to prioritise further structural reforms. To ease doing business, increase competition in legal services and reduce licensing costs and waiting times.
- Continue to emphasise fiscal measures that minimise harm to growth and equity, such as the residential property tax. Review existing tax and welfare structures to address better labour force participation of low-wage workers.
- Address long-term spending pressures in the pension system. Place environmental protection more at the centre of tax, charges and subsidy policy choices.

Pathways to jobs

- To avoid rising structural unemployment and a drift into social exclusion, prioritise the engagement with long-term jobseekers and increase the number of caseworkers supporting them, through internal redeployment.
- To reduce mismatches between supply and demand of skills, better align the content of education and training schemes so that they provide skills required in the expanding sectors.
- Focus limited fiscal resources on policies empirically-proven to improve employability; this will require systematic evaluation of labour-market programmes through consistent tracking and randomized trials, followed by decisions to close down ineffective schemes while strengthening successful ones.

Boosting innovation in Irish firms

- Reflecting significant uncertainties about the effectiveness of various innovation policy tools, independently and regularly evaluate all actions in this area, strengthen programmes with proven higher returns, and wind down the others. To promote effective evaluation, ensure all innovation and enterprise supports have sunset clauses.
- To increase the effectiveness and cost-efficiency of the innovation and research policies, and make it easier for businesses to access support, consolidate innovation funding and actions into a smaller number of Government agencies.
- To increase capital supply and encourage entrepreneurship, lower costs for small-cap IPOs, centralise legal processes for intellectual property rights (IPR) transfers with the new central technology transfer office and introduce changes to the examinership process.

Assessment and recommendations

Ireland is getting back on its feet after a severe banking and fiscal crisis. Determined structural reforms and fiscal consolidation (Figure 1) have helped to rebalance the economy, which is recovering gradually, and underpinned a successful return to the sovereign bond market at declining costs (Figure 2). However, the crisis has left a legacy of unemployment and debts, amongst the highest in the OECD. Now is the time to implement policies that will promote sustainable growth and job creation, including by reforming public institutions and regulations.

Figure 1. **Fiscal consolidation and structural reform efforts**

Note: The reform responsiveness rate is an indicator based on assigning a value of one if "significant" action is taken on OECD recommendations given in *Going for Growth 2011* and zero if not.
Source: *OECD Economic Outlook 93 Database* and OECD calculations.

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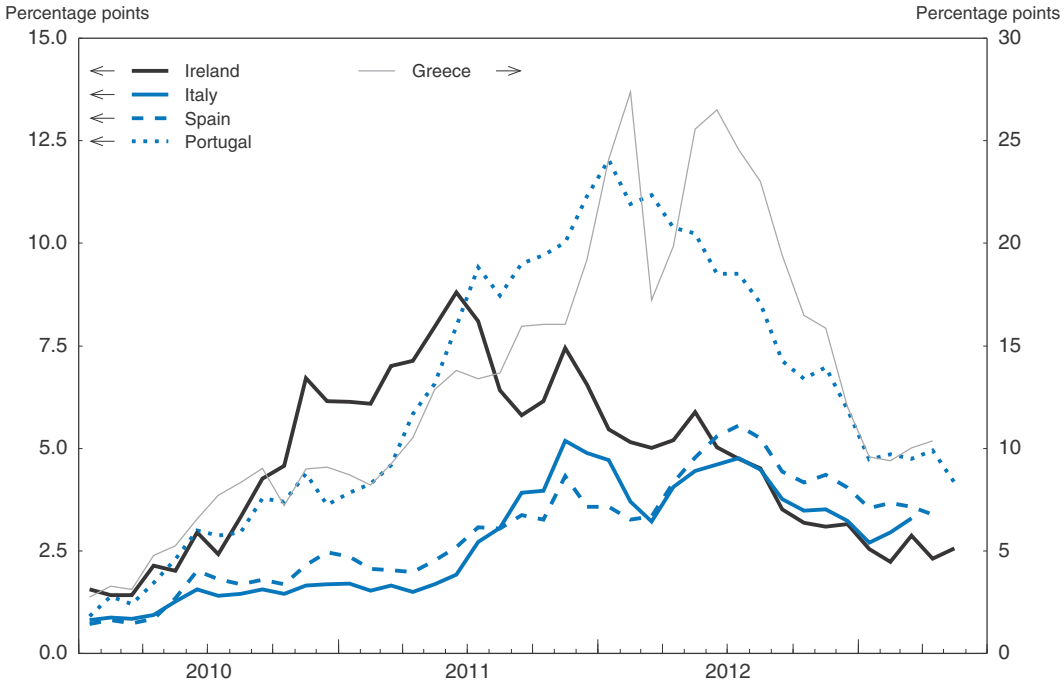
Figure 2. **Sovereign risk premia**[1]



1. 10-year government bonds spread relative to German rate.
Source: OECD Economic Outlook Database.

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Growth recovery and economic rebalancing

Although output data have been volatile, Ireland has recorded positive growth, led by exports (Table 1). Export-oriented firms, underpinned by a solid base of multinational firms have been the main source of growth, particularly in high-tech industries. Competitiveness, as measured by unit labour costs, has improved markedly (Figure 3, panel A), although this partly reflects sectoral composition effects due to labour shedding in low-skilled sectors, such as construction, and the strong performance of the high value-added chemicals sector (O'Brien, 2011). In a context of declining world trade market shares in most OECD countries, Ireland has shown a resilient export performance (Figure 3, panel B). Service exports, notably computer and business sector services, are growing robustly, although the patent cliff (the expiry of a number of drug patents) and the slowdown in Europe are having a material effect on overall exports. The economy contracted for three consecutive quarters through to the first quarter of 2013. Short-term indicators suggest a better second quarter of 2013. However, data for 2013Q1 is preliminary. Historically, revisions to first estimates of Irish GDP can be comparatively large. The elimination of the current account deficit illustrates the progress made in rebalancing the economy, even though this is partly due to imports being depressed due to falling domestic demand and the size of the external surplus reported in 2012 is exaggerated by the redomiciling of some foreign companies to Ireland due to policy changes elsewhere (FitzGerald, 2013).

Domestic economic conditions are improving, but at a modest pace. Private consumption has stabilised, following a moderate pick-up in household disposable income, but stronger consumer purchases are hindered by efforts made to reduce indebtedness (Figure 4). After five years of contraction business investment is at a very low

Table 1. **Demand, output and prices**

	2009	2010	2011	2012	2013	2014
	Current prices EUR billion	Percentage changes, volume (2011 prices)				
GDP at market prices	162.3	-1.1	2.2	0.1	0.0	1.9
Private consumption	79.6	0.4	-1.4	-0.3	-1.4	0.8
Government consumption	33.0	-4.9	-2.9	-3.2	-2.1	-2.0
Gross fixed capital formation	26.0	-22.7	-9.6	-0.7	-5.1	5.1
Final domestic demand	138.6	-5.2	-3.0	-1.1	-1.5	0.7
Stockbuilding[1]	23.7	0.7	1.0	-0.4	0.9	0.0
Total domestic demand	136.2	-4.6	-1.8	-1.6	-1.6	0.7
Exports of goods and services	146.4	6.4	5.3	1.6	-1.7	4.9
Imports of goods and services	120.4	3.6	-0.4	0.0	-0.4	4.6
Net exports[1]	0.0	3.1	5.7	1.6	-1.6	1.4
Memorandum items						
GDP deflator	-	-1.5	0.7	0.7	0.4	1.1
Harmonised index of consumer prices	-	-1.6	1.2	1.9	0.9	1.2
Private consumption deflator	-	-2.0	2.1	0.5	1.7	1.1
Unemployment rate	-	13.9	14.6	14.7	13.9	13.7
Household saving ratio, net[2]	-	7.0	5.6	4.3	3.7	3.3
General government financial balance[3, 4]	-	-30.5	-13.0	-7.5	-7.5	-4.6
General government underlying primary balances[3]	-	-6.0	-4.4	-2.5	-0.6	1.7
General government net debt[3]	-	46.0	64.2	82.3	89.4	91.4
General government gross debt[3]	-	96.9	109.8	123.1	128.0	125.7
General government debt, Maastricht definition[3]	-	91.2	104.1	117.4	122.4	120.0
Current account balance[3]	-	1.1	1.2	4.4	4.6	5.0

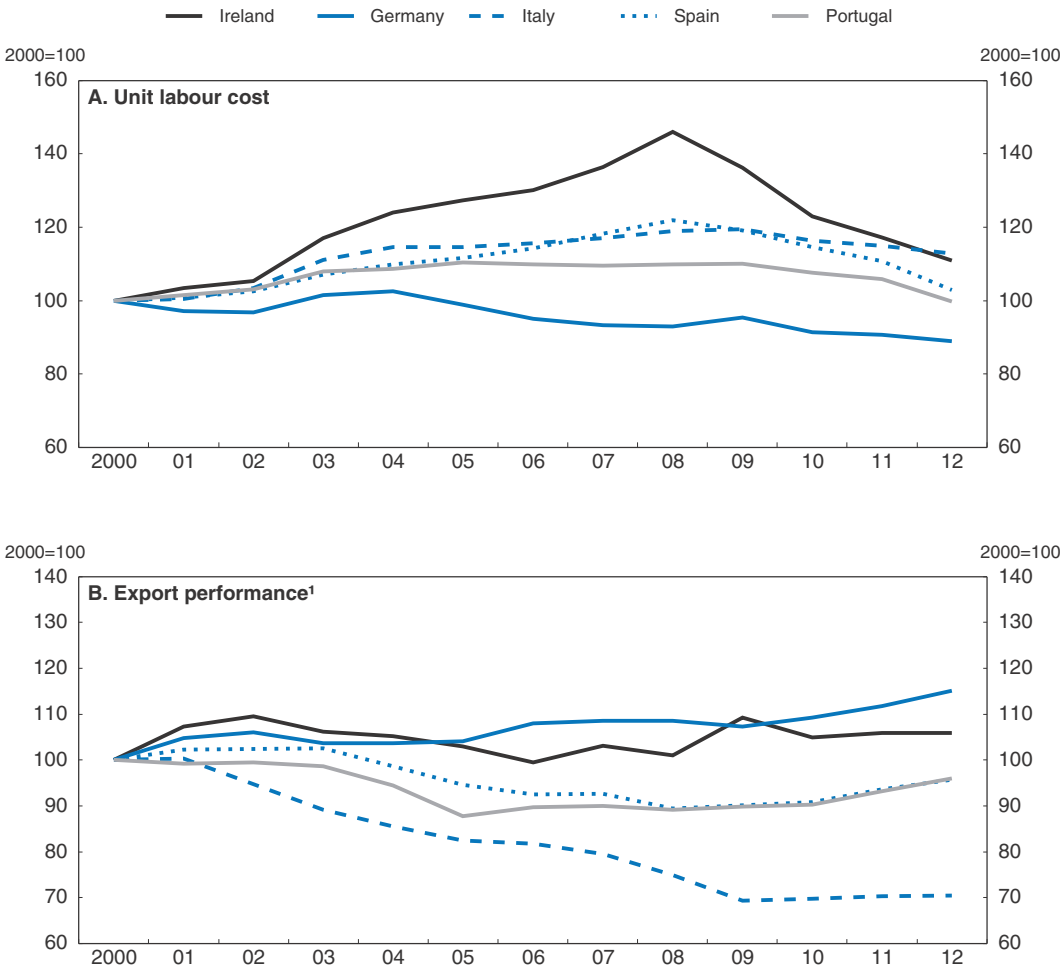
1. Contributions to changes in real GDP, actual amount in the first column.
2. As a percentage of disposable income.
3. As a percentage of GDP.
4. Includes the one-off impact of recapitalisations in the banking sector.

Source: OECD (2013), *OECD Economic Outlook: Statistics and Projections* (database) updated; CSO (2013), "National Accounts", *StatBank*, Central Statistics Office.

level. It has recently started growing again, but acceleration is held back by the high debt of non-financial corporations (Figure 5). The SME sector, which accounts for more than 70% of private employment, is constrained by high property-related debt, and has faced several years of weak profitability. Banks have undertaken significant balance adjustments, but are still making losses.

Ireland has made progress in shifting away from investment in bricks and mortar towards the accumulation of innovative assets. Investment in knowledge-based capital (KBC), a broad measure including computerised information, innovative intellectual property and economic competencies, has grown over time, as in other countries, but remains in the lower half of the 18 OECD countries for which data are available (Figure 6). Building KBC would help Ireland to upgrade its participation in global value chains from its current median position (OECD, 2013). This would in turn allow Irish firms to reap the productivity benefits derived from economies of scale that in a small economy can only be gained through international trade. The SME sector has a large potential, which could be better realised with reforms favouring entrepreneurship, innovation and productivity.

Figure 3. **Competitiveness**



1. Export performance is the ratio between export volumes and export markets growth for total goods and services.
Source: European Central Bank (ECB) and *OECD Economic Outlook Database*.

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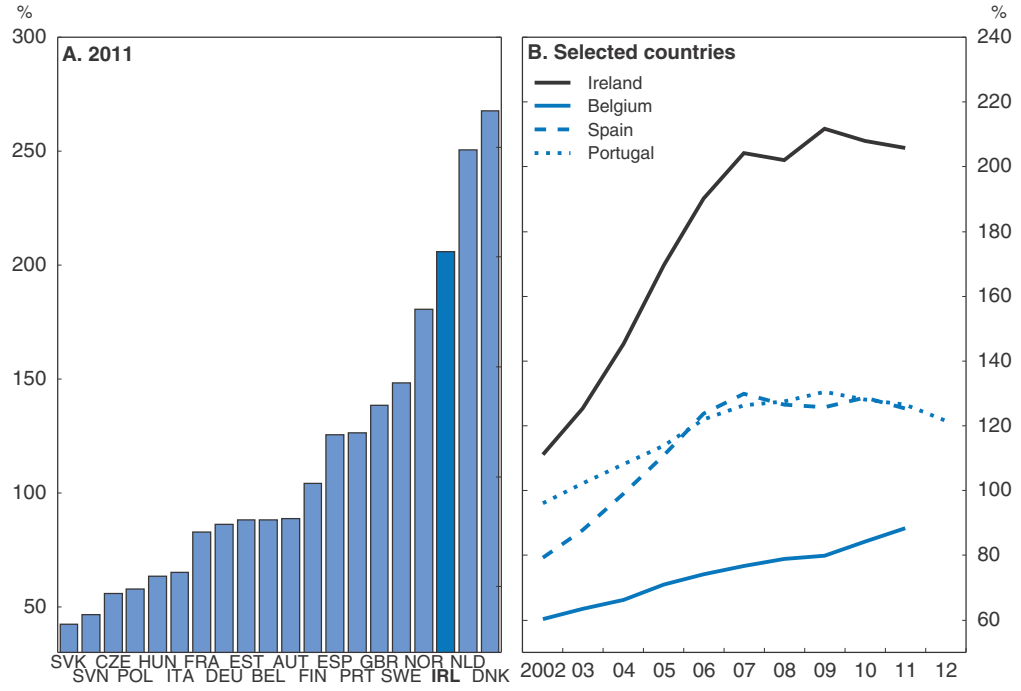
Strong adherence to fiscal targets has brought debt closer to a declining path

Ireland has undertaken considerable fiscal adjustment, as shown by the expected reduction in the underlying primary balance by 9% from 2009 through to 2014, which has been instrumental in regaining financial-market confidence. In 2013, despite measures equivalent to 2% of GDP, the deficit is projected to remain at around 7.5% of GDP reflecting a combination of special deficit increasing factors (fall in revenues from the Eligible Liabilities Guarantee after its discontinuation, a one-off payment related to the liquidation of the Irish Bank Resolution Corporation, and expiration of a grace period on interest payments on promissory notes). To date Ireland has met or bettered their fiscal targets. On the assumption that the government implements the EUR 3.1 billion consolidation effort for 2014 outlined in the 2013 budget package and that the fiscal space provided by the promissory note restructuring is used for deficit reduction, the general government deficit is projected to decline to 4.6% of GDP in 2014. In case growth projections are not met and if financial markets conditions are appropriate, the automatic stabilisers should be allowed to operate around the structural consolidation path.

Figure 4. **Household debt as percentage of disposable income**



Note: Gross debt-to-income ratio of households is defined as loans (ESA95 code: AF4), liabilities divided by gross disposable income (B6G) with the latter being adjusted for the change in the net equity of households in pension funds reserves (D8net). Detailed data and methodology on site *http://ec.europa.eu/eurostat/sectoraccounts*.
Source: Eurostat.

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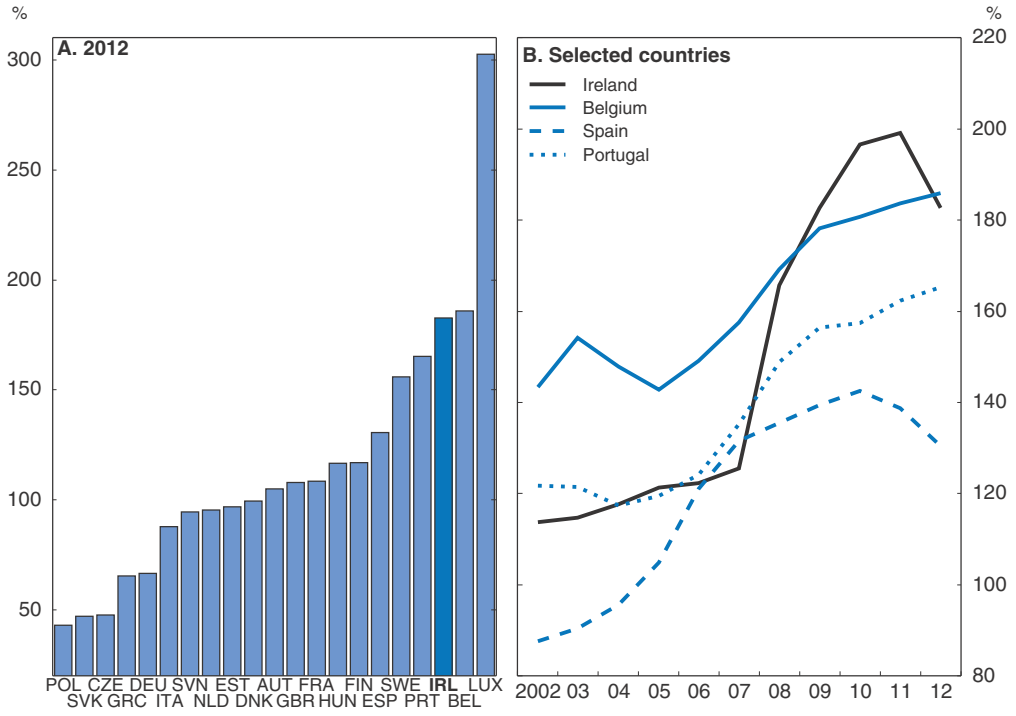
Thanks to ongoing fiscal consolidation and positive growth, the debt-to-GDP ratio (Maastricht definition) is set to peak in 2013. To protect hard-earned credibility and reap the benefits of improved market confidence, it is important to remain on the fiscal path set out in the Government programme (Table 2), while pursuing growth-enhancing reforms. Ireland will soon have done most of the heavy lifting to bring its public debt on a downward trend: by 2014 the structural fiscal balance will have improved 9 percentage points of GDP since the onset of the crisis and a primary surplus is projected for that year. Gradually reducing Government debt from over 120% in 2013 to 60% of GDP by around 2030, in line with the EU fiscal compact, would then only require around an estimated 2.5% of GDP in additional adjustment (Figure 7). The fiscal consolidation effort will continue to exert a drag on the economy, but there are mitigating factors. Fiscal multipliers tend to be lower in open economies (Ilzetzki et al., 2011), for instance a central estimate of Ireland's fiscal multiplier would be 0.5 (Irish Fiscal Advisory Council, 2013), although there is considerable uncertainty surrounding that estimate and it depends on the composition of instruments used (Bergin et al., 2010, Benetrix et al., 2009).

In addition to fiscal measures, a return to health of the banking sector would help to preserve market confidence, in particular by removing uncertainties about the possible further injection of public funds. In Ireland, like elsewhere in the euro area, the fiscal adjustment and bank restructuring processes would be facilitated by further monetary policy action (as discussed in OECD, 2013a), which would reduce the fragmentation of markets, improve financial conditions and help to restore access to credit, in particular for SMEs and households.

Figure 5. **Non-financial corporations' debt as percentage of GDP**



Source: European Central Bank (ECB).

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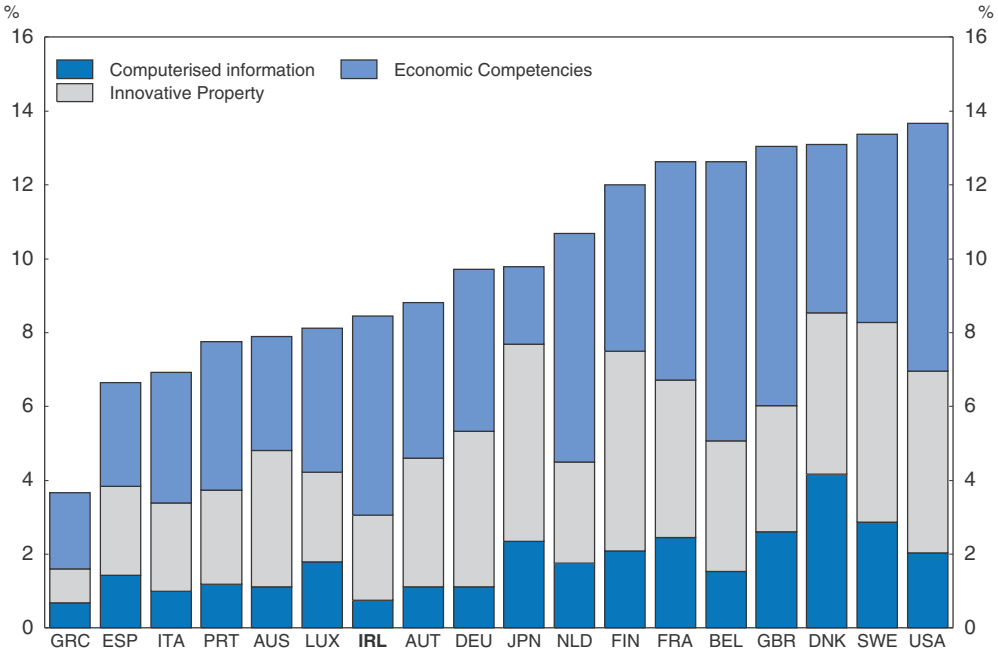
Adopting a strong fiscal framework has been encouraged by EU directives, past *Economic Surveys of Ireland*, and previous OECD work (Hagemann, 2011; Molnar, 2012). Ireland has significantly upgraded the fiscal framework, which now includes fiscal rules for the Government balance and debt, gives legal status to expenditure ceilings, introduces more transparency in the publication of fiscal information and provides the Fiscal Advisory Council with a central and independent role in assessing macroeconomic forecasts and budget plans and compliance with the fiscal rules.

Ireland has also made progress in lightening its public debt servicing burden. Promissory notes have been replaced with 20 to 40-year bonds, and the average weighted maturities of loans received from the European Financial Stability Facility (EFSF) and European Financial Stabilisation Mechanism (EFSM) have been increased by up to seven years. Both initiatives reduce rollover risks, in particular as the EU-IMF programme terminates at the end of 2013 and Ireland returns to market financing. The Government has also rebuilt its financial buffers, seizing the opportunity of more affordable market conditions to issue new sovereign bonds and accumulating the proceeds as financial assets.

Ireland's steadfast commitment to the EU-IMF programme, consistent meeting of fiscal targets and recent maturity extensions on official lending have improved prospects for debt sustainability. The OECD central scenario for the debt-to-GDP ratio is that it will peak in 2013 and decline thereafter. As highlighted by the previous *OECD Economic Survey of Ireland* and the Irish Fiscal Advisory Council (Irish Fiscal Advisory Council, 2012) lower economic growth remains a risk to debt sustainability. Significant risks surround the medium-term growth outlook including: weaker than expected growth in trading partners, especially in the euro area, a deterioration in financial market conditions; and a slow

Figure 6. **Investment intensity in Knowledge-Based Capital**

As a percentage of market sector value added, 2010



Note: Data refer to the market economy unless otherwise stated, which excludes Real Estate, Public Administration, Health and Education. Figures for the United States correspond to the definition of the Private sector of the National Industry and Production Accounts (NIPA).

Source: OECD calculations based on INTAN-Invest (KBC investment for EU27 and United States); *OECD Main Science and Technology Indicators* (EU27 market sector value added); National Accounts from Eurostat (EU27 tangible investment); United States NIPA from the Bureau of Economic Analysis (United States private sector value added and tangible investment); *Australian Innovation System Report* (2012) (KBC investment), National Accounts from the Australian Bureau of Statistics (value added and tangible investment) and the *Japanese Industrial Productivity Database* (JIP) (intangible and tangible investment and value added); Corrado et al. (2012).

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resolution of non-performing loans and revival of bank lending (see below). Should real growth average only 1% per annum during 2014-21 instead of around 2.4%, the debt ratio could rise to 136% by 2021 instead of falling to 96% (IMF, 2013).

A back-stop might be appropriate, such as a precautionary IMF credit line, an Enhanced Conditions Credit Line by the ESM, or gaining access to the ECB's Outright Monetary Transactions (OMT) programme. This would act as a safeguard against potential adverse movements in financial markets confidence that could endanger the sustainability of a successful return to the market.

Returning the banking sector to health

The banks were recapitalised to well above regulatory minima following the March 2011 Prudential Capital Assessment Review (PCAR). However, bank operational profitability before loss provisions is still weak, reflecting low interest-rate margins, which were around half those in the United Kingdom in 2012 (Holton et al., 2013). The expiration of the Eligible Liabilities Guarantee (ELG) at the end of March 2013 has raised margins somewhat as bank fee payments in exchange for the guarantee reduce as guaranteed liabilities mature. Nevertheless, despite some promising signs, including lower operational costs, lifting profitability will be challenging. Around half of mortgages are low-yielding,

Table 2. **General government finance**

Per cent of GDP unless otherwise noted

	2011	2012	2013	2014	2015	2016
Expenditure	48.2	42.2	*42.5*	*39.6*	*37.5*	*36.5*
Of which:						
Compensation of employees	11.6	11.5	*11.2*	*10.2*	*9.2*	*8.9*
Social payments	17.4	17.5	*16.8*	*16*	*15.1*	*14.6*
Interest expenditure	3.3	3.7	*4.9*	*4.9*	*4.9*	*4.8*
Gross fixed capital formation	2.5	2.0	*1.9*	*1.8*	*1.7*	*1.7*
Revenue	34.9	34.6	*35*	*35.2*	*35.3*	*34.8*
Of which:						
Taxes on production and imports	11.1	11.0	*11.2*	*11.4*	*11.5*	*11.2*
Current taxes on income, wealth, etc.	12.1	12.8	*13.2*	*13.8*	*14.3*	*14.3*
Social contributions	6.4	5.8	*5.8*	*5.8*	*5.6*	*5.5*
Property income	1.3	1.4	*1.7*	*1.3*	*1.4*	*1.3*
Headline balance (Net lending/borrowing)[1]	-13.4	-7.6	*-7.5*	*-4.4*	*-2.2*	*-1.7*
Primary balance	-5.7	*-3.8*	*-2.6*	*0.5*	*2.7*	*3.2*
Consolidation measures intended (EUR billions)			*3.5*	*3.1*	*2*	*0*
EDP intermediate targets for the headline balance		*-8.6*	*-7.5*	*-5.1*	*-2.9*	*na*
Exchequer cash borrowing requirement (EUR billions)[2]		15.6	*16.3*	*16.7*	*14.3*	*14.7*
Public debt (Maastricht criteria)	106.4	117.6	*123.0*	*119.4*	*116.0*	*111.0*
Real GDP growth (%)	1.4	0.9	*1.3*	*2.4*	*2.8*	2.7

1. Includes the one-off impact of recapitalisations in the banking sector.
2. Including debt rollovers.

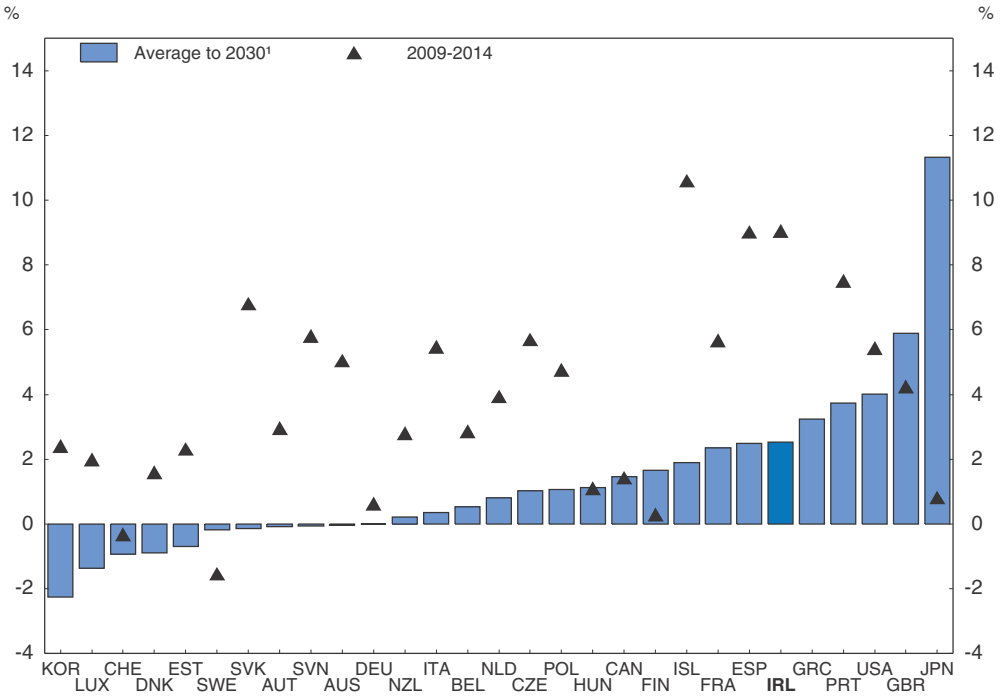
Source: Irish Stability Programme April 2013 Update.

with interest rates that are priced at a small spread over the ECB's low main refinancing rate. Banks have raised standard variable mortgage rates, but further increases may just induce an increase in nonperforming loans (NPL), which are already high: Ireland has the second highest NPL ratio in the OECD, although the definition of NPLs is not entirely comparable across countries (Figure 8).

Rising non-performing loans are hindering the return of banks to health. Compared to the stress tests under the PCAR, losses associated with provisioning for bad loans already exceeded by June 2012 the base case scenario for the whole period 2011-13 (CBI, 2013), although they remain below those in the stressed scenario for which the banks were recapitalised to absorb. As a result of this and asset disposal costs being lower than in the stressed scenario, capital adequacy ratios have declined but they remain above the regulatory minimum in early 2013. The high level of non-performing loans undermines financial-market confidence in the banks and limits their access to funding, which in turns means that credit supply conditions, especially for SMEs, remain amongst the tightest in Europe. That said, financial market confidence in the banks has seen a significant improvement since 2011, as evidenced in the decline in the use of eurosystem funding by the banks and the issuance of new funding to private counterparties. A new round of stress tests will be completed ahead of but in close proximity to the European-wide bank stress tests scheduled for 2014.

Mortgage loans are a large part of the NPL problem. More than five years into the crisis, the banks' main response has often been limited to principal payment holidays or extended loan terms – a strategy dubbed "extend and pretend". Repossessions have been very low, even for investment properties, partly because of a legal lacuna which is being addressed. Repossession can provide an efficient means of dealing with investment

Figure 7. **Fiscal efforts to reduce government debt to 60% of GDP by 2030**



1. The average measure of consolidation is the difference between the primary balance in 2014 and the average primary balance between 2015 and 2030, except for those countries for which the debt target is only achieved after 2030, in which case the average is calculated up until the year that the debt target is achieved.

Source: OECD Economic Outlook 93 Long-Term Database.

StatLink http://dx.doi.org/10.1787/888932893715

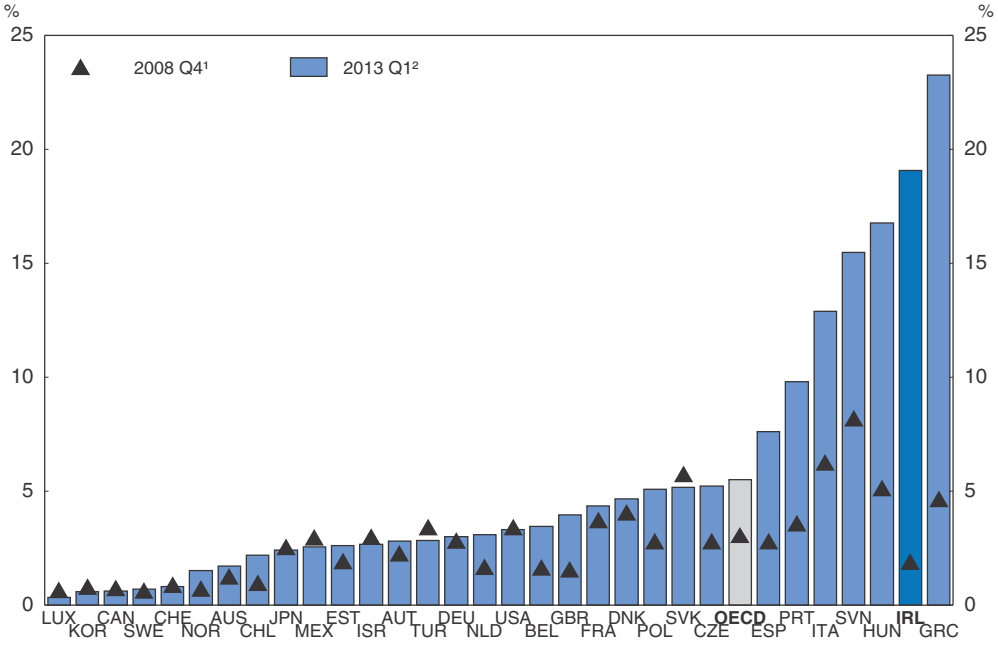
property loan defaults, but in the case of owner-occupied dwellings should be used only as a last resort.

The legislature passed legislation in late 2012 to overhaul personal bankruptcy and introduce a new personal insolvency regime, which is expected to be operational by mid-2013. In addition, the Central Bank of Ireland announced in March 2013 a new target-based framework for mortgage arrears. This involves quarterly quantitative targets for the number of problem loans to be dealt with on a sustainable basis by the principal mortgage banks. These are welcome steps, which should be followed by strong implementation, including regular progress reports. Fiscal constraints notwithstanding, the Government should stand ready to provide further staff for the new insolvency service should bottlenecks become apparent.

Ireland's SMEs still experience difficulties in relation to the supply and demand of credit. Availability of finance is tight, loan rejection rates are high, the banks are widening their interest-rate margins in their drive to restore operational profitability and credit growth is weak (Figure 9). The Government has set SME lending targets for the banks, which they have met; however two thirds of new SME lending is just rollover of existing loans and the overall stock of lending to SMEs is still declining (CRO, 2012).

Credit decisions tend to be overly mechanical and the banks are focussed on low to medium-risk lending only (CRO, 2012).The Government lending targets for 2013 are 14% higher than last year and both main banks are expected to meet these targets. The banks' weak operational profitability and the burden of tackling large bad loan problems, increase the importance of developing other sources of finance for SMEs, as discussed below.

Figure 8. **Ratio of non-performing loans to total gross loans**



Note: OECD area is the simple average of OECD countries for which data are available. The definition for impaired loan classification is not entirely standardised across countries. Many, including Ireland, are loans overdue for more than 90 days.

1. Or nearest quarter available. Year 2008 for Germany, Ireland and Switzerland; December 2008 for Chile and Mexico.
2. Or latest quarter available. 2011 for Germany and Switzerland; January and March 2013 respectively for Chile and Mexico.

Source: IMF, *Financial Soundness Indicators Database*.

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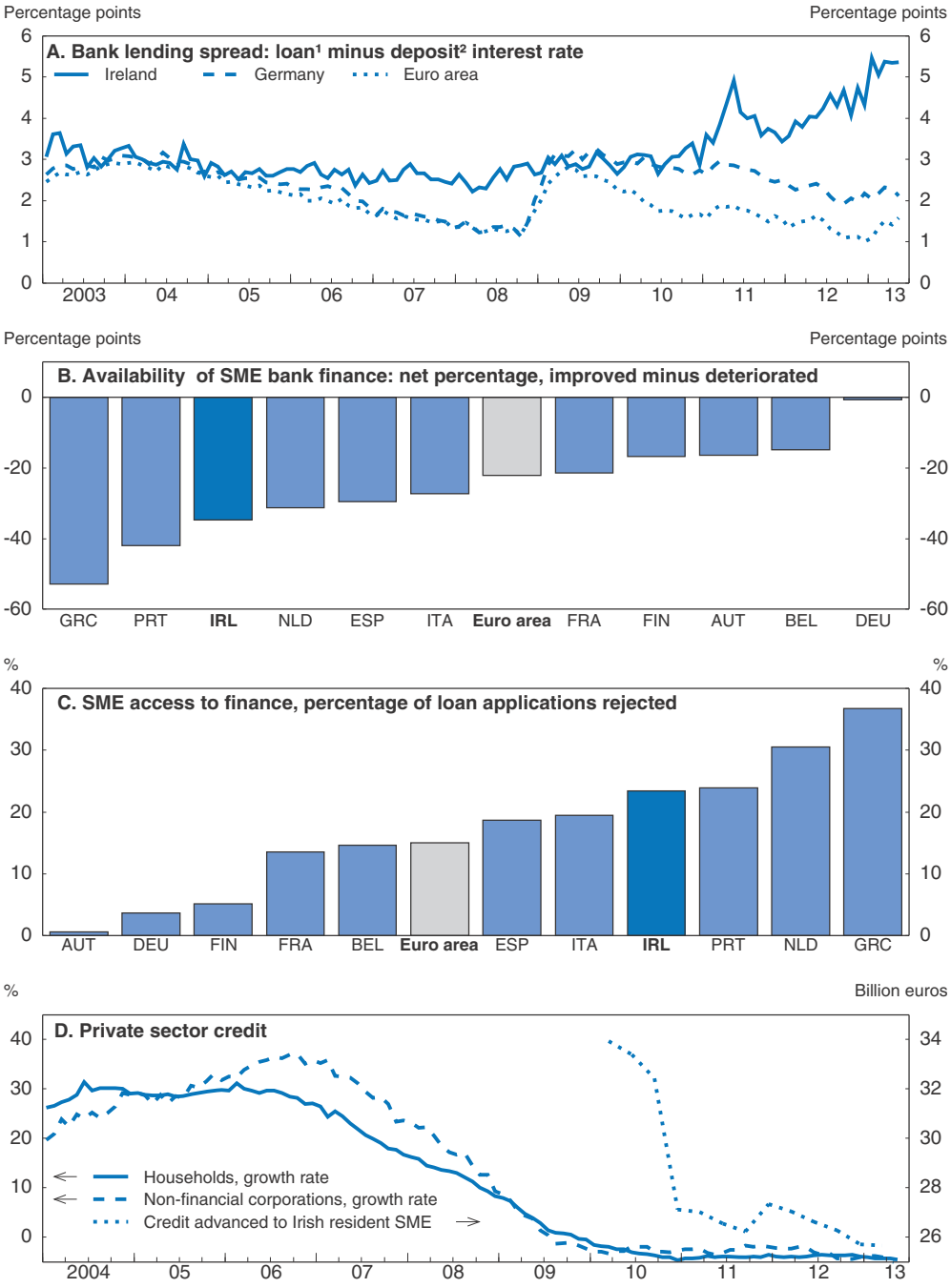
Risks to the outlook

There are risks both external and internal to the outlook. Ireland's growth outlook remains largely dependent on developments in its main trading partners, notably the euro area and the United Kingdom. Significantly lower growth in these countries would hurt exports and aggravate fiscal difficulties. Both the sovereign and the banks depend crucially on financial stability in Europe, so contagion from adverse financial events elsewhere remains a significant risk.

There are both external and domestic risks to the return of confidence and the revival of investment could take longer than expected which could delay the recovery of strong growth. The return to health of the banking sector could also be more protracted than hoped for. Lack of progress on mortgage and loans arrears may endanger the on-going balance sheet adjustments and thus the gradual recovery of domestic demand. Renewed downward pressure in house prices would also be unfavourable. The high saving rate and the low investment-to-GDP ratio offers scope for better medium-term prospects for domestic demand.

On the domestic side, there are also significant long-term risks for the fiscal position including failure to properly manage health and pension spending pressures associated with aging, and contingent liabilities linked with the banks and the National Asset Management Agency (NAMA). NAMA holds a portfolio of property-related loans worth approximately EUR 38 billion (including 12.9 billion issued in exchange for the Irish Bank Resolution Corporation Facility Deed), or 23% of GDP. Its failure to redeem the assets at or above their book value could trigger the Government guarantee of the Senior Notes that were used to acquire the loans.

Figure 9. **Financial conditions**



Note: The Panel B refers to the question: "for each of the following ways of financing, would you say that their availability has improved, remained unchanged or deteriorated for your firm over the past 6 months?" and the Panel C to: "if you applied and tried to negotiate for this type of financing over the past 6 months, did you receive all the financing you requested, or only part of the financing you requested, or only at unacceptable costs or terms and conditions so you did not take it, or you have not received anything at all?"

1. Loans other than revolving loans and overdrafts, convenience and extended credit card debt: Original maturity: over 1 year; amount category: up to and including EUR 1 million.
2. Deposits with agreed maturity; Original maturity with counterpart sector of households and non-profit institutions serving households.

Source: European Central Bank (ECB), SAFE – Survey on the Access to Finance of small- and medium-sized Enterprises – April 2012 to September 2012.

StatLink http://dx.doi.org/10.1787/888932893753

The labour market situation entails significant risks for long-term growth potential and debt sustainability. The emigration of young workers, skill mismatches and rising inactivity all threaten growth in the years ahead. In particular, persistent long-term unemployment may translate into structural unemployment and contribute to a lost generation of young talent.

Box 1. **Key recommendations on rebalancing the economy**

- To retain access to financial markets under sustainable and affordable terms, further reduce the public debt-to-GDP ratio. If growth projections are not met and if financial markets conditions are appropriate, the automatic stabilisers should be allowed to operate around the structural consolidation path.
- Fully implement the strategy to reduce non-performing loans taking account of the steps taken to date, so as to sustain on-going balance sheet adjustments, improve bank health and foster the gradual recovery of domestic demand.
- After exit from the current EU-IMF programme, consider international backstop options to provide support in the event of an unexpected shock.

Building a pathway towards robust, sustainable and inclusive growth

Ireland benefits from having introduced growth-friendly structural policies in the recent past, following up on OECD structural policy recommendations (Annex A.1), and international comparisons show substantial payoffs in terms of well-being, equity, pollution and ease of doing business (Annex A.2, Table A2.1). There is nonetheless room for further improvement, including in areas where policy settings are relatively strong (Annex A.2, Table A2.2).

Improving the business environment

Although Ireland is ranked as the 15th easiest place to do business (Annex A.2, Table A2.1) and it enjoys a light-handed regulatory approach, there is scope to improve the business environment. Ireland's enterprise sector, as measured by birth and death rates, is not as dynamic as in many other OECD countries and firms that employ fewer than 10 employees account for a lower share of employment than average. In addition to measures deemed to boost SME innovation (discussed below), various steps could make doing business easier.

- *Reforming the legal system*. Enforcing contracts and registering property remain difficult for business (Annex A.2, Table A2.2) due to legal and court fees, time delays and high insolvency proceedings costs. Increasing competition in, and better regulation of, the legal profession would reduce these costs. The OECD's Product Market Regulation (PMR) for the legal profession shows that Ireland ranks around the middle of the OECD in terms of restrictiveness, though it is more restrictive in particular areas, including legal education and the types of co-operation allowed (Annex A.2, Table A2.2). The new Legal Services Regulatory Bill that, *inter alia*, establishes an independent legal services regulator, would substantially improve competition and it should be passed without delay. A conveyancing profession, the introduction of which substantially reduced costs in the United Kingdom (Goggin, 2011), should be introduced in Ireland as well.

- *Reforming licence and permit regulation and local government funding*. The OECD's index of product market regulation (PMR) shows that barriers to entrepreneurship are high, with licence and permit regulations being amongst the most restrictive. This is largely due to high fees and excessive delays for planning permissions, fire safety and disability certificates (Annex A.2, Tables A2.1 and A2.2). Also, local Government revenue should continue to shift away from planning charges, which distort investment decisions (Gorecki et al., 2011), towards more stable recurrent property taxation.
- *Increasing competition in utilities*. The incumbent Electricity Supply Board's (ESB) connection fees and time delays remain large, and vertical integration in electricity and gas is too high (Annex A.2, Table A2.2). Ownership of the electricity transmission grid should be transferred from ESB to the grid operator, Eirgrid. ESB's generation business should also be separated into competing generating companies and partially privatised.
- *Reducing standard business-to-business credit periods and eliminating contracting out*. Large firms with market power often contract out from standard business-to-business credit periods, dictating long credit periods to SME suppliers, and thereby putting them under cash-flow pressure.

Improving the government's expenditure and revenue mix

To minimise harm to long-term growth and equity, fiscal consolidation should prioritise the reform of pensions, subsidies, tax expenditures, property taxes and environmental taxes (Cournede and Pina, 2013). The Irish fiscal programme focused on such priorities, with increases in the pension age and higher fuel excise taxes. A new residential property tax is also expected to raise revenue by 0.15% of GDP in 2013 and 0.3 % in 2014. This is a welcome way to broaden the tax base because taxes on immovable property appear to have the least harmful impact on economic growth (Johansson et al., 2008) and provide more stable revenues than transaction-based taxes. The payment is based on the assessed value of the taxpayer's home, with two tax rates differentiated according to the value of the property, sharing some similarities with a progressive wealth tax. Using it to finance local government, as envisaged, also provides that level of government with a more stable funding and encourages greater accountability from local authorities.

There is potential to further reform pensions and reduce tax expenditures. As recommended in the recent *OECD Review of the Irish Pension System*, Ireland should consider a structural change of the state pension scheme (moving to either a universal basic pension or a means-tested basic pension) complemented with either mandatory or auto-enrolment with opt-out in private pension schemes. Reducing tax expenditures would both lower distortions to growth and improve equity. Tax breaks for health and child care, education, owner-occupied housing and retirement savings often fall into this category (Rawdanowicz et al., 2013).

Reducing the public service pay bill involves difficult trade-offs in terms of numbers and pay cuts. Pay cuts spread the burden more widely among government workers than job cuts although efficiency considerations should be taken into account. Following large increases in the total paybill cost (through increases in both rates and numbers) in the decade prior to 2008, public-sector wages have been cut a number of times during the crisis. Average reductions in pay of some 14% were applied to all public servants in 2009 and 2010 and public sector occupational pensions were reduced in 2011. Notwithstanding these reductions it has been possible to secure agreement with public sector staff to deliver

substantial cost reductions and efficiencies alongside industrial peace and avoid potential negative impacts on equity and growth from disruptions to public services. With the aim of securing a further substantial saving in the public service pay and pensions bill to 2016, further reductions of between 5.5% and 10% of wages were applied to higher paid staff on 1 July 2013, with parallel reductions to higher level occupational pensions. The latest agreement with staff, the Haddington Road Agreement, provides for substantial productivity increases and cost reductions; it came into force in parallel with the pay reductions. Increasing public-sector efficiency, without compromising its quality, has a role to play in ensuring longer term growth, especially in the health care sector, where international benchmarking suggests that Ireland lags behind (OECD, 2010; Redmon, 2012). Systematic hospital benchmarking and concentrating specialised medical services could bring both efficiency and patient safety gains.

It is important that the tax and welfare systems operate to minimise disincentives to work especially for low-wage workers. This requires a careful and granular review of the interactions between tax and benefits for certain segments of the population to make work pay more *vis-à-vis* benefit receipt. Minimising disincentives to work is important because the risk of long-term poverty is much higher for jobless individuals on benefits than for employed people. Ireland has the highest proportion of population in jobless households in the EU, and it was the second highest prior to the recession (Watson et al., 2012).

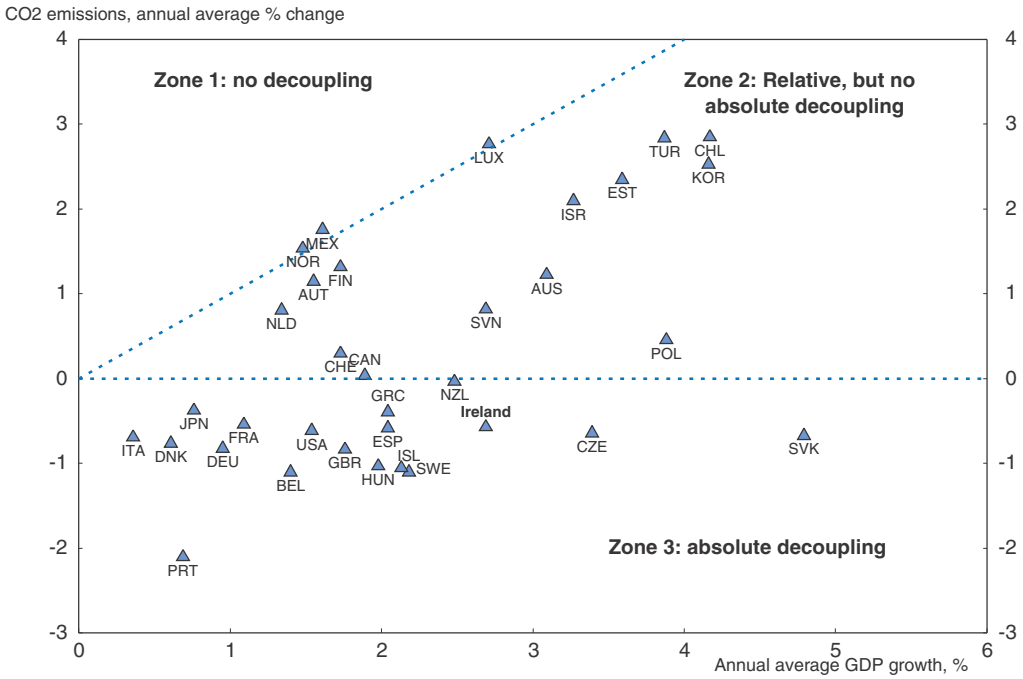
To ensure the medium-term stability and credibility of the tax system, it is essential that the Government remains proactive in the on-going international efforts to co-ordinate tax standards and avoid base erosion and profit shifting. The Irish authorities have recently completed the ratification of the OECD Convention on Mutual Administrative Assistance in Tax Matters, which provides for mutual assistance between the parties to the convention in relation to the exchange of tax information, recovery of taxes and service of documents. Ireland was also one of the first countries in the world to sign an agreement with the United States to improve international tax compliance and implement the Foreign Account Tax Compliance Act to establish automatic exchange of tax information. Ireland has remained actively involved in the action plan following OECD's Base Erosion and Profit Shifting report. Ireland's effective corporate tax remains close to the statuary 12.5% tax rate and is a central element in its foreign direct investment model. Ireland should continue to update domestic tax rules in line with new international standards as the best way to remain attractive for foreign direct investment vital for economic growth, while preserving its reputation for international co-operation on tax issues.

Make environmental protection and economic development more mutually supportive

Ireland has made some progress in decoupling its environmental footprint from economic growth (Figure 10), although per capita CO_2 emissions are still amongst the highest in the OECD. The share of renewable energy production has grown, albeit from a low base (OECD, 2010a), but 88% of electricity generation was still based on fossil fuels in 2011 (SEAI, 2012), while the EU average is around 40%. Ireland is committed to producing 40% of electricity from renewable resources by 2020 and is making progress towards the target by rapidly increasing wind generation.

Past economic growth was accompanied by a rapid expansion in road transport and urban sprawl. As a result, land covered with buildings and roads has increased by 15% since 2000 (EEA, 2010). Waste generation per capita is amongst the highest in the OECD and there is a high reliance on landfills. Also, agriculture makes more use of nitrogenous

Figure 10. **CO_2[1] emissions and real GDP changes, 2000-10**



1. CO_2 emissions from fuel combustion. Sectoral approach.
Source: IEA Database.

StatLink http://dx.doi.org/10.1787/888932893772

fertilisers compared to other European countries, nitrogen levels in rivers and groundwater are on the rise and water losses through leakages in distribution are substantial.

Tax and user fee policies have a role to play in addressing these environmental challenges. Ireland's environmental taxation revenue as a percentage of GDP is around the middle of the OECD, though significantly below the leading country in the OECD, Denmark. The Government has improved the tax, charges and subsidy policy mix to ensure pricing better reflects environmental impacts, and it is introducing water metering and charges for households, but more could be done. In particular, the Government should narrow the gap between the taxes on diesel and petrol, because diesel produces more NO_X and particulate matter per litre (OECD, 2010a). In addition, road pricing in Dublin would provide funds for public transport. Better public transports in the metropolitan area would increase equity and improve work prospects. Waste management can (subject to an *ex ante* cost-benefit analysis) be better tackled by extending producer responsibility initiatives to take back waste materials to a wider range of end-use products (OECD, 2010a), which would also incentivise innovation. The Government plans to require households to have a waste collection provider to reduce illegal dumping and to link charges with waste produced, which has not been the case in the past (DECLG, 2012).

Strengthen confidence in government institutions by increasing transparency

Ireland is ranked 25th out of 176 countries in terms of the perception of corruption and 50th out of 144 in terms of public trust of politicians (Transparency International, 2012; World Economic Forum, 2013) – far below the leading small economies of the OECD. The Government can increase public trust and ultimately its capacity to implement reform

through greater openness, scrutiny and accountability. The Government is implementing a major reform programme to improve openness, transparency and accountability including: the reform and extension to all public bodies of Ombudsman legislation (enacted 2012); a comprehensive legislative framework for parliamentary inquiries (Bill introduced in parliament May 2013); whistle-blowing protection for workers (Bill being drafted); reform and extension to all public bodies of Freedom of Information (Bill being drafted); lobbying regulation; and reform of ethics legislation. As part of this comprehensive package, the Government could consider instituting practices that are compulsory or routine in many other OECD countries: on-line official information requests, automatic publication of administrative datasets and audit documents, and declaration of liabilities (in addition to assets, as now) by senior members of all Government branches.

Box 2. **Recommendations for reinvigorating growth**

Key recommendations

- While Ireland is generally business friendly, there is a need to prioritise further structural reforms. To ease doing business, increase competition in legal services and reduce licence and permit fees and waiting times.
- Continue to emphasise fiscal measures that minimise harm to growth and equity, such as the residential property tax. Review existing tax and welfare structures to address better labour force participation of low-wage workers.
- Address long-term spending pressures in the pension system. Place environmental protection more at the centre of the tax, charges and subsidy policy choices.

Other recommendations

- To improve public trust in Government, increase transparency and accountability of Government institutions.

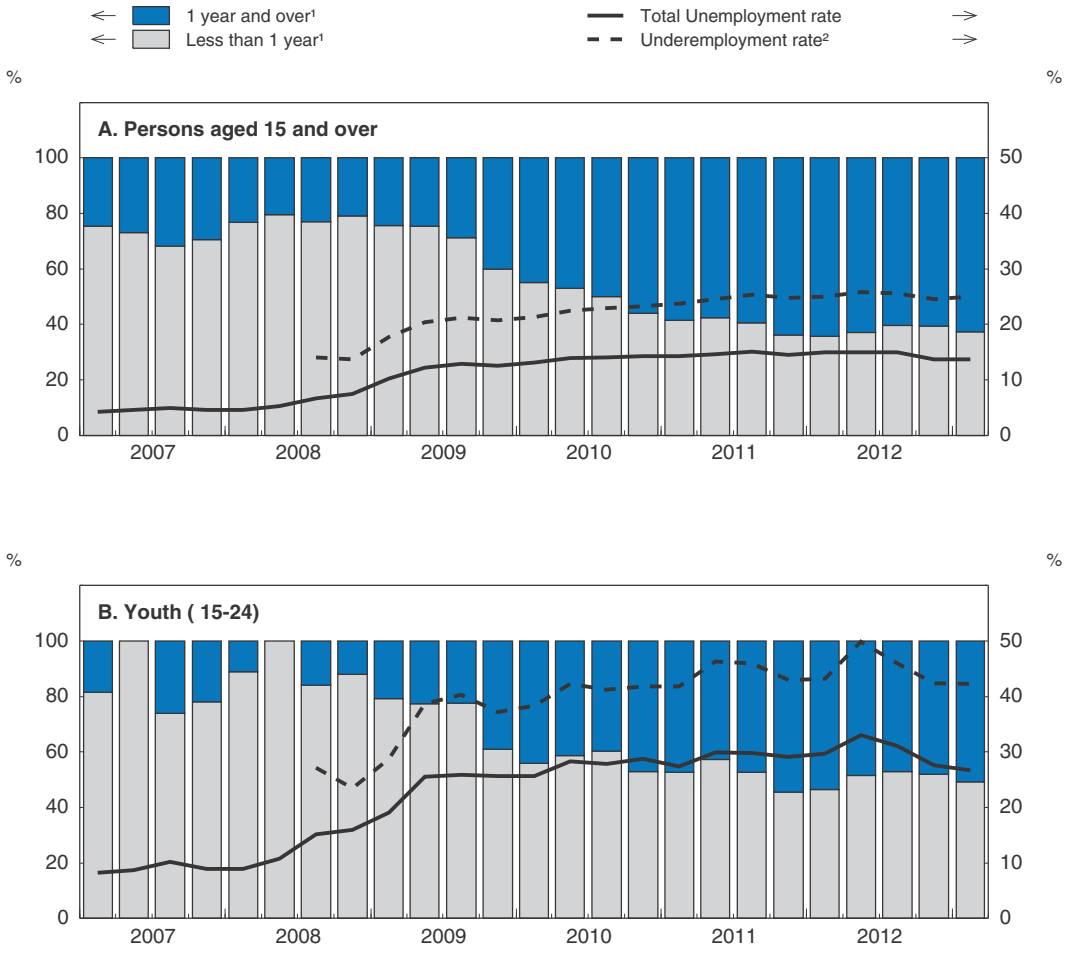
Labour and social policies

The slow recovery of the Irish economy is leaving behind far too many for far too long. The unemployment rate recently began a moderate decline but nearly 14% of the labour force remains unemployed, with more than 60% having been unemployed for more than twelve months, one of the highest shares in the OECD (Figure 11). Long-term unemployment affects workers in all age groups and education levels. Since the outset of the crisis, the labour force has decreased by 6%, reflecting the largest rise in inactivity among OECD countries and the increasing emigration.

Job losses have been especially large among low-skilled workers (Figure 12). For example, the number of workers employed in construction in 2012 is below that in 2000. By contrast, high-skill jobs can be sometimes difficult to fill, suggesting significant skill gaps, as shown by comparing skill profiles in the population and in employment (Figure 13). Some are attributable to cyclical conditions, but there are important skill shortages in such expanding sectors as information and communications technology (ICT), engineering and internationally traded services.

Young people have been affected particularly hard (Figure 12): they have been subject to falling participation, rising outward migration, and high unemployment. Taking into

Figure 11. **Unemployment by duration**



1. Share in total unemployment.
2. Accounting for involuntary part-time workers and workers only marginally attached to the labour force (PLS4 indicator).

Source: Central Statistics Office and Eurostat.

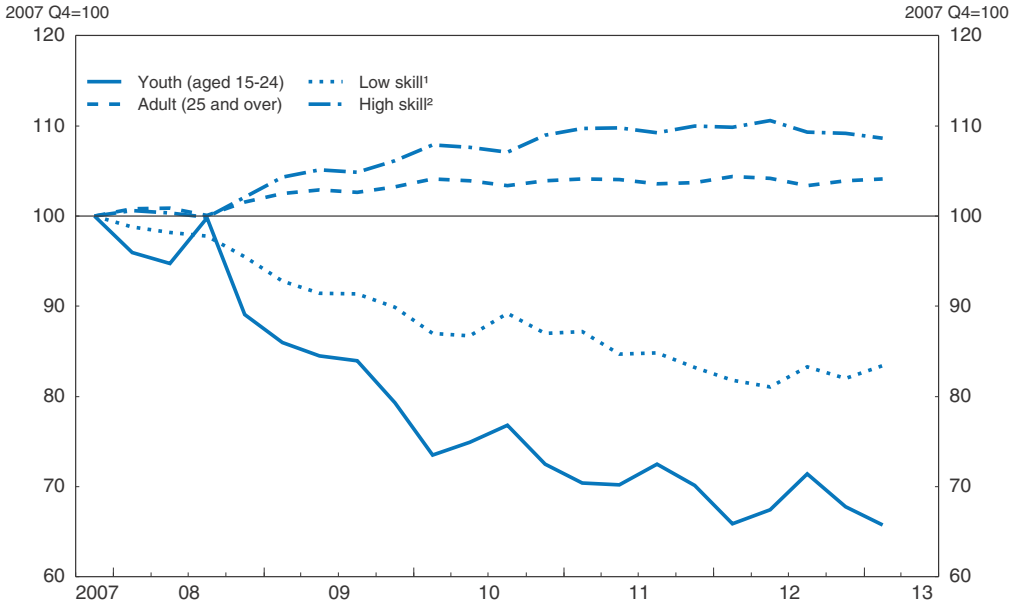
StatLink http://dx.doi.org/10.1787/888932893791

account involuntary part-time work and workers marginally attached to the labour market, the youth unemployment rate is closed to 45% (Figure 11). Ireland has also one of the largest shares of youth who are neither in employment nor in education (NEET) (Figure 14). This is the segment of the youth population that is at greatest risk of becoming permanently disengaged from the labour market. Other EU countries face similar problems, triggering initiatives at EU level to establish a *Youth Guarantee Scheme* and the OECD's *Action Plan to Tackle Youth Joblessness*.

Reflecting high unemployment and rising inactivity, Ireland also ranks unfavourably when looking at other joblessness indicators. The proportion of the population living in a jobless household is higher in Ireland that in any other EU country. Of particular concern is that 20% of children are living in households where no one works (Figure 15). This is the highest proportion in the EU, indicating serious risks of the persistence of social exclusion.

Higher aggregate demand and job creation are essential for bringing down unemployment. But they will not be sufficient. Decisive interventions in labour market policies are also needed to avoid the unemployment rate remaining high for many years to

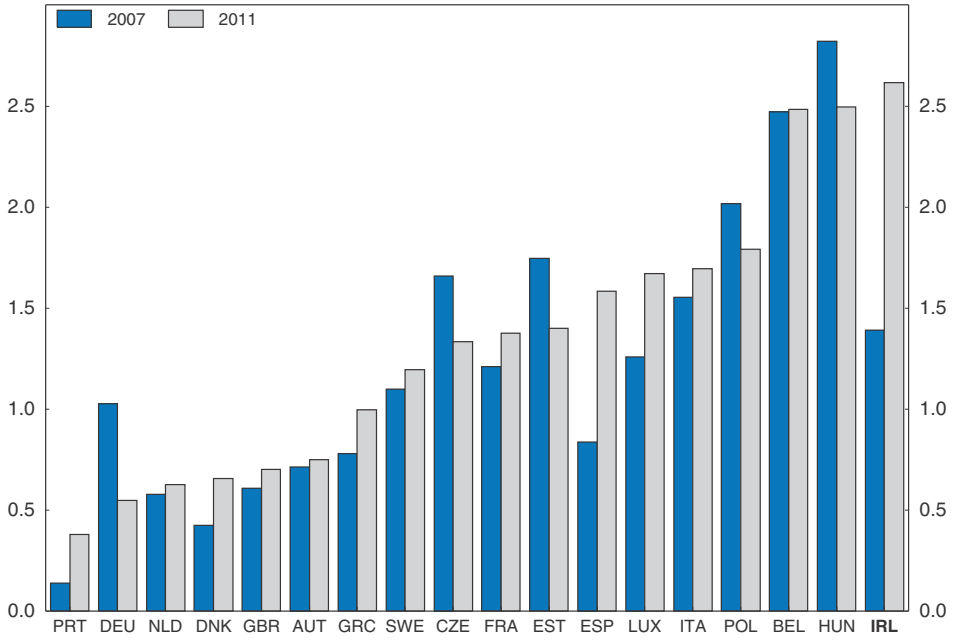
Figure 12. **Employment ratio**



Note: Ratio of employment rate of each group to total employment (15 and over).
1. Low skill refers to pre-primary, primary and lower secondary education (levels 0-2), ISCED 1997 levels.
2. High skill refers to first and second stage of tertiary education (levels 5 and 6), ISCED 1997 levels.
Source: Eurostat.

StatLink http://dx.doi.org/10.1787/888932893810

Figure 13. **Skills gap index**

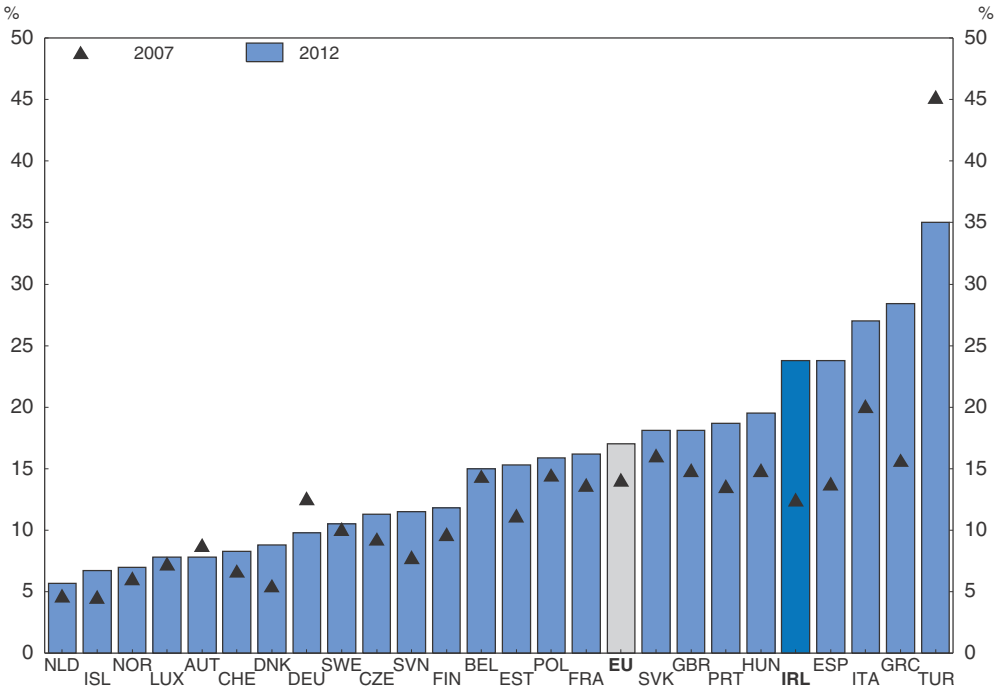


Source: Own calculations following Estevão et al., based on Eurostat data.

How to read this figure: The skills gap index is computed based on the gap between the proportion of the low, medium and high skilled in the working population and the corresponding proportion in employment. A rise in the index reflects increasing skill mismatches. For example, for Ireland the index increase from 1.4 in 2007 to 2.6 in 2011. This reflects that the gaps between the skills in the working population and those that are in employment have widened in that period.

StatLink http://dx.doi.org/10.1787/888932893829

Figure 14. **NEET rates among youth[1] in European countries**



1. Persons aged 15-24.
Source: Eurostat.

StatLink http://dx.doi.org/10.1787/888932893848

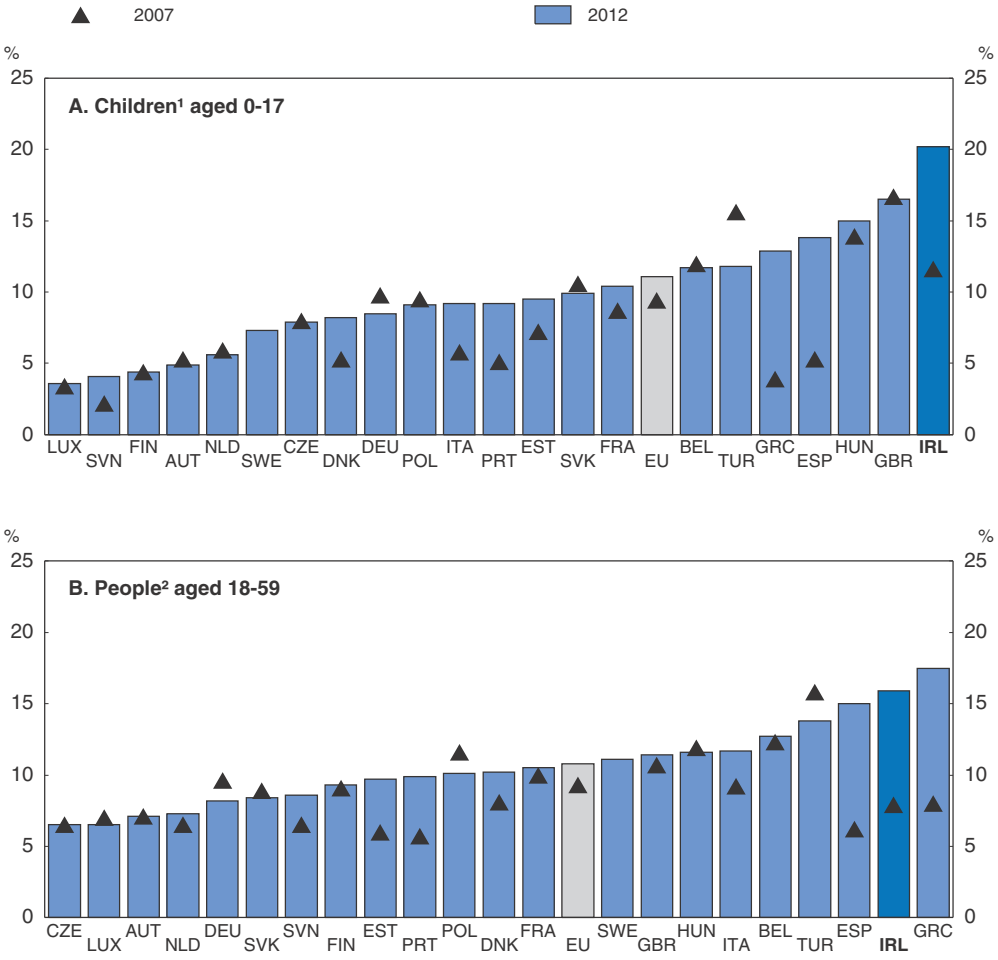
come, risking a rising structural unemployment rate, which would hamper growth and exacerbate inequality and social exclusion. Six years after the crisis began, multiple steps in the right direction are being made, though current plans leave the long-term unemployed without appropriate activation and support. Thus, there is a high risk that these people will be simply left behind as permanent casualties of the recession as new and better qualified job seekers, including immigrants, take advantage of the recovery.

Labour-market policy reforms are underway

Labour-market activation policies were relatively weak in Ireland prior to the crisis and previous *Economic Surveys* have recommended increasing engagement with jobseekers and intensifying job-search monitoring and counselling. In line with these recommendations, several labour-market reforms have been introduced. In February 2012, the Government launched "Pathways to Work", which, in line with reforms in other OECD countries, merges employment services and benefit administration into one-stop-shops, called "Intreo offices" providing a single point of contact for all employment and income supports. The reform introduces the profiling of all new jobseekers to determine their probability of exit from the unemployment register and establish an adequate support plan. Jobseekers face sanctions in case of non-compliance. Full roll-out is expected by end-2014.

For now, however, only new jobseekers are fully covered by Intreo, leaving about 85% of the registered unemployed without access to Intreo support, in particular the long-term unemployed. Despite a commitment in 2012, as part of "Pathways to Work", to also devote efforts to the existing cohort of long-term unemployed (GOI, 2012), to date, most of them have not yet received the one-to-one interview where the needs of the individual are

Figure 15. **Population in jobless households**



1. Share of persons aged 0-17 who are living in households where no-one is working.
2. Share of persons aged 18-59 who are living in households where no-one works.

Source: Eurostat.

StatLink http://dx.doi.org/10.1787/888932893867

assessed by a caseworker and a personalised action plan is drawn-up and initiated. Maintaining long-term unemployed outside Intreo has a detrimental impact since activation is delayed and scarring continues.

Limited resources are devoted to job-search assistance (Table 3, "placement and related services"), even though this tends to be one of the least costly active labour market policies (Martin, 2000; Kluve, 2006) and has been shown to increase the probability of returning to work (McGuinness et al., 2011). While there are plans to double the number of caseworkers, at present each caseworker oversees approximately 800 jobseekers, which is very high by international standards. To reach more long-term unemployed persons, the Government is considering contracting out activation to private providers. The involvement of private sector service providers was already envisaged at the launch of "Pathways to work" (GOI, 2012) but no final decision has been taken yet, and it will take at least an additional year to set up the actual service provision. Experiences in other countries suggest that, if properly designed, contracting out can make a positive contribution but there are difficulties in implementing it in an effective way and empirical

Table 3. **Spending on active labour market programmes**

As a percentage of GDP

	Ireland		United Kingdom		Nordic countries[1]		Other OECD Europe[2]	
	2007	2010	2007	2009	2007	2010	2007	2010
Public employment service and administration	0.12	0.18	0.27	0.34	0.19	0.36	0.14	0.17
Of which:								
Placement and related services	0.04	0.05	0.14	0.19	0.08	0.21	0.06	0.07
Benefit administration	0.03	0.08	0.06	0.07	0.06	0.08	0.05	0.05
Training	0.26	0.46	0.02	0.02	0.26	0.31	0.13	0.17
Direct job creation	0.21	0.25	0.01	0.00	0.03	0.04	0.08	0.10
Other active measures[3]	0.05	0.07	0.02	0.02	0.46	0.56	0.20	0.27
Memorandum:								
Active measures (total)	0.64	0.96	0.31	0.38	0.95	1.40	0.56	0.73
Active measures excluding direct job creation	0.43	0.71	0.30	0.38	0.91	1.37	0.49	0.63
Passive measures (total)	0.92	2.98	0.16	0.32	0.97	1.21	0.80	1.18

1. Simple average of Denmark, Finland, Norway and Sweden.
2. Simple average of EU-15 excluding Ireland and Finland plus Czech Republic, Hungary, Poland and Switzerland.
3. Job rotation and job sharing, employment incentives, support employment and rehabilitation and job start-up incentives.

Source: OECD/Eurostat Labour Market Programmes Database.

research suggests that contracting out may create a substitution effect, whereby those assisted by external providers displace other unemployed with no net effect on reducing unemployment (Crépon et al., 2013). As delays risk greater social exclusion and marginalisation, the number of caseworkers in Intreo should be further increased as soon as possible, through further internal redeployment, to provide long-term unemployment with engagement and support.

Training should be demand-driven to foster labour reallocation

The highest qualification of seventy-five per cent of those in long-term unemployment is a leaving certificate (equivalent to a secondary level qualification) or below. This group requires substantial training to acquire the skills and competencies demanded by job-creating sectors. So far the authorities have only partially responded to such needs. A new agency, SOLAS, to oversee the delivery of training to the unemployed, was announced in mid-2011 but had not begun operating two years later. It will also eventually be responsible for vocational training and other forms of further education. SOLAS should ensure that training is tailored to the evolving needs of participants and employers. In particular, recent evidence indicates that certain qualifications that significantly raised the probability of employment before the crisis (e.g. post-leaving certificate) no longer have such a decisive impact, while other qualifications (e.g. third-level qualifications) provide better prospects for exiting unemployment (Kelly et al., 2013).

The emphasis should be on courses providing the participants with high-level skills in fast-growth areas and that include a job placement component. This involves a tricky balancing act to ensure that participants can really build advanced skills, while gaining experience. Progression pathways between different education levels need to be established and long-term unemployed may require some pre-training schemes before entering other education programmes. New thinking about the approach to third level education courses, such as concentrating theory segments in blocks alternated with work placements will also be required. At the vocational level, the recently-launched *Momentum*

programme seems to answer this need, although its scope so far is limited. At tertiary level, *Springboard* and the *ICT skills conversion* programmes, some of which are oversubscribed, establish clear links to current and emerging labour market needs. In these three cases, a thorough evaluation of the outcomes of the schemes should be undertaken and, if the initial promising results are confirmed, the programmes should be expanded.

Internships allow younger workers to get a foothold in the labour market by gaining valuable working experience. *JobBridge* is the new National Internship Scheme, which seems to have good outcomes, partly reflecting that qualified participants with significant previous working experience enter the scheme. The authorities plan to double the number of places on *JobBridge* over the next year. It will also be important to increase the participation of youth without previous experience and of long-term unemployed. The apprenticeship system is geared towards providing relevant skills for the construction sector. As already recommended two years ago in the *previous OECD Economic Survey of Ireland*, the system needs to be adapted to the new economic environment to provide skilled workers to expanding sectors and engage SMEs in their design and delivery.

As part of the *Action Plan for Jobs 2013* a new initiative, *JobPlus*, will provide employers who hire a long-term unemployed person with a cash payment. Several similar programmes have suffered from low take-up, partly due to lack of awareness by employers and perhaps also reflecting too-high wages for the low-skilled in the current weak economic environment, particularly for SMEs. Compared to the median wage, the minimum wage does not stand out in international perspective (Figure 16), but the gap with the United Kingdom widened after the economic crisis. In conjunction with other relevant parameters, the Government should ensure that the minimum wage does not hamper employment of low-skilled workers and young people.

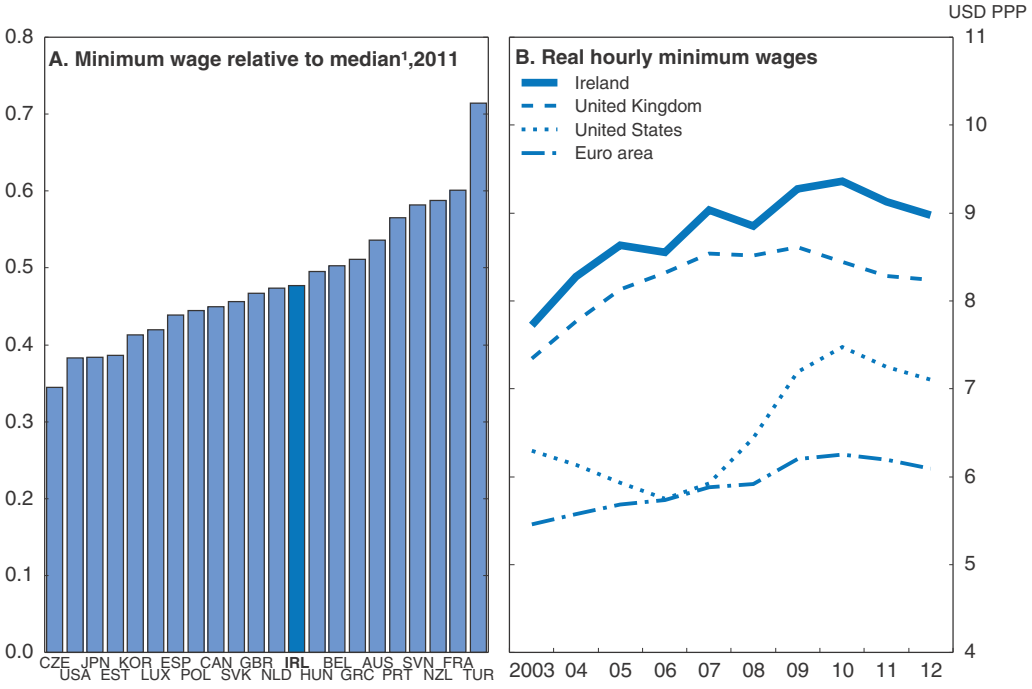
Given budgetary constraints, it is essential to prioritise programmes with proven effectiveness in raising the employability of participants, while phasing down those that do not help a return to work. For that, systematic and statistical-based independent evaluations of existing and new policies should be established. When launching a new programme, the structure to allow for the continuous evaluation should be also set-up. Resources should be reallocated to those policies found to increase the employability of participants to the detriment of less successful schemes.

More targeted and comprehensive policies for disadvantaged

Those disadvantaged from personal circumstances, such as disability or illness, or from unfavourable social background require more specific forms of support (OECD, 2010b). Schemes, such as the ones being provided by *Youthreach*, where participants received more inclusive and specialised attention, including adult mentoring, seem to offer good outcomes. Youth suffering from disability enter into disability benefits at an early age, and disability assessments, contrary to international best practice, are based on medical diagnosis rather than an evaluation of work ability. Those out of work because of disability should receive greater attention from activation programmes to facilitate their reintegration into the labour market.

Irish social enterprises, which encompass non-profit institutions and for-profits whose driving purpose is social, employ a large number of disadvantaged or marginalised people, but the sector is underutilised compared with other European countries, and has potential for expansion. To realise such potential, the sector should have access to the

Figure 16. **Minimum wage**



1. Minimum wage relative to median wages of full-time workers.
Source: OECD Minimum Wages and Earnings Database.

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same kinds of Government support as conventional enterprises, including access to finance, knowledge sharing and business support services.

Ireland's strong social support system has cushioned the impact on poverty

Poverty and social exclusion have increased since the onset of the crisis, as shown by the "anchored" poverty rate, which measure poverty in relation to a fixed median income level and rose by nearly 4 percentage points from 2007 to 2010 (OECD, 2013b). Ireland´s strong welfare system has cushioned the impact of poverty: if all social transfers were excluded from income, the relative at-risk of poverty rate would substantially increase to 51% (CSO, 2013). This rate is steadily rising reflecting an increasing dependence of individuals on social transfers to avoid poverty.

The Irish welfare system provides a critical and effective safety net, but it is essential to support the return of displaced workers to the labour market as the unique way to escape the risk of social exclusion. This involves a difficult trade-off between maintaining incomes at levels acceptable to Irish society and ensuring that people do not end up in welfare traps where the immediate income incentive to work is weak, locking them out of the long-term income and wider social benefits of employment. Prior to the recession passive labour market policies were accompanied with little monitoring and mutual obligation requirements. As the economic recovery strengthens, and employment prospects brighten, the emphasis should be re-geared towards active measures. It will become increasingly important to ensure stricter and rigorous mutual obligations regimes and to adjust the tax and welfare mix (discussed above) to reduce such traps. Welfare and tax adjustments should be made based on micro-based evidence that identify particular

groups where the disincentive to work is high. For example, such evidence suggests that around 8% of the unemployed face a replacement rate of over 100%, often due to the receipt of housing related benefits that are available when in unemployment but rarely when in employment (Callan et al., 2012).

Box 3. **Recommendations on labour market activation policies**

Key recommendations

- To avoid rising structural unemployment and a drift into social exclusion, prioritise engagement with the long-term unemployed and increase the number of caseworkers supporting them, through internal redeployment.
- To reduce mismatches between supply and demand of skills, better align the content of education and training schemes so that they provide skills required in the expanding sectors.
- Focus limited fiscal resources on policies empirically-proven to improve employability; this will require systematic evaluation of labour-market programmes through consistent tracking and randomised trials, followed by decisions to close down ineffective schemes while strengthening successful ones.

Other recommendations

- To minimise the detrimental and enduring impact of long-term unemployment, establish a youth compact whereby those in unemployment will receive a compulsory offer of training, work or a combination.
- To avoid the perpetuation of social exclusion and risk of poverty, put a stronger emphasis on encouraging and facilitating the return to work of those more detached from the labour market.

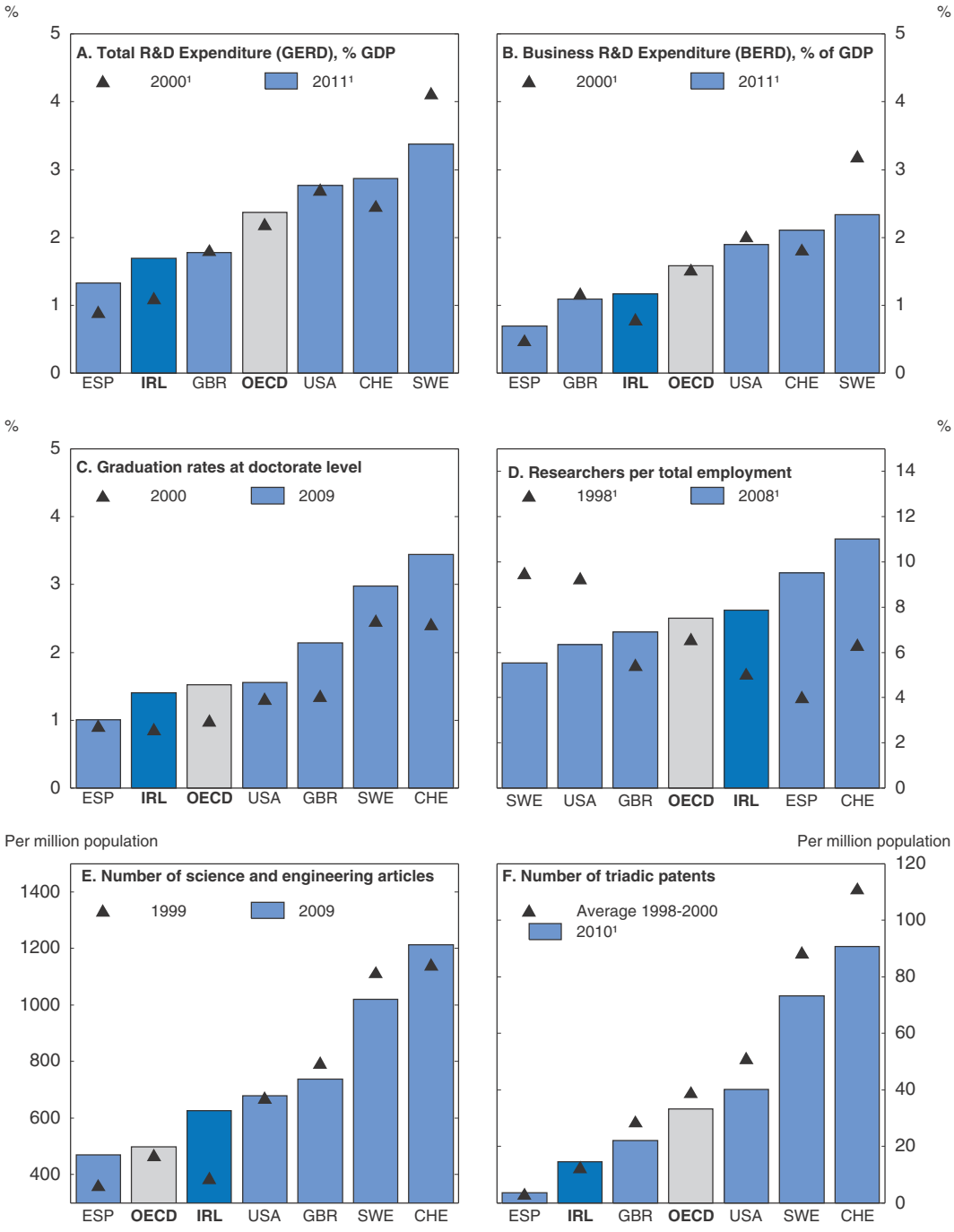
Improving the environment for innovation and entrepreneurship

Ireland offers an environment auspicious to innovative firms (Global Innovation Index, 2012), reflecting strong institutions, fine universities, good infrastructure and a well-educated workforce. However, innovation is concentrated in multinational firms, while domestic ("indigenous") SMEs lag behind. A broader diffusion of innovation would be conducive to stronger economic performance, as investing in innovation is linked with increased productivity and growth (Box, 2009) and innovative new firms tend to be the greatest contributors to job creation (Lawless, 2013, OECD, 2012a). In Ireland, firms with greater sales due to innovation are more productive (Squicciarini et al., 2013). The Government has expanded the innovation system from a relatively low base during the past two decades (Figure 17). More recently, it has decided to focus a large part of its research spending on 14 priority areas. Nonetheless, more could be done to promote innovation and entrepreneurship.

Enhancing the institutional framework for innovation and enterprise supports

Further promoting research activity would require additional budget funding, which at present is lacking. These fiscal constraints put a premium on effective allocation to areas of highest returns, requiring regular, independent evaluation of research programmes and innovation supports. As there is a particularly high level of uncertainty about which policy tools are the most effective, the authorities should stand ready to reallocate resources. This

Figure 17. **The expanding Irish innovation system**



1. Or nearest/latest data available.

Source: National Science Foundation, National Center for Science and Engineering Statistics, and The Patent Board, Special tabulations (2011) from Thomson Reuters, SCI and SSCI, *http://thomsonreuters.com/products_services/science*; *OECD Science, Technology and Industry Scoreboard 2011*, OECD 2011 and *OECD Main Science and Technology Indicators Database*.

StatLink http://dx.doi.org/10.1787/888932893905

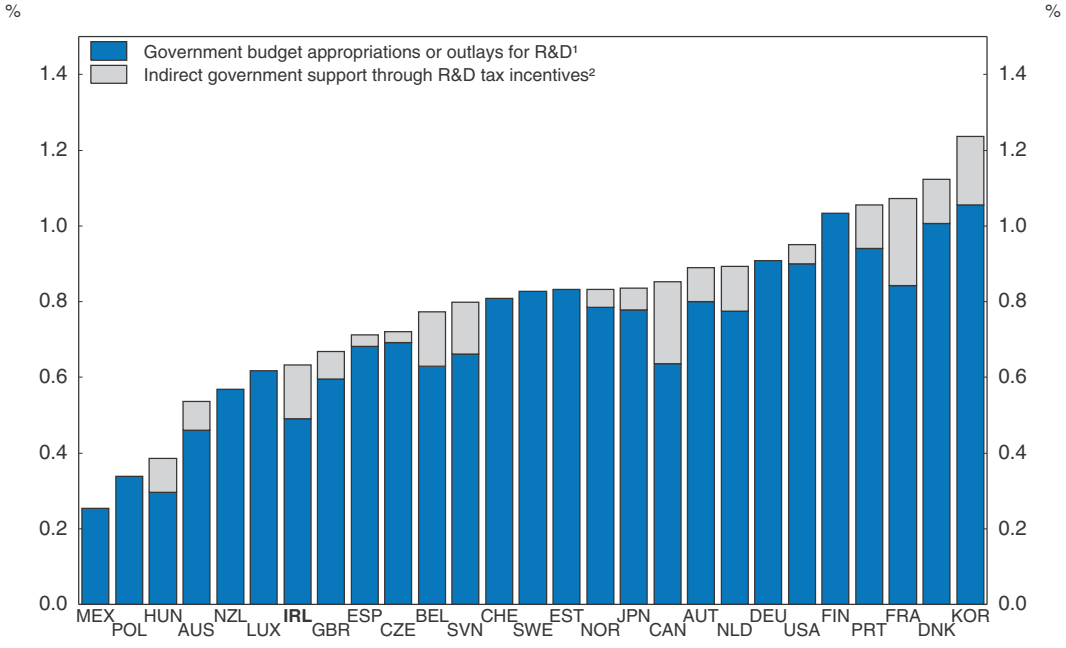
involves rigorous evaluation of programmes, shutting down those that are shown not to work, while expanding the most effective schemes. Given political-economy realities and resistance to change, sunset clauses attached to innovation and enterprise support programmes would help to enforce such a policy. Although sunset clauses reduce the

certainty of funding, they would speed up the reallocation of funds to the most effective programmes. In this context, it is welcome that the government launched a review of the R&D tax credit, following an increase in its generosity over time.

The number of programmes and agencies multiplied during the period of booming growth. There are now over 170 separate budget lines, sometimes for very small amounts of money, and 11 major funding agencies involved in disbursing the Science Budget, although it is small by international standards (Figure 18). This fragmentation raises overheads, risks duplication and hampers resource reallocation. Gains would be achieved by consolidating funding into a drastically smaller number of agencies, with one group dealing with science and basic research, and another with applied research and innovation. This should be coupled with a high-level co-ordination committee to prevent gaps or duplication. This division between basic research and business-orientated innovation is the norm in almost all other small OECD countries and reflects the large differences in the types of activities, rationales for support and policy instruments. Consolidation would also make it easier to evaluate the overall economic impact of the innovation system and improve the Government's ability to direct investment for maximum returns.

Figure 18. **Government support for research**

As a percentage of GDP



1. 2012 or latest year available. Measures the funds committed by governments for R&D to be carried out domestically or abroad (including by international organisations).
2. 2009.

Source: OECD Main Science and Technology Indicators Database.

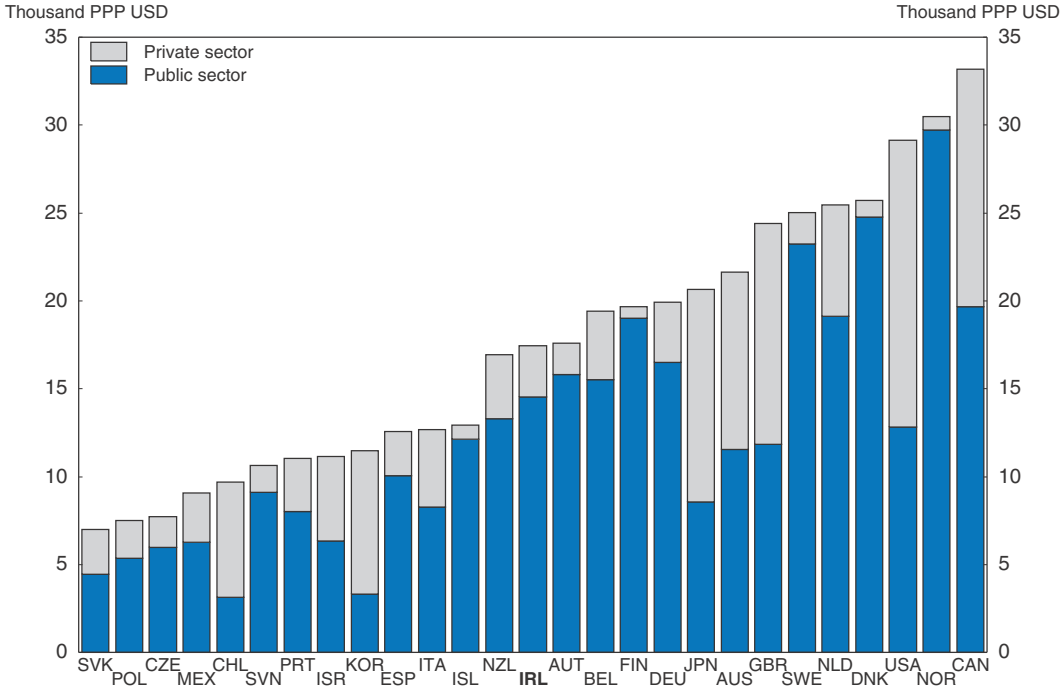
StatLink http://dx.doi.org/10.1787/888932893924

A proliferation of innovation agencies and programmes is a frequent problem. Several countries, including Austria, Finland and the Netherlands, have consolidated support in the past (OECD, 2005), and consolidation has been recommended for Sweden, which has a large number of funding agencies (OECD, 2012b). Austria now has a national "one-stop-shop", the FFG, which provides the bulk of applied R&D funding, following the merger of

several agencies. In Finland, the Tekes agency funds applied research conducted by all types of firms, whether small or large, regardless of ownership, and it also supports researchers in universities and elsewhere. A similar approach in Ireland could help to build linkages across firms, especially between domestic and multinational firms, and strengthen relationships with HEIs.

Higher Education Institutions (HEI) employ researchers, train future researchers and conduct fundamental research on which the rest of the system rests. The Government has allocated significant funds to HEI-based research centres, but total spending (public and private) per tertiary student, which was around the OECD median (Figure 19), has been compressed by the crisis. HEIs have increased efficiency, including through new ways of working, but nonetheless their international ranking has fallen due to academic reputational effects. The reductions in funding directly from the Exchequer will require careful management to ensure that the higher education system continues to underpin Ireland's attractiveness as a location for multi-national investment and Ireland's capacity to operate as a high quality research partner. Ireland should ensure that its allocations of public funding to higher education promote the optimal alignment of the higher education system with innovative, high-value enterprise. Ireland should also explore the potential for a greater contribution from students themselves to the cost of higher education, including the potential for student loans.

Figure 19. **Expenditure per student by funding source in the tertiary education system in 2010**[1]



1. 2009 for Germany.

Source: OECD Education Database.

StatLink http://dx.doi.org/10.1787/888932893943

New ways to fund HEIs could make this difficult situation more manageable. HEIs could be given multi-year funding envelopes, instead of annual budgets, so as to help them

undertake activities requiring medium-term planning. In addition, HEI funding should better take account of differing levels of student growth across sectors. The Higher Education Authority (HEA) determines how funding is allocated between HEIs. Since 2007, funding for Institutes of Technology (IoTs) has transferred to the HEA from the Department of Education and Skills. Since then, the HEA has applied the percentage change in the overall budget equally to both the IoT and university sectors. Funding to each HEI is then allocated using a formula-based funding model which links student numbers to course types. To allow better reallocation of funding in line with changing patterns of student demand the percentage change in the overall allocation to IoTs and Universities should be in line with the overall relative demand for places by students. This would also facilitate the greater clustering of HEI institutions to facilitate more joint research, as planned by the Government. The Government should also, as it intends as part of its third level reform agenda, continue to move towards complementing core funding with a more comprehensive performance-based funding component, based on an agreed strategy for each institution and using output targets and clearly defined indicators. The student contribution has risen rapidly in recent years and will reach around EUR 3000 by 2015. Ireland already has a grant scheme, but should also introduce an income-contingent loan scheme, as in other countries with high fees, such as Australia and the United Kingdom (OECD, 2006). HEIs with research centres should also have more autonomy over employment and salary conditions in certain defined cases consistent with overall public pay policies. This should be coupled with benchmarking and monitoring to ensure accountability. In particular, HEI research centres should be able to hire staff not as civil servants but on contracts that better match their needs subject to controls.

Improving framework conditions for innovation and entrepreneurs

Due to long lead times from R&D to commercialisation, innovation requires advanced funding, which entails large risks and is difficult to collateralise. The shrinkage of bank credit provided to firms has potential damaging effects on innovation, thereby increasing the importance of alternative sources of finance. Government credit guarantees, though not without risks, could alleviate, at least temporarily, some of the problems, and the Government has recently introduced a credit guarantee scheme. A more sustainable source of finance should be sought through market-based alternative, like SME loan securitisation (including covered bonds) and mezzanine (hybrid debt/equity) financing instruments (OECD, 2012c; OECD, 2013c). Informal forms of equity financing like crowd funding could help small dynamic start-up companies. For such companies, venture capital provision in Ireland is around the OECD median. In line with trends elsewhere in the OECD, the Government is increasing the number of Government-sponsored schemes (OECD, 2013d), but the increasing range of schemes and public money being committed calls for better evaluation.

A vibrant Initial Public Offerings (IPO) market is a vehicle for realising the benefits of innovation (OECD, 2013d), but the Irish IPO market is small. Reducing regulatory reporting requirements for newly listed companies and increasing incentives for brokers to research and promote SME listings could improve market information and thus stimulate IPOs. Longer-term investment in small-cap stocks could be encouraged by reducing capital gains taxes on stock held for several years (IPO Taskforce, 2011). Demutualising the Irish stock exchange itself in an IPO is a potential avenue to provide fresh capital to the exchange (Forfas, 2013).

Intellectual property rights (IPR) are another avenue to allow innovators to benefit. The Government has developed a new IPR protocol to improve intellectual property rights agreements (DJEI, 2012). IPR negotiations could be further standardised by placing responsibility for the legal processes with the new central Technology Transfer Office.

Entrepreneurs, as well as creditors and the economy, stand to gain from better insolvency procedures. According to the *World Bank Doing Business* indicator, Ireland's cost of insolvency procedures as a percentage of debtor assets is relatively high. The Companies Bill of 2012 proposes to allow small companies to apply to the cheaper Circuit Court instead of the High Court. Likewise, the Jobs Action Plan of 2012 proposes non-judicial debt settlement for SMEs. Both would reduce costs and are therefore welcome.

Box 4. **Recommendations to foster innovation and entrepreneurship**

- Reflecting significant uncertainties about the effectiveness of various innovation policy tools, independently and regularly evaluate all actions in this area, strengthen programmes with proven higher returns, and wind down the others. To promote effective evaluation, ensure all innovation and enterprise supports have sunset clauses.
- To increase the effectiveness and cost-efficiency of the innovation and research policies, and make it easier for businesses to access support, consolidate innovation funding and actions into a smaller number of Government agencies.
- To increase capital supply and encourage entrepreneurship, lower costs for small-cap IPOs, centralise legal processes for intellectual property rights (IPR) transfers with the new central technology transfer office and introduce changes to the examinership process without delay.

Bibliography

Andrews, D. and C. Criscuolo (2013), "Knowledge-Based Capital, Innovation and Resource Allocation", *OECD Economics Department Working Paper,* No. 1046.

Bénétrix, A. and P.R. Lane (2009), "The Impact of Fiscal Shocks on the Irish Economy", *IIIS Discussion Paper,* No. 281, Dublin: Trinity College.

Bergin, A., T. Conefrey, J. FitzGerald and I. Kearney (2010), "The Behaviour of the Irish Economy: Insights from the HERMES Macro-Economic Model", *ESRI Research Series,* No. 7.

Callan, T., C. Keane, M. Savage, J.R. Walsh and K. Timoney, "Work Incentives: New Evidence for Ireland", in *Budget Perspectives 2013*, *Research Series,* No. 28, Economic and Social Research Institute, Dublin.

Central Bank of Ireland (CBI) (2013), *PCAR 2011 Review – Analysis of PCAR Banks up to June 2012 Compared to PCAR 2012*.

Central Statistics Office (CSO) (2013), "Survey on Income and Living Conditions (SILC): 2011 and Revised 2010 Results", February 2013.

Cournede, B. and A. Pina (2013), "How Much Scope for Growth and Equity-Friendly Fiscal Consolidation?", *OECD Economics Department Working Papers*, forthcoming.

Credit Review Office (CRO) (2012), *Tenth Quarterly Report,* December 2012, Dublin.

Crépon, B., E. Duflo, M. Gurgand, R. Rathelot and P. Zamora (2013), "Do Labour Market Policies Have Displacement Effects? Evidence from a Clustered Randomized Experiment", *Quarterly Journal of Economics*, 128(2).

Department of Environment, Community and Local Government (DECLG) (2012), *A Resource Opportunity: A Waste Management Policy in Ireland*, July 2012.

Department of Finance (2013), *Irish Stability Programme*, April 2013 Update, Dublin.

Department of Jobs, Enterprise and Innovation (DJEI) (2012), *Putting Public Research to Work for Ireland*, Dublin.

Department for Work and Pensions (DWP) (2012), "Work Programme Evaluation: Findings from the First Phase of Qualitative Research on Programme Delivery", *Research Report,* No. 821.

Expert Group for Skills Needs (EGFSN)/Forfas (2012), *Key Skills for Enterprise Internationally*.

Forfás (2010), *Review of Labour Market Programmes*.

Gautier, P., P. Muller, B. van der Klaauw, M. Rosholm and M. Svarer (2012), "Estimating Equilibrium Effects of Job Search Assistance", *IZA Discussion Papers,* No. 6748, Institute for the Study of Labor (IZA).

Goggin, I. (2011), "Competition and the Structure of the Legal Profession", Presentation to the UCD Conference on Regulating the Legal Profession Conference, Dublin.

Goldstein, M. and K. Kavajecz (2000), "Eighths, Sixteenths, and Market Depth: Changes in Tick Size and Liquidity Provision on the NYSE", *Journal of Financial Economics,* Vol. 56, pp. 125-149.

Government of Ireland (2012), *Pathways to Work: Government Policy Statement on Labour Market Activation*, Dublin.

Grubb, D., S. Singh and P. Tergeist (2009), "Activation Policies in Ireland", *OECD Social, Employment and Migration Working Papers*, No. 75, OECD Publishing, Paris.

Estevão, M. and E. Tsounta (2011), "Has the Great Recession Raised U.S. Structural Unemployment?", *IMF Working Paper*, WP/11/105.

FitzGerald, J. (2013), "The Effect of Re-Domiciled PLCs on Irish Output Measures and the Balance of Payments", *Research Note,* in *ESRI Quarterly Economic Commentary*, Spring 2013.

Forfás (2011), *Report of the Research Prioritisation Steering Group*.

Forfás (2013), *A Review of the Equity Investment Landscape in Ireland*.

Gorecki, P., H. Hennessy and S. Lyons (2011), "How Impact Fees and Local Planning Regulation Can Influence the Deployment of Telecoms Infrastructure", *ESRI Working Paper*, No. 401.

Hagemann, R. (2011). "How Can Fiscal Councils Strengthen Fiscal Performance?", *OECD Journal: Economic Studies*, Vol. 2011, Issue 1.

Higher Education Authority (HEA) (2011), "Sustainability Study: Aligning Participation, Quality and Funding", *Report to the Minister for Education and Skills from the Executive of the HEA*, November 2011.

Higher Education Authority (HEA) (2012), "Review of Funding Model for Higher Education Institutions", *Consultation Document*, July 2012.

Holton, S., J. Kelly, R. Lydon, A. Monks and N. O'Donnell (2013), "Impact of the Financial Crisis on Banks' Net Interest Margins", *Central Bank of Ireland Economic Letter Series*, Vol. 2013, No. 1.

IPO Taskforce (2011), *Rebuilding the IPO On-Ramp: Putting Emerging Companies and the Jobs Market Back on the Road to Growth,* 20 October 2011.

IMF (2013), Ireland: "Tenth Review under the Extended Arrangement", *IMF Country Report,* No. 13/163.

Irish Fiscal Advisory Council (2012), "Fiscal Assessment Report", *Report 12/03*.

Irish Fiscal Advisory Council (2013), "Fiscal Assessment Report", *Report 13/01*.

lzetzki, E., E. Mendoza and C. Vegh (2010), "How Big (Small?) are Fiscal Multipliers?", *Working Paper,* 16479, Cambridge, MA: National Bureau of Economic Research.

Johansson, Å., C. Heady, J. Arnold, B. Brys and L. Vartia (2008), "Tax and Economic Growth", *OECD Economics Department Working Papers,* No. 620, OECD Publishing, Paris.

Kelly, E., S. McGuinness and P.J. O'Connell, (2012). "Comparing Public and Private Sector Pay in Ireland: Size Matters", *QEC Research Notes*, 2012/4/2.

Kelly, E., S. McGuinness, P.J. O'Connell, A. González Pandiella and D. Haugh (2013), "Transitions In and Out of Unemployment Among Young People in the Irish Recession", *OECD Economics Department Working Paper*, forthcoming.

Kluve, J. (2006), "The Effectiveness of European Active Labour Market Policy", *IZA Discussion Paper,* No. 2018.

Lawless, M. (2013), "Age or Size? Contributions to Job Creation", *Central Bank of Ireland Research Technical Paper*, 2/RT/13.

Martin, J. (2000), "What Works Among Active Labour Market Policies: Evidence From OECD Countries' Experiences", *OECD Economic Studies,* No. 30.

McGuinness, S., P.J. O'Connell, E. Kelly and J.R. Walsh (2011), "Activation in Ireland: An Evaluation of the National Employment Action Plan", *ESRI Research Series,* No. 20, Dublin: Economic and Social Research Institute.

McGuinness, S., P.J. O'Connell and E. Kelly (2011a), "One Dummy Won't Get it: The Impact of Training Programme Type and Duration on the Employment Chances of the Unemployed in Ireland", *ESRI Working Paper,* 410.

Molnar, M. (2012), "Fiscal Consolidation Part 5: What Factors Determine the Success of Consolidation Efforts?", *OECD Economics Department Working Papers*, No. 936.

OECD (2005), *Innovation Performance and Policy: A cross-country comparison*, OECD Publishing, Paris.

OECD (2006), *Reviews of National Policies for Education: Higher Education in Ireland*, OECD Publishing, Paris.

OECD (2010), *Health Care Systems: Efficiency and Policy Settings*, OECD Publishing, Paris.

OECD (2010a), *OECD Environmental Performance Reviews Ireland*, OECD Publishing, Paris.

OECD (2010b), *Off to a Good Start? Jobs for Youth*, OECD Publishing, Paris.

OECD (2011), *OECD Economic Surveys Ireland*, OECD Publishing, Paris.

OECD (2012), *Education at a Glance,* OECD Publishing, Paris.

OECD (2012a), "What Drives the Dynamics of Business Growth", *OECD STI Working Paper*, 2012/6.

OECD (2012b), *OECD Reviews of Innovation Policy: Sweden*, OECD Publishing, Paris.

OECD (2012c), *Alternative Financing Instruments for SMEs and Entrepreneurs – The Case of Mezzanine Finance*, CFE/SME(2012)9/FINAL, Paris.

OECD (2013), "Drawing the Benefits from Global Value Chains", *Draft Synthesis Paper*, DSTI/IND(2013)1, Paris.

OECD (2013a), *OECD Economic Outlook* – May 2003, Paris.

OECD (2013b), "Crisis Squeezes Income and Puts Pressure on Inequality and Poverty. New Results from the *OECD Income Distribution Database*", Paris.

OECD (2013c), *Financing SMEs and Entrepreneurs 2013 – An OECD Scoreboard*, OECD Publishing, Paris.

OECD (2013d), *Policies for Seed and Early Stage Finance: Summary of the 2012 OECD Financing Questionnaire*, DSTI/IND (2013)5, Paris.

O'Brien, D. and J. Scally (2012), "Cost Competitiveness and Export Performance of the Irish Economy", *Quarterly Bulletin,* Central Bank of Ireland, 3 July.

Oreopoulos, P., P. Page and S. Stevens (2008), "The Intergenerational Effects of Worker Displacement", *Journal of Labor Economics*, Vol. 26, No. 3.

Rawdanowicz, L., E. Wurzel and A. Christensen (2013), "The Equity Implications of Fiscal Consolidation", *OECD Economics Department Working Paper*, No. 1013.

Redmond, P. (2012), "Expenditure and Outputs in the Irish Health System: A Cross Country Comparison"; available at *www.publicpolicy.ie*.

Squicciarini, M., V. Millot and D. Haugh (2013), "Determinants of Firm Innovation Performance and Productivity in Ireland", *OECD Working Paper*, forthcoming.

Sustainable Energy Authority of Ireland (SEAI) (2012), "Energy in Ireland 1990-2011", *2012 Report*.

Transparency International (2012), *2012 Corruption Perceptions Index*.

Watson, D., B. Maître and C.T. Whelan (2012), "Work and Poverty in Ireland: An Analysis of the CSO Survey on Income and Living Conditions 2004-2010", *Social Inclusion Report,* No. 3, Dublin: Department of Social Protection.

World Economic Forum (2013), *Global Competitiveness Index 2012-13*.

ANNEX A.1

Progress in structural reform

This annex reviews actions taken on recommendations from previous *Surveys*. Recommendations that are new in this Survey are listed at the end of the relevant chapter.

Recommendations from previous Surveys	Action taken since the October 2011 Survey
Public debt sustainability and public sector efficiency	
Implement the EU-IMF financial assistance programme to reduce the deficit to below 3% of GDP by 2015. Put money saved from interest rate reductions on official financial assistance towards faster consolidation. Providing growth allows reduce the deficit faster than required by the programme. Focus the consolidation effort more on reducing spending. Broaden the tax base.	The targets established in the programme have been consistently met. The new property tax was introduced in 2013.
Proceed with the implementation of a new fiscal framework. Produce a multi-year budget. Use a ceiling for nominal expenditure in each year of the medium-term framework. Establish a central role for the Fiscal Council in the budget framework and continue to appoint international fiscal policy expertise to it.	The Fiscal Responsibility Act, 2012 provides a legislative basis for fiscal rules. A medium-term expenditure framework with binding multi-year expenditure ceilings will be legislated in 2013, and provides a legislative basis for the existing administrative ceilings. Fiscal Advisory Council set up with an independent role in assessing the official forecasts, the fiscal stance and compliance with budgetary rules. International expertise appointed to the Council.
Focus on a debt-to-GDP target to be achieved by a specified date.	Ireland is committed under the new EU Fiscal Compact requires to reduce general Government debt to below 60% of GDP at a rate of no less than 1/20th of the excess over 60% per annum until the target is met. Following Ireland's exit from the programme, and a subsequent transition period, this will come into effect in 2019.
Introduce better performance indicators with historical data so that performance trends can be seen. Concentrate indicator development on large expenditure items, particularly education and health. Require a performance narrative to accompany indicators linking outputs with the Government's desired outcomes.	The format of the Revised Estimates Volume has been restructured. For nearly all Departments' and Offices, spending allocations are grouped by strategic programme and accompanied by performance information. This includes the actions taken to deliver upon specified objectives and the measured impacts of those actions. Ireland Stat has been introduced to present a whole-of-Government performance measurement system linking high level goals with inputs, outputs and impacts. Following a pilot it will be extended to all spending votes.
Make service provision to or on behalf of Government more contestable through benchmarking, yardstick competition, contracting out, as well as introducing greater user choice.	The Government's Public Service Reform Plan (November, 2011) sets out a number of key areas for action around increased contestability, competition and efficiency in delivering public services. These include the introduction of shared services for administrative functions and an overhaul of the public procurement function to ensure greater value for money and market access.
Reduce the number of agencies through mergers with Government departments or other agencies and introduce sunset clauses that require a regular review of the need for an agency.	Rationalisation and amalgamation measures involving 25 bodies have been fully implemented. Measures involving a further 83 bodies are at advanced legislative or administrative stages. Further rationalisation and amalgamation measures, involving 107 bodies, were identified undertaken in 2012 as part of the Public Service Reform Plan. The Plan also includes a commitment that all legislation to create new State Bodies must include a sunset clause.
Consider giving senior agency and department management responsibility for managing their labour costs within a centrally set wage envelope.	No action.
Open up recruitment to the public service at all levels to private sector candidates.	Open recruitment is more commonly used as part of the on-going reforms to the public sector.

Recommendations from previous Surveys	Action taken since the October 2011 Survey
Banking	
Keep NAMA focused on its long term mission of managing its assets to achieve the best possible return for the taxpayer and refrain from activities that increase the contingent liabilities of the Government.	NAMA has generated over EUR 12 billion in cash, has repaid EUR 6.25 billion of its senior debt and is on course to meet the EUR 7.5 billion end-2013 target redemption. It has applied its 80/20 initiative (offers home buyers 20% protection from the risk of further house price declines) on a limited scale (400 properties offered to date with 165 sold). NAMA reports regularly in a detailed way on its activities.
As financial market confidence returns, narrow the bank liability guarantee scheme to a more restricted range of liabilities.	The Eligible Liabilities Bank guarantee was closed to new liabilities from as of 28 March 2013.
Adopt the standards envisaged by Basel III.	The Basel III global accord will be transposed into EU member states laws via a directive known as Capital Requirements Directive IV and the Capital Requirements Regulation. They will be published by end June 2013 and Ireland is committed and taking action to transpose those into national law by 31 December 2013.
Consider using a leverage ratio (total un-risk-weighted assets over capital) as a back-stop to capital ratios.	No action.
Consider using further rule based regulation, such as caps on the ratio of loans to values (LTV) or incomes (LTI).	No action.
Consider a credit register to prevent excessive exposures to certain sectors and borrowers.	Credit Reporting Bill to introduce a register published in September 2012. As of June 2013 under consideration by the parliament but not yet enacted.
Consider introducing a well-defined process where the breach of identified benchmarks on a few indicators, such as excessive growth in overall lending, would accelerate a formal assessment of what, if any, corrective action may be required.	The Government has set the two pillar banks (AIB and Bank of Ireland) lending targets of EUR 4 billion each in 2013. The banks are required to submit their lending plans to the Department of Finance (Department) and the Credit Review Office (CRO) at the beginning of each year, outlining how they intend to achieve their lending targets. The banks submit monthly lending figures to the Department and meet with the Department and the CRO on a quarterly basis to discuss progress. The Economic Management Council meets the banks on a regular basis and discusses the key issues pertaining to SME credit.
Make strengthening of the banking issues division of the Department of Finance permanent.	As part of the restructuring of the Department of Finance a permanent banking policy division has been established.
Resume the publication of financial stability reports.	Semi-annual Macro-Financial Reviews published by the Financial Stability Division of the Central Bank of Ireland since March 2012.
Labour market and welfare	
Decrease unemployment benefits with unemployment duration.	Jobseeker's Benefit duration was reduced from twelve months to nine months for recipients with 260 or more contributions paid and from nine months to six months for recipients with less than 260 contributions paid, in 2013.
Review the coherence and work incentive effects of other welfare benefits. Ensure that safety-net payments never exceed the value of the reformed unemployment benefits. Move away from rent supplement to other forms of housing benefits. Consider moving towards a single working age social assistance payment.	The Advisory Group on Tax and Social Welfare is currently analysing working age income supports with a particular focus on addressing anomalies in the interaction of the tax and social welfare codes. The Supplementary Welfare Assistance (SWA) payment is paid at a lower rate than either Jobseeker's Allowance or Benefit. The One Parent Family Payment (OFP) and the Farm Assist Schemes have been reformed and brought into closer alignment with the Jobseeker's Allowance (JA) scheme. The provision of rental assistance to persons with a long-term housing need is being transferred from the Department of Social Protection to housing authorities using a new Housing Assistance Payment (HAP).
Increase efficiency in public employment services and engage more actively with job seekers, while enforcing tighter requirements for job search and participation in relevant ALMPs. Make greater use of direct referrals of jobseekers to job vacancies posted by firms.	Pathways to work and "Intreo" one-stop shops started functioning in October 2012. This approach includes client profiling, integrated decisions of welfare claims, group engagements, tailored individual engagements (including job referral), and a 'record of mutual commitments' between clients and the Department of Social Protection. Elements of the approach (for example profiling and group engagements) are active in all offices. The full comprehensive approach is in place in offices covering as of June 2013 16% of all unemployed.
Improve the alignment of training programmes with participants' background and labour market skill needs.	Education and training provision is informed by the National Skills Strategy, the Strategy for Science Technology and Innovation, the Report of the Task Force on Innovation, the National Strategy for Higher Education to 2030, the Action Plan for Jobs and Pathways to Work. The Expert Group on Future Skills Needs informs the selection of new targeted programmes designed to tackle the skills shortages, in particular elements of the economy, e.g. Springboard (10 000 places in last two rounds), Momentum and the ICT skills conversion initiative (1 500 places in two rounds).

Recommendations from previous Surveys	Action taken since the October 2011 Survey
Enlarge the set of trades covered by apprenticeship programmes and temporarily close apprentice admission in construction trades. Make programme duration more flexible across trades.	A review of the apprenticeship model is currently under way to re-focus it as an alternative progression route to third-level education for school leavers and explore connections with other further education and training provision.
Increase workplace training in vocational education programmes.	Courses under the Momentum programme include a significant work-based element.
Reduce participation periods in job creation schemes, and enable employment officers to impose compulsory participation. Decrease payments to participants in line with the reformed unemployment benefits, and strengthen the schemes' training and educational content.	Payments to participants have been reduced. In addition, recruitment processes have been altered to ensure that the case officer is centrally involved.
Extend the duration of the recent cut in employers' social security contributions (PRSI) for low-wage workers.	JobPlus giving employers a fixed payment for hiring long-term unemployed to be implemented and replace the social security reduction, which received a low take-up.
Conduct an independent assessment of the job creation impact of the new VAT reduced rate.	Independent assessment of job creation impact undertaken in 2012.
Re-assess the minimum wage on annual basis and take into account falling wages. Re-consider the system of sectoral minimum wages.	Government policy is that National Minimum Wage will not be reduced. See below for reforms on sectoral minimum wages (see REAs and EROs).
Require lone parents to seek work once their children reach school age.	The Department of Social Protection is currently undertaking comprehensive reform of the One-Parent Family Payment (OFP). The reforms see a reduction in the age threshold of the youngest child at which a lone parent is still eligible for the OFP. The age is being reduced to seven years of age on a phased basis between July 2013 and the end of 2015. Lone parents who still have an income need may apply for another social welfare payment.
Systematically evaluate the work capacity of disability benefit recipients. Illness benefit should be limited to one year, after which recipients should be assessed for their work capacity.	The introduction of the Partial Capacity benefit scheme in February 2012 provides for work capacity assessments for those recipients of Illness Benefit (for six months+) and Invalidity Pension who wish to take up employment opportunities.
Restoring competitiveness	
Implement planned reforms to Employment Regulation Orders (REOs) and Registered Employment Agreements (REAS), and go further by allowing firms to opt out through collective agreement.	Legislation passed (2012) reforming REOs and REOs. Employers not originally party to an REA, but who are subject to it, can now apply to the Labour Court to vary its terms. In May 2013, the Supreme Court declared unconstitutional provisions of the 1946 Industrial Relations Act governing REAs. The Judgment also casts doubt on whether provisions of 2012 legislation would withstand constitutional challenge.
Keep a tight control of public sector wage expenditure.	There is continuing control on wage costs and numbers employed, and maintenance of reductions already implemented. In addition, the Financial Emergency Measures in the Public Interest Act 2013, effective from 1 July 2013, includes a reduction in the remuneration of certain public servants on higher rates of pay in excess of EUR 65 000, and the reduction of pension or other benefits payable to persons who are or were in the public service under an occupational pension arrangement, and in receipt of pensions greater than EUR 32 500. The Act also provides for contingency measures for savings to the public pay bill, including provision for a suspension of incremental progression for three years for all public servants unless they are covered by a collective agreement.
Set up an independent regulator for the legal professions.	Legal Services Regulatory Bill inter alia setting up a new regulator introduced to the parliament but legislation has not passed. It is expected that the Bill will be enacted by end year.
Decrease vertical integration in electricity and gas.	Bord Gáis Éireann's (BGE) electricity supply and generation businesses being sold, leaving BGE as a network company.
Transfer the ownership of the electricity transmission network assets from the ESB to EirGrid.	The current arrangements of the transmission assets being owned by ESB, but operated by an separate independent company, Eirgrid, as the transmission system operator, was certified by European Commission decision in May 2013.
Reform the feed-in tariff scheme for electricity from renewable energy sources (REFIT). Bring to an end support for offshore wind, tidal or wave electricity, as well as the fixed part of REFIT payments.	Ireland no longer has support for offshore wind, tidal or wave electricity. In line with European Commission guidelines the Government intends to design a new support scheme that takes account of the structure of the market that will operate in Ireland from 2016, with the aim of revising and reducing price supports for new onshore wind projects over time, while recognising the need for a predictable and transparent policy framework.
Increase the duration of daily classes in the Pre-School Year and open it to children soon to be three.	In the short-term due to resource constraints the focus has been on ensuring and enhancing quality of existing service provision.

Recommendations from previous Surveys	Action taken since the October 2011 Survey
Concentrate support for research in fewer centres of excellence. Improve co-ordination between researchers and with industry	In 2012, SFI launched a new Research Centres programme to consolidate its supports (to 28 existing centres) into a smaller number of larger centres with enhanced industry contribution and participation. As a result 7 large-scale centres (partly a combination of some of the existing SFI CSETs and SRC) will be established during 2013, with a total budget of EUR 300 million over the period to 2019 and 800+ researchers Over EUR 100 million of this funding is being provided from 150+ industry partners connected to these 7 centres. Funding for 10 of the remaining SFI SRCs expires at the end of 2013/early 2014. It is envisaged that SFI will be supporting around 15 to 18 larger centres by the end of 2014.
Centralise support to the internationalisation of indigenous enterprise in Enterprise Ireland, and rationalise the overseas office networks of state agencies.	Enterprise Ireland staff have been re-directed towards non-EU high growth markets over the past 10 years. In 2012, 42% of EI's offices and 33% of EI's overseas staff were dedicated to Asia Pacific and emerging high-growth markets of Latin America, South Africa and the Gulf – up from 26% of its offices and 13% of overseas staff who were dedicated to these regions in 2003.
Upscale efforts to promote co-operation between industry and researchers and concentrate resources in a smaller number of centres of excellence, with prioritisation informed by systematic performance assessment.	Forfás is carrying out an evaluation of large number of enterprise support programmes in 2013. Implementation of the Research Prioritisation Programme, which inter alia aims to strengthen collaboration with enterprise, is underway. Action Plans have been developed for each of the 14 Research Priority Areas and are being brought to Government in June 2013. The Prioritisation Action Group has been established to support collaboration among research funders across the 14 Priority Areas.
Further assess the effectiveness of the R&D tax credit scheme, and make it more focused on additional R&D activity if significant deadweight costs are confirmed. Introduce greater flexibility in the way firms can account for this tax credit.	Changes were introduced in Finance Act 2011, which allowed the credit to be accounted for "above-the-line", i.e. claimed against payroll tax expenses rather than corporate tax liabilities. A value-for-money review of the R&D Tax Credit is underway in 2013 and expected to be completed by year-end. It will include a cost benefit analysis and an international comparison to further assess the competitiveness of the scheme.

ANNEX A.2

Structural reforms to lift growth

Table A2.1. **Scoresheet: Sustainable inclusive growth**

	Year	Ireland[1]	Best OECD country	Specific problems
Well being				
Human development index	2012	8/187	Norway	
OECD better life index	2011	15/34	Australia (with equal weights on components of the Index)	
GDP per capita growth 2000-11	2000-2011	23/34	Slovakia	
GNI per capita level	2011	17/34	Norway	
Business Environment				
World Bank ease of doing business	2013	15/185	New Zealand	
Global competitiveness index (GCI) overall	2012-13	27/144	Switzerland	
Labour				
Unemployment rate	2012Q4	30/34	Korea	
Unemployment long-term share	2012	32/33	Korea	
Innovation				
TFP growth 2005-12	2005-2012	9/34	Slovakia	
Change in TFP growth 1998-2004 to 2005-12		21/34	Israel	TFP growth halved
Patents per million population	2010	18/34	Japan	
Doctoral graduation rates	2009	19/34	Switzerland	
Financial Stability				
Non-performing loans percentage	2012	30/31	Luxembourg	
Access to credit for SMEs				
GCI financing through local equity market	2012-13	94/144	Norway	
GCI availability of venture capital	2012-13	88/144	Israel	
Environment				
Nitrogenous fertiliser use	2006	25/30	Iceland	Usage is well above average for OECD Europe
Municipal waste generation per capita	2011	29/33	Estonia	
Air pollutants (nitrogen oxides per capita)	2010	9/34	Switzerland	
Greenhouse gas emissions per capita	2010	26/34	Chile	
Equity				
Gini coefficient whole population after taxes and transfers	Late 2000s	12/34	Slovenia	
Gini coefficient over 65 after taxes and transfers	Late 2000s	18/34	Czech Republic	
Governance and Institutions				
Transparency international corruption perception	2012	25/176	Denmark, Finland, New Zealand	
Financial secrecy	2011	3/71	Spain	
Press freedom	2011-12	15/179	Finland	
GCI judicial independence	2012-13	4/144	New Zealand	
GCI public trust of politicians	2012-13	50/144	Norway	
GCI wastefulness of government spending	2012-13	73/144	Switzerland	
GCI burden of government regulation	2012-13	46/144	Finland	

1. Rank from best/least restrictive to worst/most restrictive.

Table A2.2. **Structural levers to lift sustainable, inclusive, growth**

	Year	Ireland[1]	Best OECD country	Specific problems
Business Environment				
OECD Product Market Regulations (PMR)				
Overall PMR	2008	3/34	United Kingdom	
Licences and permits	2008	31/34	Austria	
Government involvement in infrastructure sector	2008	30/34	United Kingdom	
OECD professional services PMR	2008	3/34	Sweden	
OECD legal PMR	2008	15/34	Sweden	
Regulation on forms of legal professional co-operation	2008	34/34	10 countries	
Regulation legal professional education requirements	2008	19/34	3 countries	
OECD retail trade PMR overall	2008	5/34	Sweden	
Protection of existing retail firms	2008	29/34	10 countries	
OECD electricity transport communications PMR overall	2007	28/34	United Kingdom	
Rail overall	2007	30/34	United Kingdom	Entry, Public ownership, market structure, vertical integration
Gas overall	2007	29/34	Canada	Public ownership, market structure
Electricity overall	2007	26/34	United Kingdom	Public ownership
World Bank Doing Business				
Dealing with construction permits	2013	106/185	New Zealand	Fees and time for planning permission, fire safety and disability certificates
Getting electricity	2013	95/185	Iceland	Electricity network company fees and time to connect
Enforcing contracts	2013	63/185	Luxembourg	Legal and court fees and trial/judgment times
Registering property	2013	53/185	New Zealand	Conveyancing time and stamp duty
Trading across borders	2013	28/185	Korea	Document preparation, customs and port fees
Global competitiveness index				
Strength of auditing and reporting standards	2012-13	66/144	Finland	
Regulation of securities exchanges	2012-13	76/144	Finland	
Protection of minority shareholder interests	2012-13	40/144	Finland	
Number of days to start a business	2012-13	59/144	New Zealand	New Zealand 1 day versus 13 in Ireland
Labour				
OECD Employment Protection Legislation (EPL) overall	2008	7/34	United States	
OECD EPL balance permanent & temporary protection	2008	23/34	Austria and Estonia	
GCI flexibility of wage determination	2012-13	106/144	Estonia	Less bargaining is at firm level
GCI hiring and firing practices	2012-13	75/144	Switzerland	More impeded by regulation
Innovation				
GBAORD per cent of GDP	2012	21/27	Korea	
Expenditure per student in tertiary education USD PPPs	2009	13/22	Norway	
GCI Government procurement of advanced tech products	2012-13	88/144	Israel	
Environment				
Environmental taxes per cent of GDP	2010	13/34	Denmark	Taxes on energy products low, taxes not linked to carbon emissions
Environmentally harmful tax exemptions and subsidies				No VAT on fertilisers, tax relief on water and waste charges,subsidies for electricity production from peat and domestic aviation
Equity				
Government services redistribution effect (per cent reduction in Gini)	2007	1/34	Ireland	
Compulsory or auto enrolment in earnings related pensions pillar	2013	No	33/34 OECD countries	
Governance and Institutions				
Applying for official Information online	2010	No	26/32 countries allow	

Table A2.2. **Structural levers to lift sustainable, inclusive, growth** *(cont.)*

	Year	Ireland[1]	Best OECD country	Specific problems
Disclosure of *Liabilities* by senior members of 3 branches of Government	2010	No	70% of OECD countries require this for the Executive and Legislative Branches and 40% for the judicial branch	
Publication of administrative data sets	2010	No	22/32 countries compelled or routinely do this	
Publication of audit documents	2010	No	23/32 OECD countries compelled or routinely do this	

1. Rank from best/least restrictive to worst/most restrictive.

Source: OECD, World Bank, World Economic Forum, Tax Justice Network, Transparency International, United Nations, Reporters Without Borders.

Chapter 1

Getting youth on the job track

Irish youth was hit hard by the crisis. Many young workers have remained unemployed for a long time and, unless it is tackled promptly, this issue will become one of the most enduring legacies of the recession. New labour-market policy initiatives have been introduced recently, but more will be needed to limit scarring effects and keep youth connected so that they can get back to work as soon as the recovery strengthens. For many young workers learning new skills is the way to get ready. The Irish economy is shifting away from bricks and mortar towards knowledge-based services, and those previously employed in construction-related activities need to acquire the skills and competencies required in these expanding sectors. For those who have already drifted into more marginalised environments, a longer process of rehabilitation will be necessary to escape poverty and social exclusion. This chapter recommends focusing limited fiscal resources on policies empirically-proven to help regain employment; this will require systematic and rigorous evaluation of labour-market programmes and policy decisions to close down ineffective schemes while strengthening successful ones.

The youth unemployment rate has risen sharply since the onset of the crisis and reached a historical high in 2012. Of special concern is that about half of unemployed youth have been out of work for more than a year. Such long-term youth unemployment risks having large and enduring negative implications, as shown by past experience (Martin and Manning, 1999; Bell and Blanchflower, 2011). It is associated with deskilling, permanent scarring effects and a rise of the structural unemployment rate, which would imply that those worst affected would drift into social exclusion and would no longer be able to participate in normal economic activities. Moreover, younger cohorts of workers typically introduce new skills and innovative expertise into the production processes, thus raising the overall productivity level (Lalkemond and Ryckx, 2009; Prskawetz et al., 2006). Maintaining youth excluded from the labour market would, therefore, have seriously damaging repercussions on Ireland's growth potential. It would also have a large cost for the society as it is associated with welfare dependency, risk of poverty and fall into marginalisation and social exclusion. Unless the youth unemployment problem is tackled head-on, these large personal, economic and societal costs risk being among the most enduring and negative legacies of the recession.

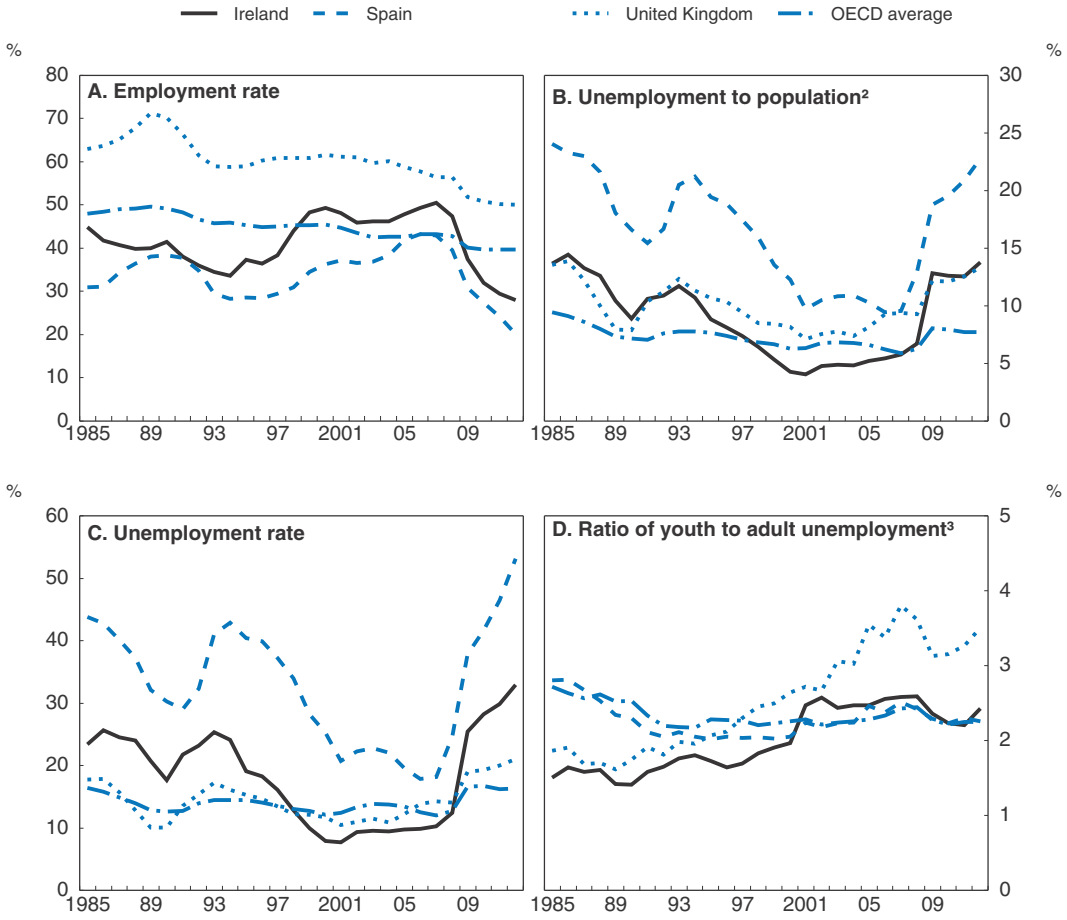
This chapter first describes the situation of youth in Ireland's labour market by reviewing recent developments as described by a number of key economic and social indicators. It then discusses the role that labour market policies can play in limiting the negative impact of unemployment and in facilitating the reintegration to work. Afterwards, it examines ways to improve the transition from education to work, and it follows with a review of ways to support youth self-employment and entrepreneurship. Last, the chapter considers how to better integrate youth in more disadvantaged circumstances into the labour market.

The situation of youth in Ireland's labour market

The youth employment rate in Ireland has fallen sharply since the recession, declining from about 50% to 30%, which is its historical minimum and well below the OECD average (Figure 1.1). The unemployment-to-population ratio, calculated by dividing the number of 15-24 year old unemployed people by the total population aged 15-24 years, increased by nearly 7 percentage points after the crisis and currently stands at 12%, well above the OECD average. The unemployment-to-labour supply ratio has also increased sharply, by 20 percentage points to 30%, the highest level recorded since the mid-1980s and significantly higher than the OECD average. The exposure of youth to the risk of unemployment had already increased prior to the crisis, as shown by the ratio of youth to adult unemployment but has fallen in recent years. This contrasts with the OECD average, which has remained constant since the 1990s. Broader measures of unemployment, including discouraged workers and involuntary part-time workers, show about half of active young people are under-employed, nearly twice as much as for the total working-age population (Figure 1.2).

Young people from all educational backgrounds have been affected (Figure 1.3), including those with tertiary education. Men with upper secondary education and those

Figure 1.1. **Youth[1] labour market indicators**

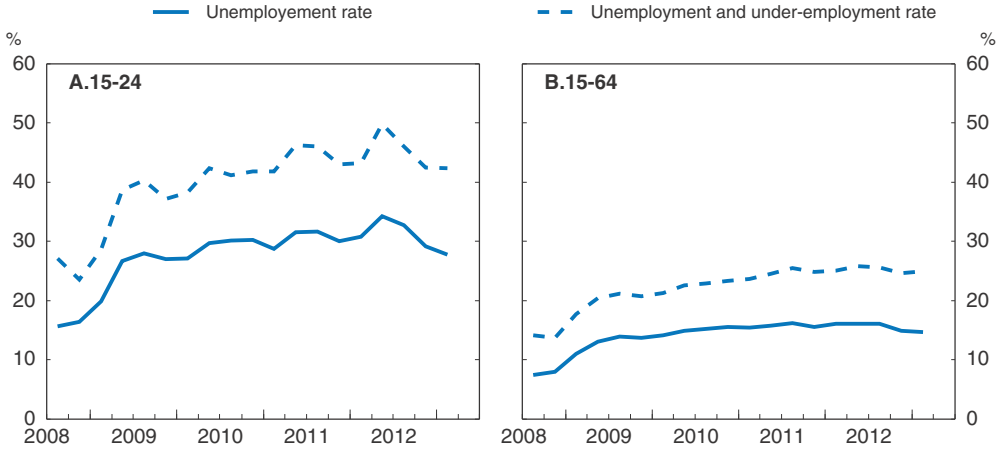


1. Persons aged 15-24.
2. Unemployed as a percentage of the population in the age group.
3. Unemployment rate of youth (15-24) divided by unemployment rate of adult (25-54).

Source: OECD Labour Force Statistics Database.

StatLink http://dx.doi.org/10.1787/888932893962

Figure 1.2. **Broader measures of young unemployment**

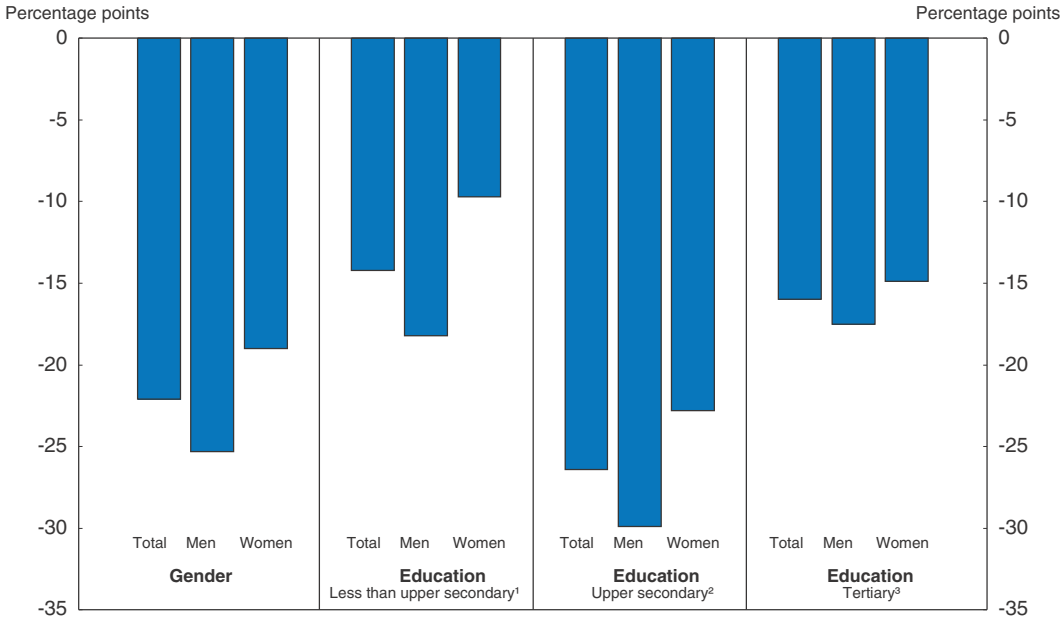


Source: Central Statistics Office.

StatLink http://dx.doi.org/10.1787/888932893981

Figure 1.3. **Youth employment rates by sex, age and highest level of education attained**

Difference between 2007Q4 and 2013Q1



1. Pre-primary, primary and lower secondary education (levels 0-2).
2. Upper secondary and post-secondary non-tertiary education (levels 3 and 4).
3. First and second stage of tertiary education (levels 5 and 6).

Source: Eurostat, *European Union Labour Force Survey* (EU-LFS).

StatLink http://dx.doi.org/10.1787/888932894000

with less than secondary education have been more affected than women with the same level of education. This reflects the large number of young male workers in construction-related activities during the cyclical upswing.

The decline in youth employment was concentrated in construction, a sector where the number of jobs collapsed from 60 000 at the end of 2007 to only 5 000 in the third quarter of 2012, and in services, which went from 160 000 to 90 000 positions during the same period (Figure 1.4). The sharpest fall has been among workers in craft and related trades, reflecting the collapse of construction activities. About 20% of the unemployed female and 10% of the unemployed male have a tertiary qualification (Figure 1.5).

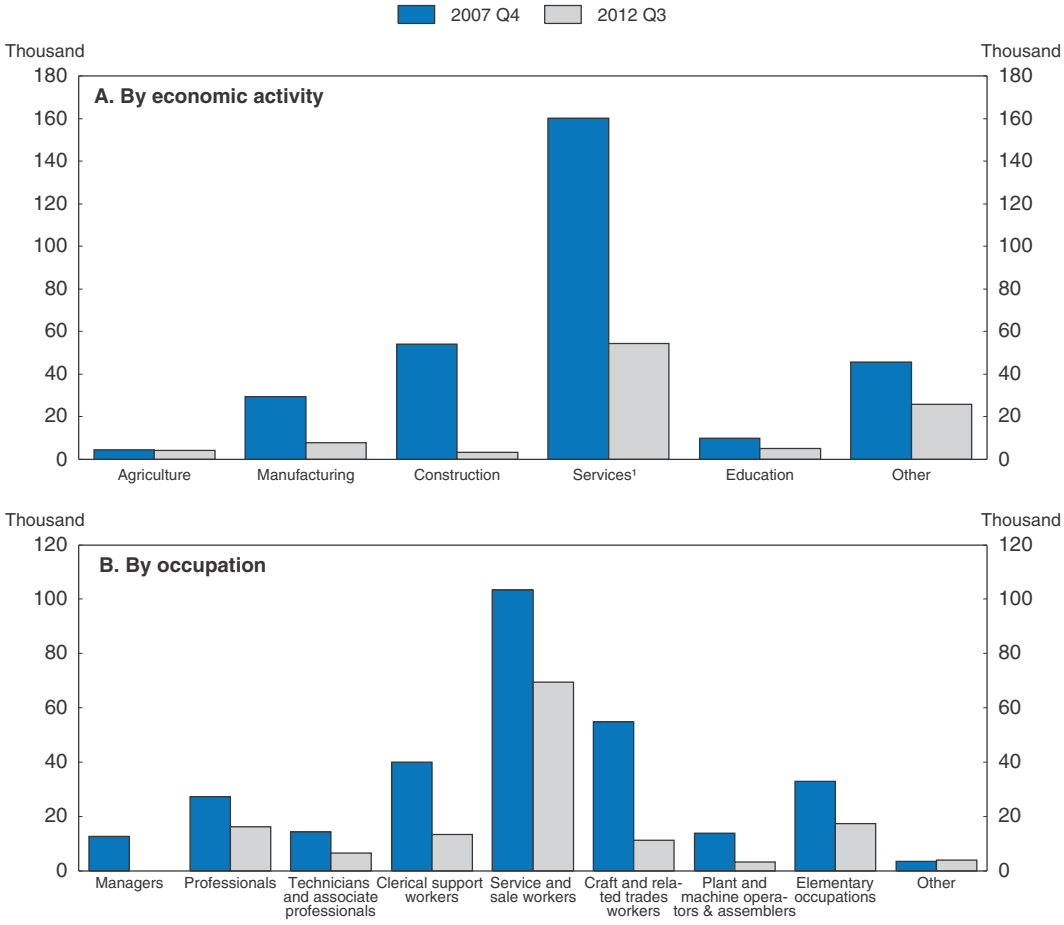
Labour-market participation has fallen since the crisis, particularly among those aged 15-24 (Figure 1.6), who accounted for 90% of the overall decline in participation.

Increasing emigration is a risk for long-term growth prospects

As a consequence of the massive loss of employment and weak economic prospects, outward migration has sharply increased, reversing the pattern prior to the recession when Ireland was a net recipient of migration. Net emigration averaged 1.4% of the labour force in the period 2010-12 and is expected to continue (one person out of two aged 18-24 was considering emigrating according to a poll by the National Youth Council of Ireland conducted in October 2012). Initially, after the bust, outward migration was mainly accounted for by workers from new EU member states. However, from 2010, emigration by Irish nationals surged and it now accounts for more than half of total emigration. Total emigration reached 87 000 in the twelve months to April 2012 (CSO, 2012) and it has been

Figure 1.4. **Youth employment by industry and occupation**

Number of employees in 2007Q4 and 2013Q1



Note: Data refer to persons aged 15-24.

1. Service sector includes G-L sections of NACE rev. 2. For 2007Q4, data refer to G-K sections of NACE rev. 1.

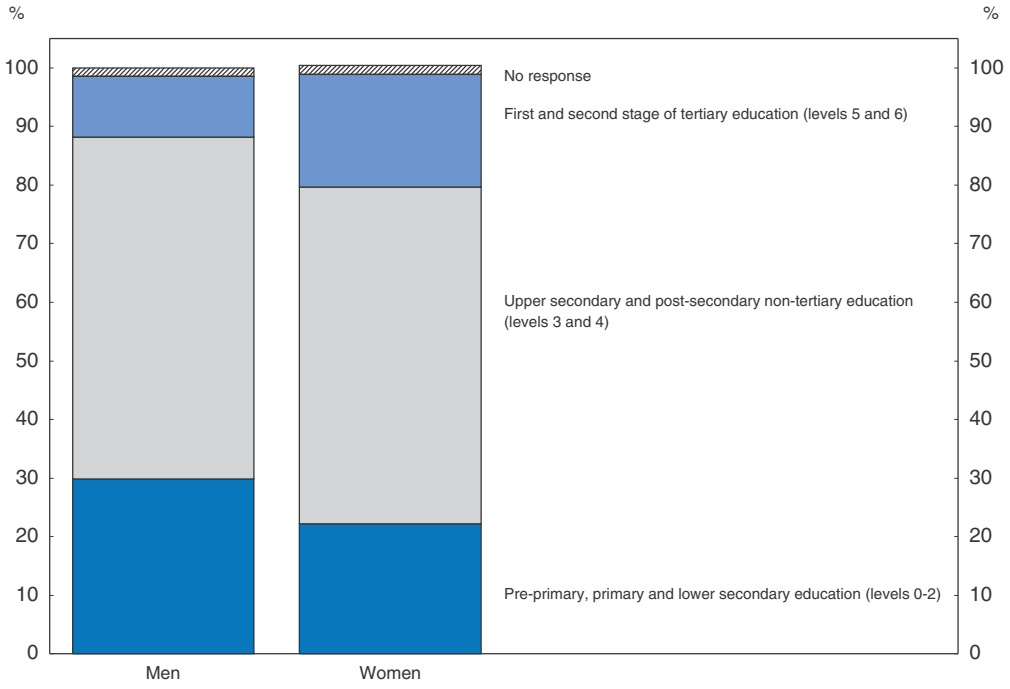
Source: Eurostat, *European Union Labour Force Survey* (EU-LFS).

StatLink http://dx.doi.org/10.1787/888932894019

concentrated in the 15-24 and 25-44 age groups. A notable change concerns destination. While the United Kingdom used to be the main destination followed by the United States and European Union countries, the majority are now moving to other countries such as Australia and Canada (Conefrey, 2013). Despite high levels of unemployment, poor labour market prospects and increasing emigration by Irish nationals, Ireland is still receiving significant immigration (around 50 000 every year) (Gilmartin, 2012). This reflects the shortage of workers with the appropriate skills in some areas.

While emigration can be seen as a factor moderating the rise in unemployment, limiting scarring effects of being out of work and alleviating the pressure on public services, it entails significant risks for the long-term growth potential of the economy if the departures become permanent. This is not only because of the reduction in the size of the labour force, but also because emigration is concentrated in younger cohorts, which will exacerbate the impact of ageing. While Ireland had one of the largest youth cohorts in the OECD prior to the crisis, accounting for 16% of the population, this has fallen to 12%, reflecting demographic trends and the rise in emigration (Figure 1.7).

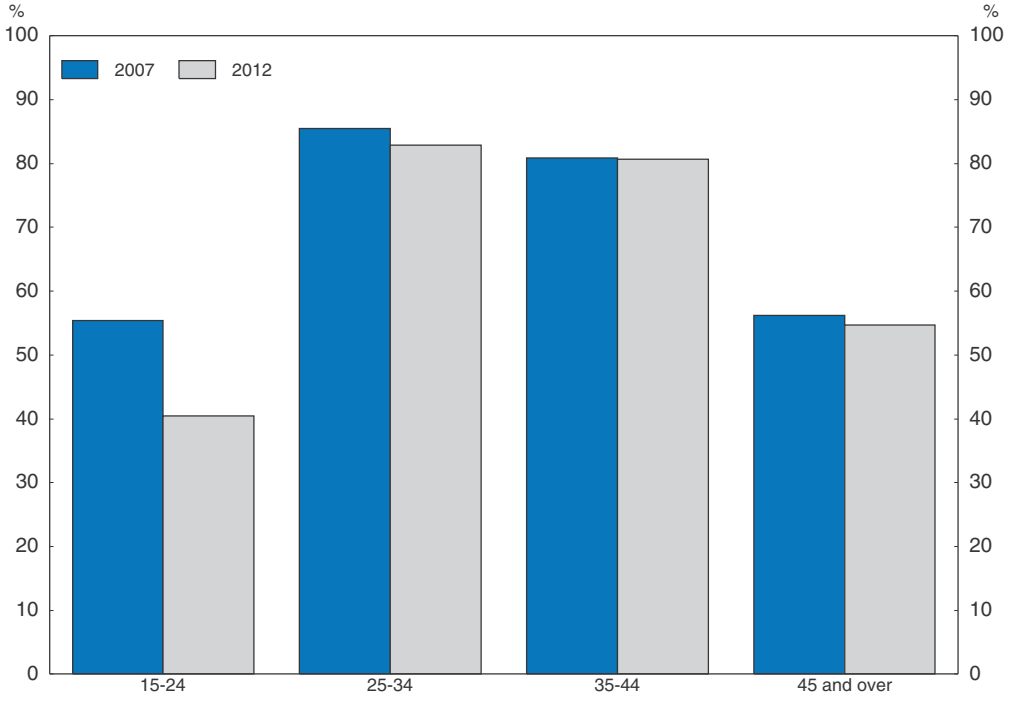
Figure 1.5. **Youth[1] unemployment rate by highest level of education attained and sex, 2012**



1. Persons aged 15-24.
Source: Eurostat.

StatLink http://dx.doi.org/10.1787/888932894038

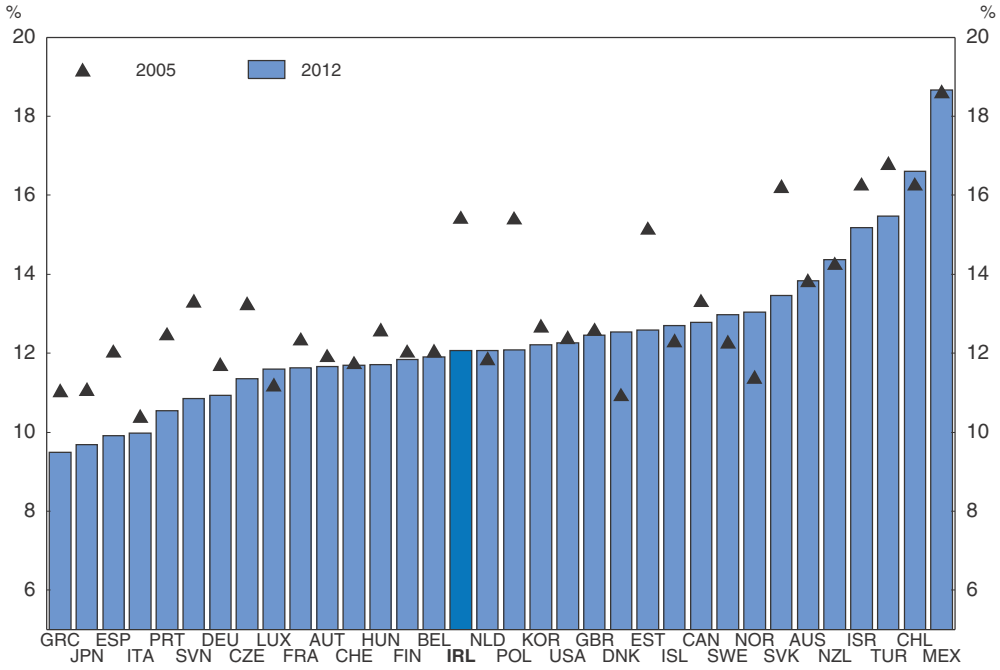
Figure 1.6. **Participation rates by age group, 2007 versus 2012**



Source: Eurostat.

StatLink http://dx.doi.org/10.1787/888932894057

Figure 1.7. **Youth[1] cohort**



Note: For the year 2012, population data are estimated for many countries.
1. Persons aged 15-24.
Source: Eurostat.

StatLink http://dx.doi.org/10.1787/888932894076

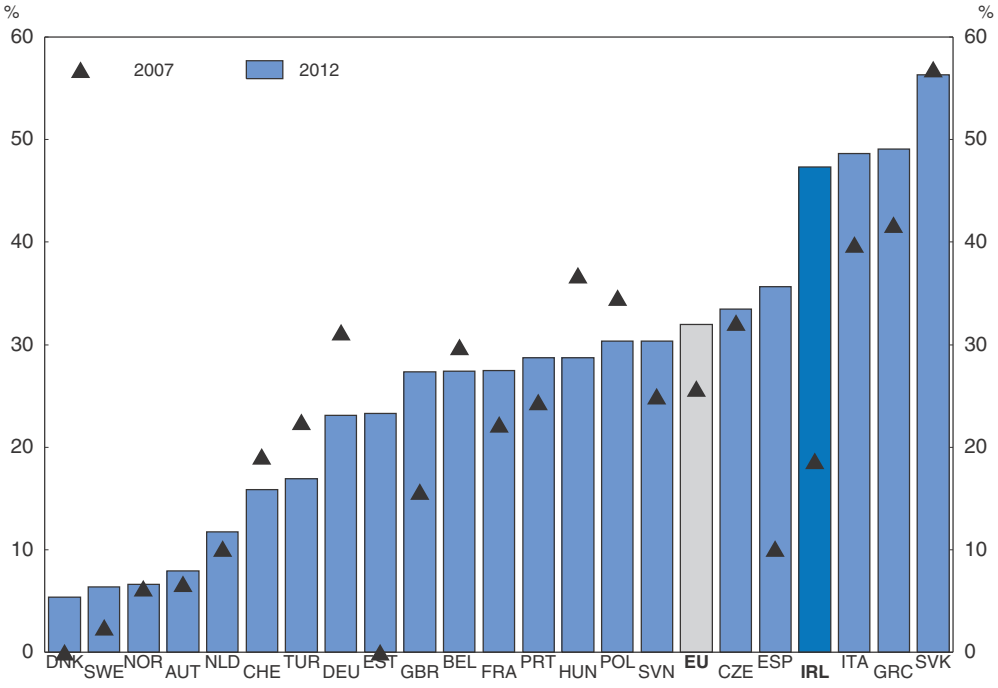
In the mid-1990s, a period of high growth, Ireland was successful in reintegrating migrants, but international competition to attract workers with specialised skills has become fiercer and the automatic return of migrant workers, once the economy regains strength, should not be taken for granted. Mechanisms to better track emigrants and support their eventual return could reduce the risks of a permanent loss of valuable qualified workers from the labour force.

Long-term unemployment, structural change, and the risks of a lost generation

Long-term unemployment entails depreciation of human capital and may also be associated with poor health conditions and social distress (Arulampalam et al. 2001; Paul and Moser, 2009; Puig-Barrachina, 2011) (more below). This is a matter of concern because the proportion of young people who are long-term unemployed has increased from 21% in 2007 to close to 50% in 2012 (Figure 1.8) and they face poor probability of exiting from unemployment (Figure 1.9). While before the crisis the probabilities of youth re-entering employment was similar in Ireland, the United Kingdom and the euro area, the prospects in Ireland are now the worst. The exit prospects have deteriorated in overall terms, but those who have been unemployed for more than one year are the ones who had the largest decline in the probability of exiting unemployment. The probability of exiting unemployment for young workers unemployed for less than twelve months is 65%, but it falls to 40% for those unemployed for longer than a year.

Prior to the recession, the duration of an earlier unemployment spell was found to be key to explaining the risk of remaining unemployed (Kelly et al., 2012). The recession has increased this negative effect of past unemployment spells, with the proportion of those

Figure 1.8. **Share of long-term unemployment in total youth[1] unemployment, 2007 versus 2012**



1. Persons aged 15-24.
Source: Eurostat.

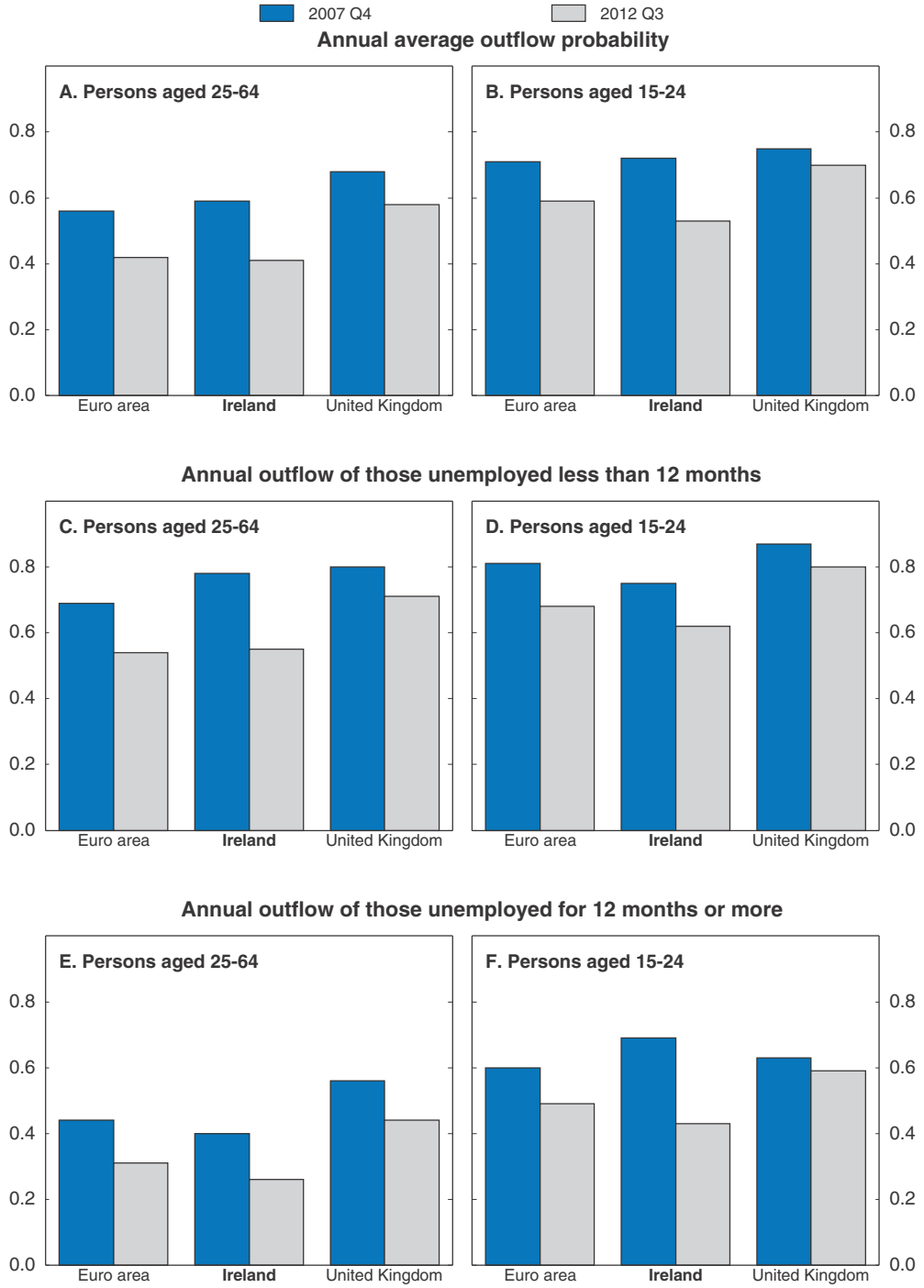
StatLink http://dx.doi.org/10.1787/888932894095

making a successful return to work having fallen from 38% in 2006 to only 17% in 2011, while the proportion of youth remaining continuously unemployed increasing from 37% to 52% during the same period and the share of those drifting into inactivity increasing from 25% to 31% (Kelly et al., 2013). Those with an unemployment period lasting more than three months are significantly less likely to return to work. There are also significant differences pre and post-recession in other factors such as education level or age (discussed below).

Youth employment is generally more sensitive than adult employment to business-cycle conditions (e.g. Bell and Blanchflower, 2011), and particularly so in Ireland (OECD, 2008b). Such sensitivity is greater for the 15-19 age cohort and then declines progressively with age. This is explained by the higher incidence of temporary contracts among young workers, and in the case of Ireland it is also due to a higher concentration of youth jobs in highly cyclical sectors, such as the construction sector. The Irish economy is not expected to return to the exuberant pace of growth of the decade preceding the crisis, particularly the housing and property market weighed down mired by excessive supply, so the economy may not generate significant many low and medium-skilled jobs. Employment is more likely to be found in the exporting high-tech sector, where high-skilled services play a greater role. The new jobs are already concentrated in services such as information and communication, professional, and scientific and technical activities (CSO, 2013).

Against this background, young people who have been unemployed for many months and do not have the types of skills demanded by fast-rising sectors risk become increasingly detached from the labour market. Empirical evidence indicates that, while prior to the recession unemployed youth aged 20 to 24 were more likely to find a work

Figure 1.9. **Evolution of unemployment-exit probabilities**



Note: Euro area refers to the 17 countries. The outflow probability for those unemployed less than 12 months (for those unemployed for 12 months or more) is calculated as one minus the ratio of the number of unemployed with a duration of 12-24 months (number of unemployed with a duration of 24 months or more) over the number of persons unemployed for less than 12 months (number of persons unemployed for 12 months or more) one year earlier.
Source: Own calculations based on Eurostat data.

StatLink http://dx.doi.org/10.1787/888932894114

compare to those aged 15-19, the opposite is observed post-recession (Kelly et al., 2013). This could indicate that employers may have a preference for younger workers who have a lower minimum wage and shorter spells of unemployment to the detriment of older youth that have been out of work for a longer period, and highlights the risks of a cohort of young workers getting excluded from emerging job opportunities. This calls for important policy action to foster labour re-allocation via active labour market policies, particularly training.

Disadvantaged youth

Entering the labour market at the current juncture is especially challenging for disadvantaged youth such as school dropouts, young individuals from immigrant background, those living in workless households and those suffering from disabilities. The proportion of those who are at risk of losing contact with the labour market, youth not in education or employment (NEET), is higher in Ireland than in most other OECD countries, and has seen a sharp increase from 2007 to 2011 (Figure 1.10). Of significant concern is the rate of youth not in education and not in the labour force (i.e. inactive youth), which was already high prior to the crisis (OECD, 2012). An additional concern is that Ireland has one of the highest NEET rates among those aged 15-19. Being away from the labour market and from the educational system at such an early age is likely to have long-lasting damaging consequences.

Employment losses have hit non-Irish nationals four times more than Irish nationals (McGinnity et al., 2011). While young non-Irish had slightly better prospects than young Irish before the recession, they now seem to be having more difficulties in exiting unemployment than Irish nationals (Kelly et al., 2013). The second generation of immigrants, contrary to findings in other European countries, seems well integrated and there is no significant evidence of school segregation (Byrne, 2010). This is mainly due to the high geographical dispersion of the immigrant population and the wide variety of nationalities present in Ireland.

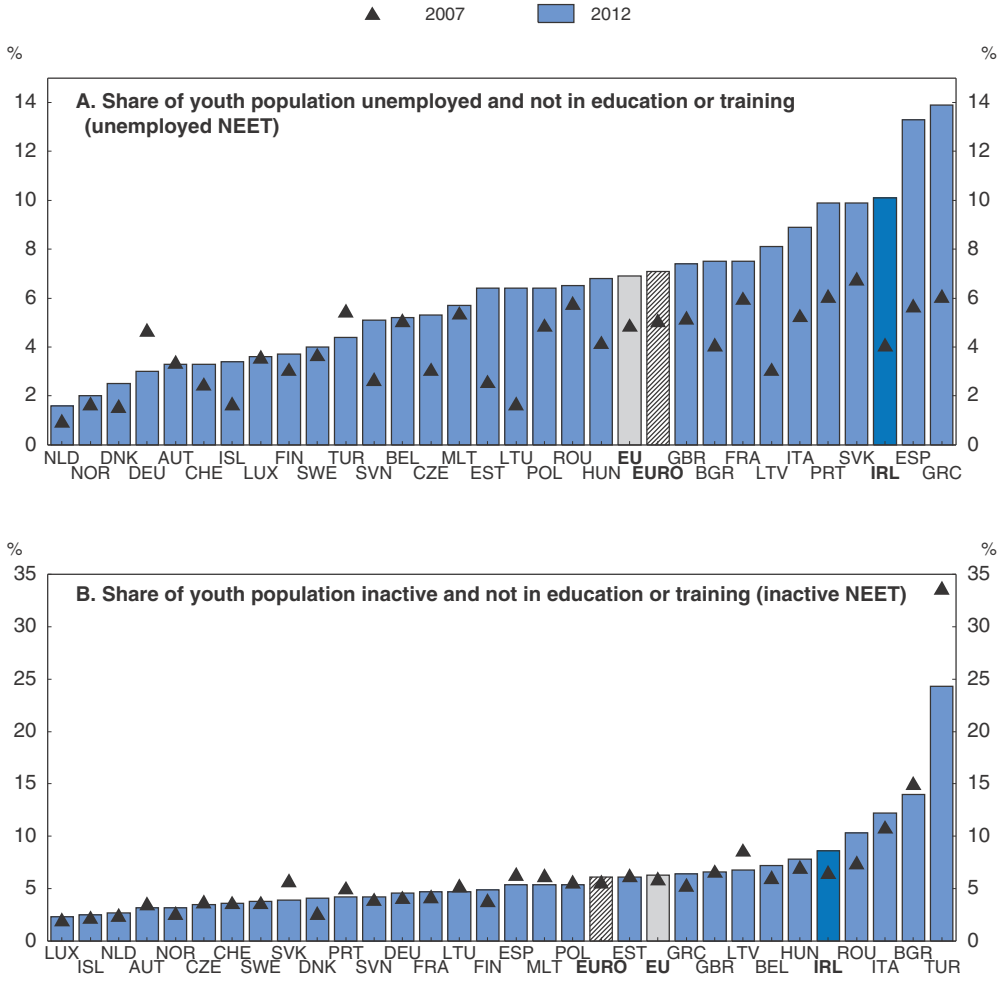
Ireland's welfare system has provided an effective cushion during the crisis. Nevertheless, the risk-of-poverty of those between 16 and 24 years old is above the EU average (Figure 1.12) and has increased from 26% in 2007 to 40% in 2011. The same indicator for individuals below 16 years had a similar increase in the same period. These developments highlight the pressing need for helping youth to step into the labour market as the best way to escape poverty and social exclusion.

An increase in the long-term unemployment rate and dependency on social welfare has been associated with a rise in mental health issues, drug and alcohol abuse, and an increase in criminal behaviour among young people. However, to date the consumption of alcohol, tobacco, cannabis and other drugs by Irish youth does not stand out in international perspective (ESPAD, 2012) and there is no significant evidence of an increase in youth crime. Nevertheless, Ireland has one of the highest rates of suicide among youth in Europe, specially for male youth (Figure 1.13), and in historical perspective, a link between the unemployment rate and the male suicide rate in younger age groups has been established for Ireland (Walsh, 2012). This demands an increased focus on prevention policies.

Ensuring active labour market and benefit policies better support young unemployed

The risk of a "lost generation" calls for decisive intervention in the youth labour market. Given high and persistent unemployment rates among young workers, activation policies are paramount to limiting scarring effects. In the short-term, weak economic

Figure 1.10. **NEET rates among youth[1] in European countries**



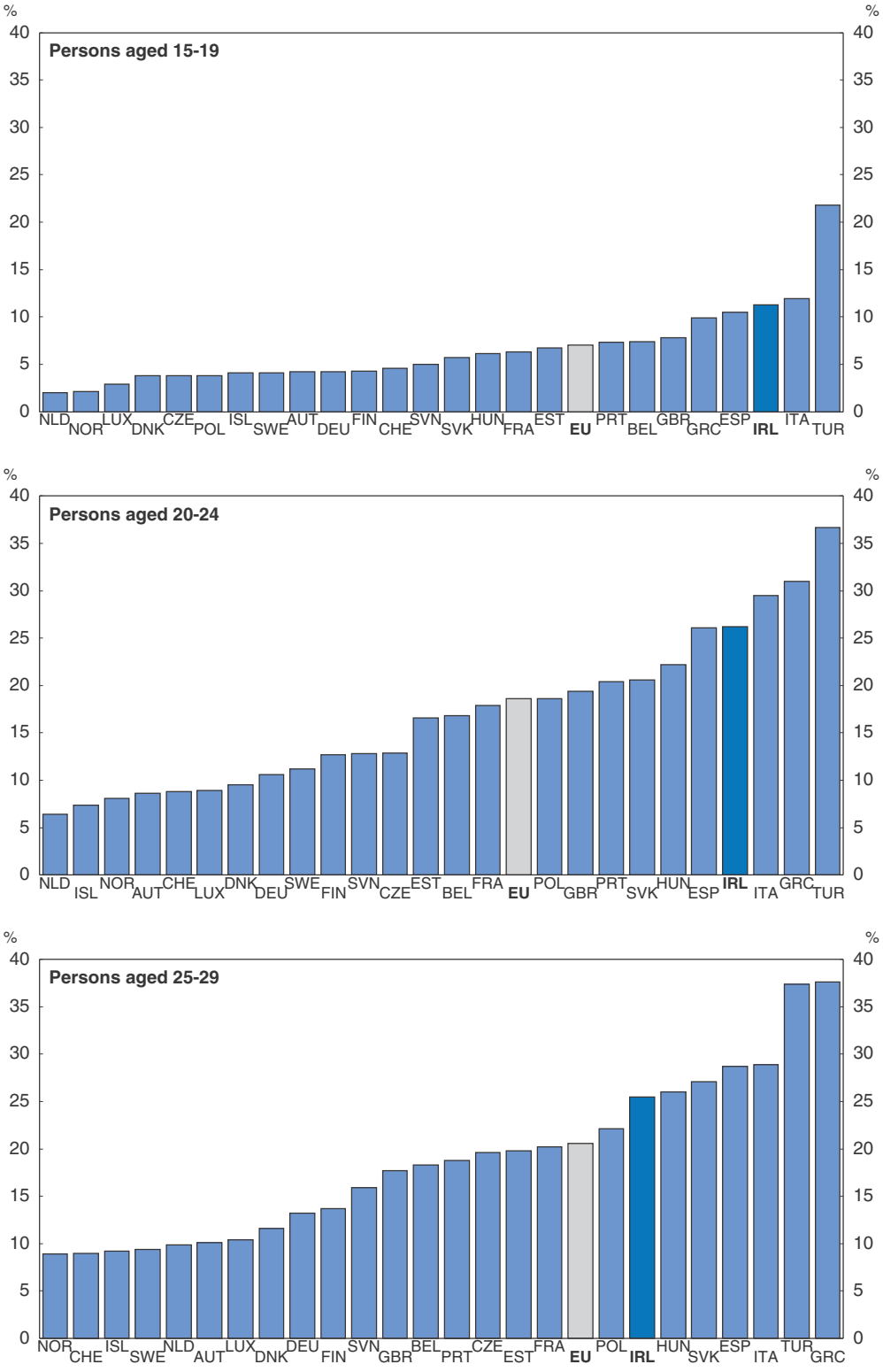
1. Persons aged 15-24.
Source: Eurostat.

StatLink http://dx.doi.org/10.1787/888932894133

growth and labour demand will limit the decline in unemployment. However, it is important to maintain youth connected to the labour market so that they can return to work when the recovery strengthens. To that aim, implementing effective active labour market programmes (ALMPs) well targeted at the specific needs of youth is key. ALMPs are essential for youth even in times of buoyant employment creation. Young workers may be less efficient in job search activities than adults. They are also likely to have fewer contacts and less experience of finding work, placing them at a relative disadvantage compared to adults (Bell and Blanchflower, 2011). Therefore employment assistance and support services provided by the public employment services can play a vital role.

Ireland devotes significant fiscal resources to labour-market policies by international standards (Figure 1.14). However, a large proportion of this spending has gone into passive programmes, even before the bust, and some of the spending on active measures, such as Community employment, had little effect in helping participants to re-enter the labour market (more below). In a context of tight fiscal and budgetary constraints, the emphasis should be on implementing cost-effective policies found to increase the employability of participants. In

Figure 1.11. **NEET by age group, 2012**

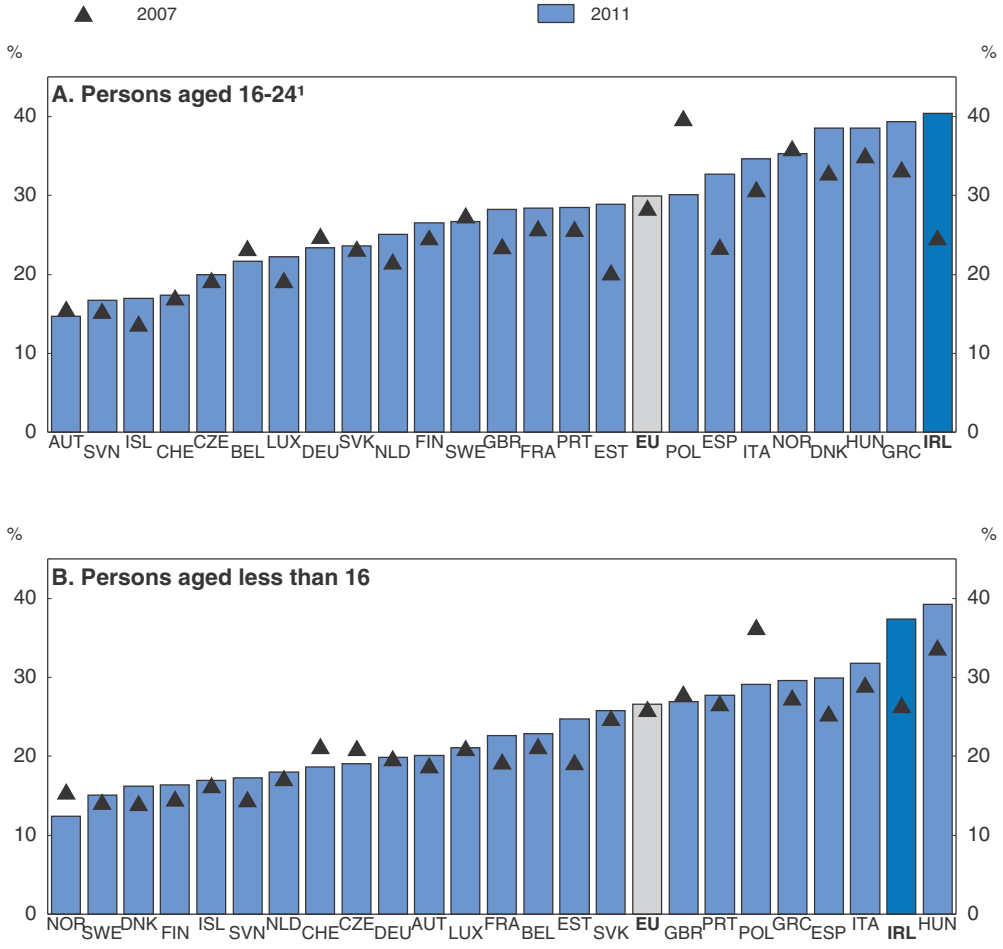


Source: Eurostat.

StatLink http://dx.doi.org/10.1787/888932894152

Figure 1.12. **Young people at risk of poverty or social exclusion**

As a percentage of total population



1. Caution should be used in cross-country comparisons due to differences in the propensity of students to live away from home.

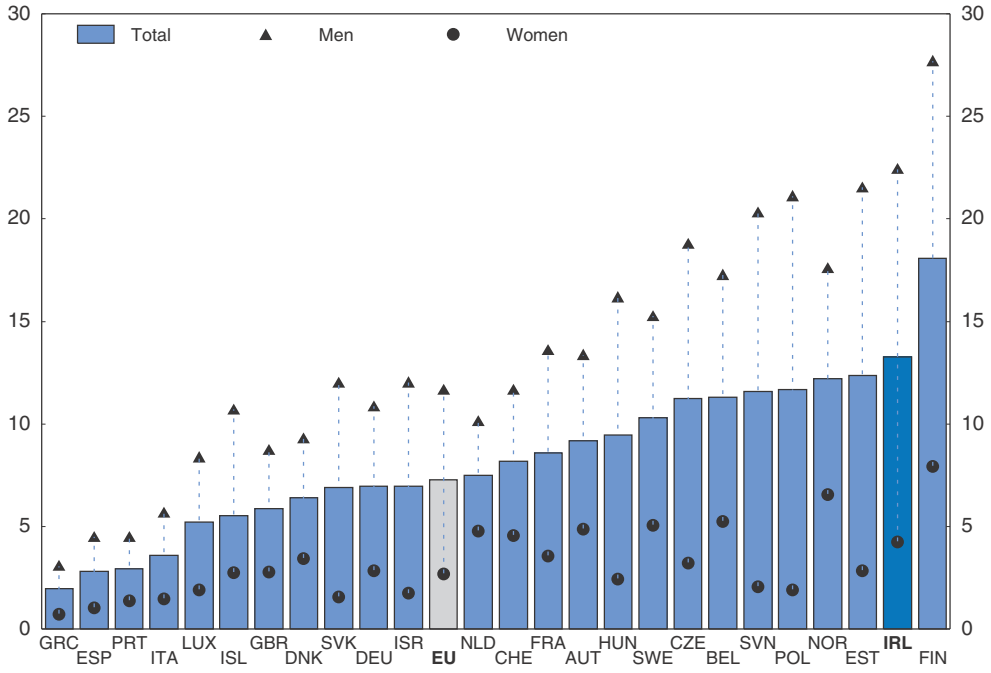
Source: Eurostat.

StatLink http://dx.doi.org/10.1787/888932894171

international perspective, job search assistance seems to yield favourable results (Martin, 2000; Kluve, 2006; Card et al., 2010), and in the Irish context it also has been found to increase the probability of returning to work (McGuinness et al., 2011). Direct public sector employment programmes are found to be less effective both internationally (Kluve, 2006; Card et al., 2010) and in Ireland (McGuinness et al., 2011). Training programmes are associated with positive medium-term impacts (Card et al., 2010). In Ireland those who participated in training were found to be less likely to be unemployed although the impact differed according to the type and duration of the training received (McGuinness et al., 2011a) (more below).

Comparing the pre-crisis participation of youth in active and passive labour market schemes across countries highlights that participation in active measures, such as training or employment incentives, was low in international perspective (Figure 1.15). By contrast, participation in passive measures, aimed at income support, was already relatively high in 2007. Post-crisis, the percentage of youth supported by passive measures increased from 10% in 2007 to more than 30% of the youth labour force, the highest rate in the EU and more

Figure 1.13. **Total suicide and intentional self-harm death rates per 100 000 for 15-29 years olds**



Note: 2011 or latest year available.
Source: *European Mortality Database*, August 2012.

StatLink http://dx.doi.org/10.1787/888932894190

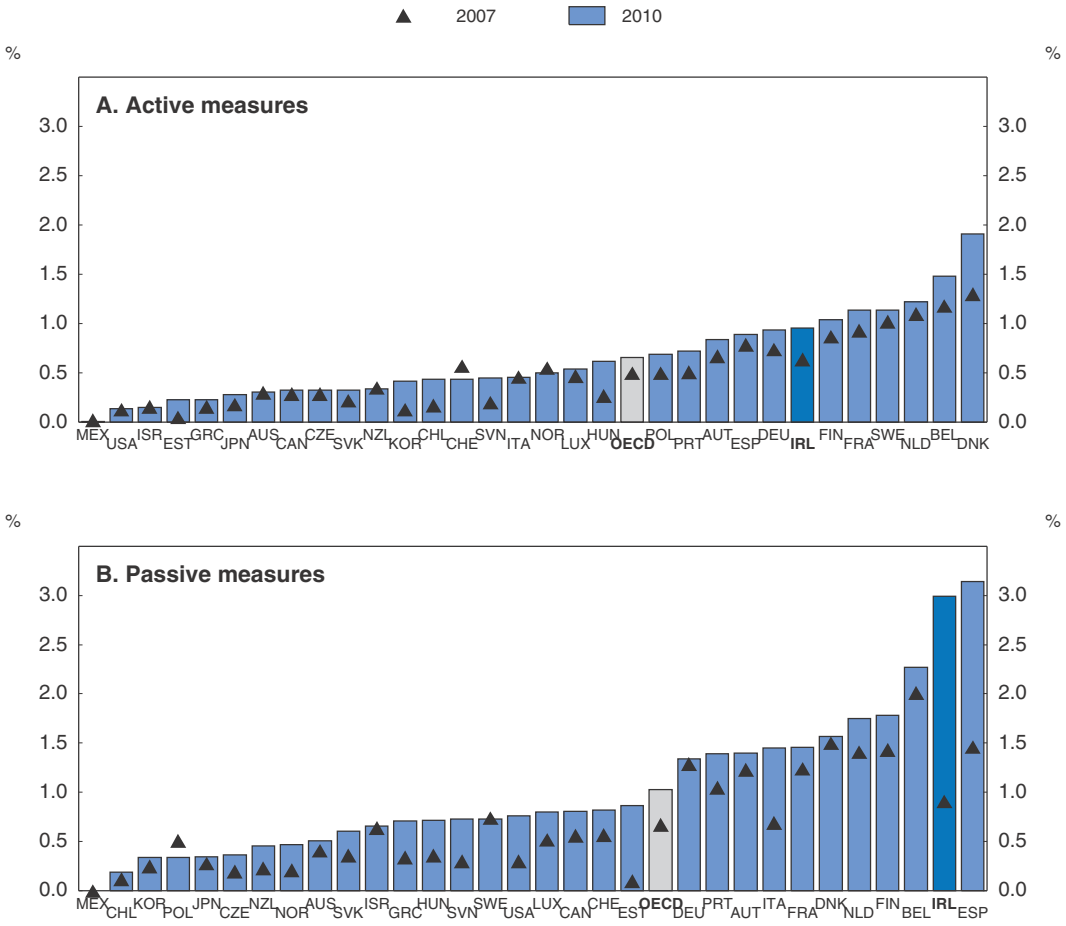
than triple the EU average. Participation in active labour market programmes also increased but remained clearly below the EU average.

Support for youth via passive schemes is needed to avert poverty risk and social exclusion. Passive measures include out-of-work income maintenance and support measures such as the job seekers benefits (JSB) and job seekers allowances (JSA). JSB are taxable weekly payments to persons over 18 who are out of work and have accumulated enough social security contributions. They were paid for 15 months in the 2000s, were reduced to 12 months in 2008 and, as of April 2013, were reduced again to 9 or 6 months depending on the level of social security contributions paid. Those not qualifying for JSB, or those who have used it up, can apply for the JSA, which is means tested. Youth unemployed retain their full JSB payment if they participate in a training programme. As of 2013, the maximum JSB payable to youth was reduced from 188 EUR per week to 100 EUR for those under 22 years and to 144 EUR for those aged 22-24, with a rate of 160 EUR for those participating in certain education and training programmes. These changes aim at boosting work incentives and encouraging participation in training activities.

As the economic recovery strengthens and employment prospects improve, the emphasis of labour market policies should be re-geared towards more active measures for youth to the detriment of passive schemes. It will be increasingly important to ensure that income support is subject to stricter and rigorous mutual obligation regimes. In an-innovation led economy, such as the one Ireland strives to become, it is essential to foster continuous labour reallocation across sectors and firms through effective active labour market policies.

Figure 1.14. **Public expenditure on Labour Market Programmes: Main categories**

As a percentage of GDP



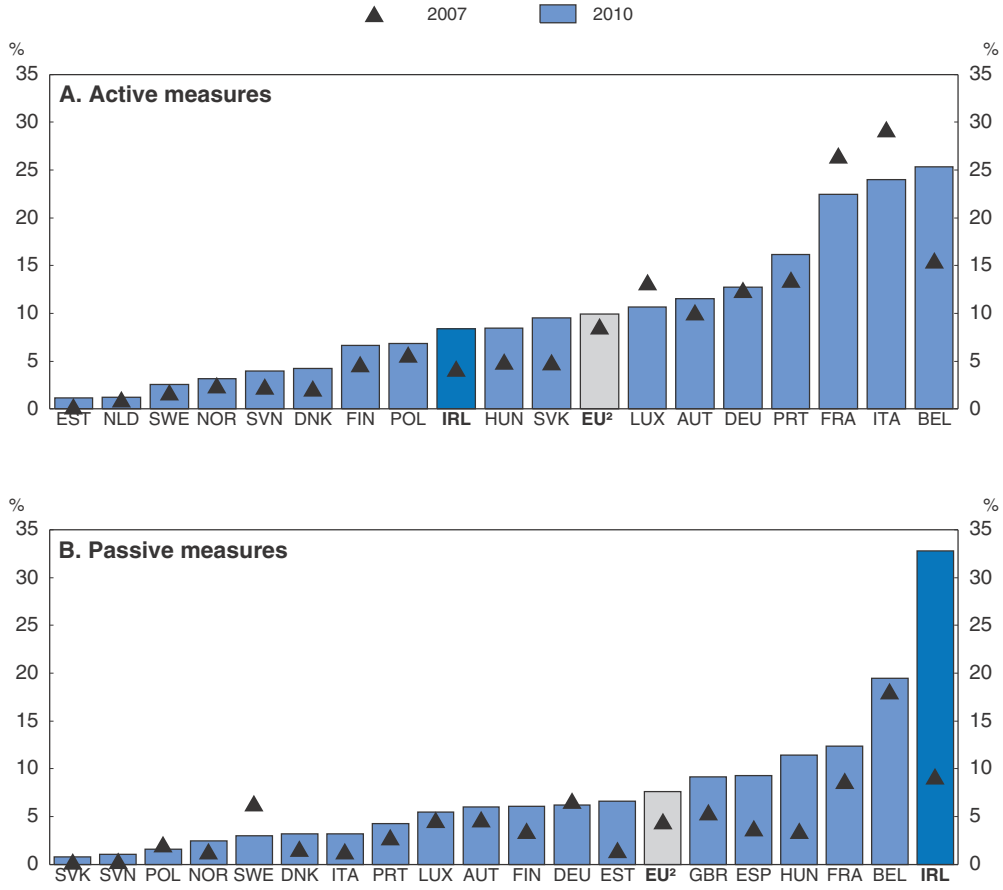
Note: Active measures refer to categories 1-7 of the OECD/Eurostat *Labour Market Programme Database*. They include PES and administration (placement and related services, benefit administration), training, employment incentives, supported employment and rehabilitation, direct job creation and start-up incentives. Passive measures refer to categories 8-9 and include out-of-work income maintenance and support and early retirement.
Source: OECD/Eurostat *Labour Market Programmes Database*.

StatLink http://dx.doi.org/10.1787/888932894209

The Irish authorities launched Pathways to Work (PTW) in February 2012, a major initiative to foster engagement with the unemployed, enhance activation and incentives to take-up opportunities, strengthen links with employers, and reform institutions to improve the services delivered to the unemployed (Box 1.1). The new activation regime is stricter than the previous one, where the waiting period to receive benefit payment and employment services was around 4 weeks and the first intensive job-counselling interview with a caseworker was typically only offered after three months on the live register. The number of sanctions imposed was also low prior to the reform. PTW has introduced a new stricter procedure for sanctions, although the actual number of people sanctioned remains low in international comparison, reflecting the high compliance so far. In certain respects, such as job-search monitoring, the regime remains weaker in comparison with other OECD countries such as the United Kingdom or Australia where a minimum of job-search actions need to be reported every two weeks.

Figure 1.15. **Young[1] participants on Labour Market Programmes: Main measures**

As a percentage of the labour force in the same age group



Note: Active measures refer to categories 2-7 of the OECD/Eurostat *Labour Market Programme Database* and include training, job rotation and job sharing, employment incentives, supported employment and rehabilitation, direct job creation and start-up incentives. Passive measures refer to categories 8-9 and include out-of-work income maintenance and support and early retirement.

1. Persons aged 15-24.
2. The EU area is the simple average of countries for which data are available.

Source: OECD/Eurostat *Labour Market Programmes Database*.

StatLink http://dx.doi.org/10.1787/888932894228

PTW improves the delivery of ALMPs in Ireland and it is in line with previous OECD recommendations in this area (OECD, 2011; Grubb et al., 2009). However, the pace of reform implementation is slow and the number and scope of unemployed workers covered by the enhanced Intreo services remains low considering the pressing needs for activating the jobless population. Previous OECD studies stressed the number of people in employment offices providing job-search assistance and monitoring, relative to the numbers of unemployed workers in the economy, were well below that in other advanced economies. These resource constraints are more acute nowadays given the growing number of unemployed. At present, each case worker oversees approximately 800 jobseekers, which is high by international standards. Youth require a more intense and comprehensive job-search assistance and counselling and are therefore likely to be seriously affected by the insufficient number of caseworkers. A major concern is also that the long-term unemployed are not covered by the enhanced Intreo services and have not yet even

Box 1.1. **Pathways to work**

The Pathways to Work policy and the establishment of the new Integrated National Employment and Entitlement Service (Intreo) service aims at establishing an enhanced engagement between the employment and income support services and the unemployed, including those under the age of 25. Intreo services are delivered via one-stop-shops where job-placement and benefit administration are integrated in a single delivery unit. The new policy is underpinned by five core principles (Pathways to Work, 2012):

- More regular and ongoing engagement with the unemployed.
- Greater targeting of activation places and opportunities.
- Incentivising the take up of opportunities by the unemployed.
- Creating and enhancing relations with employers through incentivising the provision of opportunities for people who are unemployed.
- Reforming institutions to deliver better services to the unemployed.

The first stage in the process is the client registration both for welfare entitlements and employment services. As part of the registration process the client completes a profile questionnaire to enable a case worker to assess their Probability of Exit (PEX) from unemployment and develop a personal progression plan. Depending on the outcome of the assessment, the progression plan will offer a level of engagement with the employment services. For example, clients with a high PEX rating will be encouraged and helped to search for employment. Clients with a mid-point PEX rating, and those with a high-PEX rating but still unemployed after three months, will be invited to participate in group sessions where they will be provided with guidance on how to improve their job search activities and also on the training and development opportunities available to them to improve their employment prospects. Clients with a low-PEX rating and all those unemployed after 12 months will receive intensive one-to-one support from an employment advisor.

received the one-to-one interview where the needs of the individual are assessed by a caseworker and the personalised action plan is drawn-up and initiated. To reach more long-term unemployed persons, the government is considering contracting out activation to private providers. Experiences in other countries suggest that, if properly designed, contracting out can make a positive contribution but there are difficulties in implementing it in an effective way. In addition, empirical research, focused on large-scale job seeker assistance program targeted at young graduates in France, suggests that contracting out may create a substitution effect. Job seekers assisted by external providers are more likely to get a job, but at the expense of other unemployed workers with whom they compete in the labour market and did not receive the external assistance, and there is no significant net effect on reducing unemployment (Crépon et al., 2013). Further delaying tackling the long-term component of youth unemployment with an effective activation regime increases the risk of a lost generation. The number of caseworkers in Intreo should be further increased as soon as possible, through further internal redeployment, to provide long-term unemployment with appropriate engagement and support.

The government needs a more strategic approach to youth unemployment

A comprehensive national strategy to tackle the very high unemployment rates among youth is lacking. Youth policy is fragmented, with several Government departments

taking individual action. A more co-ordinated and tailored approach to the youth unemployment problem is required, including profiling and a reallocation of resources towards schemes with greater activation success for youth based on rigorous evaluation and a youth guarantee.

Good programme targeting is vital for youth because their profiles and their needs may differ significantly. The introduction of the profiling model to define targeted pathways to work depending on the characteristics of the individual is a decisive step forward. However, the Irish economy is undergoing profound structural changes and recent evidence indicates that the determinants of unemployment have changed significantly (Kelly et al., 2013). In line with practices in other countries such as Australia (Lipp, 2005), the profiling model needs to be continuously assessed and updated to take into account the new economic conditions. The model is currently being applied to jobseekers who get registered in the employment offices. There is also a pressing need to define targeted policies for youth neither in education nor in the labour force or those suffering from disabilities. The profiling model should therefore be enhanced in order to incorporate relevant characteristics for those individuals.

Outreach programmes together with early intervention are key for youth. For that it is essential to ensure appropriate co-operation between the public employment services and the education system to reach youth as soon as possible (OECD, 2010). The focus should be on assessing whether they have relevant qualifications, and in case they do not have them, they should return to training. For those considered job-ready the most cost-effective ALMP is to provide them with a job-search assistance "package" as early as possible. The "package" should include not only aspects related with job-search techniques such as how to write a resume but should also incorporate guidance concerning geographical mobility or housing assistance. For those with more important problems entering the labour market, the "package" could include adult mentoring, work experience and remedial education (OECD, 2010). Reading and writing tests should be taken as early as possible to detect potential obstacles in these areas, which have been associated with risk of long-term unemployment (Kelly et al., 2011). Courses should be made available for those who do not meet acceptable literacy standards before progressing to other ALMPs.

The Department of Social Protection has been increasing spending on ALMPs despite intense fiscal constraints (Table 1.1). However, programmes that account for more than half of spending (direct job creation programmes, such as Community employment) have very little youth participation. The main programmes potentially aimed at youth are the internship schemes, accounting for 8% of the total spending, and Back to Education Allowance, which accounts for 23% of the spending. The fourth main scheme, with 16% of the budget, aims to supporting self-employment and also has few young participants (more below). In addition, the two programmes with the largest participation by youth, accounting for 31% of the total, are not exclusively targeted at youth and also have significant adult participation.

In a context of structural change the ability to adapt to labour market needs is key for designing successful and efficient ALMPs. Allocating resources to those programmes that prove effective and efficient in improving the labour force performance of participants and abandoning those that do not help the unemployed return to work is vital to get value for money. It also enables the authorities to establish targets for government agencies and private sector service providers. All this calls for a systematic, independent, and rigorous

Table 1.1. **Trends in Department of Social Protection employment support schemes (EUR million)**

	Nature	2007	2010	2011	2012
Community employment programme	Work-programme	357.5	368.3	356.7	315.2
Rural social scheme	Work-programme	47.8	46	46.1	45.7
Tús – community work placement scheme	Work-programme	0	0	30	84
Job initiative	Work-programme	40	30.2	28.5	27.2
Back to work allowance	Self-entrepreneurship	71	87.9	91.5	137.9
JobBridge	Internship	0	0	20	65.8
Back to education allowance	Training	64.1	179.8	198.8	183
Other programmes reviewed (est.)		10	16	17.3	15
Total above		590.4	728.2	788.9	873.81

Source: Department of Social protection.

programme evaluations and performance measurement. Evaluations should be able to isolate the effect of the programme from the outcome that would have been achieved without programme participation. This can be done either via experimental evaluations or quasi-experimental evaluations based on statistical techniques. Evaluation culture is well-established in North-America and the United Kingdom, and is progressing in some European countries such as the Nordic countries and the Netherlands. Ireland should also take decisive steps in this field. These steps should include greater political commitment to evidence based policy making (Johnston, 2006) and establishing legal requirements for evaluation including its funding. Linked to the rigorous evaluation, sunset clauses should systematically be introduced, implying a regular review of the need for policies and schemes.

When allocating resources to different schemes, preference should be given to those schemes that are effective in integrating participants in the labour market, to the detriment of those schemes with a poor performance in increasing the employability of participants, such as Community employment (O'Connell et al., 2009). The programme was originally targeted at those who have been unemployed for more than a year, aged more than 25 years and with low educational or disadvantaged backgrounds. Comparing the educational background of participants in 2008 *vis-à-vis* more recent years reveals that the share of persons entering the scheme with secondary or higher education attainment has increased, reflecting the persistence of long-term unemployment across the labour force. Community employment should not be expanded in its current configuration, focused on the provision of goods and services to the local communities, but should be limited to the most disadvantaged participants with little realistic prospects in the open labour market and for whom there is no other alternative. Its funding should be treated and budgeted as providing welfare and social support and not as an active labour market policy. The extra resources freed up should be reallocated to other schemes more effective in improving the employability of participants such as *Momentum*, Springboard or ICT conversion programmes (see below).

The Back to Education allowance (BTEA) accounts for a substantial proportion of the education resources available to the unemployed. BTEA is a second chance educational opportunities scheme for people on welfare payments who wish to participate in full time education, from basic foundation up to third level courses. Since 1 January 2013, the allowance is paid to new entrants at a weekly rate equivalent to the rate of the relevant social welfare payment that qualifies the applicant for participation in the scheme, with the exception of under 25 year olds who are subject to a new ceiling of EUR 160. While the scheme is generous in providing the unemployed with re-education opportunities, it

resembles more a pure education allowance rather than a genuine activation programme and the linkage with labour market needs is lacking. To better align the BTEA to the labour market, job-services should take a central role in the selection of the degree that the participant is going to pursue to ensure that the qualification and skills gained are adequate to the participant profile and are relevant to the labour market, in line with the recommendation in the Department of Social Protection review (DSP, 2012). As is done in other education programmes, a link between the degrees pursuable via a BTEA and the findings of the Expert Group on Future Skills Needs Expert should be established. Access to the allowance should be aligned to the school calendar to avoid unduly long waiting periods.

The most effective ALMPs are those based on the mutual obligation principle, whereby the unemployed receive income and employment support, and in return, they are required to participate actively in job-search and/or training (Martin, 2000; Kluve, 2006). PTW has mutual obligation as one of the core underlying principles but the limited resources devoted to job-assistance and monitoring may limit its effective implementation. Some countries, such as the Netherlands, have a strict implementation of the mutual obligation approach for youth, whereby authorities are obliged to give a young person aged 18-27 who applies for social benefits an offer of work, training or a combination, and the young cannot remain inactive and must accept the offer to be entitled to social benefits. Ireland should introduce a similar stricter mutual obligation compact for youth. The first step in such a compact or youth guarantee would be to provide those in long-term unemployment and those neither in education nor in the labour force with an offer of training or work so as to keep at bay social exclusion and marginalisation.

Improving the transition from school to work

An education system that prepares youth for entering the labour market is vital from both economic and social viewpoints. Ireland ranks favourably in terms of the share of the youth population that has completed tertiary education. Nearly half of those between 25 and 34 year old have completed tertiary education, which is one of the highest rates in the OECD (OECD, 2012). In addition, around a third of the fall in youth participation in the labour market since 2009 is accounted for by a return to education (Conefrey, 2012). Nevertheless there remains a large cohort of jobless unskilled youth and Ireland is under a profound process of structural change which requires substantial labour reallocation. This requires ensuring that the training system provides skills relevant in the labour market and meets the needs of the long-term unemployed, improving the apprenticeship system and making good use of internships. The general weak situation of European Union labour markets increases the challenges. Even in low to medium skills occupations, youth must be able to compete with other youth immigrants who are often well qualified and mobile from elsewhere in the EU.

To tackle the mounting training challenges faced by Ireland, the authorities embarked in a re-organisation of the training system (Box 1.2). SOLAS, the new education authority in the Department of Education and Skills, will oversee the delivery of training to the unemployed and also of further education such as vocational training. While there are potential efficiency gains in pooling the funding for unemployed training and further education, SOLAS will face major challenges in terms of supervision and co-ordination. A key challenge will be to ensure that the training provided is effective in addressing the needs of unemployed, in particular of long-term and other disadvantaged unemployed. For that, the training providers should be chosen according to their ability to deliver suitable

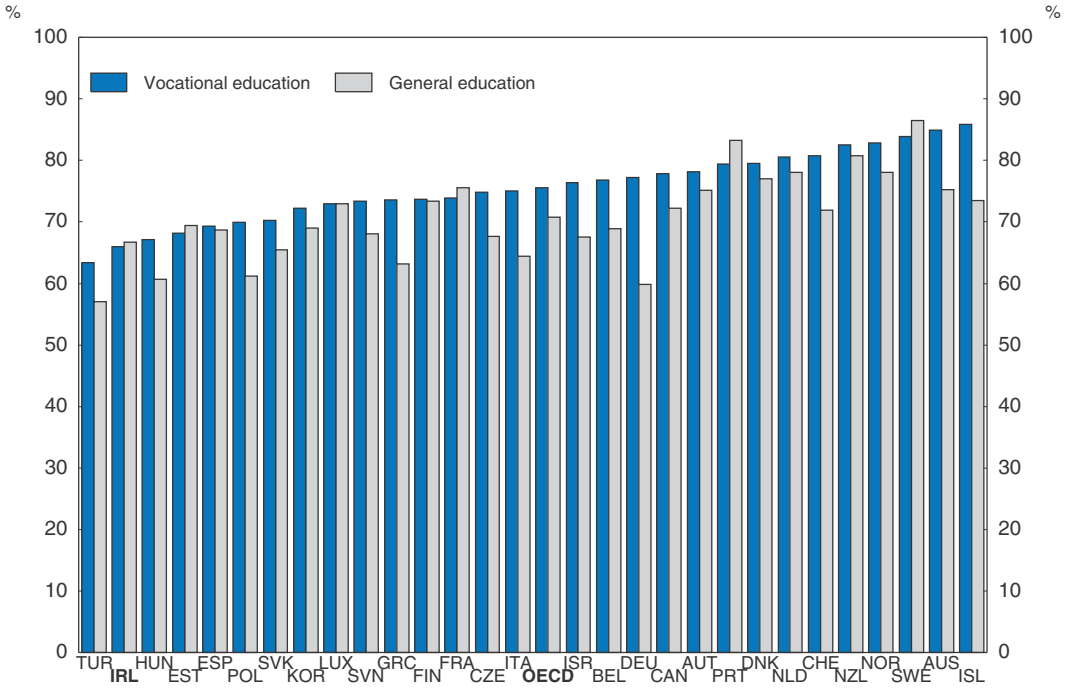
Box 1.2. **SOLAS, the new Further Education and Training Authority**

The 33 vocational education committees, which provide further education, are being rationalised into 16 Education and Training Boards. In addition to providing for further education these Education and Training Boards will take over the responsibility for training services currently provided by FÁS. FÁS is being disbanded and a new body, SOLAS is being established. SOLAS will act as an oversight and funding body of the Further Education and Training sector. Further education encompasses a range of full and part time programmes. Full-time schemes are: Post Leaving Certificate courses, targeted at those who have complete a Leaving certificate (secondary education) or adults reentering education; Vocational Training Opportunity Schemes, aimed at unemployed over 21 years old and leading to secondary level qualifications; Youthreach, which provides integrated education and training for early school leavers without qualification. Part-time programmes are adult literacy schemes, community education for those harder to reach and the Back to Education initiative targeted at those who have not completed the Leaving certificate qualification (secondary education).

instruction, irrespective of whether they are embedded in the public sector or they are private sector providers. Given scarce resources, to increase effectiveness, the provision of training should be incentivised according to the number of jobs placements achieved. Effective co-ordination with the Department of Social Protection (DSP) will also be vital so that DSP can assess whether the training is having the appropriate impact on the employability of the jobseekers and ensure than the training is driven by the needs of the participants, rather than being provider-driven. SOLAS, in co-ordination with the Department of Social Protection, should establish channels to monitor the attendance at the training schemes in a timely way so that the mutual obligations underlying Pathways to Work are maintained. A target of 51 000 placements has been reserved for the long-term unemployed and it is intended to intensify this in 2014.

In most countries, vocational training has been identified as a significant determinant of ensuring an efficient school-to-work transition (OECD, 2010). Employment rates of those with vocational education and general education is the second lowest in the OECD after Turkey (Figure 1.16). In addition, contrary to most countries, in Ireland the employment rate of individuals with general education, which in principle tends to provide skills with fewer direct links to the labour market, is higher than those with vocational education. The recession and the subsequent shift in Irish growth model have important implications on the effect that different educational qualifications have on labour market transitions (Kelly et al., 2013). Before the recession having a post-leaving certificate (PLC), the largest vocational education scheme, was associated with the best prospects for getting into employment. Lower qualifications such as leaving certificate also had a significant positive impact. After the recession, there is no significant difference in the impact that a post-leaving certificate has in comparison with lower qualifications such as a junior certificate. On the contrary, while possessing a third level non-degree did not help in the pre-recession era, after the crisis the impact is positive, likely reflecting that employment growth is taking place in higher skill areas. Holding a third level degree had a positive impact on employment prospects before the recession, and the impact has increased after the recession (Kelly et al., 2013). In order to cope with these changing requirements it is

Figure 1.16. **Employment rates of individuals with vocational and general education attainment at ISCED 3-4 level, 2010**



Note: Countries are ranked in ascending order of the employment rate of 25-64 year-olds with vocational education at ISCED 3-4 level.
Source: OECD, *Education at a Glance 2012*.

StatLink http://dx.doi.org/10.1787/888932894247

essential to establish progression plans going beyond the traditional pathways (i.e. from school to higher education).

Research has shown that training providing high-level skills is the most effective in increasing employability, while general training tended to provide lower returns and low-skilled training seemed to have no impact on increasing employability of participants (McGuinness et al., 2011). In order to respond to the current demands for specialized workers, the emphasis of vocational schemes should be on specialised courses providing the participant with high-level skills relevant in potential growth areas in the labour market and including a job placement component (Ashton, 2002). The recently launched *Momentum* programme seems to incorporate many of these elements. The programme is targeted at the long-term unemployed and will provide 6 500 places in expanding employment areas of ICT, digital media, healthcare and social services, the green economy, food processing and sales and marketing. Participants in *Momentum* account for approximately 11% of total participants in all FAS programmes in 2013, so the scope of the programme is limited. Its effectiveness should be evaluated, and in case of positive results the programme coverage should be extended. As a general principle, education and training schemes need to be continuously evaluated so that unsuccessful schemes can be disbanded in a timely fashion and new ones set up. This is particularly important for vocational training schemes, which provide very specific skills, in some cases of limited versatility.

Apprenticeships can have large benefits for youth due to the combination of classroom and practical experience and tight linkages with employers (see Box 1.3). The

Box 1.3. **A dual system of apprenticeship and vocational training**

Countries such as Austria (OECD, 2013), Germany (Hoeckel et al, 2010) and Switzerland (Fazekas et al., 2013) have a longstanding tradition of apprenticeship systems based on a dual approach and associated with good labour market outcomes for participants. The main characteristics of the dual approach are:

- They combine learning time at a vocational school with learning time at a host company.
- Employers and social partners are engaged in the design, running and financing of the system.
- Employers get the possibility of hiring young workers "ready to work", reducing spending on recruitment and training; employees get a recognized qualification together with related and relevant work experience.

The strength of the dual apprenticeship system is that all key stakeholders, including employers, social partners (trade unions, chambers of commerce, etc.) and experts from the vocational schools, are engaged in developing the vocational training curricular frameworks. The vocational school then takes care of delivering the theoretical part of the curricula, while the private companies provide the practical part. Around 60% of the training takes part in the company. The high involvement of employers in the design of the scheme ensures a good match between the supply of and demand for skills. It also provides flexibility to respond to the requirements of the labour market and to deliver training that is adjusted to changing needs.

In Germany, special mechanisms are in place targeted at SMEs, whose training capacities may vary. This includes intercompany facilities to supplement the training hosted at some SMEs and specific structures such as the "lead enterprise with partner enterprise", whereby the lead enterprise keeps the overall training responsibility but part of the training is conducted at other partner enterprises.

current Irish apprenticeship system is concentrated in craft areas such as construction, the electrical sector, engineering, motor and printing. Contrary to the PLCs, whose workplace training periods have been found to be limited (Kis, 2010), apprenticeships provide abundant workplace training. Prior to the crisis the apprenticeship system provided around 8 000 new registrations every year, with a high concentration on the construction sector. After the collapse in construction activity, registrations have stabilised at around only 1 000 every year and the government has announced a review of the apprenticeship system. In order to foster and facilitate the on-going labour reallocation, it is important that the new apprenticeship system goes beyond craft related activities and also provides skilled workers to other sectors of the economy.

The cost of apprenticeships is high in Ireland in international perspective. To improve cost-effectiveness, training on specialised equipment should take place in the company, where more up-to-date technology is available (Kis, 2010). On-going structural change in the Irish economy requires a flexible apprenticeship system where the terms of the apprenticeship depends on the needs of the specific sector, with real possibilities to create new apprenticeships rapidly enough to react to emerging needs and where resources and participants can be shifted towards those with better prospects. For that it is essential that a good level of foundation and transversal skills is ensured (Hoeckel, 2007). One key element of a successful apprenticeship and vocational system is to engage employers both in the design of the curricula and in the delivery of apprenticeship time. This is important

because employers are aware of changing labour market needs. In the case of Ireland it is essential to involve SMEs, since they account for 70% of private employment. Co-ordinated shared training structures should be put in place to allow that smaller companies, with more limited training capabilities, can become engaged and participate in the system.

Concerning higher education, to respond to the skills shortages in certain high skilled areas, the Higher Education Authority has launched *Springboard* and ICT skills conversion programmes. These schemes, some of which are oversubscribed, establish clear links with current and emerging labour market needs. *Springboard* offers part-time higher education courses for the unemployed leading to qualifications in growing and emerging sectors such as ICT, biopharma, green economy or international financial services. Recently-launched ICT Skills conversion programmes, are specifically aimed at building the supply of high-level ICT graduates. They include work-placement periods and are delivered in partnership with industry. In both cases a thorough evaluation of the outcomes of the schemes should be continuously undertaken. If the initial promising results found in the on-going monitoring are confirmed, the programmes should be expanded.

Internships provide a less involved structured pathway from education to work. In 2012, the DSP rolled out *JobBridge*, a national internship scheme aimed at individuals with a welfare entitlement in the preceding six months. The evaluation of the program (Indecon, 2013) revealed that about half of the participants have secured employment since finishing their internships. Youth participants (i.e. those between 15 and 24 years old) accounted for 29% of all participants, and the highest participation was in the 25-34 age group, which was 45% of the total. Most participants had a bachelor degree and only few had lower qualifications, such as junior or leaving certificate. Most of the participants also had significant working experience: 85% had at least one year of previous working experience. Participation declined with the duration of unemployment prior to starting the internship. One third of participants had been unemployed for less than 6 months, and 40% of participants were long-term unemployed. A third of internships took place in the Dublin area, with a lower participation in some of the counties where youth unemployment is higher.

While the scheme has served many unemployed workers with working experience to regain employment, the impact on unemployed workers without previous experience has been more limited. Given the profile of the participants, the scheme seems to have functioned more as an employer incentive scheme, which subsidised the cost of employment, rather than as a genuine internship programme aimed at facilitating the transition of inexperienced young workers to the labour market. In order to break the circle "no experience-no job-no-experience" a specific track should be established for youth (Table 1.2). While an ex-post evaluation of the programme has taken place (Indecon, 2013), a more thorough evaluation, based on a full control group dataset, should be undertaken to assess its effectiveness in increasing employability when taking into account participants qualifications and previous working experiences. This would also contribute to further adjusting eligibility criteria to limit potential deadweight costs associated with the scheme.

Reducing labour demand barriers for youth

Across OECD countries, the two main demand-side barriers faced by youth, and particularly by low-skilled youth, are inflexible employment protection legislation and high labour cost. Ireland retains one of the most flexible labour markets among OECD countries as measured by the OECD Employment legislation index. Despite that, the current economic uncertainty makes employers reluctant to hire on permanent contracts

Table 1.2. **Summary labour market and training schemes and recommendations**

Programme	Scope[1]	Nature of programme	Eligibility[1]	Youth participation[1]	Recommendation
Community employment	315 EUR million 24 000 participants	Work-programme.	People over 25 in receipt of specified social welfare payments for at least a year.	Very marginal.	Limit to more disadvantaged cases and budget as welfare and income support. Reallocate freed up resources to other schemes.
Back to Education allowances	197 EUR million 26 000 participants	Second chance education.	Welfare payment recipients for at least 3 months older than 21.	About 15% of all participants in 2011.	Job-services to take a central role in ensuring the relevance and adequacy of pursued studies.
JobBridge	55 EUR million 5 500 participants	Internships of up to nine months.	Recipients of welfare claim for at least three months in the preceding 6 months.	About 33% of all participants in 2012.	Establish a track for inexperienced youth.
Back to work	127 EUR million 6 300 participants	Support self-entrepreneurship.	Recipients of welfare claim for at least 12 months.	39% supported under 35 years in 2011.	Introduce mentoring and coaching for youth participants. Set-up mechanisms to allow follow-up of supported business.
JoBPlus		Encourage hiring of long-term unemployed.	Employers hiring long-term unemployed.	To be assessed.	Evaluate outcome. In case youth not well-covered establish a youth track.
Training for employment (currently provided by FAS)	75 000 participants		Unemployed by referrals.		More emphasis on high-skills and driven by employers and participants needs.
Post-Leaving certificate (provided by VECs)	32 000 participants	Vocational education (post-secondary).		Most participants are above 21.	More emphasis on high-skills and driven by employers and participants needs. Increase work-placement component.
Apprenticeship	1 400 participants				Expand to other areas of the economy and allow for more participation by SMEs.
Momentum	6 500 participants	Vocational education.	Unemployed for 12 months or more.	New program starting in 2013	Evaluate its outcome and expand according to the result of the evaluation
Springboard	6 000 participants per year	Part-time courses in higher education.	Unemployed people.		Evaluate its outcome and expand according to the result of the evaluation.
ICT Skills conversion courses	700 participants	Intensive ICT training.	Graduates with priority for long-term unemployed.		Evaluate its outcome and expand according to the result of the evaluation.

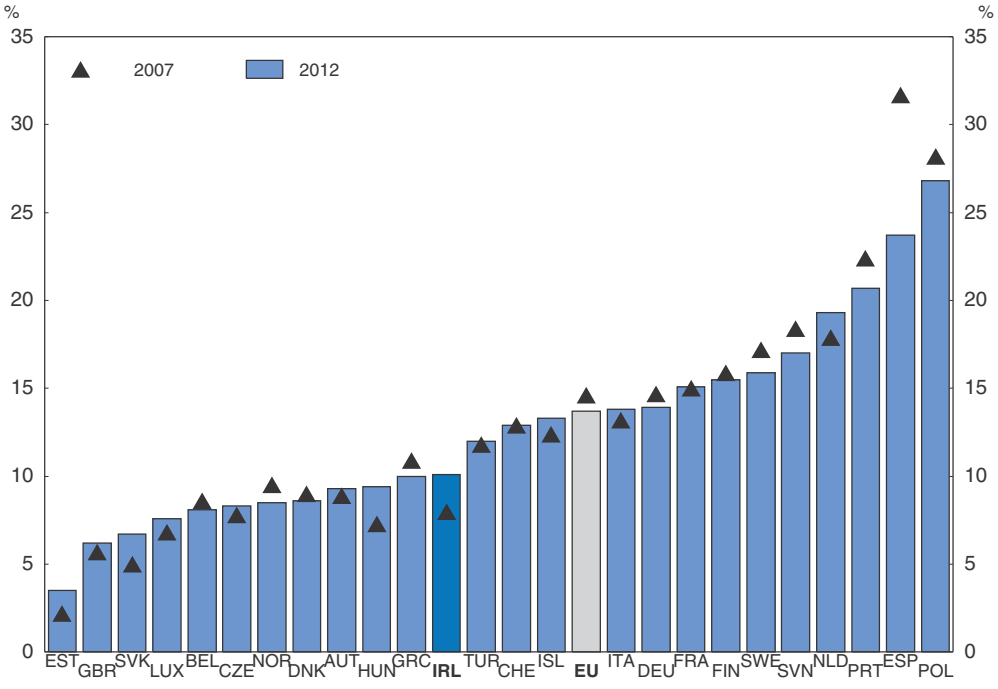
1. DSP (2012).

and they are making more use of temporary and part-time contracts (Figures 17 and 18). When faced with unemployment as the alternative, temporary and part time contracts are arguably a more favourable option. For young people entering the labour market for the first time, they can act as an initial stepping stone to permanent and full time employment.

As outsiders to the labour market, youth, in particular the low-skilled, are more likely to suffer from too high labour costs. The two main policies affecting wage and labour costs are the social security contributions paid by employers for low-pay/low-skilled workers and the minimum wage.

To improve conditions for job creation at the lower salary band, the Irish government extended the Employer Job PRSI Incentive scheme in 2012. The scheme provides an exemption in social security contributions for employers who take on an additional member of staff who had been unemployed for 6 months or more and had the potential to benefit young unemployed workers, especially the low skilled. However, the scheme has had low take-up, likely reflecting weakness of business confidence in that period and the lack of awareness by employers. As a response, the government plans to introduce *JobPlus* to provide those employers who hire unemployed workers with a cash payment. This new scheme aims at obtaining a higher take-up by providing a simpler framework. Employers will receive a fixed payment over two years for hiring an individual who has been unemployed for more than 12 months. The payment will be larger if the unemployment spell has been greater than 24 months. The scheme seems well targeted to address the

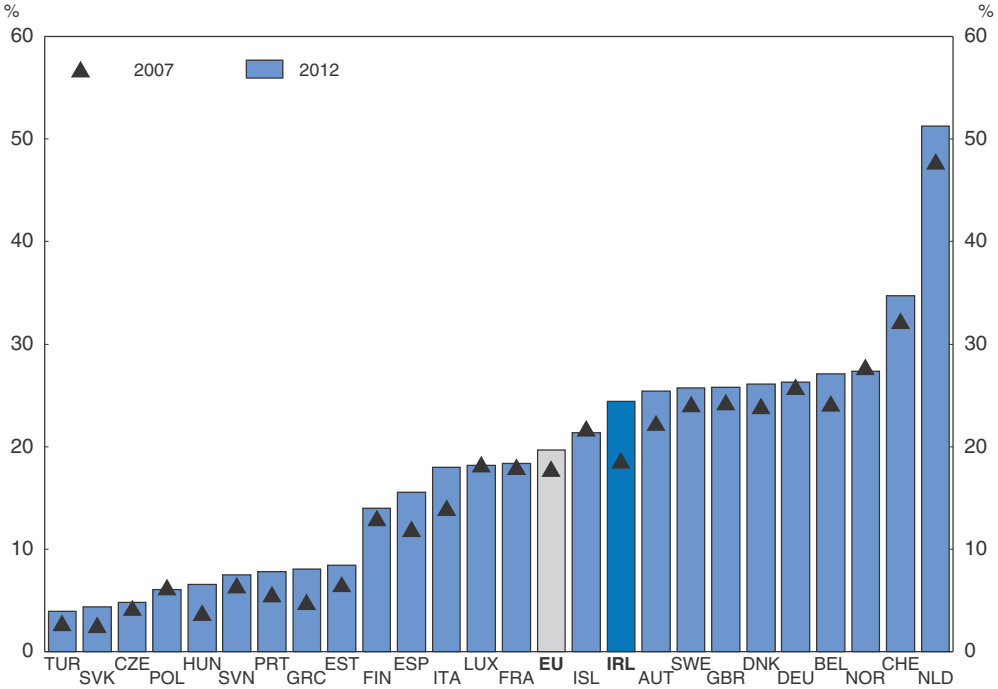
Figure 1.17. **Percentage of temporary employees**[1]



1. Persons aged 15-64.Number of temporary employees as a percentage of the total number of employees.
Source: Eurostat.

StatLink http://dx.doi.org/10.1787/888932894266

Figure 1.18. **Percentage of part-time employees**[1]



1. Persons aged 15-64. Number of part-time employees as a percentage of the total number of employees.
Source: Eurostat.

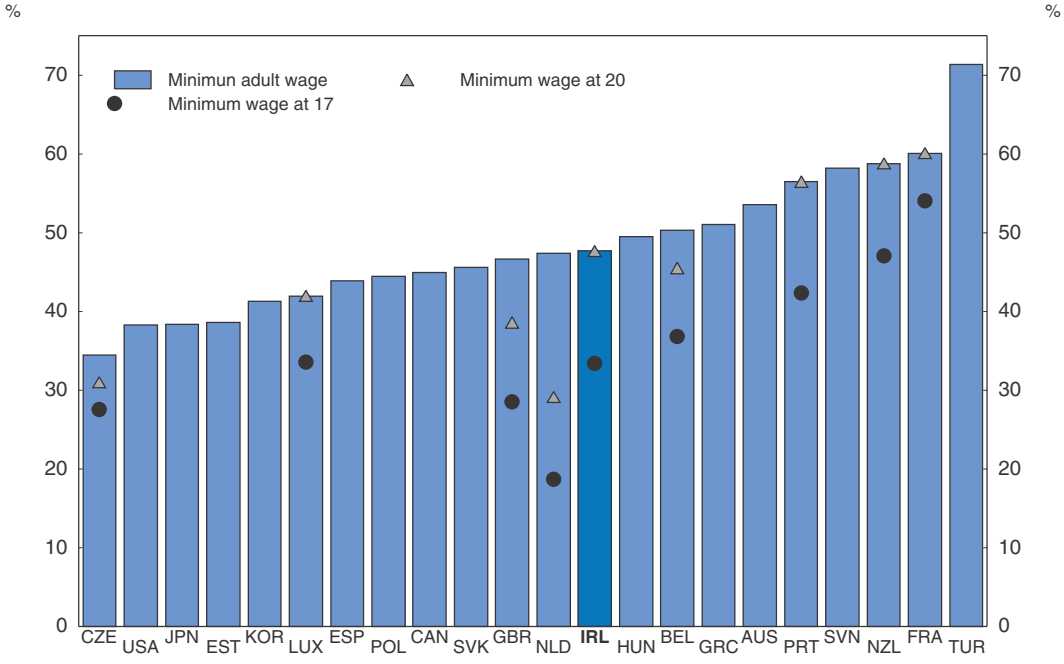
StatLink http://dx.doi.org/10.1787/888932894285

difficulties that the long-term unemployed are facing but there is no specific provision for youth. As in the new internship schemes, this may put them at a disadvantage to adult workers who tend to have more working experience. The scheme should be evaluated to assess whether it is successful in facilitating the access of long-term youth unemployed to employment. In case it is not, a specific track targeted at youth long-term unemployment needs to be established.

A high minimum wage with respect to the median wage could increase the difficulties of those least productive or skilled to gain employment. In Ireland the adult minimum wage is EUR 8.65 per hour and there is a sub-minimum for youth: 70% of the adult minimum wage for those under 18 (and those who enter employment for the first time), 80% in the first year of employment since the age of 18, and 90% in the second year. Youth sub-minima are useful in taking account productivity differentials among workers depending on their age and experience. When compared with the median wage, the statutory minimum wage in Ireland does not stand out in international perspective. The setting of youth sub-minima varies across countries. For example in the United Kingdom the sub-minimum applies to youth under 22 (Figure 1.19). In conjunction with other relevant parameters, the government should ensure that the level of the minimum salary, including the youth sub-minimum, does not hamper the employment of lower-skilled young workers. In addition, it is also essential that the lower skills youth cohort gets re-skilled to fulfil the productivity requirements in the service sectors that are currently creating employment. Failing to do so will put lower-skilled youth in a disadvantageous position *vis-à-vis* highly mobile and skilled youth workers from other European economies whose labour markets remain depressed.

Figure 1.19. **Minimum annual wage:[1] Difference between youth and adults, 2011**

As a percentage of median wage



1. Data refer to the gross wage, which does not take into account potential social contribution exemptions.

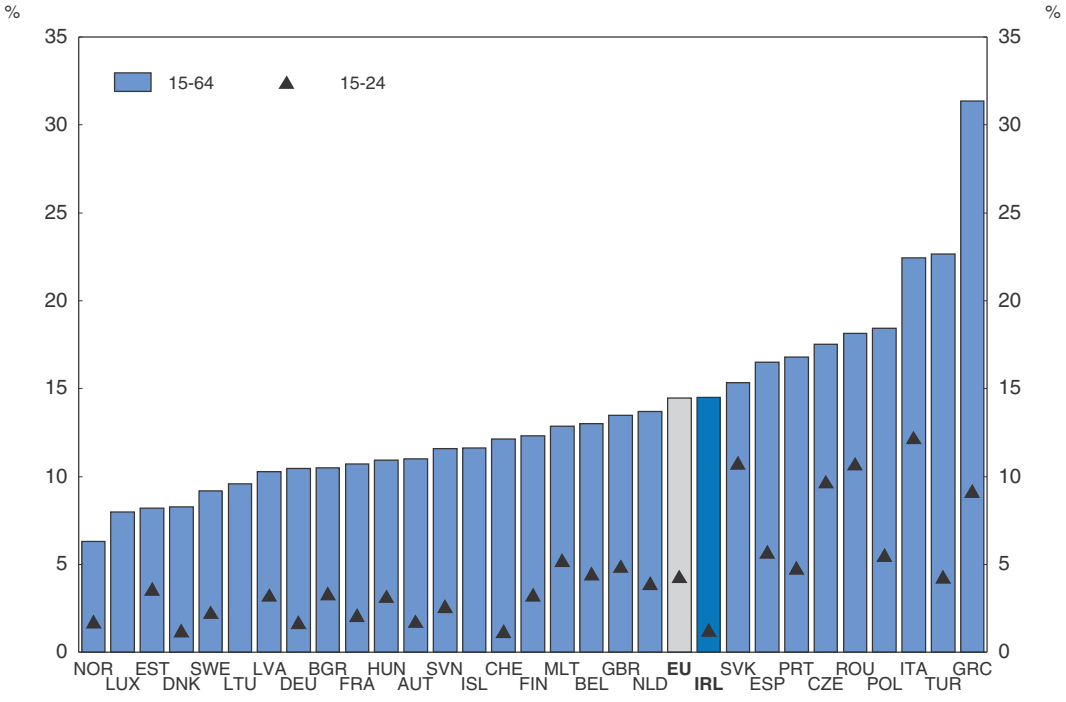
Source: OECD Minimum Wages and Earnings Database.

StatLink http://dx.doi.org/10.1787/888932894304

Supporting youth self-employment and entrepreneurship

The self-employment rate among youth in Ireland is very low in international perspective (Figure 1.20). While this may partly reflect the uncertain post-crisis economic environment, the financing constraints and emigration trends, barriers to youth self-employment include a lack of exposure to entrepreneurship training and entrepreneurship as a career option.

Figure 1.20. **Self-employment rates[1] 2012**



1. Self-employment as a percentage of the employment in the age group.
Source: Eurostat.

StatLink http://dx.doi.org/10.1787/888932894323

To develop entrepreneurship skills among youth, entrepreneurship and the option to work for oneself could be better integrated into the Irish educational system, starting from primary education, where students may get first exposure with entrepreneurship as a career option. Evidence signals that programmes aimed at instilling entrepreneurial attitudes and competencies in secondary education are effective in increasing the entrepreneurial intentions of participants, have a significant effect on the self-perceived feasibility to start a company and increase the perceived desirability of the self-employment option (Lepoutre et al., 2010). Providing information, advice, coaching and mentoring, facilitating access to financing and offering support infrastructure for business start-up are also important elements (OECD, 2012b). While Ireland has in place specific programmes to support entrepreneurship by specific groups, e.g. Enterprise Ireland provides the Competitive Feasibility Fund for Female Entrepreneurs targeted at female-led new start-ups, there is no specific provision for youth entrepreneurship so far.

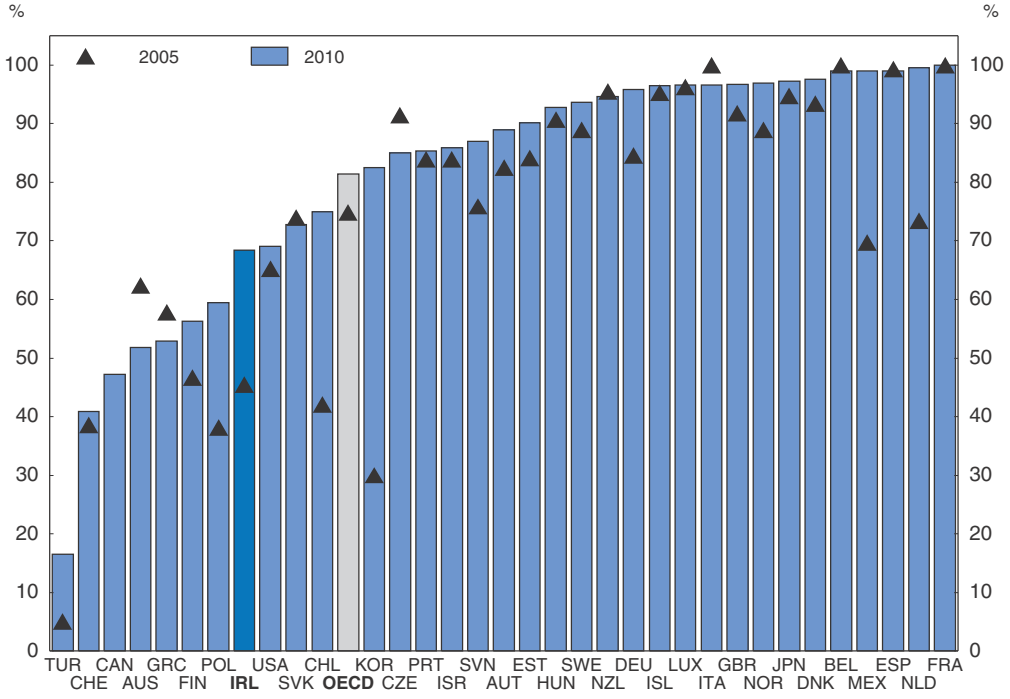
Back to Work Enterprise Allowance and Short-term Enterprise Allowance are programmes supporting self-employment among those on social welfare payments. In neither of these schemes there are specific support provided to youth and there is no follow-up concerning

outcomes and survival rates of the business supported by the schemes. In order to allow for a more efficient and effective delivery of the schemes, the allowances should be granted in conjunction with a coaching and mentoring package especially when these schemes are granted to young unemployed. A centralised gathering of information related to the schemes should be developed to allow for a proper evaluation and follow-up of the supported business.

Better integration of disadvantaged youth

Standard policies are unlikely to work for disadvantaged youth i.e. those young workers who are disadvantaged by their personal circumstances from entering or re-entering the labour market, including youth of disfavoured social background or those with health problems or disability. Alternative schemes, such as the ones being provided by Youthreach, where participants received more inclusive and specialized attention, including adult mentoring, seem to offer good outcomes. Skill-upgrading should be tailored to the profile of the disadvantaged youth (OECD, 2010), and for that, the existing profiling models should be adapted to identify targeted pathways to work also for these people. Early action, and in particular enrolment in early childhood and primary education, has been identified as an effective way to mitigate social inequalities and avoid the perpetuation of social exclusion and poverty (Carneiro and Heckman, 2003; Caille and Rosenwald, 2006). Ireland's enrolment rate has increased but remains well below the OECD average (Figure 1.21). Efforts should be made to increase early childhood education as a preventive way to better integrate youth with more disfavoured social and economic backgrounds. This is also pertinent given the structural problems of workless households that Ireland suffers, with a high share of children living with lone-parents.

Figure 1.21. **Enrolment rates in early childhood and primary education at age 4**



Note: The OECD area is the simple average.
Source: OECD Education Database.

StatLink http://dx.doi.org/10.1787/888932894342

Ireland has the highest proportion of population in jobless households in the EU, and it was the second highest prior to the recession (Watson et al., 2012). The risk of long-term poverty is much higher for jobless individuals on benefits than for employed people. It is important that the tax and welfare systems operate to minimise disincentives to work especially for low-wage workers. This requires a careful and granular review of the interactions between tax and benefits for certain segments of the population to make work pay more *vis-à-vis* benefit receipt.

Employment rates of people with health problems or disability were already among the lowest in the OECD before the crisis, which signals some structural difficulties in accessing the labour market for these groups. Despite some recent changes, disability policy in Ireland remains mostly passive with little conditionality for the disabled group. Over the period 2000-10, the number of recipients of disability and illness allowances rose by 48% from 184 500 to 275 000 (DSP, 2012). The increase occurred in a context of general improvement in health and living conditions and strong demand for labour up to 2008, and partly reflects the easing of the conditions to access disability benefits as opposed to tighter conditions for unemployment benefits. At the end of December 2010, the Department of Social Protection introduced a Partial Capacity Benefit scheme with the intention of changing the current structure of the welfare system, which categorises people as "fit to work" or "unfit to work" and does not take into account those who have some capacity to work. This change is in the right direction; however, participation in the scheme remains on a voluntary basis. Ireland is among the minority of OECD countries where young people can access disability benefits at the age of 16. DSP can refer young people to a mainstream training or to a specialist training provision. Nonetheless, no conditionality is imposed on benefit recipients. Disability benefit for young people should be more linked to participation in a targeted strategy towards reintegration in education or in the labour market.

Mental health problems are increasingly becoming a major cause of labour market exclusion in many OECD countries (OECD, 2012c), and international evidence suggest that long-term unemployment can have significant negative effects on mental health (Paul and Moser, 2009). It is key that youth suffering from long-term unemployment receive adequate psychological support. The National Psychological Services (NPS) seem to have some good attributes including providing comprehensive psychological support in schools to intervene early and preventing mental health problems arising in the first place. However, as in other OECD countries, the ratio of individuals supported to psychologist is very high. Going forward, the role of the NPS and its capacity need to be stepped up to assist the employment services, particularly in supporting young people in long-term unemployment at risk of social exclusion and marginalisation.

Irish social enterprises have played a valuable role in fighting social exclusion through the number of disadvantaged or marginalised people they employ, but the sector remains comparatively under utilised in comparison with other European countries. Encompassing both nonprofit institutions and for-profits whose driving purpose is social, the social enterprise sector has the potential to provide significantly greater public returns by improving local communities and give youth more detached from the labour market additional working opportunities. In order to achieve such potential, the social enterprise sector, including non-profits organisations, should be able to access the same kinds of government support as conventional enterprises including access to finance, knowledge sharing and business support services.

Box 1.4. **Recommendations for getting youth on the job track**

Activating youth

To minimise the detrimental and enduring impact of long-term unemployment, establish a youth compact whereby those in unemployment will receive a compulsory offer of training, work or a combination.

To provide job-search assistance and activate the current cohort of long-term young unemployed, increase the number of caseworkers in the public employment service through internal redeployment.

Establish specific youth tracks in those schemes where youth is having difficulties to access (Table 1.2).

Fostering labour reallocation

To respond to the demand for specialised skills, concentrate training efforts in those schemes providing high level skills such as Momentum, Springboard or ICT conversion courses. Progression pathways between different education levels should be stepped-up.

To provide skilled workers to emerging sectors, expand the apprenticeship beyond craft-related areas involving the SME sector, better align curricula of vocational training to unemployed profiles and to employers demands and increase its workplace component.

Delivering cost-effective ALMPs

Establish a systematic and rigorous evaluation of all policies and schemes including sunset clauses to review at regular intervals the need for extensions. Based on the evaluation, reallocate resources to those schemes which are found to be effective in increasing employability (Table 1.2).

To adapt Pathways to Work to the changing structure of the Irish economy, establish a regular review and evaluation of the profiling model. Enlarge the model to encompass those more detached from the labour market.

Supporting youth entrepreneurship

Establish a strategy to provide youth with relevant training and support. Introduce mentoring and coaching in the existing programme supporting self-entrepreneurship among unemployed.

Better integrating disadvantaged youth

To reduce poverty risk and social exclusion, put a stronger emphasis on encouraging and facilitating the return to education or employment of those more unattached from the labour market by increasing mutual obligation approaches.

Step-up the role and the capacity of psychological services to assist employment services in supporting young people and increase early childhood education as a preventive way to better integrate disfavored youth.

To realise its potential in the social inclusion of disadvantaged people, the social enterprise sector, including non-profits organisations, should be able to access the same kinds of government support as conventional enterprises.

Bibliography

Arulampalam, W., P. Gregg and M. Gregory (2001), "Unemployment Scarring", *Economic Journal*, Vol. 111, F577-F584.

Ashton, D. (2002), "Supporting Workplace Learning for High Performance Working", International Labour Office, Geneva.

Bergin, A. and I. Kearney (2007), "Human Capital Accumulation in an Open Labour Market: Ireland in the 1990s", *Economic Modelling*, Vol. 24, pp. 839-858.

Bell, D.N.F. and D.G. Blanchflower (2011), "Young People and the Great Recession", *IZA Discussion Papers,* 5674, Institute for the Study of Labour (IZA).

Blundell, R. (2006), "Earned Income Tax Credit Policies: Impact and Optimality. The Adam Smith Lecture, 2005", *Labour Economics,* Vol. 13, pp. 423-443.

Byrne, D., F. McGinnity, E. Smyth and M. Darmody (2010), "Immigration and School Composition in Ireland", *Irish Educational Studies*, Vol. 29:3, pp. 271-288.

Caille, J.P. and F. Rosenwald (2006), "Les inégalités de réussite à l'école élémentaire: Construction et évolution", *France Portrait Social*, INSEE, Paris.

Card, D., J. Kluve and A. Weber (2010), "Active Labour Market Policy Evaluations: A Meta-Analysis", *Economic Journal*, 120(548), F452-F477.

Carneiro, P. and J. Heckman (2003), "Human Capital Policy", *IZA Discussion Paper*, No. 821, Bonn.

Conefrey, T. (2011), "Unemployment and Labour Force Participation During the Recession", *Central Bank of Ireland Economic Letters Series,* Vol. 2011, No. 4.

Conefrey, T. (2013), "Migration in Ireland: Recent Trends in Historical Context", Box in Central Bank of Ireland's *Quarterly Bulletin* 01/January 2013.

Crépon, B., E. Duflo, M. Gurgand, R. Rathelot and P. Zamora (2013), "Do Labour Market Policies Have Displacement Effects? Evidence from a Clustered Randomized Experiment", *Quarterly Journal of Economics*, 128(2).

Crowley, L., K. Jones, N. Cominetti and J. Gulliford (2013), "International Lessons: Youth Unemployment in the Global Context", *The Work Foundation*, Lancaster University, April 2012.

Central Statistics Office (CSO) (2013), *Quarterly National Household Survey*, Quarter 1 2013.

Department of Social Protection (DSP) (2012), "A Review of Department of Social Protection Employment Support Schemes".

Education, Audiovisual and Culture Executive Agency (Eurydice, 2012), *The European Higher Education Area in 2012: Bologna Process Implementation Report*, Brussels.

Eissa, N. and H.W. Hoynes (2005), "Behavioral Responses to Taxes: Lessons from the EITC and Labor Supply", *NBER Working Paper,* 11729.

FitzGerald, J. et al. (2008), "Medium-Term Review: 2008-2015", Dublin: The Economic and Social Research Institute.

Gautier, P., P. Muller, B. van der Klaauw, M. Rosholm and M. Svarer (2012), "Estimating Equilibrium Effects of Job Search Assistance", *IZA Discussion Papers* 6748, Institute for the Study of Labor (IZA).

Government of Ireland (2012), *Pathways to Work: Government Policy Statement on Labour Market Activation*, Dublin.

Gilmartin, M. (2012), "The Changing Landscape of Irish Migration, 2000-2012", *NIRSA Working Paper Series*, No. 69, October.

Grubb, D. and J. Martin (2001), "What Works and for Whom: A Review of OECD Countries' Experiences with Active Labour Market Policies", *OECD Office of Labour Market Policy Evaluation Working Paper,* 2001:14.

Hoeckel, K. (2007), "Key Evidence on Vocational Education and Training Policy from Previous OECD Work", OECD Publishing, Paris.

Hoeckel, K. and R. Schwartz (2010), "Learning for Jobs OECD Reviews of Vocational Education and Training – GermanyKey", OECD Publishing, Paris.

Indecon (2013), "Evaluation of JobBridge", Indecon International Economic Consultants.

Johnston, D. (2006), "Lessons to Be Learnt? The Role of Evaluations of Active Labour Market Programmes in Evidence-Based Policy Making", *Public Administration and Development,* Vol. 26, Issue 4.

Kelly, E., S. McGuinness and P.J. O'Connell (2011), "What Can Active Labour Market Policies Do?", *Renewal Series,* Paper 1, Economic and Social Research Institute (ESRI).

Kelly, E., S. McGuinness and P.J. O'Connell (2011), "Transitions to Long-Term Unemployment Risk Among Young People: Evidence from Ireland", *Journal of Youth Studies*, Vol. 15:6, pp. 780-801.

Kelly, E., S. McGuinness, P.J. O'Connell., A. González Pandiella and D. Haugh (2013), "Labour Market Transitions Among Young Unemployed People in Ireland Pre and Post the Recession", *OECD Economics Department Working Paper*, forthcoming.

Kluve, J. (2006), "The Effectiveness of European Active Labour Market Policy", *IZA Discussion Paper,* No. 2018.

Krueger, A. and A. Mueller (2011), "Job Search, Emotional Well-Being, and Job Finding in a Period of Mass Unemployment: Evidence from High-Frequency Longitudinal Data", *Brookings Papers on Economic Activity*, Vol. 42, No. 1, pp. 1-57.

Lepoutre, J. et al. (2010), "A New Approach to Testing the Effects of Entrepreneurship Education Among Secondary School Pupils", *Vlerick Leuven Gent Working Paper Series 2010/01*, in M. Fazekas and S. Field (2013), "A Skills Beyond School Review of Switzerland", OECD Publishing, Paris.

Lallemand, T. and F. Ryckx (2009), "Are Young and Older Workers Harmful for Firm Productivity?", *Institute for the Study of Labour (IZA) Discussion Paper,* No. 3938.

Martin, J. (2000), "What Works Among Active Labour Market Policies: Evidence From OECD Countries' Experiences", *OECD Economic Studies*, No. 30.

Machin, S. and A. Manning. (1999), "The Causes and Consequences of Long-Term Unemployment in Europe", in O. Ashenfelter and D. Card (eds.), *Handbook of Labor Economics,* Vol. 3, pp. 3085-3139, Amsterdam, Elsevier.

McGuinness, S., P.J. O'Connell, E. Kelly and J.R. Walsh (2011), "Activation in Ireland: An Evaluation of the National Employment Action Plan", *ESRI Research Series,* No. 20, Dublin, Economic and Social Research Institute.

McGuinness, S, P.J. O'Connell and E. Kelly (2011a), "One Dummy Won't Get it: The Impact of Training Programme Type and Duration on the Employment Chances of the Unemployed in Ireland", *ESRI Working Paper,* 410.

McGinnity, F., E. Quinn, P.J. O'Connell and N. Donnelly (2011), "Annual Monitoring Report on Integration. How are Immigrants Integrating Into Irish Society?", Economic and Social Research Institute.

O'Connell, P.J., S. McGuinness, E. Kelly and J. Walsh (2009), "National Profiling of the Unemployed in Ireland", *ESRI Research Series,* No. 10, Dublin, Economic and Social Research Institute.

Prskawetz, A., B. Mahlberg, V. Skirbekk, I. Freund, M. Winkler-Dworak, T. Lindh, B. Malmberg, O.S. Nordström and F. Andersson (2006), "The Impact of Population Ageing on Innovation and Productivity Growth in Europe", *Research Report No. 28 for the European Commission, Employment, Social Affairs and Equal Opportunities DG*, Vienna Institute of Demography.

Puig-Barrachina, V., D. Malmusi, J.M. Martínez and J. Benach (2011), "Monitoring Social Determinants of Health Inequalities: The Impact of Unemployment Among Vulnerable Groups", *International Journal of Health Services*, Vol. 41, No. 3/2011.

OECD (2008b), *OECD Employment Outlook*, OECD Publishing, Paris.

OECD (2010), *Off to a Good Start? Jobs for Youth*, OECD Publishing, Paris.

OECD (2011), *OECD Economic Surveys: Ireland*, OECD Publishing, Paris.

OECD (2012), *Education at a Glance*, OECD Publishing, Paris.

OECD (2012b), "Entrepreneurial Activities in Europe", *Policy Brief* on Youth Entrepreneurship.

OECD (2012c), *Sick on the Job? Myths and Realities about Mental Health and Work*, OECD Publishing, Paris.

OECD (2013), *OECD Economic Surveys: Austria*, OECD Publishing, Paris.

O'Connell, P.J., S. McGuinness, E. Kelly and J.R. Walsh (2009), "National Profiling of the Unemployed in Ireland", *ESRI Research Series,* No. 10, Dublin, Economic and Social Research Institute.

Paul, K.I. and K. Moser (2009),"Unemployment Impairs Mental Health: Meta-Analyses", *Journal of Vocational Behavior,* 74(3), pp. 264-282.

The European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) (2011), *2011 ESPAD Survey*.

Walsh, B. And D. Walsh (2011), "Suicide in Ireland: The Influence of Alcohol and Unemployment", *The Economic and Social Review*, Vol. 42, pp. 27-47.

Watson, D., B. Maître and C.T. Whelan (2012), "Work and Poverty in Ireland: An Analysis of the CSO Survey on Income and Living Conditions 2004-2010", *Social Inclusion Report,* No. 3, Dublin, Department of Social Protection.

Chapter 2

From bricks to brains: Increasing the contribution of knowledge-based capital to growth in Ireland

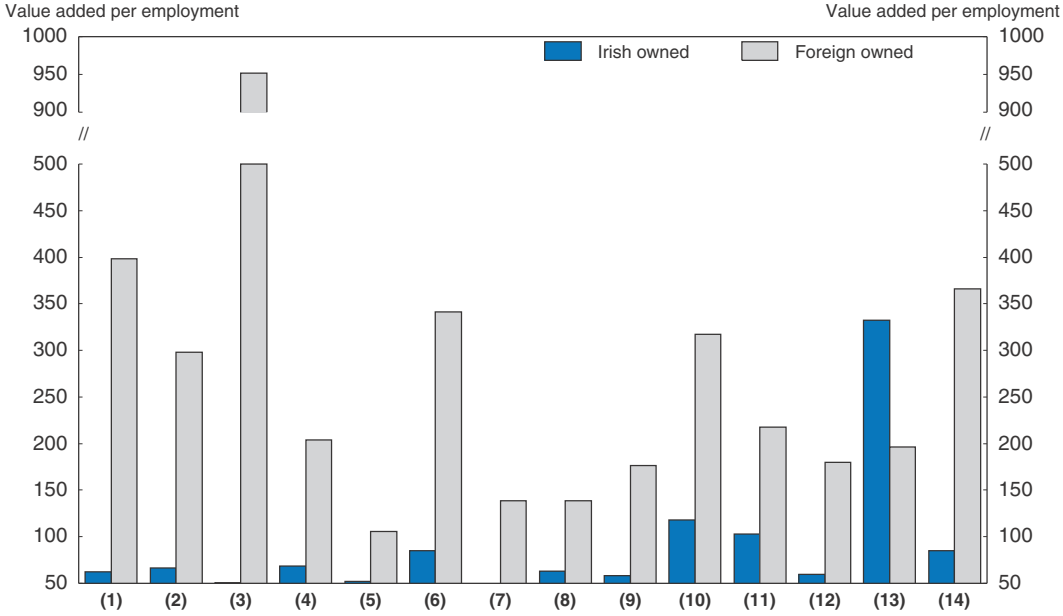
With sound framework conditions, fine universities, good infrastructure and policies friendly towards foreign direct investment, Ireland scores high in international innovation scoreboards. Overall, policies to boost innovation and entrepreneurship are on the right track, but investment in knowledge-based capital could be made a more dynamic source of growth and jobs. While Ireland has made good progress towards building up its scientific capabilities, innovation capacity remains weaker than in other small advanced OECD countries, such as Austria, Denmark, Sweden and Switzerland. To become more effective, the innovation strategy should be simplified, with a drastic reduction in the number of government agencies involved in funding innovation, so as to better focus on strengthening the linkages between the business and academic communities. While attracting high-tech multinationals should remain central, there is potential to better develop spillovers between these firms and domestic SMEs, notably by establishing applied research centres. Entrepreneurship should be fostered by improving the business environment, including access to non-bank finance, streamlining the insolvency regime and transfer of intellectual property rights, and upgrading the broadband network.

Moving towards a knowledge-capital based economy

To generate sustainable growth and jobs, Ireland needs to continue moving away from "bricks and mortar" towards accumulating knowledge-based capital. The potential benefits for the economy and society are high. OECD empirical work shows that investing in innovation is strongly linked with increased productivity and growth (Box, 2009). There is evidence at the firm level for Ireland that firms with greater sales due to innovation are more productive (Squicciarini et al., 2013). Innovative new firms also tend to be the greatest contributors to job creation (Lawless, 2013; OECD, 2012a; OECD, 2013).

Ireland provides a favourable environment for innovative activities according to international benchmarking thanks to strong institutions, fine universities, good infrastructure, a well-educated workforce and policies friendly toward foreign direct investment – as testified by large presence of high-tech industries (Global Innovation Index, 2012). However, innovative activities are largely confined to multinational firms, while domestic ("indigenous") SMEs are less innovative and productive than their foreign-owned counterparts (Figure 2.1).

Figure 2.1. **Labour productivity in selected industries, 2011**



Notes: 1) Manufacturing and Other Industry (including Primary Production), *of which:* 2) Food, Drink and Tobacco; 3) Chemicals; 4) Rubber and Plastics; 5) Basic and Fabricated Metal Products; 6) Computer, Electronic and Optical Products; 7) Electrical equipment; 8) Machinery and Equipment; 9) Medical Device Manufacturing; 10) Information, Communications and Other Services, of which: 11) Computer Consultancy; 12) Other IT and Computer Services; 13) Financial Services; 14) Total – All sectors.
Source: Forfás (2013).

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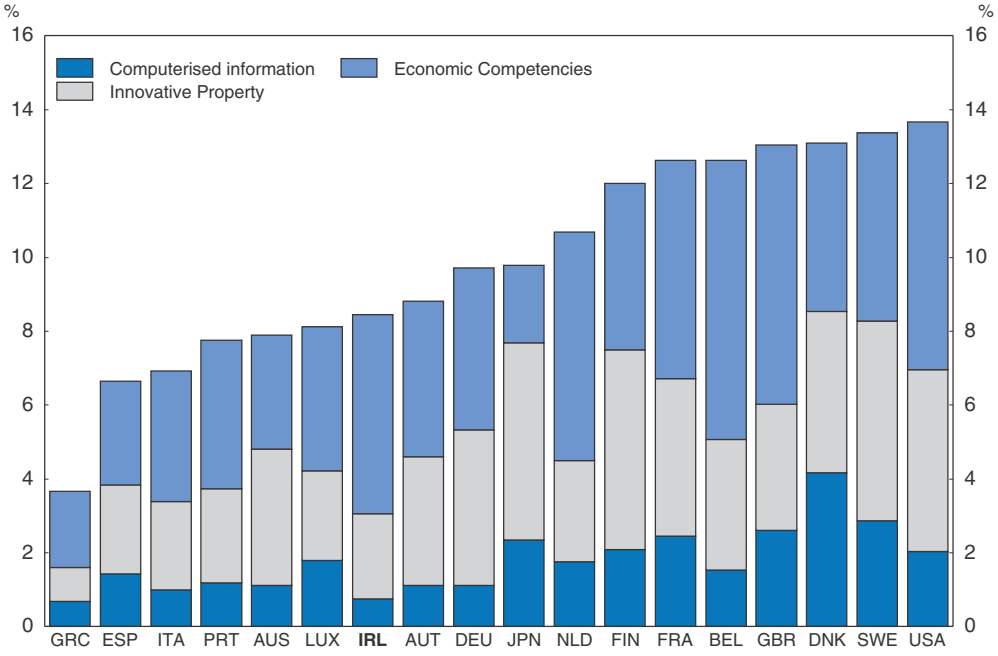
Knowledge based capital (KBC) is a broad measure of investment in knowledge, which includes computerised information, innovative intellectual property (e.g, patents) and economic competencies (such as organisation capabilities). Ireland's KBC has grown over time but, reflecting weak innovation in SMEs, its intensity remains in the lower half of the 18 OECD countries covered (Figure 2.2). In nearly all industries, firms' involvement in patenting intellectual property is below the average of 15 other OECD countries (Squicciarini et al., 2013). Building KBC would help Ireland to increase its participation in global value chains. This would in turn allow Irish firms to reap the productivity benefits derived from scale that enterprises in a small economy can only gain through international trade.

Figure 2.2. **Investment intensity in Knowledge-Based Capital**

As a percentage of market sector value added, 2010



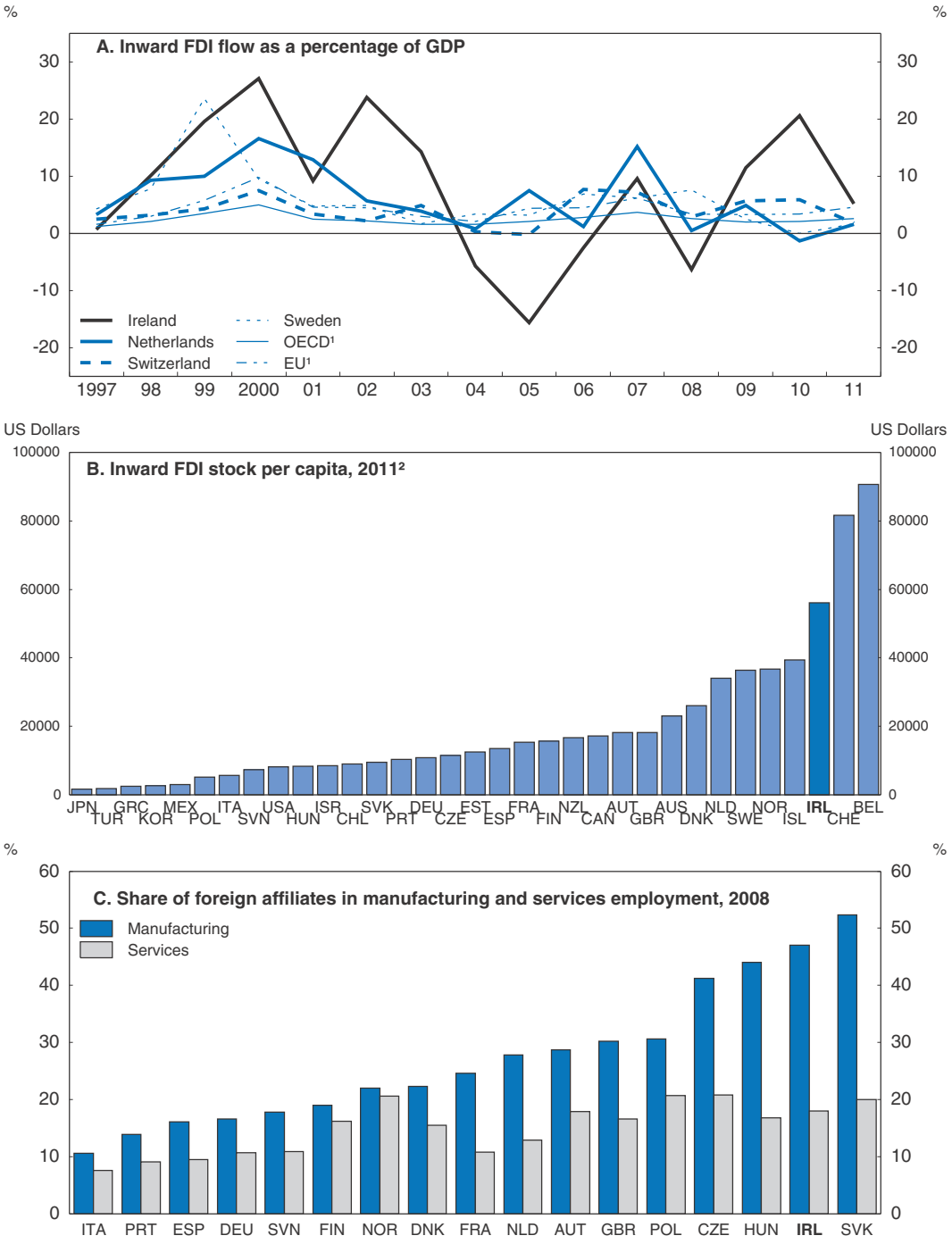
Note: Data refer to the market economy, unless otherwise stated, which excludes Real Estate, Public Administration, Health and Education. Figures for the United States correspond to the definition of the Private sector of the National Industry and Production Accounts (NIPA).

Source: OECD calculations based on INTAN-Invest (KBC investment for EU27 and United States); *OECD Main Science and Technology Indicators* (EU27 market sector value added); National Accounts from Eurostat (EU27 tangible investment); United States NIPA from the Bureau of Economic Analysis (United States private sector value added and tangible investment); *Australian Innovation System Report* (2012) (KBC investment), National Accounts from the Australian Bureau of Statistics (value added and tangible investment) and the *Japanese Industrial Productivity Database* (JIP) (intangible and tangible investment and value added); Corrado et al. (2012).

StatLink *Note:* To download the data corresponding to this graph, refer to *Figure 6*.

Foreign direct investment by multinational corporations plays a key role in Ireland's economic development. FDI firms account for nearly 20% of employment in services, but it is in manufacturing that they make an overwhelming contribution (50% of employment and 85% of value added) (Figure 2.3). FDI flows into Ireland appear to be volatile from year to year, largely reflecting statistical issues, such as loans made by Irish-based foreign companies to their parents or affiliates elsewhere (measured as negative inwards FDI). From a longer term perspective, the stock of FDI equity and reinvested earnings follows on an upward trend, rising from 75% of GDP in 1998 to 143% in 2012. Foreign-owned

Figure 2.3. **Foreign direct investment intensity**



1. Unweighted. The EU area refers to the OECD countries members.
2. 2010 for Germany, Mexico and United Kingdom.

Source: OECD, *Foreign Direct Investment (FDI) Database*, *Activities of Foreign Multinationals (AFA) Database* and *National Accounts Database*.

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manufacturing is dominated by three sectors: computer, electronic and optical products; medical devices; and pharmaceuticals and chemicals. The services sector, the most important sub-sectors of which are information, communication and computer services,

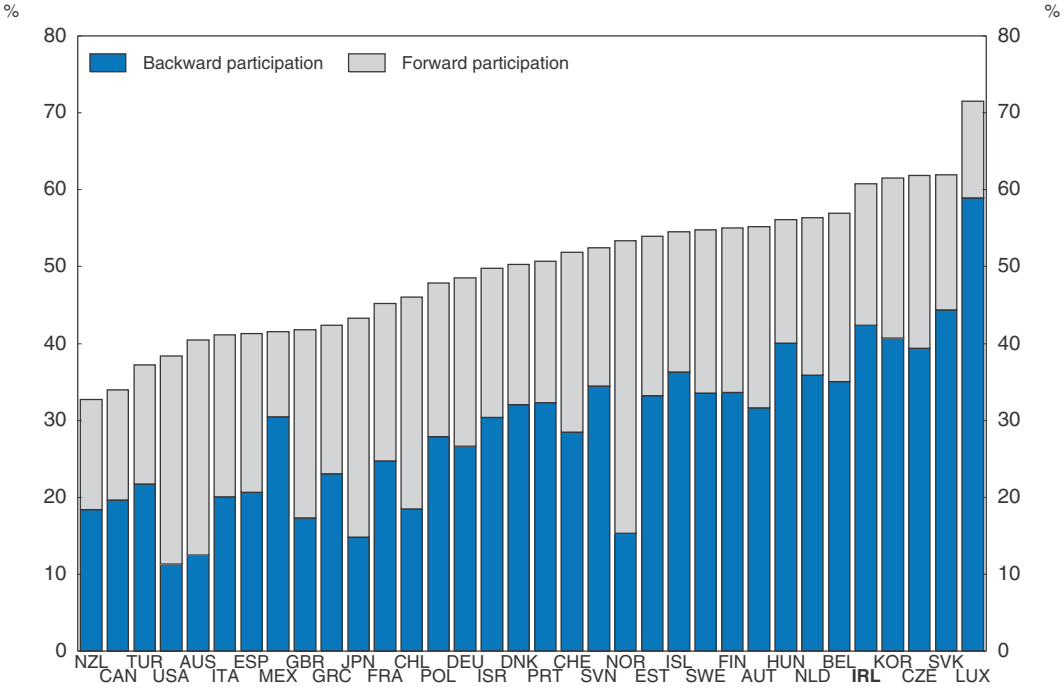
and business and financial services, has grown in importance over the past decade. All of the top 5 software companies in the world have a significant presence in Ireland (IBEC, 2012). Four hundred and fifty international financial institutions operate from the International Financial Services centre (IFSC) in Dublin, including half of the world's top 50 banks and top 20 insurance companies (Barry and Bergin, 2012).

Foreign direct investment is an important contributor to Ireland's innovative activities. MNCs have facilitated innovation by transplanting the technological capability to produce new products and services in sectors that now play a large role in the Irish economy. Nearly three quarters (the highest share in the OECD) of business enterprise spending on R&D (BERD) in Ireland is carried out by foreign-owned firms that spend more on R&D as a share of value added than their domestically owned counterparts.

Foreign direct investment is also largely responsible for Ireland's high participation in global value chains (GVCs) (Figure 2.4). Foreign-owned firms were responsible for around three quarters of total Irish exports in 2010 (Forfás, 2012). The high overall GVC ranking is due to the extensive use of foreign inputs in Irish exports (backward participation) as opposed to Ireland producing inputs used in third country exports (forward participation) (OECD, 2013a). Participation in GVCs is strong in pharmaceuticals, food, finance and business services, where Ireland accounts for a substantial share of value added in world exports (OECD, 2013b), and Ireland is the 10th largest exporter of services in the world. However, despite some impressive successes in the agri-food sector, Irish-owned firms are not integrated enough into GVCs, particularly in terms of providing inputs to be used in other country exports.

Irish-owned firms need to become more knowledge driven. Technical innovation is low by EU15 standards, especially in large Irish firms (250+ employees) (Figure 2.5). Irish

Figure 2.4. **Participation in GVCs, 2009**



Note: Foreign inputs and domestically-produced inputs used in third economies' exports, as a share of gross exports.
Source: OECD inter-country Input Output model, December 2012.

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firms reap the benefit of innovation only through modernizing their production processes, unlike firms in other countries (such as Austria and the Netherlands) which reap returns from a wider range of innovation activities, including technological (patenting) type innovation (Frenz and Lambert, 2012). In addition, the share of firms engaged in any type of innovation co-operation with outside partners (government, higher education, other firms) is below that of foreign-owned firms and below the EU medians for their counterparts This, and especially a low rate of co-operation with other firms, has performance implications as being part of a group with other firms tends to raise the productivity returns from innovation spending (Squicciarini et al., 2013).

Even foreign-owned firms have a potential for higher gains. The pharmaceutical, computer and electronic hardware and computer software sectors, with a strong multinational presence in Ireland, are highly innovative industries, but Ireland is not getting a large share of the global investment in R&D in these sectors (ACSTI, 2010).

All firms, whether foreign or Irish owned, identify a number of barriers to innovation, including the high cost of R&D, a shortage of industry-relevant R&D skills, and barriers to greater enterprise links with higher education institutes (ACSTI, 2010). Problems more specific to SMEs and Irish-owned firms are a lack of firm absorptive capacity and accessing finance. Challenges more specific to the Irish operations of MNCs are the need to be competitive *vis-à-vis* subsidiaries elsewhere in the world on R&D cost and attracting R&D talent from within the company. Establishing effective MNC - higher education sector linkages also requires the higher education sector to have research centres with critical mass.

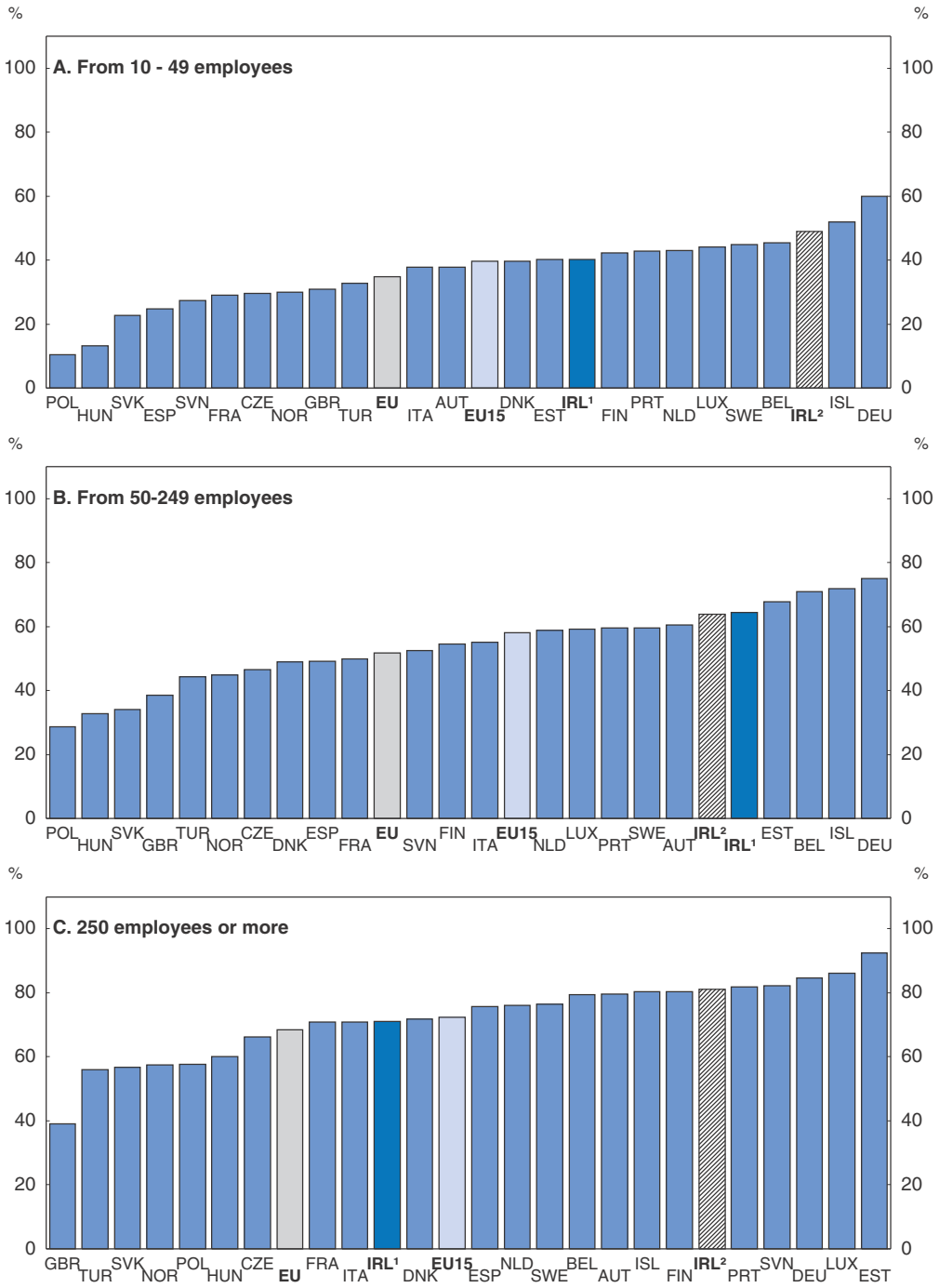
Foreign direct investment by large high-tech multinationals has the potential to remain a key driver of growth, hence the importance of continuing to be attractive to such firms. Experience shows that a favourable business environment, including the low and stable corporate tax rate, relatively low skill-adjusted wages and a well-qualified labour force are important (Barry and Bergin, 2012). Export-platform investments in small countries by US corporations tend to be in low-tax countries (Slaughter, 2003). For example, most pharmaceuticals companies have only invested in active ingredients plants located in one of three locations – Ireland, Puerto Rico, and Singapore – all of which have these main characteristics (van Egeraat and Barry, 2009).

Foreign direct investment is also attracted by the talent pool. To support the IFSC as a world-leading centre for aircraft leasing – rivalling London – specialised training in aircraft management and leasing is offered in Limerick. Similarly, the Galway higher-education sector provides specialised training and research programmes in the field of medical devices (Ryan and Giblin, 2012). Making an effort to attract an anchor MNC, as IDA Ireland (the inwards investment promotion agency) has done in the past, also appears to pay off due to strong gravity effects – the presence of a leading international firm in Ireland tends to attract others (Barry, Goerg and Strobl, 2003). Initiatives to deepen the EU single market also play a role, such as changes allowing life insurers headquartered in one EU country to sell insurance elsewhere in the EU helped encourage the development of the IFSC (Barry and Bergin, 2012).

Efforts to foster more innovation in Irish-owned SMEs as well as multinationals should continue, while further building linkages between the foreign and Irish-owned sectors and HEIs. Three policy areas are at stake: the institutional and policymaking framework; government financial support; and framework conditions. Within these areas, a mix of solutions broadly applicable to the enterprise sector (such as improving the certainty of R&D tax credit rules) as well as actions more tailored to specific problems of different enterprise classes is required (such as improving SME access to non-bank sources of capital).

Figure 2.5. **Innovation rates by size of enterprise in 2010**

Percentage of firms which innovate



1. Indigenously owned firms in Ireland, data refer to persons engaged.
2. Foreign owned firms in Ireland, data refer to persons engaged.

Source: Eurostat, Community Innovation Survey and Central Statistics Office (CSO).

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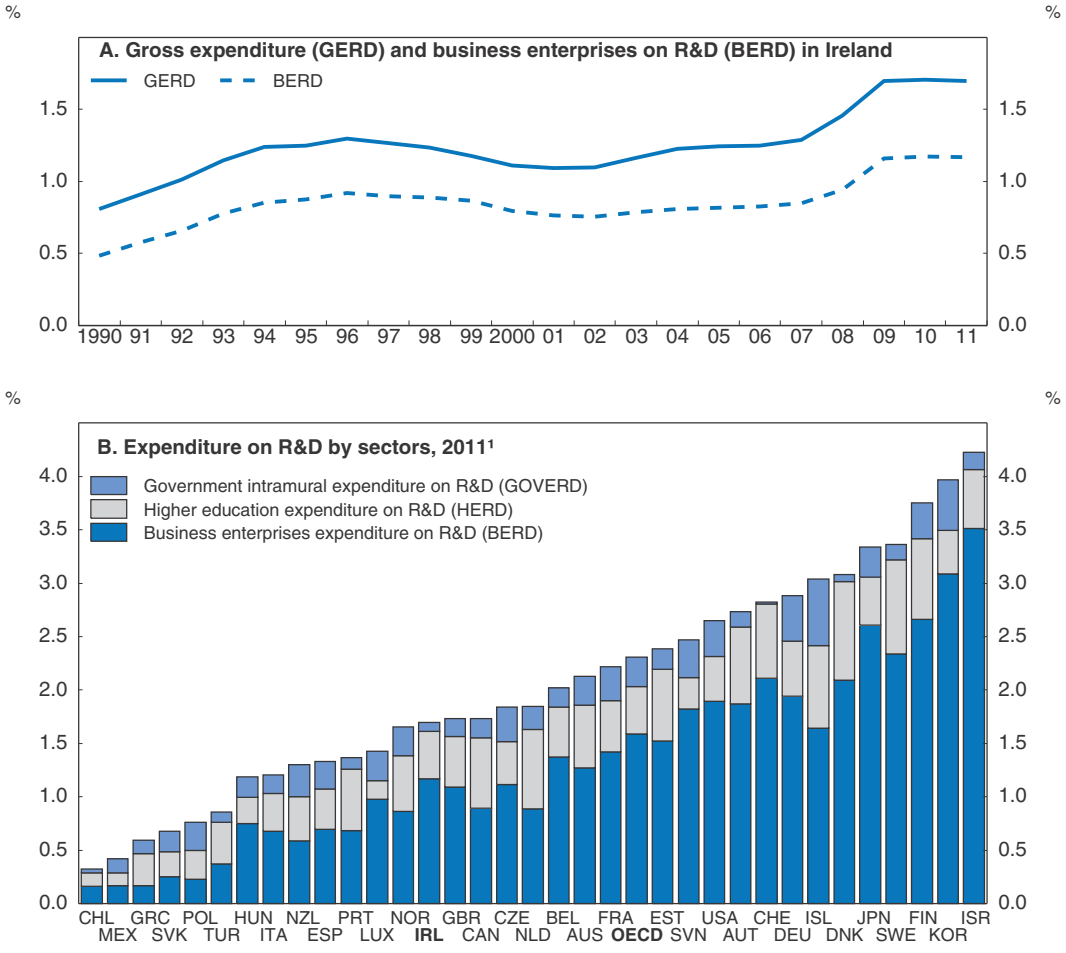
Strengthening the institutional and policy making framework

From a low base in the late 1990s, Ireland embarked on a strategy of substantially strengthening public research and promoting business innovation. The government expanded research funds available to the higher-education institutions and established a new agency, Science Foundation Ireland (SFI), to promote research excellence in ICT, biotechnology and, later on, energy. It also introduced a large variety of programmes to boost firm absorptive capacities and linkages across different actors. An R&D tax credit was introduced in 2004.

There are signs that Ireland has significantly expanded its scientific capabilities. Since 2000, both Gross Expenditure on Research and Development (GERD) and Business Enterprise Expenditure on Research and Development (BERD) have risen as a share of GDP, although not as much as was targeted in the Strategy for Science, Technology and Innovation 2006-13 (SSTI) (Figure 2.6). There has been a rapid increase in PhD graduates and researchers employed in the economy, as well as the number of scientific and engineering articles (Figure 2.7). Partial indicators also suggest that Ireland is getting a

Figure 2.6. **Research and development expenditure**

As a percentage of GDP



1. Or latest year available.

Source: OECD Main Science and Technology Indicators Database.

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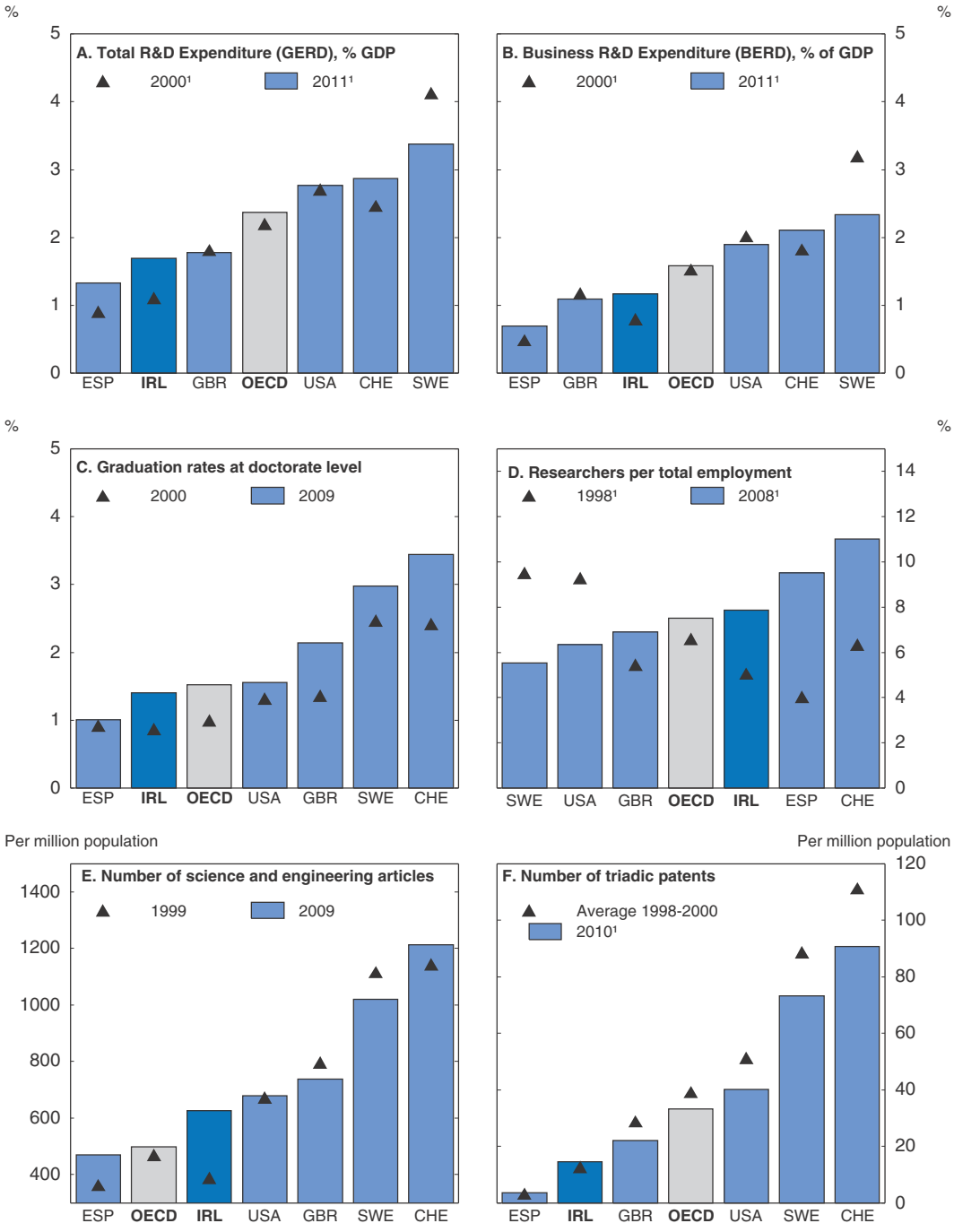
Figure 2.7. **The expanding Irish innovation system**



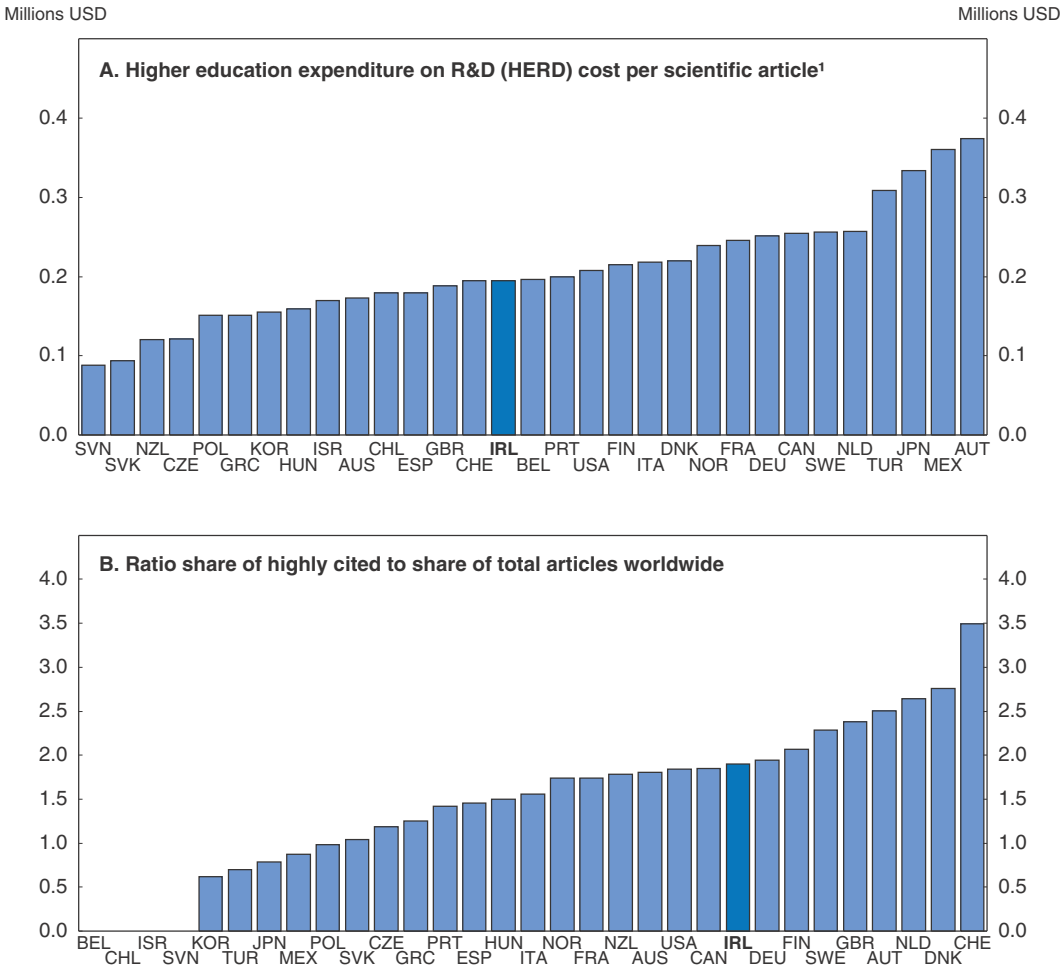
1. Or nearest/latest data available.

Source: National Science Foundation, National Center for Science and Engineering Statistics, and The Patent Board, Special tabulations (2011) from Thomson Reuters, SCI and SSCI, *http://thomsonreuters.com/products_services/science*; *OECD Science, Technology and Industry Scoreboard 2011*, OECD 2011 and *OECD Main Science and Technology Indicators Database*.

StatLink *Note:* To download the data corresponding to this graph, refer to *Figure 17*.

good return on its R&D spending in terms of the quality of scientific articles, as indicated by citations with particular strengths in genetics, immunology and materials sciences (Figure 2.8), the output of trademarks and the overall proportion of firms that are innovative (Squicciarini et al., 2013).

Figure 2.8. **Cost and quality of scientific articles**



1. HERD measured as average annual expenditure 2000-10 and in million 2005 US dollars (constant prices and PPP). Science and engineering articles produced in all fields in 2009.

Source: OECD Main Science and Technology Indicators Database: HERD data; OECD based on Scopus Customised Data for highly cited articles; National Science Foundation for total articles.

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A broader strategic approach to ensure a successful innovation system

Building on progress in expanding the science base, and driven by a need to generate growth and jobs, the government's policy focus has shifted to getting greater economic return from its investments in innovation. Following the Report of the Research Prioritisation Steering Group (Forfás, 2011), the government is moving to target publicly-funded research performed in HEIs and public research organisations more towards the needs of the enterprise sector. Research in this category is being focused on 14 priority areas. The intention is to build on the science and skills base that has been developed over the past decade with a move towards a more applied research focused on areas likely to show economic returns within a 5-year timeframe and better co-ordinate funding support across programmes. The new, larger SFI-funded research centres will all be required to have industry collaboration component to projects.

The move towards more applied research, as recommended by the *Report of the Research Prioritisation Steering Group*, is in line with trends for public research institutes in

other OECD countries (OECD, 2011). It is also part of wider trend of a revived interest in industrial policy and prioritising sectors, including in France, Korea, Japan, the Netherlands and the United Kingdom. International experience suggests that horizontal measures that improve the business environment regardless of sector are preferable, but that in some policy areas strategic decisions may need to be made. In these cases, to minimise the risks associated with selectivity, the government should, as appears to be the case in Ireland, adopt a "soft" approach to industrial policy where the government plays essentially a co-ordinating role, building on capabilities that have already emerged (Warwick, 2013).

However, aside from the dangers of trying to "pick winners", Ireland's innovation system is young and risks trying to move too fast with too few resources. As there is a particularly high level of uncertainty about which policy tools are the most effective, the authorities should stand ready to reallocate resources as needed. This involves rigorous evaluation of programmes (discussed below), and shutting down those that are shown not to work. Given political economy realities, sunset clauses attached to innovation and enterprise support measures would help to enforce such a policy. Although sunset clauses reduce the certainty of funding, they would speed up the reallocation of funds to the most effective programmes by making it easier to support strong performers and wind up weak ones. In implementing this approach, effort should be made to avoid "short-termism" – some programmes will take time to show results and therefore a mix of short and long-term indicators is needed. Excessive policy uncertainty should also be minimised by explicitly taking into account policy volatility in any cost-benefit analysis.

The international economic context has changed significantly since 2006, when the government last formulated its innovation strategy (Strategy for Science, Technology and Innovation for 2006-13). The new strategy should be informed by international best practice and help to ensure greater consistency of policy. In addition, it should seek greater cost-efficiency in the current context of fiscal tightness. Hence, it should hold accountable all major actors in the system, not just those directly involved in commercialising research.

Streamlining institutional funding

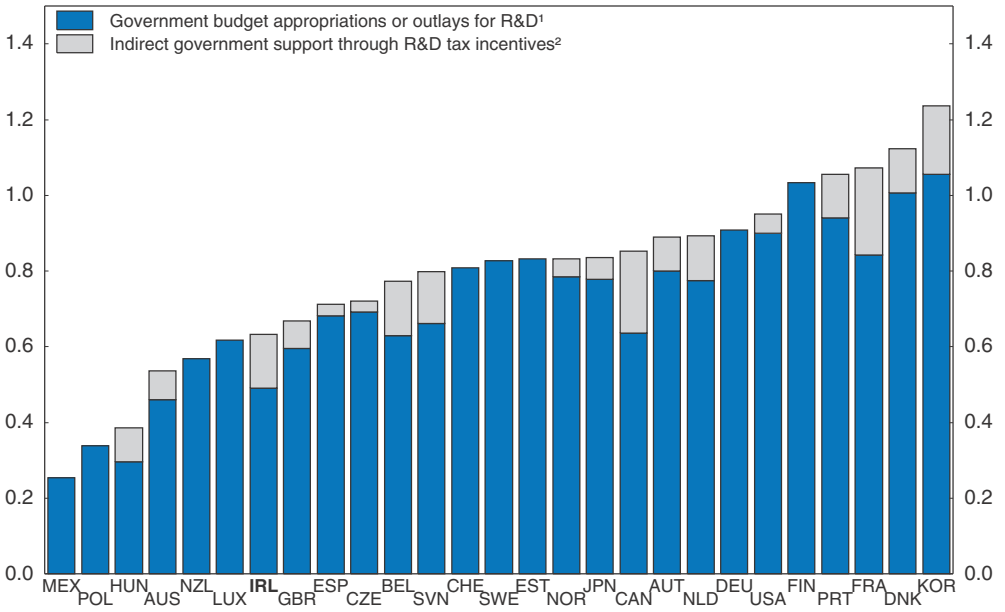
Although the total government funding envelope for innovation support of around EUR 1 billion (0.6% of GDP) including approximately EUR 200 million in R&D tax credits, is small by international standards (Figure 2.9), the most recent Science Budget lists over 170 separate budget lines, sometimes for very small amounts of money, and 11 major funding agencies or departments (Annex 2.A1) – a very large government administration for a small-size country like Ireland. These various agencies seek to build the science base through funding research personnel and infrastructure and boosting enterprise R&D, collaboration, commercialisation and international networking (Annex 2.A2).

The main agencies and departments involved in funding science and basic research and innovation in Ireland are:

- *Higher Education Authority* (HEA): Tertiary education and research including competitive funding of research in HEIs.
- *Science Foundation Ireland* (SFI): Competitive funding of research in HEIs.
- *Irish Research Council* (IRC): Building research human capital.
- *Enterprise Ireland* (EI): Agency promoting indigenous firms, supports business innovation and HEI commercialisation.

Figure 2.9. **Government support for research**

As a percentage of GDP



1. 2012 or latest year available. Measures the funds committed by governments for R&D to be carried out domestically or abroad (including by international organisations).
2. 2009.

Source: OECD Main Science and Technology Indicators Database.

StatLink *Note:* To download the data corresponding to this graph, refer to *Figure 18.*

- *IDA Ireland*: Supporting foreign-owned enterprise.
- Specific funding departments and agencies include: Department of Agriculture, Food and the Marine; *Teagasc* (Agri-Food); Department of Health; Health Research Board; Department of Energy and Natural Resources; and Department of the Environment.

This diversity of funders and budget lines reflects a system that has undergone rapid expansion during the boom period. However, a large number of agencies risks resulting in excessive overhead, because each agency has its management structure, and agencies and departments naturally want to protect their resource base, thereby creating blockages to resource reallocation within the government's overall support envelope. Co-ordination committees such as *Technology Ireland* can help to generate synergies, but this does not change the fundamental set of incentives. Any savings generated by the consolidation of agency funding for science basic research and innovation should preferably be ploughed back into innovation support, and not returned to the Exchequer, as overall government spending on innovation support is already low by international standards.

The two Irish research councils (humanities and science) have been combined into one. In addition, *Forfás*, the policy advisory board for enterprise, trade and innovation, will be merged into its parent ministry, the Department of Jobs, Enterprise and Innovation (DJEI), by end 2013. *County Enterprise Boards (CEBs)* are being dissolved and replaced with *Local Enterprise Offices* (LEOs). Unlike the CEBs, which had separate legal status with their own CEOS and Boards, the LEOs will be business units within the local authority reporting to the county manager. The LEOs will cover firms with fewer than 10 employees, as the CEBs did, as well as non-exporters with more than 10 employees. *Enterprise Ireland*, through its Centre of Excellence, will be charged with spreading best practice among LEOs.

Service level agreements between Enterprise Ireland and the local authorities will set out LEO budgets, targets and evaluation criteria. *Enterprise Ireland* is also setting up a *Central Technology Transfer Office* (TTO) to be an advisory body for the 10 HEI-based TTOs. *Technology Ireland* (a group of senior officials in DJEI and its funding agencies) has responsibility for co-ordinating programmes and research centres to ensure consistency and avoid overlaps, including setting up a central portal that will direct enterprises to research centres that can collaborate in R&D in their chosen field.

Notwithstanding these reforms, there is scope for still more consolidation. Consolidation would contribute to a more streamlined, transparent and accountable innovation strategy. Gains would be achieved by consolidating funding into a smaller number of agencies, with one group dealing with applied research and innovation, and another with science and basic research. This should be coupled with a high-level co-ordination committee to prevent gaps or duplication. This division between business-orientated innovation and basic research is the norm in almost all other small OECD countries and reflects the large differences in the types of activities, rationales for support and policy instruments.

A proliferation of innovation agencies and programmes is a common problem internationally. Austria, Finland and the Netherlands have consolidated support in the past (OECD, 2005) and consolidation has been recommended for Sweden, which has also a large number of funding agencies (OECD, 2012b). Austria now has a national "one-stop-shop", the FFG, for funding applied research and development as a result of a merger of several agencies. Consolidation would make it easier to evaluate the overall economic impact of the innovation system and improve the government's ability to direct investment for maximum returns. In Finland, the *Tekes* agency, funds applied research conducted by all types of firms, whether small or large, regardless of ownership and also researchers in universities and elsewhere. A similar approach could help to build linkages across firms and with HEIs and break down the divide between domestic and multinational firms that exists in Ireland.

For example, business innovation funding could be concentrated with EI, which has the largest budget and the most responsibilities, but with a mandate to support innovation across the whole business sector, so as to help break down barriers between the foreign and Irish owned sectors. EI could seek IDA advice on particular MNC clients as projects arose. At a minimum, there needs to be a business innovation funding structure that is flexible enough to adapt to new ways of doing business, regardless of firm ownership or size or whether they export or are for profit. Steps have been taken in this broad direction with the setting up a senior management team of Enterprise Ireland and IDA officials to increase collaboration on priorities that cut across the two such as increasing MNC purchases of intermediate inputs from Irish-owned firms (global sourcing). Such efforts should be intensified in the innovation arena. Globalisation and rapidly changing business practices mean that having an agency devoted to multinational innovation (IDA Ireland) and another devoted to innovation in domestic enterprises ready to export, which up until recently also required 10 or more employees (Enterprise Ireland), can result in firms, and especially innovative start-ups, falling through the gaps.

On the science and basic research side, SFI already has the largest budget for competitively-allocated funding and has developed significant expertise in allocation of resources based on international peer review. There appears to be potential to merge further science and basic research funding with SFI due to strong crossovers in terms research fields and activities with other agencies. For example, as recommended by the

OECD Review of Higher of Education, Science Foundation Ireland's role should be merged with the IRC as both support the development of research human capital.

Rigorous system evaluation and indicators

Over the past two decades, innovation policy has become more strategic in OECD countries (OECD, 2010). This is evidenced by the increased use of various forms of *ex ante* evaluation, such as technology assessment and technology foresight. Fiscal constraints in the aftermath of the economic crisis have also led governments to better focus research efforts. Ireland too is moving in this direction. In particular, it is now an established practice among research funding bodies to carry out reviews. These reviews have taken place at both the programme and agency level. In addition, funding bodies are proactive in collecting a wide range of metrics to gauge the programmes.

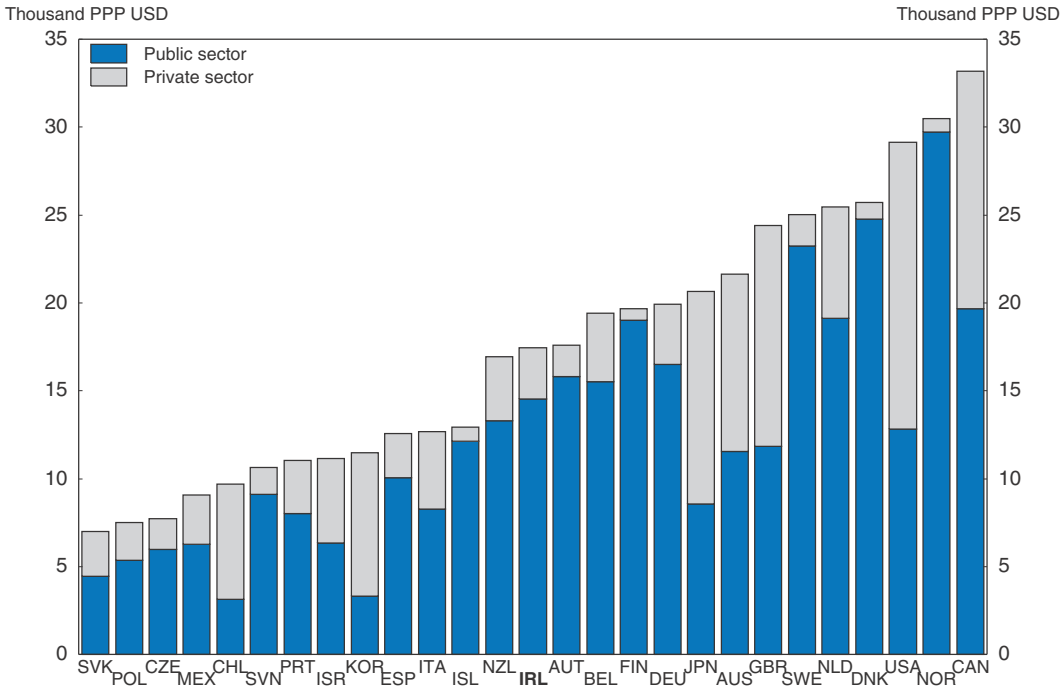
Specifically, the *Report of the Research Prioritisation Steering Group* made a number of recommendations aimed at improving the effectiveness of the Research, Development and Innovation evaluation system. In line with this, Forfás (policy advisory board on enterprise and science) has undertaken a systematic review of all enterprise supports using a new methodology for carrying out evaluations of a large number of programmes simultaneously. This methodology is an important development, novel by international standards and provides an important platform for building a more robust evaluation culture in Ireland.

Ireland can build on this progress. At present there is no formal or consistent process of *ex ante* evaluation undertaken systematically within and across funding bodies. There is a need to embed a culture of *ex ante* evaluation, including pilot experiments into programme design and start-up, and to clearly document how each new programme aligns with national policy and strategy, across all funding bodies. Despite the copious amount of data being gathered by funding bodies, it is often not possible to link metrics from individual programme evaluations to overall system targets or to determine the extent to which each individual programme contributes to the achievement of system-level goals. This should include tracing better how outputs from the innovation system (such as PhD graduates) are affecting the economy – for example, how many graduates were eventually employed in the enterprise sector and their role in start-ups. Because the returns to innovation can take a long time to materialise, an overemphasis on short-term targets should therefore be avoided, and appropriate metrics for measuring change in the more medium and longer terms should be developed. Such evaluations should be independent, i.e. undertaken by bodies that are separate from funding agencies, and should use statistically-robust methods, such as randomised trials, rather than expert judgements that tend to be opinion-based and prone to cognitive biases.

Strengthening the higher education funding system and governance

HEIs are at the core of the innovation system, especially in Ireland where, by international standards, very little research is done in the broader public sector. They are the source of research centre staff, train future researchers and conduct basic research on which the rest of the system rests. The government has allocated significant funds to HEI-based research centres but the broader HEI funding and governance model is a concern. In 2009, Ireland's total spending (public and private) per tertiary student was around the OECD median (Figure 2.10). However, since then a reduction in government funding of HEIs has been only partially offset by rising student contributions (fees). This has been exacerbated by an increase in student numbers leading to a cut in the recurrent funding

Figure 2.10. **Expenditure per student by funding source in the tertiary education system in 2010**[1]



1. 2009 for Germany.

Source: OECD Education Database.

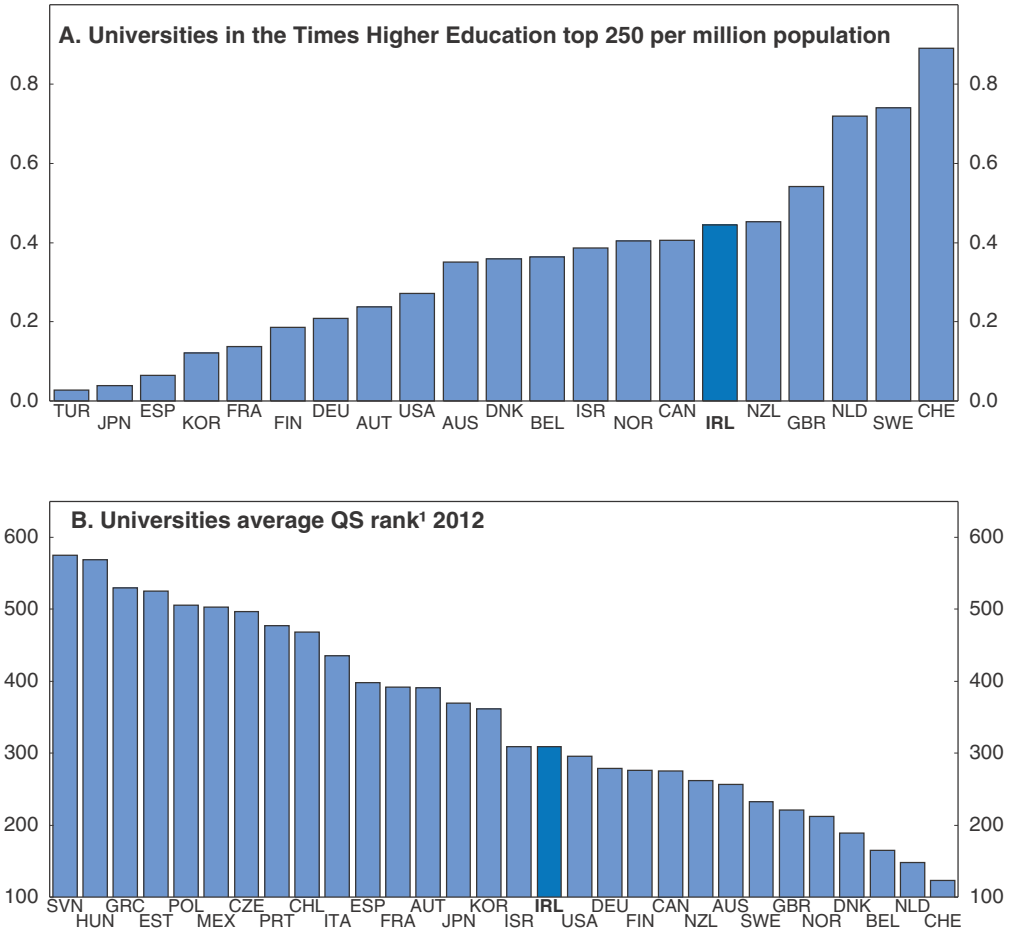
StatLink *Note:* To download the data corresponding to this graph, refer to *Figure 19.*

per student (public plus student contribution) by approximately 20% that pushes Ireland down the OECD ranking. Academic staff numbers in HEIs fell by around 5% from 2009 to 2011. HEIs have responded with a range of efforts to increase efficiencies including new ways of working, but nonetheless their international ranking has fallen due to academic reputational effects (HEA, 2011) (Figure 2.11).

The reductions in funding directly from the Exchequer will require careful management to ensure that the higher education system continues to underpin Ireland's attractiveness as a location for multi-national investment and Ireland's capacity to operate as a high quality research partner. Ireland should ensure that its allocations of public funding to higher education promote the optimal alignment of the higher education system with innovative, high-value enterprise. Managing HEI funding involves balancing quantity, cost and quality. In the face of rising student numbers, the government's policy has been to offset increasing student contribution by declining public funding. Thus, in recent years it has achieved increased quantity and lower public costs but more could be done to improve quality. Ireland's fiscal position is a constraint, but there are nevertheless a number of financial and governance levers that could be used to underpin quality.

HEIs should be given multi-year funding envelopes. Creating greater funding certainty is particularly important from the perspective of research, which is often conducted over longer horizons (OECD, 2006). In addition, HEI funding should better take account of differing levels of student growth across sectors – enrolments in institutes of technology grew faster than universities from 2008 to 2012 although this trend has tapered off more recently. The Higher Education Authority (HEA) determines how funding is allocated

Figure 2.11. **University rankings: Summary**



1. Rankings of over 700 of the world's best universities. Rankings above 400 are given in ranges only so the mid range value was applied and 601 was applied for all those given the rank 601+.

Source: Times Higher Education World University rankings; QS World University Rankings and OECD Calculations.

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between HEIs. In 2007, funding for Institutes of Technology (IoTs) was transferred to the HEA from the Department of Education and Skills. Since then, the HEA has applied the percentage change in the overall budget line for IoTs and universities equally to both the IoT and university sectors. Funding to each HEI is then allocated using a formula-based funding model which links student numbers to course types. To allow better reallocation of funding in line with changing patterns of student demand, the percentage change in the overall allocation to the IoT and universities sectors should be in line with the overall relative demand for places by students in the IoT and university sectors. This would also facilitate the greater clustering of HEI institutions to facilitate more joint research as planned by the government. The Government should also, as it intends as part of its third level reform agenda, continue to move towards complementing core funding with a more comprehensive performance funding component than at present, based on agreed strategy and output targets. This would allow institutions to specialise in different strategies of teaching or research excellence. Private funding from non-household sources is particularly low in international comparison and the government should also encourage

HEIs to raise funding from these sources by guaranteeing that the HEIs are entitled to keep any funds they raise in this way with no prejudice to public funding levels (OECD, 2006).

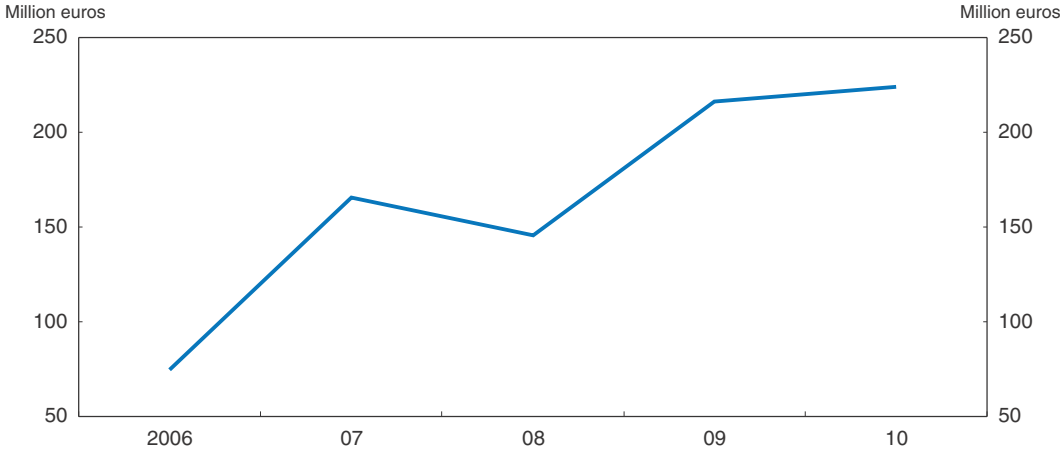
Subject to independent auditing against specified individual performance targets, HEIs, including research centres, should also have more autonomy over employment and salary conditions in certain defined cases consistently with overall public pay policies. Importantly, research centres should no longer be required to hire staff as civil servants, but be given the authority to negotiate ordinary contracts, perhaps fixed terms, that better match their needs subject to controls. Moreover, autonomy over salaries would help in recruiting top-end research talent, which universities note is becoming increasingly difficult (HEA, 2011).

With the exception of the Nordic countries and Switzerland, Ireland's public funding per student, although slipping, remains at the higher end of the OECD, and the share of public funding of the education system is above the OECD average. Less private funding is an important reason for the difference between Ireland and countries with higher total funding per student. The student contribution fee (tuition fee) has risen rapidly in recent years and will reach around EUR 3 000 by 2015/16. Ireland should explore the remaining potential for a greater contribution from students themselves to the cost of higher education, together with a student loan scheme. Ireland already has a grant scheme for students from lower income families, but should also introduce an income-contingent loan scheme, as in other countries with high fees, such as Australia and the United Kingdom (OECD, 2006) to better ensure financial access to higher education. Finally, even more focus should be put on the acquisition of high-quality skills, rather than the quantity of students enrolled. Participation rates already rank well and a key pillar of Ireland's economic success rests on its ability and reputation for generating high-quality graduates and research and therefore more use should be made of student number caps to preserve funding levels per student and quality. Student demand is generally quite responsive to labour market conditions but public funding should be reduced for areas where there is a demonstrated over-supply relative to labour market needs (HEA, 2012).

Government financial support

Ireland's R&D tax credit was introduced in 2004, allowing firms to offset 25% of their R&D expenses, over the 2003 level, against their corporate tax liability. The government has over time increased the generosity of the scheme by: increasing the rate of relief from 20 to 25%; allowing cash refunds for companies with insufficient corporate tax liabilities; permitting credit to be claimed against employer social security contributions; and unlimited carry forward of credits (Figure 2.12). In line with the *2011 OECD Economic Survey of Ireland*, in 2012 the government also introduced a hybrid of volume and incremental credit schemes. Lower research expenditure amounts are credited on a volume basis – a 25% credit is available for every euro of the first EUR 100 000 in R&D expenses, including subcontracted R&D, which was raised to EUR 200 000 in 2013. Beyond this amount, the credit is only available for R&D expenditure that exceeds the amount spent by the firm in the base year, 2003. Hybrid schemes are particularly useful if the objective is to maintain the level of, and reward high growth of, R&D (Criscuolo et al., 2009). As measured by the tax subsidy provided per euro of R&D expenditures, Ireland's scheme was around the OECD median in terms of generosity in 2008 (OECD, 2009), although this was before recent changes that increased generosity. Features of the scheme including unlimited carry forward, cash refunds and ability to claim for contracted out R&D expenses should help SMEs that may not yet be profitable and/or do not have the in-house skills to carry out R&D.

Figure 2.12. **Budgetary cost of the R&D tax credit**



Source: Department of Finance.

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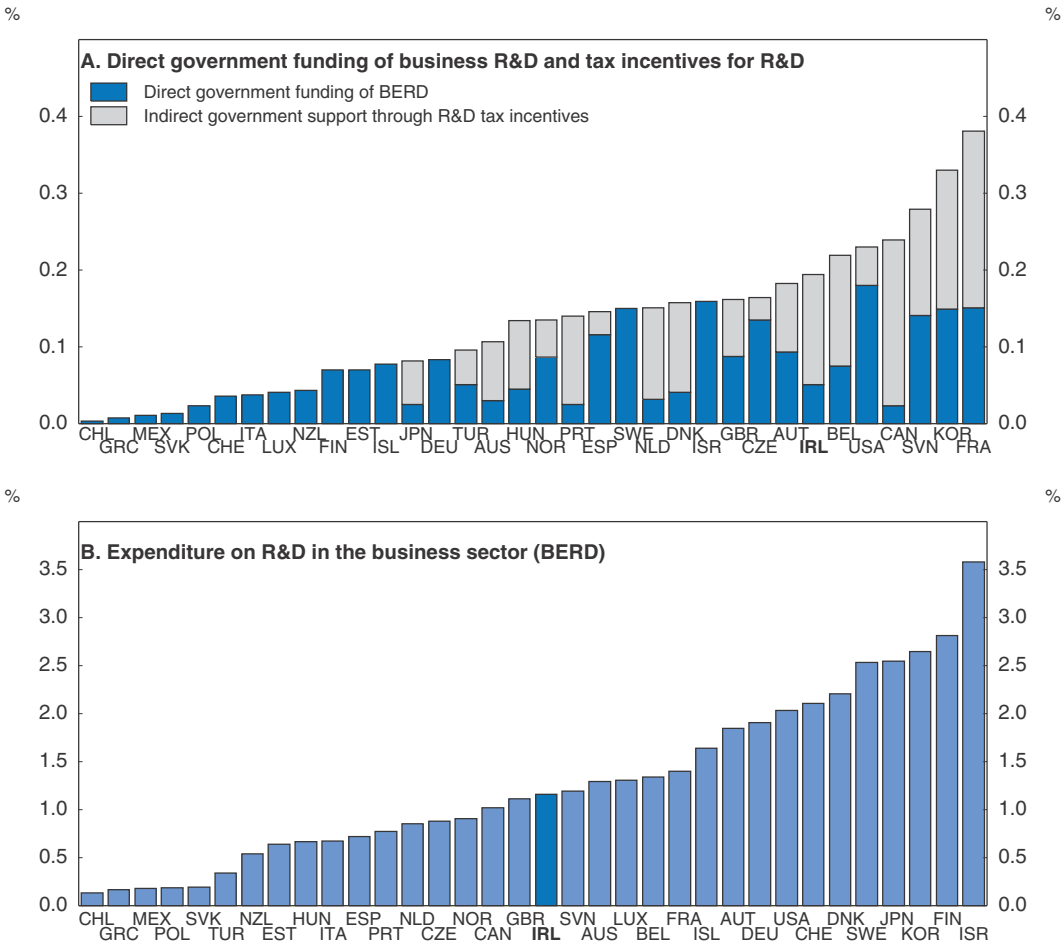
The government should maintain a mix of R&D tax incentives and selective direct grants to firms (Andrews and Criscuolo, 2013), as each has strengths and weaknesses. R&D tax credits have the large advantage that they avoid the "picking winners" problem associated with direct grants. They also should require fewer administrative resources to operate than direct grants, which is particularly important in a small country. However, Ireland's low corporate tax rate means the credit may have less leverage on R&D activities since there is a small tax liability to offset. R&D tax incentives can also have unintended consequences including protecting incumbents to the detriment of new entrants (Bravo-Biosca et al., 2012), sometimes generate little additional R&D, and can be used as tax shelters, especially via cross-border tax planning by MNCs (OECD, 2013). By contrast, direct support makes SMEs more likely to carry out R&D and results in a wider distribution of R&D activities - larger companies benefit from a higher likelihood of receiving a subsidy, but this is offset by more small firms doing R&D (Czarnitski and Ebersberger, 2010). Indeed, even if R&D tax incentives contain carry-over provisions and refunds, young firms may not fully benefit from the schemes if they lack the upfront funds to start an innovative project, and in these cases public funding may be more beneficial (Busom et al., 2012).

R&D tax incentives account for about three-quarters of total government financial support to business innovation – among the higher shares in the OECD (Figure 2.13). This share is likely to grow because the aggregate amount of R&D tax credit is not capped, unlike the science budget. Further major extensions of the credit appear unwarranted without greater evaluation. The government has appropriately launched a new review of the R&D tax credit in 2013. OECD empirical work suggests that reducing R&D cost through incentives by 1% will increase R&D by around 1% in the long-run (Westmore, 2013). Ireland needs to carry out more evaluation of the effectiveness of its particular scheme using statistical methods that generate control groups to isolate the effect of the credit beyond other factors (OECD, 2010a).

The government could improve the implementation of the current R&D tax credit scheme. In particular, heavy auditing by the Revenue Commissioners (tax collection authorities), and the unpredictability of their rulings as to whether a research activity is eligible for a credit, are disincentives for enterprises to take up the credit. The Revenue

Figure 2.13. **Fiscal support business Research and development expenditure, 2009**[1]

As a percentage of GDP



1. Or latest year available.

Source: OECD Science, Technology and Industry Scoreboard 2001 and *OECD Main Science and Technology Indicators Database*.

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Commissioners should work closely with the enterprise support agencies to develop a clearer set of guidance and rulings on what research activities are eligible for a credit. The choice of 2003 base year is also essentially arbitrary and appears to unnecessarily penalise corporations whose R&D expenditure spiked in that particular year. A move to an average of years should be considered to reduce this risk. Consideration could also be given to lifting the proportion of research that can be contracted out, which would help to encourage linkages between enterprises and the higher education sector without increasing the fiscal cost of a given project. Finally, Ireland's economy and export performance are increasingly driven by services. The *Frascati Manual* (OECD, 2002) discusses what can constitute R&D in the services sector, and consideration could also be given to widening the definition of R&D for R&D tax credit purposes to better encompass services R&D (Forfás, 2008).

Investing in skills will help foster spillovers from the multinationals to Irish SMEs

New OECD evidence suggests that more collaboration, as proxied by the share of higher education sector research financed by industry, is associated with higher firm-level

total factor productivity (TFP) (Andrews and Criscuolo, 2013). Linkages between MNCs, Irish-owned firms and the higher education sector have built up over time to varying degrees (Table 2.1). They are concentrated in several industrial clusters including medical devices in the west of Ireland (Galway), pharmaceuticals in the south-east (Cork) and computer hardware and software in Dublin. MNCs have also provided a fertile training ground for indigenous entrepreneurs and a source of start-ups in software. Irish entrepreneurs specialised in medical devices had previously worked in multinationals, building on earlier experience and contacts. MNCs also provide exposure to business practice outside Ireland (Barry, 2008).

Table 2.1. **Foreign direct investment spillovers and linkages with the domestic economy**

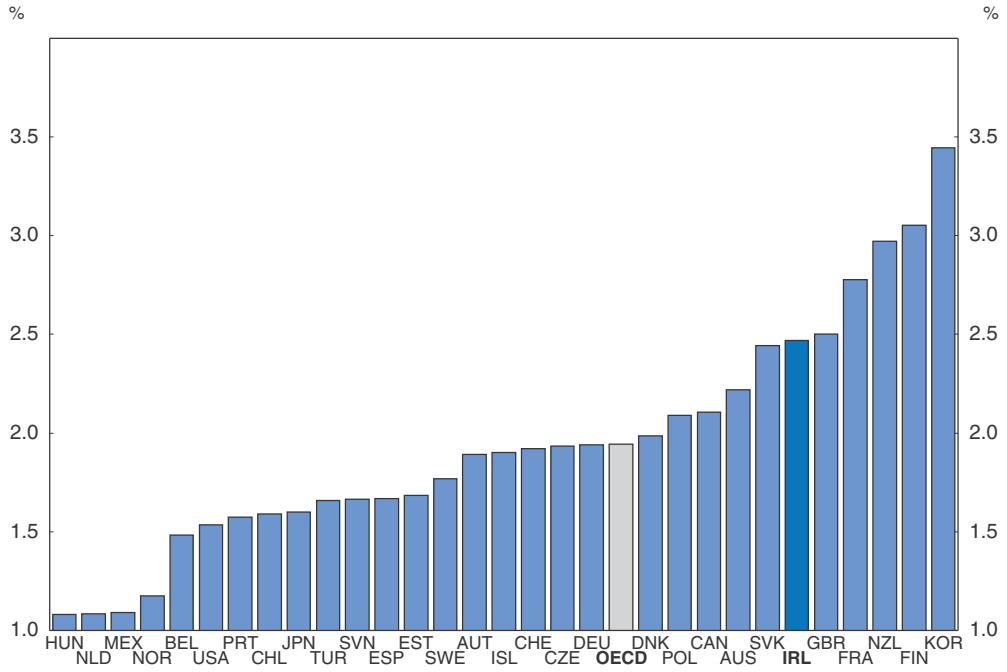
	Indicator	Firm ownership		Ratio Indigenous/ Foreign
		Indigenous	Foreign	
Supply Purchases from firms in Ireland				
	Per cent of total purchases 2001	89	50	1.78
	Per cent of total purchases 2010	83	18	4.61
New indigenous firm activity in sectors with high FDI presence[1]				
Chemicals	Employment change 2002-11	-355	-445	
Computer, electronic and optical	Employment change 2002-11	-141	-5 102	
Medical and dental	Employment change 2002-11	257	6 073	
Computer services	Employment change 2002-11	2 072	2 697	
Financial services	Employment change 2002-11	3 588	8 613	
Engage in joint research				
Any	Per cent of firms 2009	33	40	0.82
Other firms in Ireland	Per cent of firms 2009	11	10	1.09
Other firms outside Ireland	Per cent of firms 2009	17	26	0.65
Higher education or other institutes in Ireland	Per cent of firms 2009	17	22	0.78
Higher education or other institutes outside Ireland	Per cent of firms 2009	8	9	0.88
Engage in technological co-operation of any type				
	Per cent of firms 2008	21	33	0.65
	Per cent of firms 2010	25	38	0.65
Location of technological co-operation partner				
Ireland	Per cent of firms 2010	22	26	0.84
United States	Per cent of firms 2010	4	16	0.22
Europe	Per cent of firms 2010	16	34	0.48
Other	Per cent of firms 2010	2	9	0.22
Likelihood of firm increasing Ph.D researchers				
	Per cent of firms likely or very likely to hire 2007	66	58	1.15
	Per cent of firms likely or very likely to hire 2009	69	62	1.11

1. Data refer to employment in government-agency assisted firms. Central Statistics Office data for manufacturing industries suggests that this is fairly representative of the economy.

Source: Central Statistics Office based on the Community Innovation Survey; Forfas (2012), *Annual Business Survey of Economic Impact*; Forfas (2012), *Annual Employment Survey 2011*.

However, the number of such linkages remains low by international standards. Spillovers from foreign to domestic firms have tended to benefit from an increased supply of higher-skilled graduates (van Egeraat and Barry, 2008). The proportion of the young population graduating in Science, Technology, Engineering and Mathematics (STEM) appears relatively strong (Figure 2.14). However, SMEs still lack the knowledge capacity to

Figure 2.14. **The share of STEM graduates in total employment of persons aged 25-34, 2010**[1]



Note: Scientific fields include life sciences; physical sciences, mathematics and statistics, computing; engineering and engineering trades, manufacturing and processing, architecture and building.

1. For Australia, Canada and France: The number of STEM graduates refers to the year 2009.

Source: OECD Education at a Glance 2012.

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provide technological solutions to MNCs, and mainly specialise in basic raw materials and standard parts, which MNCs can also source from lower labour cost countries. The expansion of Masters and PhD programmes that include substantial work placements in firms is an important way to increase the employability of these students and increase firm innovation rates and linkages with the higher education sector other firms (ACSTI, 2009). These placements have also been the precursor to firms' moving to increase their innovation output using government innovation and enterprise support programmes. The proportion of doctoral graduates, despite rapid growth, remains below the OECD average and further expansion of structured graduate student programmes with significant work placement components should be considered using resources freed from reducing other courses that have shown little prospect of future employment.

Existing research capability in the higher education and hospital sectors can also be better organised to encourage greater interaction with the multinational sector. The move to create larger SFI- funded research centres in the higher education sector is a step in the right direction in this regard. The new health innovation hub, which will allow enterprises to access the public hospital system for clinical drug trials, is also an important step towards building greater linkages between the heretofore largely unconnected hospital and MNC pharmaceutical sectors. The government should as intended create a national health innovation hub in 2014 to ensure there is a health research "place to go" for the MNC sector.

Make a greater investment in Research Technology Organisations

A major element of the growing innovation system has been an expansion in the number and range of publicly-funded research centres. There are around 108 of these

centres, 97 of them based within the HEI system. They play a key role in encouraging linkages and spillovers in the innovation system. The larger and more successful centres, for example CRANN and Clarity (being merged to become Insight), provide a critical mass of research excellence that has encouraged multinationals such as Intel to bring core R&D functions to Ireland.

Research Technology Organisations (RTOs) are present in all EU15 countries (Arnold et al., 2010) and include Germany's Fraunhofer Institutes, Finland's Technical Research Centre, the Netherland's Applied Scientific Research Organisation and Ireland's agri-food focused, Teagasc. However, they are less of them present in Ireland, especially RTOs that serve SMEs outside the agri-food area. RTOs focus on providing firms with technological and other knowledge related solutions, raise a substantial amount of their funding privately and have a shorter-term focus of 2 to 3 years than more academically focused centres. RTOs can act as bridge from HEIs to the private sector and play an important role in supporting SMEs in future innovation activities. In particular they can provide consultancy and technological expertise tailored to firm needs and nearer to market activities.

It is important that RTOs are primarily industry focussed and that staff have the incentives to produce industry-focused research. This would mean that their performance and promotion would be based primarily on commercially-related outputs rather than academic ones, such as papers published and citations. To integrate RTOs into the wider innovation system it is important that staff could rotate between them and more academically focussed positions, which would mean treating progression equivalently in an RTO or a more academically orientated centre. An RTO would need more operational freedom, for example, over employment contracts than current HEI centres, although this kind of discretion could also benefit HEIs more generally as discussed above.

Although the centre landscape is evolving, it does not seem that this gap is being filled in Ireland. The new larger research centres (merging CSETS and SRCs) fulfil a different and important role of longer-term strategic research and academic performance metrics remain dominant. *Enterprise Ireland*'s new technology centres are industry rather than firm focussed and their scale is relatively small and project based and therefore not likely to build the critical mass and continuity that an RTO can bring. The government should move to setting up a pilot RTO. The aim should be that the RTO/s are eventually seen as "the place to go" for technological solutions for firms, especially SMEs, in the same way that Teagasc, the food and agriculture research institute, is regarded in its field.

Encouraging internationalisation

Investing in international sales education would help to better leverage the government's annual investment in innovation and enterprise supports and help Irish firms integrate better into global value chains. Innovation support funding is helping to improve Ireland's scientific base and innovation outputs such as patents. Greater returns will be had if Irish firms can better sell their inventions and technology in the international market place (Kernel Capital, 2012). Higher levels of international sales will also help to set up a virtuous circle as exporters are more likely to innovate, innovate more intensively and have higher levels of productivity than non-exporters (Squicciarini et al., 2013; Siedschlag et al., 2010, 2011). As a discipline, international sales is distinct from marketing and is about getting the buyers in to purchase once they have been made aware of a product and service through marketing.

The government should provide funding for academics expert in the field of international sales and set up a virtual international sales institute within the current university system, incorporating academics from sales-relevant disciplines including law and applied languages. The institute should draw on expertise existing within the multinational sector in Ireland and build linkages with the existing enterprise support agencies. This would provide the academic teaching and research base to build international sales into a scientific discipline in Ireland, which educates future and existing entrepreneur/innovators in evidence-based methods for selling the products and services that they invent. Indeed, Ireland, with its strong multinational base, has a unique opportunity to become an international academic leader in this field as, although the United Kingdom has recently appointed a chair in international sales, there is generally very little research in this field in Europe. Beyond sales there is also a need to build up the broader set of skills in management, logistics and customer relations required to be a successful exporter (EGFSN/Forfás, 2012).

Public procurement should be more open to SMEs and incremental innovation

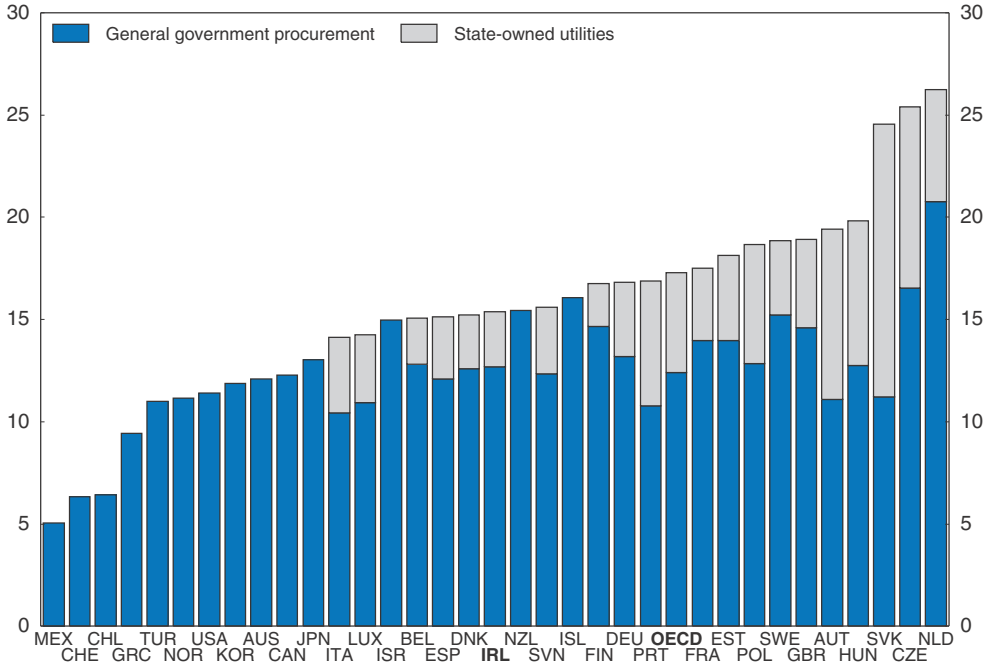
Government (including State-Owned Enterprises) procurement in Ireland is around the OECD median (Figure 2.15) and has the potential to be better harnessed to encourage innovation, especially in SMEs. The government has taken steps in this direction with the new *Procuring Innovation Initiative* to increase procurement of innovative solutions from SMEs. Using procurement to encourage innovation is not without risks and important challenges are: ensuring sufficient public sector capacity to effectively procure innovative products and services; reducing fragmentation of procurement across different parts of government; and establishing co-operation between procurement and innovation agencies (Beltramello and Nolan, 2012). It is therefore welcome that Ireland, as outlined in the *Jobs Action Plan 2013*, will concentrate procurement. This will be done by means of a *National Procurement Office* situated in the existing *Office of Public Works*, which will also co-operate with *Enterprise Ireland* to improve SMEs capacity to tender for public contracts.

Procurement of innovation also entails risks beyond those in traditional procurement, such as distorting competition, including technological or non-completion, and user non-uptake (Beltramello and Nolan, 2012). These risks, especially the first, can be mitigated by demanding incremental innovations starting with "off the shelf" products firms already produce rather than a "big bang" solution, for example a completely new IT system for government departments, which have become expensive failures in many countries (ASCTI, 2010). The government should be careful not to be overly prescriptive as experience in the United Kingdom suggests that a contributor to success was to begin by asking what was needed, not what was thought to be available or affordable. This allowed companies the freedom to innovate and explore new technologies (Beltramello and Nolan, 2012).

To assist SMEs while mitigating competition risk more the government should, within the current procurement spending envelope, allocated funds to a small business innovation research (SBIR) programme that gives grants for R&D in line with agency and department goals, with firms selected through a competitive tendering process. Indeed widening procurement to SMEs can increase competition. Such programmes exist in Australia, the United States, the United Kingdom and the Netherlands and have been effective in widening the suppliers of R&D in the SME sector (Beltramello and Nolan, 2012). The government is committed under the *Jobs Action Plan 2013* to studying the feasibility of a SBIR. A SBIR programme is an important complement to Ireland's existing programmes

Figure 2.15. **Public procurement spending**

As a percentage of GDP, 2008



Source: OECD, *Government at a Glance 2011*.

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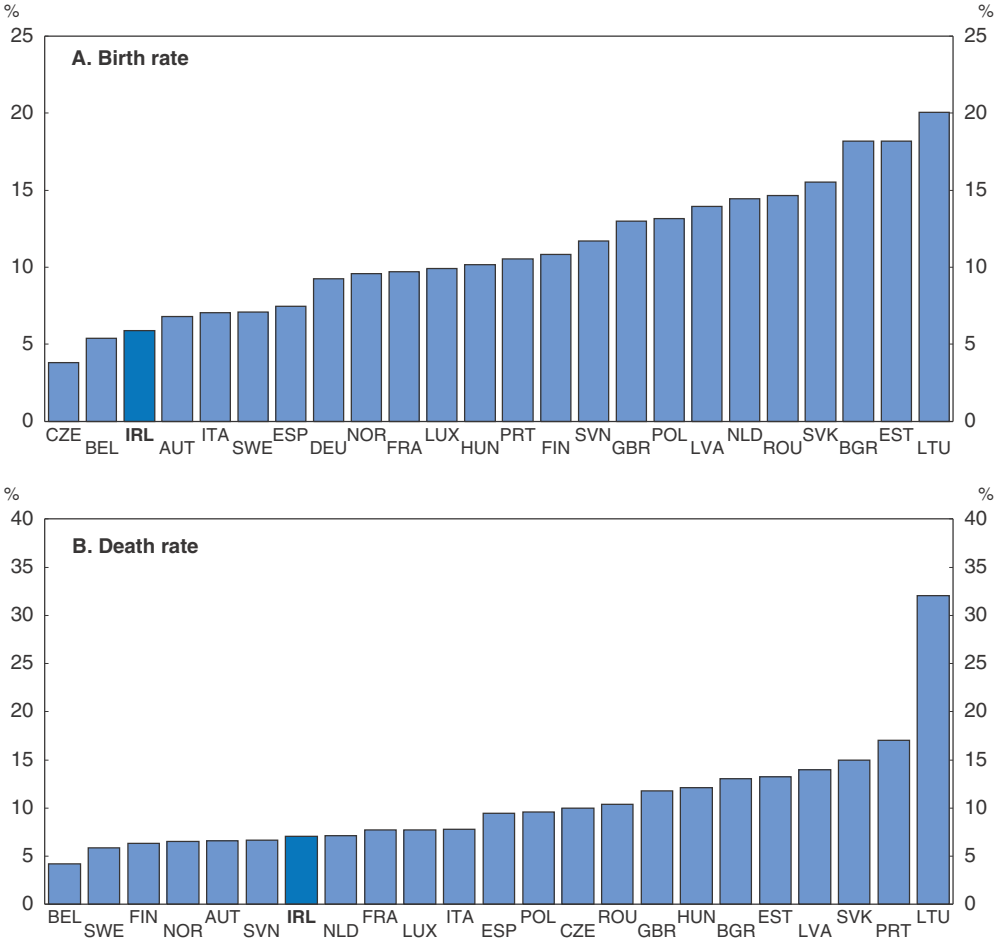
to build SME innovation capacity. A significant risk with an SBIR is that government funds might simply crowd out privately-financed R&D and SBIR schemes should attempt to only finance proposals not likely to receive funds from private sources (Wallsten, 2000). Seeking solutions to problems in areas where the government is the largest or only buyer, such as healthcare, can help achieve this goal. Keeping the innovation problems close to core government business will also enhance the chances of the public sector being able to understand the issue and effectively procure a solution.

Enhancing framework conditions for entrepreneurship and innovation

Beyond innovation specific policies it is important to establish a business environment where entrepreneurship and innovation can flourish. New firms tend to have high innovative output with almost half of all young firms (aged 5 years or less) located in Ireland filing patents. This proportion is the highest among all 16 OECD countries covered and young firms generate around 30% of all patents filed by Irish firms (Squicciarini et al., 2013). Encouraging new firms is also important because they tend to be the greatest contributors to job creation (Lawless, 2013, OECD, 2012a). However, Ireland's enterprise sector is not as dynamic as many other OECD countries, as measured by birth and death rates (Figure 2.16). Once firms are started they tend to have a high survival rate, perhaps indicating that Ireland is not "daring to fail" enough (Figure 2.17).

In addition the Irish perception of entrepreneurship opportunities is low in international comparison and entrepreneurship is not seen as a good career good option (OECD, 2012c). Firms that employ fewer than 10 employees account for a lower share of employment than average, but the share of firms with 10-249 employees is higher than the median, leaving the overall share of SMEs (249 or less employees) around the median. This may be related to the

Figure 2.16. **Birth and death rates of businesses,[1] 2008**



Note: The data do not include holding companies.

1. Number of enterprise births/deaths in the reference period (*t*) divided by the number of enterprises active in *t*. Data are based on NACE Rev. 2.

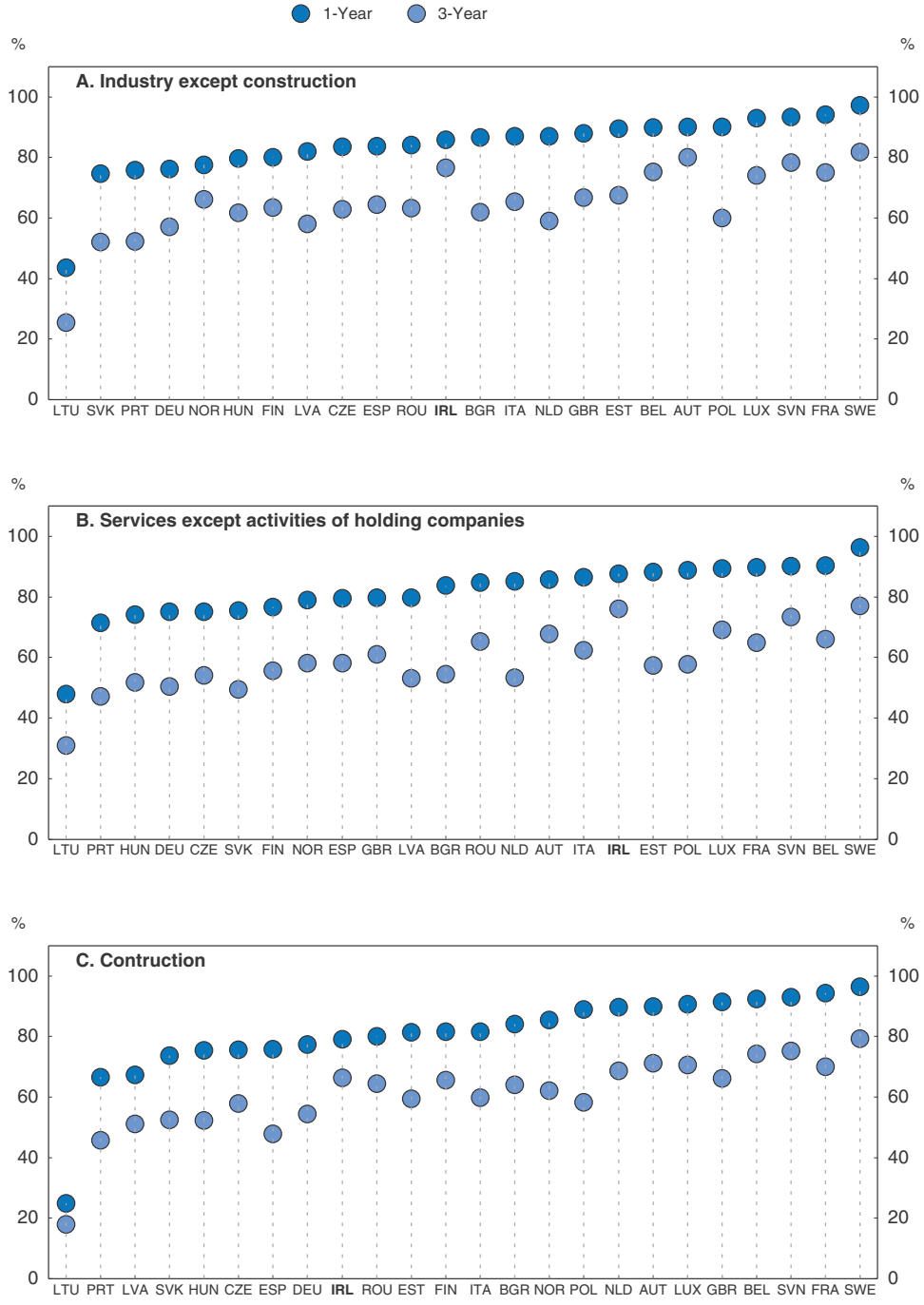
Source: Eurostat.

StatLink http://dx.doi.org/10.1787/888932894570

fact that the main government enterprise support agencies have up until recently only dealt with firms that have 10 or more employees. Ireland's general business environment ranks well in many respects but there is room for improvement in a number of areas with potency for entrepreneur-innovators, including improving access to capital, the intellectual property and insolvency regimes as well as availability of broadband Internet. Expediting immigration approvals for foreign entrepreneurs could also play a role as immigrants tend to be more entrepreneurial in Ireland, as elsewhere. Increasing competition in sectors providing inputs to all businesses to lower input costs and increase quality is also an important way to encourage greater entrepreneurship. Enforcing contracts and registering property remains difficult for business due to legal and court fees underlining the importance of passing new Legal Services Regulatory Bill that contains a number of measures to increase competition including establishing an independent legal services regulator.

Getting the business environment right, especially for start-ups, is challenging. It seems to involve fine-tuning and co-ordination of policies with an understanding of what makes start-ups thrive and cities attractive places to live and work. The Creative Dublin

Figure 2.17. **Survival rates[1] of firms by sector as 2009**



1. Survival rate as defined as number of enterprises in the reference period (*t*) newly born in (*t* – *n*) having survived to (*t*) divided by the number of enterprise births in (*t* – *n*). Data are based on NACE Rev. 2.

Source: Eurostat.

StatLink http://dx.doi.org/10.1787/888932894589

Alliance of high level representatives of central and local government and enterprises seeks to do just that to boost Dublin's already existing computer software cluster and start-up community and increase Dublin's international competitiveness (Box 2.1).

Box 2.1. **Turbo-charging the environment for high-tech entrepreneurship in Dublin**

The Creative Dublin Alliance is developing a suite of initiatives to make Dublin a better place to live and start-up a high tech firm under three main headings: getting business on line; provision of open data; and "turbo-charging" Dublin's IT start-up community. In the latter area, a group of business and government representatives is identifying Dublin's current strengths, including large internationally-sourced talent pool as well as potential barriers to high tech start-ups and linkages with multinational firms. A horizontal approach is being taken to look at initiatives that will encourage new firms regardless of ownership or sales destination. The group is examining a number of areas including: identifying gaps in the current government enterprise support framework, such as where the firm has owner-employees in both Ireland and abroad; ensuring that building leasing arrangements are flexible enough for young firms that want to be close to their peers and multinationals, and for whom standard arrangements such as long-term leases over single occupier spaces is unsuitable; creating pathways for youth from training to IT entrepreneurship by creating networking opportunities and reducing barriers to IT entrepreneurship talent from abroad coming to Dublin through reform of the visa system; creating "one-stop" shops for start-ups that would provide a single location for entrepreneurs to access the accounting, legal, tax and other regulatory advice required to get started quickly; and consolidating the number of innovation hubs within the city. Once a successful approach is developed for Dublin it could potentially be replicated for other high-tech clusters elsewhere in Ireland.

Financing of firms and capital markets including venture capital

Even with a normal bank lending channel operating, innovative start-ups and SMEs face particularly high barriers to obtaining finance due to their lack of collateral, cash flows and track record. This is exacerbated in Ireland by the impairment of the bank lending channel, further increasing the importance of other sources of finance for SMEs including angel investors (OECD, 2011a), mezzanine finance (hybrid debt/equity instruments) (OECD, 2012), SME loan securitisation (including covered bonds), venture capital and public equity offerings (OECD, 2013c). Angel investors and venture capitalists also provide other benefits to start-ups and SMEs beyond funding, including business expertise on commercialising an invention and creating connections that will facilitate an eventual trade sale. Venture capital provision in Ireland is around the OECD median. Raising venture capital has generally become harder since the financial crisis with funds raised in Europe declining by 40% from 2007 to 2011 (OECD, 2013d). In line with trends elsewhere in the OECD, the Irish government is increasing its supports for capital supply to SMEs. As discussed further below this exposes the government to substantial financial risks particularly as the interventions tend to be to support high risk firms. Public funds committed via eight initiatives total approximately EUR 1 billion (0.6% of GDP) with the intention of generating at least EUR 1.3 billion in co-funding by investors (Table 2.2). Other measures include SME lending targets for the two domestic "pillar" banks and an SME credit guarantee scheme. An examination of evidence of Credit Guarantee Schemes across OECD countries suggests that they have increased credit availability but also substantially lifted the risk exposure of the guarantors. There is very little evidence about whether they increase welfare in terms of greater sales, employment and innovation of SMEs (OECD, 2012d).

Table 2.2. **Facilitating SME access to finance**

Body	Instrument name	Year launched	Public Funds Millions of euro	Desired outside private investment
Enterprise Ireland	Innovation High Potential Start-Up funding (HPSU)	2008	23	0
Enterprise Ireland/National Pension Reserve Fund	Innovation fund Ireland	2010	250	Minimum 250
Enterprise Ireland	Development capital	2012	75	150
Microfinance Ireland	Micro enterprise loan fund	2012	10	30
Enterprise Ireland	Seed and venture capital	2013	175	525
National Pension Reserve Fund	SME equity fund	2013	125	175-225
National Pension Reserve Fund	SME turnaround fund	2013	50	50
National Pension Reserve Fund	SME credit fund	2013	175-325	Minimum 125
Approximate Total			958	1 330

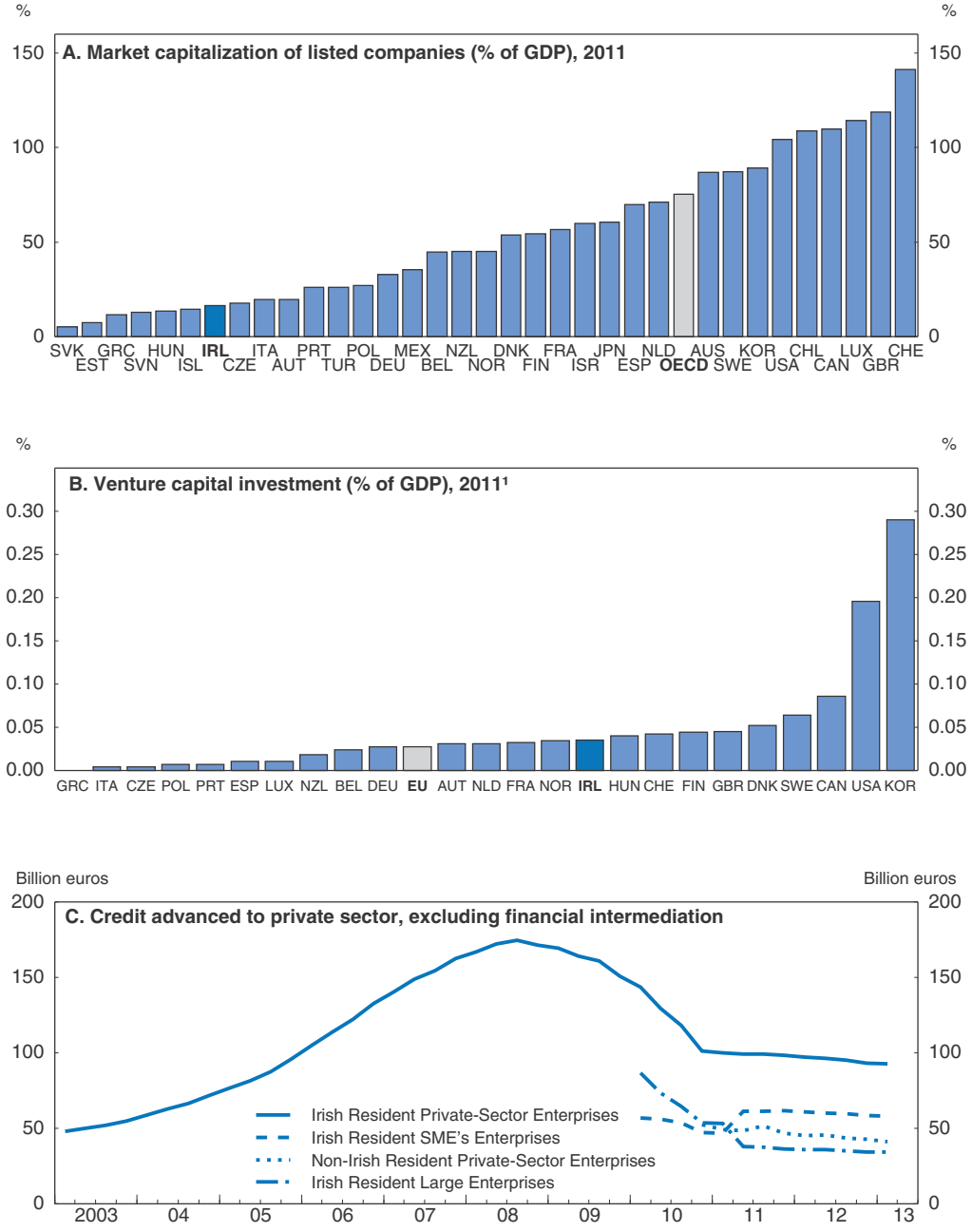
Source: Jobs Action Plan 2013, Enterprise Ireland, National Pension Reserve Fund.

Although information asymmetry problems can give rise to market failure, public intervention can result in trying and failing to pick winners (Avinimelech and Teubal, 2006) and crowding out effects (Cumming and MacIntosh, 2006) and the government should ensure all public intervention schemes have majority private co-funding (OECD, 2013d). The intention of 7 of the 8 schemes to raise matching or greater funding from the private sector is therefore welcome. Direct intervention should also be avoided and preference given to public investment via fund of funds. Although some evaluation has taken place at the scheme level, the increasing range of schemes and amounts of public money being committed calls for a more unified and transparent approach to the reporting and evaluation of these schemes. This is particularly important as the risk levels associated with this type of investment are extremely high. An empirical investigation showed around two thirds of a venture capital portfolio generates only 4% of the returns, while 4% of the portfolio generates more than 60% of the returns (Nanda, 2010). Regular summary reports should be publicly available comparing the performance of *all* schemes using financial, particularly risk adjusted rates of return, and other metrics.

Ireland's range of SME access to finance tools appears to be broad by international comparison (OECD, 2013d). However, for the financial system to work well in supporting firm growth there needs to be coverage from the seed capital stage right through to emergence as a medium to large firm and to date less initiative has been taken to encourage stock market listing. The Irish stock exchange is one of the smallest in the OECD relative to GDP (Figure 2.18) and the number of Initial Public Offerings (IPOs) is low by international standards and similar to countries with far smaller economies (Weild et al., 2013). A vibrant IPO market is an important complement to earlier stage finance, allowing venture capitalists and angel investors to exit and recycle their funds into new companies (OECD, 2013d). It also provides an important alternative for the merger and acquisition exit route, which should remain as a key exit route as well, especially for high growth companies. The *Action Plan for Jobs 2013* includes a commitment to develop proposals to incentivise dynamic companies who choose to continue to use the IPO route to raise development finance as an alternative to a trade sale exit.

SME listings face an uphill battle against an international trend towards high-frequency electronic and often computer algorithm based trading, for which relatively illiquid small-capitalisation (small-cap) stocks are not suited. IPO activity has stagnated in the United Kingdom and shrunk in the United States over the past 15 years (Weild et al.,

Figure 2.18. **Financing of the private sector**



1. 2009 for New Zealand.

Source: Bank of Ireland; World Bank, World Development Indicators (WDI); European Equity and Venture Capital Association (EVCA), *Yearbook 2012*; Canada's Venture Capital and Private Equity Association (CVCA); Private equity and Venture capital in New Zealand (NZVCA); Korean Venture capital Association (KVCA); Price WaterHouse Coopers and National Venture Capital Association.

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2013). Aside from illiquidity, small-caps rely on attracting fundamentals investors, which requires good information flows, and have only a small revenue base over which to spread regulatory and listing compliance costs. Initiatives, such as the ones to be developed under the *Jobs Action Plan*, to boost IPO activity should address these characteristics and could include reducing regulatory reporting requirements for newly listed companies, and increasing incentives for brokers and analysts to research and promote SME listings.

International experience suggests that higher tick sizes for smaller-cap stocks, and therefore greater spreads (Harris, 1997; Goldstein, 2000) and revenue for brokers, are associated with greater IPO activity (Weild et al., 2013). Demand for longer-term investments in small-cap stocks could be increased by reducing capital gains taxes for those who hold the stock for several years (IPO Taskforce, 2011).

The Irish stock exchange and brokers have an important role to play in promoting IPOs. Ireland currently has broker over-capacity in the wake of the collapse of the banks and associated equity trading, and the exchange is under pressure with Irish companies moving their listings to London. However, SME IPOs need a vibrant local stock exchange and broking industry with the local knowledge and contacts to conduct the research and carry out the promotion that is required for SME IPOs. A worldwide trend towards demutualisation and publicly listing stock exchanges, as well as technological change, that has multiplied electronic trading options has increased competition for listings and trading volume (Cristiansen and Koldertsova, 2009). Demutualising and publicly listing the Irish exchange itself in an IPO would help it to compete better by providing fresh capital to the exchange and incentivising stronger performance (Forfás, 2013a). Demutualisation would also increase the exchange's competitive edge by conferring greater decision-making flexibility on management than in a mutual form where member consent is usually required (Fleckner, 2006).

Insolvency regime

The insolvency regime is an important part of the incentive structure for entrepreneur-innovators. If the consequences of failure are harsh or it is difficult and costly to exit a failed business, this will discourage entrepreneurs from starting new ventures in the first place. Entrepreneurs, creditors and the economy stand to gain from greater efficiency in insolvency procedures. According to the *World Bank Doing Business* indicator Ireland's overall insolvency procedures rank relatively highly with the 8th most efficient insolvency regime in the OECD. However, there is potential for further improvements. Corporate insolvency of any kind has a strong stigma in Ireland. The government, media, the enterprise sector and unions all have a role to play in casting honest business failures not as something repugnant despite the sometimes painful consequences, but rather as events to be resolved so entrepreneurs can start over. In addition, the cost of the procedure as a share of debtor assets remains higher than countries ranked overall lower for insolvency.

In Ireland, corporate insolvency results in one of three main procedures: liquidation (winding up the business); receivership (enforcement of collateral against a loan); or examinership, where a court appointed official takes control of the company and develops a proposal to keep it going. The proposed reform in the Companies Bill 2012, which allows small companies to apply to the cheaper Circuit Court instead of the High Court to enter examinership, is therefore welcome. The government should also introduce a non-judicial debt settlement process for SMEs, as announced in the *Jobs Action Plan 2012*, as soon as possible. A possible mechanism is the Company Voluntary Arrangements in the United Kingdom, whereby the debtor appoints an insolvency practitioner to draw up a debt restructuring plan, allowing the company to continue to trade, to be put to creditors for a vote.

Intellectual property rights

Intellectual property rights (IPR) can have a large bearing on firms' willingness to innovate either individually or co-operate with others. Firms report that difficulties in negotiating intellectual property rights agreements are a significant barrier to collaborative projects with the higher education sector and this is more difficult in Ireland than with

institutions elsewhere (ACSTI, 2010). Contract negotiations are protracted and Technology Transfer Offices (TTOs) prefer licensing agreements over outright sales of IPR, while firms often preferred the latter. The government has developed a new IPR protocol to improve the regime (DJEI, 2012). A new Central Technology Transfer Office is also being set up to advise the 10 HEI based TTOs.

The current configuration could end up increasing bureaucracy without operational benefits. Greater efficiency gains could be potentially had if the new Central TTO took as much as possible operational responsibility for the legal processes that surround negotiations that are conducted at the individual TTO or research centre level. The new protocol also retains as the default position in the case of co-funded collaborative agreements that ownership of IPR will be retained by the HEI and only sold if it a non-severable improvement (i.e. the IPR cannot be commercialised without infringing on background IPR brought to the collaboration by the industry partner). This seems overly restrictive and the starting position should be more neutral, and the approach tailored to the capabilities of the enterprise partner to successfully commercialise research for the wider benefit of Ireland. While the government should get fair value for its contribution to IPR, the principle goal of the IPR policy should be to facilitate clusters of companies around the HEIs and to build long term HEI-Enterprise relationships (ACSTI, 2010). To this end, TTOs should not be evaluated on financial performance but rather their achievements in building in such clusters and effectively transferring technology, especially to the Irish-owned SME sector.

The government should investigate whether it can encourage greater SME innovation activity by providing a wider IPR toolbox. In particular it should seek the support of the European Commission and other EU countries to examine whether a useful addition to patent protection would be to extend the use of direct protection of intellectual property (DPI), which has been the main way of protecting new plant varieties since the 1960s, and used in Ireland to protect new potato varieties (Kronz, 1983, Kingston, 1987, 2012). Patent protection depends on the connection between the particular new idea patented and the product brought to the market. In pharmaceuticals this is almost direct (the chemical compounded patented and the drug sold have to be identical), but in other manufacturing areas the connection is much looser and therefore the protection is weaker. DPI can add to the incentive IPRs provide by protecting the effort of turning patent ideas into a commercially viable product by protecting that end product for a limited period. DPI has the advantage that it more directly incentivises what the government really wants more of – end-user products – as opposed to patents, which are just a means to an end. In the United States direct protection is given for boat hulls that have been moulded, not just designed and the European Union provides direct protection for databases. DPI is a strong form of protection and as such would be most likely be suited for areas where social benefits are high, but so are the costs of producing a marketable product, and there is little evidence of commercial research taking place. It can be seen as a fiscally cheap form of demand-led innovation.

ICT infrastructure

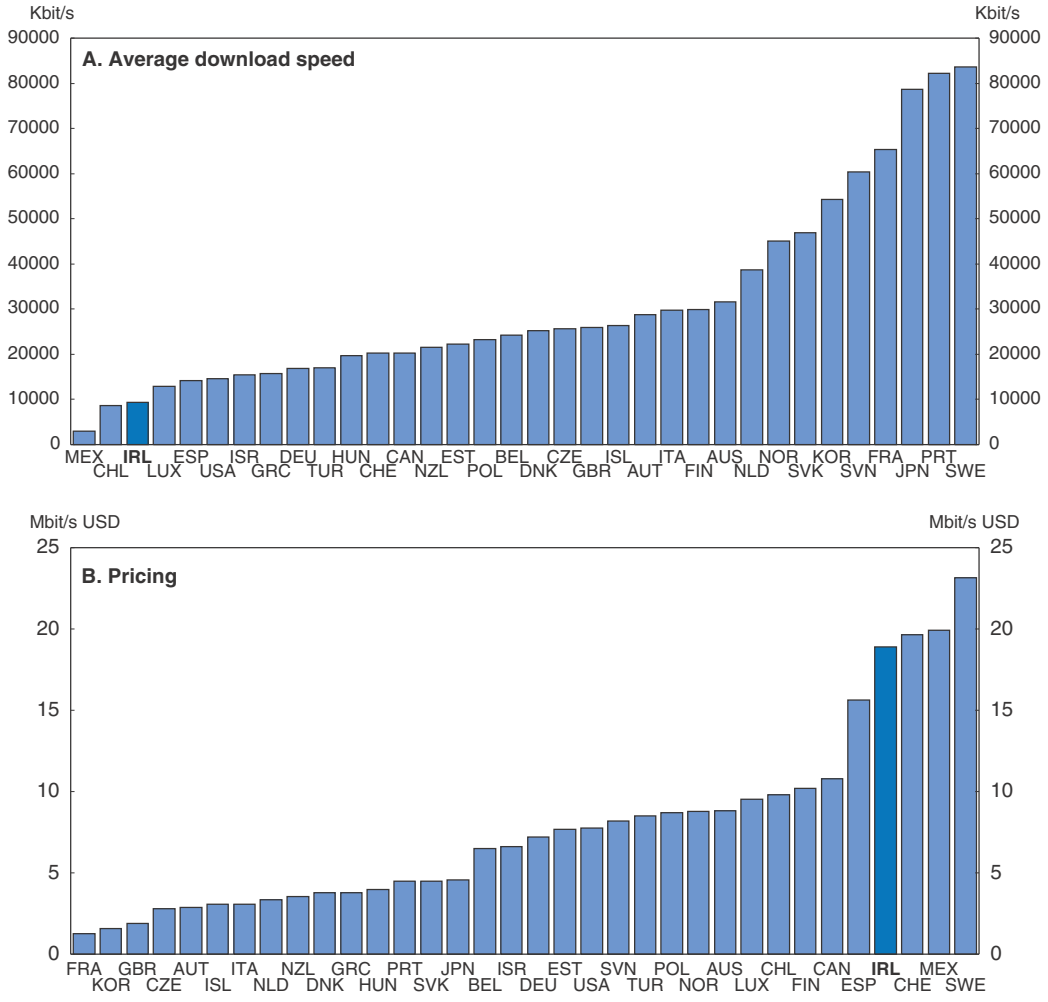
Improving broadband Internet infrastructure can potentially strongly foster both innovation and enterprise growth. The importance of broadband Internet for innovation arises from its general purpose technology (GPT) characteristics. It can be used in many sectors, it is technically dynamic and, crucially, has strong potential for innovation complementarities (i.e. the productivity of R&D in other sectors increases due to innovation in broadband [Bresnahan and Trajtenberg, 1995]). As such it has the potential to spark a long

wave of innovation and productivity as electricity did in the 20th century (David, 1991). Empirical work using panel datasets of OECD countries consistently finds a significant relationship between broadband penetration and per-capita and aggregate GDP growth (Koutrompis, 2009; Czernich et al., 2011; Atif et al., 2012). However, there is more uncertainty at the micro-level. Grimes et al. (2012) using data on a broad sample of New Zealand firms find that broadband adoption increases firm productivity by 7-10%, while Hallar and Lyons (2011) using data for Irish manufacturing firms conclude that broadband has no effect on firm productivity. However, as acknowledged by the authors, the latter result does not exclude the possibility that the strongest firm level effects lie in the services sector. For example, in Ireland there are strong potential complementarities between broadband Internet and Ireland's revealed comparative advantage in sectors such as computer software and international financial services, and its specialisation strategy to encourage growth in Internet intensive sectors, for example, cloud computing and gaming.

Although large firms in Ireland appear to be well served with access to extremely rapid broadband speeds, broadband download speeds for households and SMEs are among the lowest in the OECD and prices among the highest (Figure 2.19). Although the figure relates to residential users access, data from the Irish Telecoms Regulator, Comreg, for households and firms is consistent with this picture, with around 70% of households and 90% of SMEs having contracted access at between only 2 and 10 Mbps. In addition, around 10% of firms are not using the Internet at all (NGBT, 2012). The government's *National Broadband Plan* aims to increase broadband speeds across the country to speeds comparable with the best performing OECD countries today for more than half the population by 2015 as well as significantly lifting the minimum speed for all households. The plan aims to achieve this by facilitating private investment in the rollout, but will fall back on government investment where there is evidence that the market will not provide the services. An area of uncertainty is just how fast private-sector investment will proceed and the extent of actual demand for high-speed broadband. In both respects, the government should examine the progress and be guided by cost-benefit analyses. In this regard, an important consideration is that providing high broadband speeds via ADSL using the existing copper network allows access to a wide range of services, and the cost of ADSL is far lower than installing fibre, which requires a whole new network to be built (Kenny and Kenny, 2011).

An important barrier to broadband infrastructure is development contribution fees for installing telecommunications masts and opening roads to lay copper or fibre cables, which are sometimes very high. Fees vary significantly across counties and appear to be motivated by revenue raising rather than cost recovery. Indeed, charges tend to be levied in inverse proportion to costs in that the fees tend to be the highest in rural low population counties where negative externalities from these developments are lowest (such as fewer people live close to the mast, there is less traffic disruption from road openings). As a sometimes significant and unpredictable tax on new investment, these fees are particularly distorting way to raise revenue and empirical work shows that higher fees reduce the number of masts controlling for the usual determinants such as population density (Gorecki et al., 2011). The government has moved to partially address these obstacles by changing the planning guidelines to local government by advising that permissions for telecommunications masts should be permanent rather than for only 5 years (DECLG, 2012). In addition draft central guidelines on development contribution fees propose requiring waivers for broadband infrastructure but acknowledge that these schemes are still decided at the local authority level. The government should take a broader

Figure 2.19. **Broadband for residential users, September 2010**



Source: OECD Communications Outlook 2011.

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approach than this to reduce the development fee impediment for all infrastructure development rather than making a special exception for broadband.

To remove unwarranted impediments to infrastructure development, including the extension of high-speed broadband, central and local government should work together to implement uniform and predictable charges and licence application procedures. Local government reliance on the current fee system should be reduced by replacing it with revenue with recurrent property taxes that are more stable and less distorting to investment and growth. The cost of broadband rollout could be reduced with reforms to require open access ducting in new buildings as part of the planning process (Forfás, 2011a). The payoff from higher speed broadband in terms of innovation and enterprise would be increased by putting more government services online. In this regard, the eGovernment Strategy could usefully be co-ordinated with the rollout of high speed Internet. For example, health services are a core government activity where high speed Internet creates many new opportunities, such as remote diagnostics.

Box 2.2. **Recommendations for fostering innovation and entrepreneurship**

Reflecting significant uncertainties about the effectiveness of various innovation policy tools, independently and regularly evaluate all actions in this area, strengthen programmes with proven higher returns, and wind down the others. To promote effective evaluation, ensure all innovation and enterprise supports have sunset clauses.

To increase the effectiveness and cost-efficiency of the innovation and research policies, and make it easier for businesses to access support, consolidate innovation funding and actions into a smaller number of government agencies.

To increase capital supply and encourage entrepreneurship, lower costs for small-cap IPOs, centralise legal processes for intellectual property rights (IPR) transfers with the new central Technology Transfer Office, introduce changes to the examinership process and remove unwarranted licensing and cost barriers to the rollout of high-speed broadband.

To improve Higher Education Institution (HEIs) quality, make a significant portion of their funding performance related, provide multi-year funding envelopes for HEIs, adjust their funding to reflect different student growth patterns across institutions and give them autonomy over staff salaries.

To encourage MNCs to move advanced R&D functions to Ireland and build HEI-firm linkages, continue the strategy of building up fewer, larger academic research centres. Increase Masters and PhD graduates with significant firm placement components in order to provide firms, and particularly SMEs, with the innovation capacity to engage with HEIs. Further enhance SME-HEI links by setting up Research Technology Organisation/s targeting SME needs.

Bibliography

Advisory Council for Science Technology and Innovation (ACSTI) (2012), *Sustainability of Research Centres*, June 2012.

Andrews, D. and C. Criscuolo (2013), "Knowledge-Based Capital, Innovation and Resource Allocation", *OECD Economics Department Working Paper*, No. 1046.

Arnold, E., K. Barker and S. Sliperstaeter (2010), *Research Institutes in the ERA*, Technopolis Group, July 2010.

Atif, S.M., J. Endres and J. Macdonald (2012), "Broadband Infrastructure and Economic Growth: A Panel Data Analysis of OECD Countries", Leibniz Information Centre for Economics Open Server.

Avinimelech, G. and M. Teubal (2006), "Creating Venture Capital Industries that Co-Evolve with High Tech: Insights from an Extended Industry Life Cycle Perspective of the Israeli Experience", *Research Policy*, Vol. 35, Issue 10, pp. 1477-1498.

Beltramello, A. and A. Nolan (2012), "Intelligent Demand: Policy Rationale, Design and Potential Benefits", DSTI-IND (2012)22, OECD, Paris.

Bravo-Biosca, A., C. Criscuolo and C. Menon (2012), "What Drives the Dynamics of Business Growth?", *OECD STI Working Paper*, 2012/6.

Box, S. (2009), "OECD Work on Innovation – A Stocktaking of Existing Work", *OECD Science, Technology and Industry Working Papers*, 2009/02.

Busom, I., B. Corchuelo and E. Martínez-Ros (2012), "Tax Incentives and Direct Support for R&D: What Do Firms Use and Why?", *Business Economics Working Papers,* id-11-03, Universidad Carlos III, Instituto sobre Desarrollo Empresarial "Carmen Vidal Ballester".

Barry, F. and A. Bergin (2012), "Inward Investment and Irish Exports over the Recession and Beyond", *The World Economy*, pp. 1291-1304.

Bresnahan, T. and M. Trajtenberg (1995), "General Purpose Technologies Engines of Growth?", *Journal of Econometrics*, Vol. 65, pp. 83-108.

Christiansen, H. and A. Koldertsova (2009), "The Role of Stock Exchanges in Corporate Governance", *OECD Journal: Financial Market Trends*, Vol. 2009/1.

Criscuolo, C., D. Czarnitzki, C. Hambro and J. Warda (2009), "Design and Evaluation of Tax Incentives for Business Research and Development: Good Practice and Future Development", *final report submitted by the Expert Group on Impacts of R&D Tax Incentives to the European Commission*, Directorate General – Research, 15 November.

Cumming, D. and J. MacIntosh (2006), "Crowding out Private Equity: Canadian Evidence", *Journal of Business Venturing*, Vol. 21(5), pp. 569-609, September.

Czarnitski, D. and B. Ebersberger (2010), "Do Direct R&D Subsidies Lead to Monopolisation of R&D in the Economy?", *ZEW Discussion Papers*, No. 10-078.

Czernich, N., O. Falck, T. Kretschmer and L. Woessmann (2011), "Broadband Infrastructure and Economic Growth", *The Economic Journal*, Vol. 121, pp. 505-532.

David, P. (1991), "Computer and Dynamo: The Modern Productivity Paradox in a Not-Too-Distant Mirror", in *Technology and Productivity: the Challenge for Economic Policy*, OECD Publishing, Paris.

Department of Environment, Community and Local Government (DECLG) (2012), *Telecommunications Antennae and Support Structures Guidelines*, Circular Letter, PL 07/12.

Department of Jobs, Enterprise and Innovation (DJEI) (2012), "Putting Public Research to Work for Ireland", Dublin.

Expert Group for Skills Needs (EGFSN)/Forfas (2012), *Key Skills for Enterprise Internationally*.

Fleckner, A.M. (2006), "Stock Exchanges at the Cross-Roads", *Fordham Law Review*, Vol. 74, pp. 2541-2620.

Forfás (2008), "Catching the Wave, A Services Strategy for Ireland", *Report of the Services Strategy Group*, Dublin.

Forfás (2011), *Report of the Research Prioritisation Steering Group*.

Forfás (2011a), *Ireland's Advanced Broadband Performance and Policy Priorities*.

Forfás (2012), *Annual Business Survey of Economic Impact 2010*.

Forfás (2013), *An Analysis of the 2011 Annual Business Survey of Economic Impact*.

Forfás (2013a), *A Review of the Equity Investment Landscape in Ireland*.

Frenz, M. and R. Lambert (2012), "Mixed Modes of Innovation: An Empiric Approach to Capturing Firms' Innovation Behaviour", *OECD Science, Technology and Industry Working Papers*, 2012/06.

Goldstein, M. and K. Kavajecz (2000), "Eighths, Sixteenths, and Market Depth: Changes in Tick Size and Liquidity Provision on the NYSE", *Journal of Financial Economics*, Vol. 56, pp. 125-149.

Gorecki, P., H. Hennessy and S. Lyons (2011), "How Impact Fees and Local Planning Regulation Can Influence the Deployment of Telecoms Infrastructure", *Economic and Social Research Institute Working Paper*, No. 401.

Grimes, A., C. Ren and P. Stevens (2012), "The Need for Speed: Impacts of Internet Connectivity on Firm Productivity", *Journal of Productivity Analysis*, 37, pp. 187-201.

Hallar, S. and S. Lyons (2012), "Broadband Adoption and Firm Productivity: Evidence from Irish Manufacturing Firms", The Economic and Social Research Institute, Dublin.

Harris, L. (1997), "Decimalization: A Review of the Arguments and Evidence", *Working Paper*, Marshall School of Business, University of Southern California.

Higher Education Authority (HEA) (2011), "Sustainability Study: Aligning Participation, Quality and Funding", *Report to the Minister for Education and Skills from the Executive of the HEA*, November.

Higher Education Authority (HEA) (2012), "Review of Funding Model for Higher Education Institutions", *Consultation Document*, July.

IPO Taskforce (2011), *Rebuilding the IPO On-Ramp: Putting Emerging Companies and the Jobs Market Back on the Road to Growth*, 20 October.

IBEC (2012), "Ireland's Industry – A Profile", *Research note of the Irish Business and Employers Confederation*, available at *www.ibec.ie*.

Kenny, R. and C. Kenny (2011), "Superfast Broadband: Is it Really Worth a Subsidy?", *Info*, Vol. 13, pp. 3-29.

Kernel Capital (2012), An Open Letter to the Minister of Education and Skills, available at *www.kernelcapital.ie*.

Kingston, W. (ed.) (1987), "Direct Protection of Innovation", Dordrecht, Netherlands and Boston, MA, Kluwer Academic Publishers for the Commission of the European Communities.

Kingston, W. (2012), "Transforming the Conditions for Indigenous Innovation", *The Economic and Social Review*, Vol. 43, No. 4, Winter, pp. 631-651.

Kronz, H. (1983), "Patent Protection for Innovations: A Model", *European Intellectual Property Review*, Vol. 7, pp. 178-182.

Lawless, M. (2013), "Age or Size? Contributions to Job Creation", *Central Bank of Ireland Research Technical Paper*, 2/RT/13.

Nanda, R. (2010), "Entrepreneurial Finance", *Paper presented at the OECD conference* on "The Role of Entrepreneurship in Fostering Innovation and Growth", Paris, March.

OECD (2002), *Frascati Manual: Proposed Standard Practice on Research and Experimental Development*, OECD Publishing, Paris.

OECD (2005), *Innovation Performance and Policy: A Cross-Country Comparison*, OECD Publishing, Paris.

OECD (2006), *Reviews of National Policies for Education: Higher Education in Ireland*, OECD Publishing, Paris.

OECD (2009), *OECD Science Technology and Industry Scoreboard*, OECD Publishing, Paris.

OECD (2010), *The OECD Innovation Strategy: Getting a Head Start on Tomorrow*, OECD Publishing, Paris.

OECD (2010a), "R&D Tax Incentives: Rational, Design, Evaluation", *OECD Innovation Platform Brief*, *www.oecd.org/innovation/policyplatform*.

OECD (2010b), *Mobile Communications in the OECD Area, Working Party on Communication Infrastructures and Services Policy*, DSTI/ICCP/CISP(2010)3/FINAL.

OECD (2011), "Public Research Institutions, Mapping Sector Trends", OECD Publishing, Paris.

OECD (2011a), *Financing High-Growth Firms: The Role of Angel Investors*, OECD Publishing, Paris.

OECD (2012), "Alternative Financing Instruments for SMEs and Entrepreneurs: The Case of Mezzanine Finance", CFE/SME(2012)9/FINAL, Paris.

OECD (2012a), "What Drives the Dynamics of Business Growth", *OECD STI Working Paper*, 2012/6.

OECD (2012b), *OECD Reviews of Innovation Policy: Sweden*, OECD Publishing, Paris.

OECD (2012c), *Entrepreneurship at a Glance*, OECD Publishing, Paris.

OECD (2012d), "SME and Entrepreneurship Financing: The Role of Credit Guarantee Schemes and Mutual Guarantee Societies in Supporting Finance for Small- and Medium-Sized Enterprises", CFE/SME(2012)1/FINAL, Paris.

OECD (2013), *New Sources of Economic Growth: Knowledge Based Capital, Key Analysis and Policy Conclusions Synthesis Report*, OECD Publishing, Paris.

OECD (2013a), "Drawing the Benefits from Global Value Chains", *Draft Synthesis Paper*, DSTI/IND(2013)1, Paris.

OECD (2013b), "Global Value Chains (GVCs): Ireland", OECD Publishing, Paris.

OECD (2013c), *Financing SMEs and Entrepreneurs 2013 – An OECD Scoreboard*, OECD Publishing, Paris.

OECD (2013d), "Policies for Seed and Early Stage Finance: Summary of the 2012 OECD Financing Questionnaire", DSTI/IND (2013)5, Paris.

Ryan. P. and M. Giblin (2012), "High-Tech Cluster, Innovation Capabilities and Technological Entrepreneurship: Evidence from Ireland", *The World Economy*, pp. 1322-1339.

Schiedschlag, I., X. Zhang and B. Cahill (2010), "The Effects of Internationalisation on Firms Innovation and Productivity", *Economic and Social Research Institute Working Paper*, No. 363, Dublin.

Schiedschlag, I., D. Killeen, N. Smith and C. O'Brien (2011), "Internationalisation and the Innovation Activities of Services Firms", *Economic and Social Research Institute Working Paper*, No. 406, Dublin.

Slaughter, M. (2003), "Host-Country Determinants of US Foreign Direct Investment into Europe", in H. Herrmann and R. Lipsey (eds.), *Foreign Direct Investment in the Real and Financial Sector of Industrial Countries*, Springer, Berlin.

Squicciarini, M., V. Millot and D. Haugh (2013), "Determinants of Firm Innovation Performance and Productivity in Ireland", *OECD Working Paper*, forthcoming.

Van Egeraat, C. and F. Barry (2009), "The Irish Pharmaceutical Industry over the Boom Period and Beyond", *Irish Geography*, Vol. 42, pp. 23-44.

Wallsten, S. (2000), "The Effects of Government-Industry R&D Programmes on Private R&D: The Case of the Small Business Innovation Research Program", *Rand Journal of Economics*, Vol. 31 (Spring 2000).

Warwick, K. (2013), "Beyond Industrial Policy: Emerging Issues and New Trends", *OECD Science Industry and Technology Working Papers*, No. 2, OECD Publishing, Paris.

Weild, D., E. Kim and L. Newport (2013), "Making Stock Markets Work to Support Economic Growth", *OECD Corporate Governance Working Papers*, No. 10.

Westmore, B. (2013), "R&D, Patenting and Productivity: The Role of Public Policy", *OECD Economics Department Working Paper*, No. 1047.

ANNEX 2.A1

Main innovation support agencies and programmes

Government department	Estimated expenditure in 2012 EUR million	Per cent of total expenditure	Estimated number of R&D programmes	Principal programmes[1]	Budget EUR million	Per cent of total budget	Principal aim	Funding body
Department of Jobs, Enterprise and Innovation	361.9	40	44	IDA RD&I	63.0	7	Business R&D	IDA
				EI R&D Fund	54.2	6	Business R&D	EI
				Principal Investigators	41.9	4	Human Capital	SFI
				CSET	34.6	3	Collaboration	SFI
				Commercialisation Fund	24.0	2	Commercialisation	EI
				SRC	21.6	2	Collaboration	SFI
				Technology Centres	20.8	2	Collaboration	EI
				ESA	14.8	1	EU & International	DJEI
				TIDA-HIPA	12.5	1	Commercialisation	SFI
				Innovation Partnerships	10.0	1	Collaboration	EI
Department of Education and Science	344.9	39	27	Block Grant (Uni7)	233.8	26	Infrastructure; Human Capital	HEA
				PRTLI	53.2	6	Infrastructure; Human Capital	HEA
				IRCSET	20.1	2	Human Capital	IRCSET
				Block Grant (IoTs14)	14.6	1	Infrastructure	HEA
				IRCHSS	10.7	1	Human Capital	IRCHSS
Department of Agriculture, Food and the Marine	98.4	11	22	Agri-Food Research	60.5	6	Human Capital	Teagasc
Department of Health	39.8	4	8	Health Research	33.9	3	Human Capital; Infrastructure	HRB
Department of Energy and Natural Resources	16.1	1	14	No programmes > EUR 10 million				
Department of the Environment	10.6	1	11	No programmes > EUR 10 million				
Other	5.0	-	19	No programmes > EUR 10 million				
Total	876.7		82		724.2	74		

1. Programmes with expenditure >EUR 10 million in 2012. There are 17 such programmes which together make up around 75% of total R&D budget.

Source: Preliminary data from the 2013 Science Budget, Department of Finance.

ANNEX 2.A2

Main objectives of innovation support programmes

Principle objective of programme	Number of programmes with this principal objective	Expenditure on programmes with this principal objective EUR million	Per cent of total government budget	Number of funding bodies involved
Underpinning infrastructure (including human capital from block grant to higher education institutions)	12	324.1	38	3
Human capital/funding for research personnel (mostly competitive funding)	24	155.1	18	10
Financing business R&D (excluding R&D tax credit[1])	8	124.8	14	5
Facilitating collaboration (includes programmes to facilitate HEI-HEI, HEI-Firm, and firm-firm collaborations)	12	95.4	11	4
Commercialisation and translation of research (includes direct commercialisation and technology testing and adoption)	8	43.0	4	4
Participation in European and other international programmes	14	18.7	2	5
Other (mainly grant payments to individual institutions, including Teagasc)	53	91.7	10	~15
Total	131	852.8		

1. Estimated cost of R&D tax credit in 2010 was EUR 224 million.
Source: Preliminary data from the 2013 Science Budget, Department of Finance.

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