

Unclassified

ECO/WKP(2011)79

Organisation de Coopération et de Développement Économiques
Organisation for Economic Co-operation and Development

02-Dec-2011

English - Or. English

ECONOMICS DEPARTMENT

ECO/WKP(2011)79
Unclassified

**STRUCTURAL REFORMS TO REDUCE UNEMPLOYMENT AND RESTORE COMPETITIVENESS
IN IRELAND**

ECONOMICS DEPARTMENT WORKING PAPER No. 910

By Álvaro Pina

All OECD Economics Department Working Papers are available on the OECD Intranet website at
www.oecd.org/eco/workingpapers

JT03312760

Document complet disponible sur OLIS dans son format d'origine
Complete document available on OLIS in its original format

English - Or. English

ABSTRACT/RÉSUMÉ

Structural reforms to reduce unemployment and restore competitiveness in Ireland

After a recession of historic proportions, an export-led recovery is gaining traction in Ireland. The pace of recovery, however, varies sharply across sectors. While export-oriented manufacturing and services, led by large multinationals, have reached record-high levels of output, inward-oriented sectors, where Irish-owned SMEs predominate, are by and large still struggling to emerge from the crisis. Reflecting the weakness of this traditional sector, which is labour intensive, unemployment rates remain very high, particularly among young men with low or intermediate qualifications, often formerly employed in the construction sector.

To tackle high and persistent unemployment and thus stave off social exclusion, Ireland needs to further pursue an integrated three-pillar strategy: welfare reform to ensure that work pays; better activation policies to assist labour reallocation across sectors; and a sustained restraint in wages and other business costs to restore international competitiveness. In particular, often building on recent policy initiatives or commitments, this paper recommends reforms to further enhance product-market competition, improve innovation efforts and ameliorate the quality of education, which are key to economic prosperity.

This Working Paper relates to the 2011 OECD Economic Survey of Ireland (www.oecd.org/eco/surveys/ireland).

JEL Classification: F10, F40, I28, I38, J52, J64, J68, L40, L94

Keywords: Ireland; unemployment; labour costs; welfare system; activation policy; competition; electricity; R&D; technology transfer; education; competitiveness; international trade; constant market share analysis

* * * * *

Des réformes structurelles pour lutter contre le chômage et rétablir la compétitivité en Irlande

Après une récession d'une exceptionnelle gravité, l'économie irlandaise connaît une reprise tirée par les exportations. Néanmoins, le rythme de cette reprise est très variable d'un secteur à l'autre. Alors que l'industrie manufacturière et les services tournés vers l'exportation, dominés par de grandes entreprises multinationales, ont atteint des niveaux de production record, les secteurs axés sur le marché intérieur, où les PME irlandaises prédominent, peinent toujours à sortir de la crise. Compte tenu de la faiblesse de ce secteur traditionnel à forte intensité de main-d'œuvre, les taux de chômage restent très élevés, notamment parmi les hommes jeunes peu ou moyennement qualifiés, qui travaillaient souvent dans le secteur de la construction.

Pour s'attaquer à un chômage élevé et persistant et conjurer ainsi les risques d'exclusion sociale, l'Irlande doit poursuivre une stratégie intégrée fondée sur trois piliers : une réforme du système de protection sociale de nature à valoriser le travail ; de meilleures politiques d'activation pour faciliter un redéploiement de la main-d'œuvre entre les secteurs ; et une compression persévérante des salaires et d'autres dépenses d'exploitation afin de redevenir compétitive sur le plan international. En particulier, en s'appuyant souvent sur des récentes initiatives ou engagements politiques, cet étude préconise des réformes destinées à accroître la compétitivité sur les marchés de produits, à stimuler l'innovation et à améliorer la qualité de l'enseignement, conditions indispensables à la prospérité économique.

Ce Document de travail se rapporte à l'Etude économique de l'OCDE de l'Irlande 2011 (www.oecd.org/eco/etudes/irlande).

Classification JEL: F10, F40, I28, I38, J52, J64, J68, L40, L94

Mots-clés : Irlande; chômage ; coûts salariaux ; système de prestations sociales ; politique d'activation ; concurrence; électricité; R-D; transfert de technologie; éducation ;compétitivité ; commerce international; analyse des parts de marché

Copyright OECD 2011.

**Application for permission to reproduce or translate all, or part of, this material should be made to:
Head of Publications Service, OECD, 2 rue André-Pascal, 75775 Paris CEDEX 16, France.**

TABLE OF CONTENTS

STRUCTURAL REFORMS TO REDUCE UNEMPLOYMENT AND RESTORE COMPETITIVENESS IN IRELAND.....	5
Preventing a permanent increase in structural unemployment.....	6
The crisis has hit hard labour-intensive sectors and the least qualified.....	6
Ireland needs an integrated strategy to reduce unemployment.....	9
Welfare benefits entail substantial work disincentives.....	9
Wide-ranging welfare reform is needed.....	11
Job search assistance has been ineffective.....	12
Training programmes need to foster labour reallocation across sectors.....	13
Job creation schemes should be used as a last resort activation tool.....	16
Tax wedge reductions could favour employment of the low skilled.....	17
VAT cuts in labour-intensive sectors have limited effectiveness.....	17
Restoring competitiveness.....	18
An export-based recovery is under way.....	18
Cost-competitiveness has improved... ..	24
... but headline progress overstates underlying improvement.....	26
Gaining competitiveness through medium-term wage restraint.....	26
Reforming collective bargaining mechanisms.....	26
Competition in non-tradables.....	27
More effective competition law.....	27
Competition in legal services should be increased.....	27
Vertical integration in electricity should be decreased... ..	28
... and renewables penetration should be achieved in a cost-efficient way.....	29
Better public transport would foster green growth.....	30
Supports to SME internationalisation should be streamlined.....	30
Progress in R&D investment should be sustained.....	30
Deadweight costs from the R&D tax credit are non-negligible.....	31
Technology transfer needs more and better focused efforts.....	32
High-quality education is key to long-term economic growth and social cohesion.....	33
The school system needs stronger accountability mechanisms.....	36
Maths tuition has room for improvement.....	36
The provision of pre-primary education should be extended.....	37
BIBLIOGRAPHY.....	39
ANNEX A1. CONSTANT MARKET SHARE ANALYSIS: METHODOLOGY AND DETAILED RESULTS.....	42
Tables	
1. Unemployment rates by age cohort and level of educational attainment.....	8
2. Spending on active labour market programmes.....	14
3. Value of services exports.....	24
4. Wage developments during the crisis.....	25
A1.1. Main results of the constant market share analysis of Irish exports (nominal, manufacturing excluding energy).....	44
A1.2. Product breakdown of market share effect.....	45

A1.3. Geographical breakdown of market share effect.....	46
A1.4. Breakdown of product structure effect.....	47
A1.5. Breakdown of geographical structure effect.....	48

Figures

1. Market regulation and labour force skills in OECD countries.....	6
2 Labour market indicators.....	7
3. Net replacement rates in unemployment, 2009.....	10
4. Unemployment benefits: recipients and expenditure.....	11
5. New apprentice registrations.....	16
6. Current account and export performance indicators.....	19
7. Industrial production index, 2007=100.....	20
8. Main results of the constant market share analysis.....	22
9. Structure of Irish exports.....	23
10. Real effective exchange rate indices for Ireland.....	25
11. Electricity prices: simple average for households, SMEs and large industrial users.....	28
12. Higher education expenditure on R&D (HERD) financed by industry, 2009.....	32
13. PISA results in OECD countries.....	35

Boxes

Box 1. The 2011 Jobs Initiative.....	17
Box 2. Summary of recommendations to prevent a permanent increase in structural unemployment.....	18
Box 3. Irish merchandise export performance: a constant market share analysis.....	21
Box 4. Irish international trade in services.....	24
Box 5. Policies to promote technology transfer and SME engagement in R&D.....	33
Box 6. Summary of recommendations to restore competitiveness.....	37
Box A1.1. Export markets: countries and country groups.....	43

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

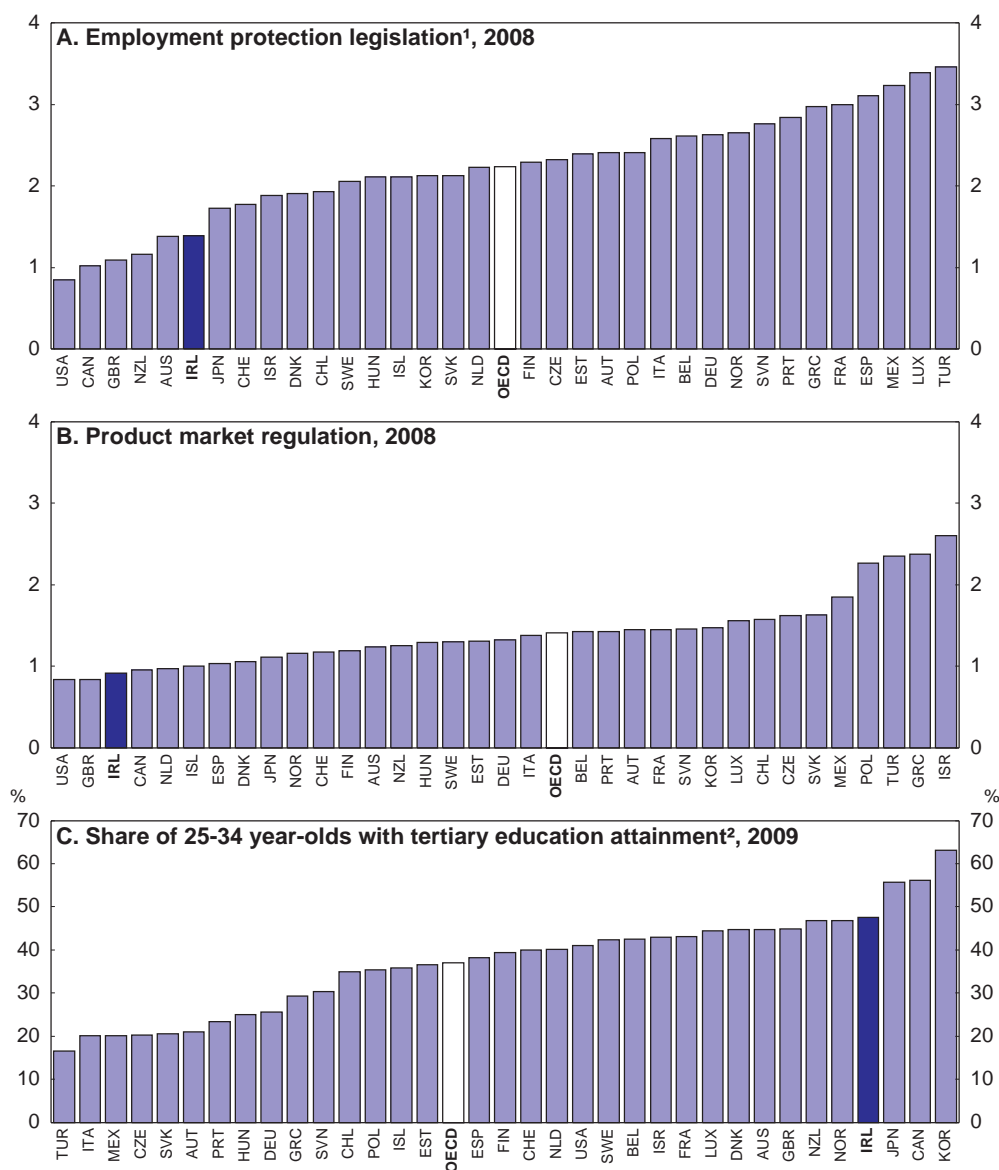
STRUCTURAL REFORMS TO REDUCE UNEMPLOYMENT AND RESTORE COMPETITIVENESS IN IRELAND

By Álvaro Pina¹

Ireland retains many of its underlying strengths: it is an open economy with flexible product and labour markets and high levels of human capital (Figure 1), with a business-friendly environment and a favourable geographical location. Nonetheless, high unemployment is now a difficult challenge: the crisis tripled the unemployment rate, and long-term unemployment has increased more than five-fold. Unemployment could remain persistently high, undermining potential growth, increasing poverty and jeopardising social cohesion. To avoid these adverse trends, employment should be promoted by appropriate reforms in labour market and welfare policies. Sustained export-led growth would also help, underpinned by a greater ability of Irish firms to successfully compete in foreign markets. This paper discusses these structural reforms to tackle high and persistent unemployment, hence minimising its social costs, and policies to improve competitiveness further, thus helping to preserve and enhance Ireland's attractiveness as a dynamic place to do business.

1 . This paper was produced for the OECD Economic Survey of Ireland, published in October 2011 under the authority of the Economic and Development Review Committee. Álvaro Pina is an economist at the OECD Economics Department. The author is thankful for valuable comments on earlier drafts received from Andrew Dean, Robert Ford, Patrick Lenain, David Haugh and David Grubb, as well as for discussions with Irish officials and independent experts, and with OECD colleagues from the Economics Department, the Directorate for Education, the Directorate for Employment, Labour and Social Affairs, the Directorate for Financial and Enterprise Affairs and the Directorate for Science, Technology and Industry. Statistical and research assistance from Josette Rabesona and editorial assistance from Heloise Wickramanayake and Olivier Besson are also gratefully acknowledged.

Figure 1. Market regulation and labour force skills in OECD countries



1. Strictness of employment protection, overall, version 3. Figures for France and Portugal refer to the year 2009. Greece has taken several measures since 2008, as described in the OECD Economic Survey of Greece 2011, which have improved the Greek indicators somewhat.
2. Tertiary-type B, A and advanced research programmes.

Source: OECD, Education at a glance 2011; Product Market Regulation database and Employment Protection Legislation database.

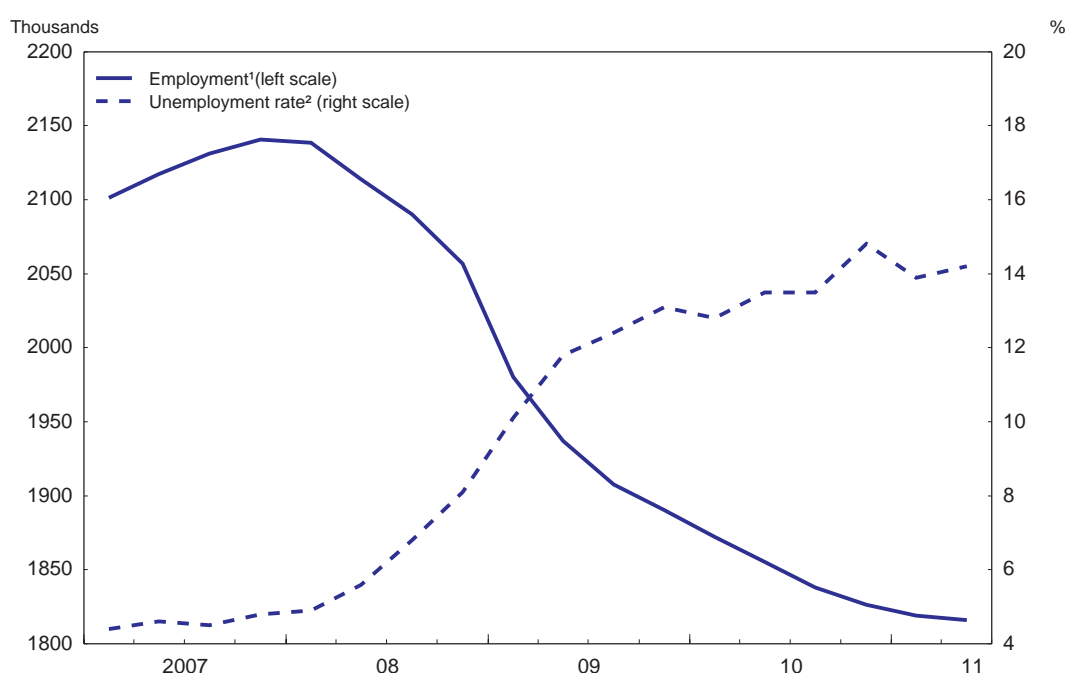
Preventing a permanent increase in structural unemployment

The crisis has hit hard labour-intensive sectors and the least qualified

The recession has had a severe impact on the labour market (Figure 2). The challenge facing the authorities is to avoid this rise of unemployment from becoming persistent. Ireland’s unemployment rate stands among the highest in the OECD, and over half of the jobless have been unemployed for more than

12 months. The construction sector has accounted for more than half of the total job losses, having shed more than half of its 2007 workforce. Large losses in employment have also occurred in manufacturing, with traditional sectors such as those supplying construction materials hit hardest, and in labour-intensive services, like trade, hotels and restaurants. As a result, though unemployment numbers have soared for all age groups and levels of educational attainment, most newly unemployed people are young workers – especially males – with low or intermediate qualifications. Those under 35 without tertiary education accounted for 42% of total unemployment at the end of 2010 (Table 1), against 23% of the total labour force. Unemployment spells also tend to be longer for the less qualified: in the fourth quarter of 2010, the share of long-term unemployment among the jobless with no tertiary qualifications reached 55% (38% among jobseekers with tertiary attainment).

Figure 2. Labour market indicators



1. Persons aged 15 years and over in employment, seasonally adjusted.
2. ILO unemployment rates, seasonally adjusted.

Source: Central Statistics Office (CSO).

Table 1. Unemployment rates by age cohort and level of educational attainment

	2010 Q4					
	15-24	25-34	35-44	45-54	55-64	Total 15-64
Primary or below						
Unemployment rate	50.0	42.1	31.8	19.0	14.0	21.9
% of total unemployment	0.7	1.5	2.1	2.4	2.5	9.2
Lower secondary						
Unemployment rate	48.4	38.4	23.3	14.4	10.7	23.9
% of total unemployment	5.0	5.9	5.2	3.8	1.7	21.4
Higher secondary						
Unemployment rate	26.8	17.0	13.0	8.0	6.8	15.2
% of total unemployment	9.5	8.6	5.3	3.0	1.2	27.6
Post leaving cert						
Unemployment rate	34.2	22.0	15.8	14.2	13.5	19.0
% of total unemployment	2.6	6.2	3.4	2.4	1.2	15.7
Third level non-honours degree						
Unemployment rate	18.6	11.1	9.5	7.1	4.7	9.7
% of total unemployment	1.2	4.3	3.2	1.6	0.4	10.7
Third level honours degree or above						
Unemployment rate	18.0	6.9	5.9	4.8	5.2	6.8
% of total unemployment	2.0	4.6	2.8	1.4	0.7	11.6
Other						
Unemployment rate	22.2	19.3	17.6	16.7	*	17.4
% of total unemployment	0.3	1.8	1.0	0.5	*	3.7
Total						
Unemployment rate	28.8	15.4	12.9	10.1	9.4	14.3
% of total unemployment	21.3	32.9	23.0	15.0	7.9	100.0

* Indicates that data are not available due to small size of cohort.

Source: CSO Quarterly National Household Survey.

The severe deterioration of the labour market could result in a persistent problem of under-employment, as experienced by Ireland between the mid-1970s to the mid-1990s, thus posing a threat to social cohesion. When measured before all social transfers, Irish poverty rates (relative to a 60% of median income threshold) rose the most in the EU (6 percentage points) during 2007-09, reaching 46%. Social transfers contained the problem in those years, with poverty rates after transfers continuing the decline started earlier in the decade. However, fighting poverty through welfare benefits alone places a heavy burden on public finances and fosters long term dependence on social transfers, which causes poverty persistence (Department of Social Protection, 2010) and reduces labour supply and potential growth. Tackling unemployment clearly offers a better chance of both reducing poverty and supporting economic recovery. A full-time job in Ireland is a highly effective defence against poverty, with a corresponding poverty rate of 4.2% in 2009, against 7.1% for the EU average.

Ireland needs an integrated strategy to reduce unemployment

Ireland needs a coherent and integrated plan, underpinned by a broad consensus among social partners, to foster the return to work of the jobless and thus stave off rising social exclusion. The three pillars of this strategy are: *i*) welfare reform; *ii*) better active labour market policies; and *iii*) further reduction in unit labour costs. Welfare reform is needed to avoid unemployment and inactivity traps and to encourage more active job search. Better active labour market programmes (ALMPs) will contribute to this goal, and should play an essential role in re-skilling unemployed workers to new sectors, thus facilitating labour reallocation. Further reduction in unit labour costs, which requires productivity-enhancing reforms as well as medium-term wage restraint, is discussed in a later section of this paper.

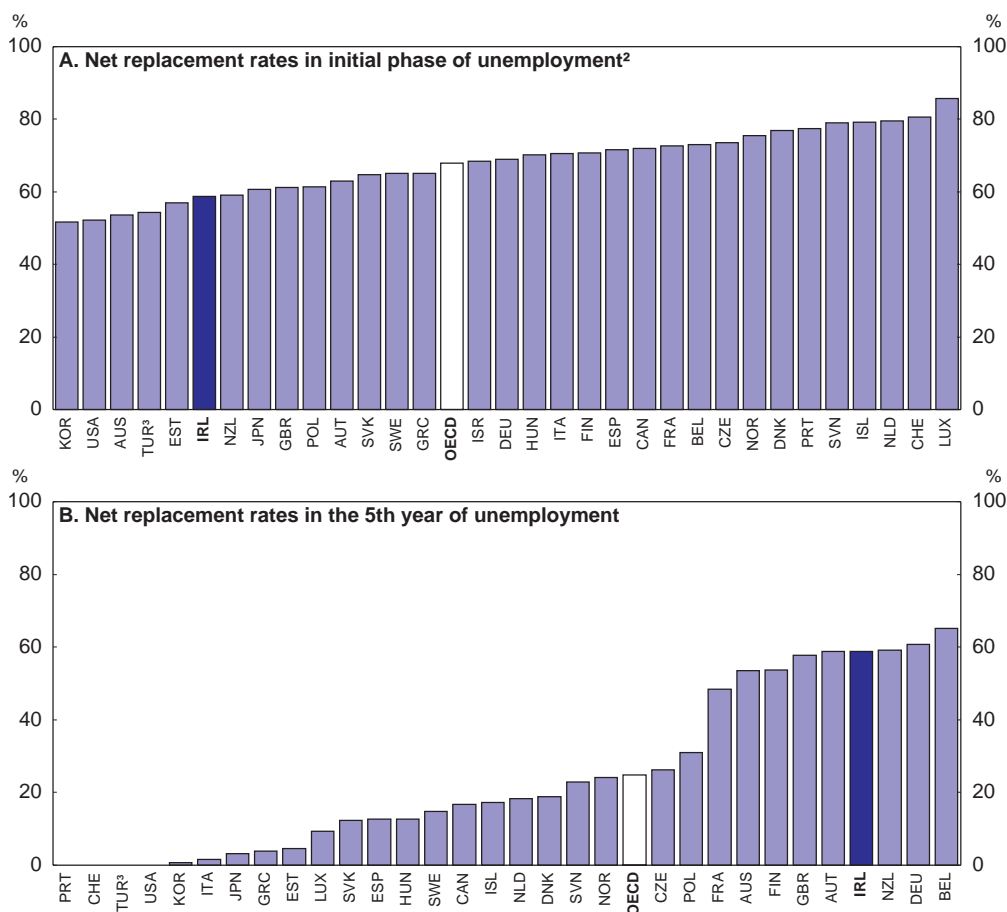
Welfare benefits entail substantial work disincentives

After very substantial increases up to 2009, long term unemployment benefit replacement rates in Ireland stand among the highest in the OECD. Unemployment benefits comprise Jobseeker's Benefit (JB), payable for a maximum of 12 months to those having made enough social security contributions, and Jobseeker's Allowance (JA), a means-tested benefit paid to the unemployed who either do not qualify for JB or have exhausted their JB entitlement. The level of income replacement upon becoming unemployed is below average (Figure 3), which may have a negative impact on the quality of job matching. Further, the design of unemployment benefits implies stronger disincentive effects for low-skill workers and the long-term unemployed, thus adding to the risk of entrenching high structural unemployment. The flat-rate nature of both benefits entails higher net replacement rates (NRRs) for low wage levels. Moreover, the unlimited duration of the JA prevents NRRs from falling over time, as is often the case in other countries. As a result, NRRs after a long unemployment spell become very high in international comparison (Figure 3).

Ireland also stands out internationally due to its very high number of unemployment benefit recipients (Figure 4), far above the number of unemployed according to the standard ILO (International Labour Office) definition used in labour force surveys (people without work, available for work and taking steps to find a job). Besides being costly, this can add to work disincentive effects through two channels. First, close to one fifth of recipients have casual or part-time jobs, being allowed to work up to three days a week and enjoying generous work income disregards in the determination of benefit amounts. Though these arrangements provide strong incentives for jobseekers to take up part-time jobs, this is probably outweighed by the high marginal effective tax rates often faced by part-time workers when moving to a full-time job and thus losing benefit eligibility. Second, the surplus of benefit recipients over labour force survey unemployment also reflects a weak enforcement of job search requirements (Grubb *et al.*, 2009), as discussed below.

Figure 3. Net replacement rates in unemployment, 2009

For four family types and two earnings levels, in percent¹



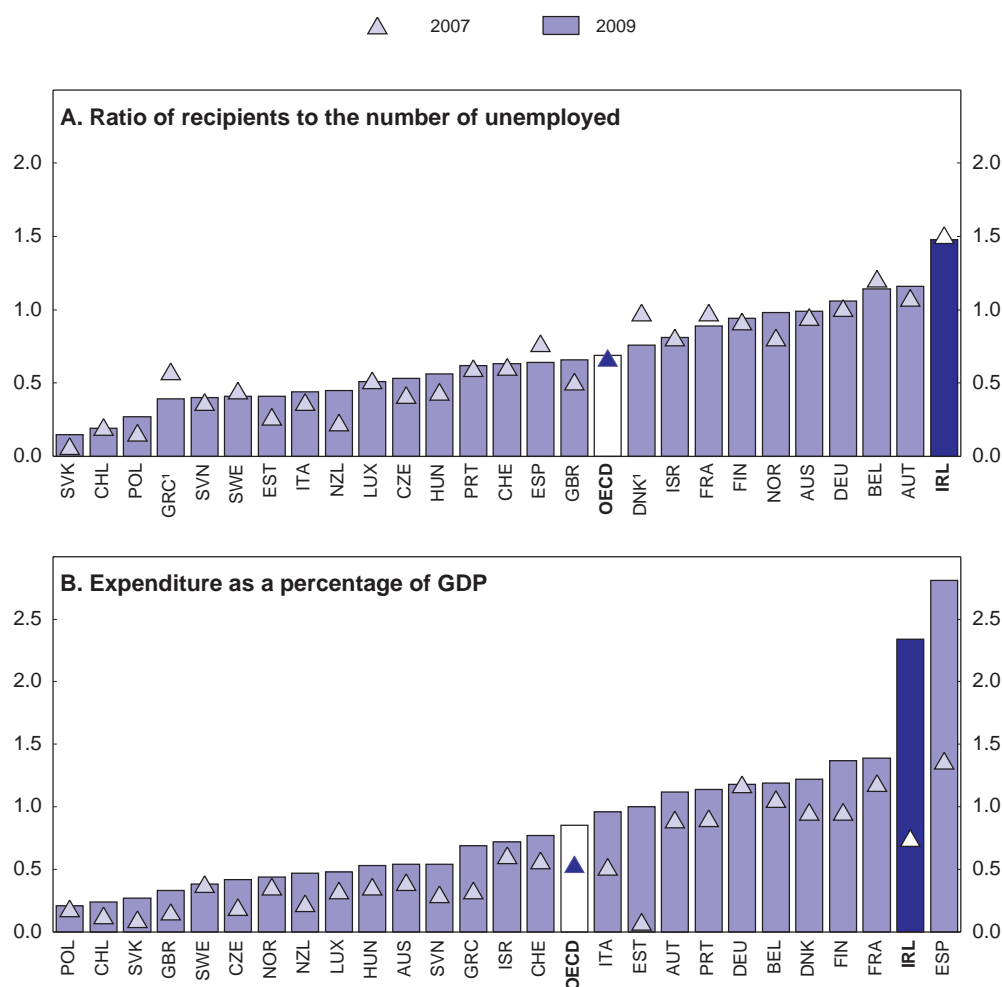
1. Unweighted averages, for earnings levels of 67% and 100% of Average Worker. Family types are: single person with no children, one-earner married couple with no children, lone parent with two children and one-earner married couple with two children. No social assistance 'top-ups' are assumed to be available in either the in-work or out-of-work situation. Any income taxes payable on unemployment benefits are determined in relation to annualised benefit values (*i.e.* monthly values multiplied by 12) even if the maximum benefit duration is shorter than 12 months. For married couples the percentage of AW relates to one spouse only; the second spouse is assumed to be 'inactive' with no earnings. Children are aged four and six and neither childcare benefits nor childcare costs are considered.

2. Initial phase of unemployment but following any waiting period.

3. Calculations are based on Average Production Worker (ISIC D).

Source: OECD, Tax-Benefit Models.

Figure 4. Unemployment benefits: recipients and expenditure



1. Denmark: 2007-2008 and Greece: 2008-2009.

Source: OECD, Employment Outlook 2011.

Welfare benefits received in addition to JB or JA (sometimes known in Ireland as secondary benefits) further worsen disincentive effects. A case in point is the Rent Supplement, a means-tested support currently paid to around 10% of unemployment benefit recipients, to assist them towards the cost of renting from a private landlord. Under a stylised set of assumptions, Rent Supplement increases the Irish average NRR over a five-year unemployment spell from 59% to 79%. While this figure may be overstated in some cases (for instance, it does not take into account that since June 2007 the long-term unemployed returning to full-time work may remain eligible for Rent Supplement), it is understated in others (maximum rent allowance for Dublin generates NRRs in excess of 100% at low wage levels – Forfás, 2010a). After receiving JA for 15 months, many unemployed also become entitled to Fuel Allowance (another means-tested secondary benefit), which makes replacement rates increase throughout the unemployment spell by up to 4 percentage points. Overall, 15% to 20% of unemployment benefit recipients are likely to face replacement rates above 70% (Forfás, 2010a).

Wide-ranging welfare reform is needed

Over the past two years, the authorities have taken some steps to mitigate such work disincentives. Several welfare rates, including those for unemployment, were reduced by around 4% in 2010, and by a

further 4% in 2011. Reduced JA rates were introduced in 2009 for 18 and 19 year-olds, and their scope expanded in 2010 to those aged 20 to 24 (except in certain circumstances, like young parents). While potentially having a major impact on the NRRs of unemployed youths, these measures are estimated to have reduced replacement rates for prime-age workers by only 1 or 2 percentage points in 2010, partly because wages also fell somewhat in that year. Impacts on replacement rates in 2011 should turn out even smaller (or, in some cases, NRR may even increase marginally, as estimated by the Department of Finance, 2011a), due to an increase in personal income tax. Further, due to negative or subdued inflation, 2011 unemployment benefits in real terms for prime-age workers are still marginally above 2007 levels. More fundamentally, those benefit cuts have not addressed one of the welfare system's main shortcomings, notably time-invariant replacement rates. These imply that, as time passes, the gains from unemployment benefits in terms of better job matching start to be outweighed by financial disincentive effects. The authorities should therefore reduce benefit rates with unemployment duration. For part-time workers, work income disregards in the determination of benefits should be made less generous.

A review of other welfare benefits is also essential to make Irish social protection more coherent, less distorting and simpler to administer. Safety-net payments (basic supplementary welfare allowance) should be reformed in tandem with unemployment benefits, so as to ensure that the former never exceed the value of the latter. As for housing benefits, the authorities should implement plans to transfer households from rent supplement to other social housing models, such as the Rental Accommodation Scheme (RAS). Under the latter (which involves a three-way relationship between landlord, tenant, and a local authority), a full-time job (30 or more hours per week) does not in general determine loss of eligibility, as is the case in rent supplement, but rather a larger household contribution towards the total cost of rent. In this context, the current RAS eligibility requirement of an 18-month period of rent supplement receipt should be reconsidered. Fuel allowance should also be redesigned to avoid increasing replacement rates for the long-term unemployed. More generally, the authorities should assess the scope for moving towards a single working-age social assistance payment (Department of Social Protection, 2010). Apart from lower administrative costs, this would enable a broader application of activation requirements and an integrated management of marginal effective tax rates and ensuing work incentives. It could also yield equity gains by increasing take-up rates among poor households.

Job search assistance has been ineffective

Job search assistance and monitoring is generally found to be a cost-effective form of ALMP (Card *et al.*, 2010), as it increases the efficiency of jobs matching and hence leads to higher outflows from joblessness. However, Irish performance on this count has been deeply unsatisfactory. Under the National Employment Action Plan (NEAP), since October 2006 all unemployed individuals are to be referred by the Department of Social Protection (DSP, responsible for welfare benefits) to the Training and Employment Authority (FÁS, the Irish public employment service) for activation measures after 3 months of unemployment benefits. An exception is if they had already been referred during a previous unemployment spell, a provision found to affect a quarter of benefit recipients (McGuinness *et al.*, 2011), thus depriving some of those in most need of support. Around 25% of those eligible for NEAP assistance were never referred to FÁS for an activation interview, probably due to a mix of coordination failures and capacity constraints. However, since interviews were found to have a *negative* impact on the chances of entering employment, those not referred could be – paradoxically – better off in the end, probably due to more intense job search on their own. These findings, referring to a period of relatively low unemployment (September 2006 to July 2008), run counter to the benign view of previous NEAP evaluation studies², and lend support to the more critical stance of Grubb *et al.* (2009), who point out a rather low level of interaction with the unemployed, sometimes limited to the referral interview itself. They also argue that

2. Whose limitations and methodological shortcomings are discussed (McGuinness *et al.*, 2011).

more needs to be done as regards liaising with employers: limited use is made of direct referrals to vacancies, and firms notifying those vacancies are often never contacted by FÁS.

These shortcomings stem from a lack of resources for guidance and job search assistance, but also from a host of organizational inefficiencies and from the absence of systematic monitoring and sanctions to ensure adequate cooperation by the unemployed. Partly due to non-integrated IT systems, DSP and FÁS have faced major coordination problems, manifest both in the failure to provide NEAP assistance to a quarter of those eligible and in cases of effort duplication (for instance, referral to FÁS of jobseekers having already self-presented at FÁS offices for support). Targeting and prioritisation are defective, as illustrated by the absence of second referrals to FÁS for those with repeated unemployment spells. Finally, penalties for insufficient job search or lack of cooperation with employment services are generally weak: for instance, sanctions for job resignation, refusal of employment or refusal of an activation place are extremely rare by international standards (Grubb *et al.*, 2009).

There are encouraging signs of reform. Benefit provision and activation are being brought together through the transfer of FÁS' employment and community services to DSP (due to be completed by January 2012), giving rise to the creation of a National Employment and Entitlements Service. Integration of hitherto separated IT systems is also proceeding. Another two recent efficiency-enhancing steps are the implementation by DSP of a profiling system for the unemployed and resort to DSP-FÁS group engagement sessions as an initial referral tool, both of which are to be deployed nationwide by the end of 2012. Group engagement focuses on providing information about available supports to groups of around 20 job seekers, which helps to make subsequent one-to-one meetings more productive. Profiling is conducive to a more targeted use of resources by allowing early intervention on those new benefit claimants with a higher probability of becoming long-term unemployed. Further, since April 2011 benefit rates can be cut by almost a quarter for refusal to engage in job search or in activation programmes. The authorities should continue to roll out these measures, enforce sanctions and closely monitor results. They should also ensure that FÁS and DSP microstructures are merged rather than merely juxtaposed. Organizational redesign should be extended to other relevant agencies. For instance, currently both DSP Facilitators and Local Employment Services are to provide support to the most disadvantaged job seekers, which does not seem an optimal arrangement. As resources allow, more systematic interaction with employers posting job vacancies should be sought.

Training programmes need to foster labour reallocation across sectors

Irish activation policy has traditionally placed a strong emphasis on training programmes, which in the current context are essential to re-skill and upskill the unemployed into new jobs. Training courses closer to the labour market and providing occupational-specific training (such as the Specific Skills Training and the Traineeship programmes) have been found generally effective, though somewhat restrictive in the scope of occupations covered. Programmes geared at the most disadvantaged and mainly aiming at progression to further education or training (like the Bridging Foundation Programme or Local Training Initiatives) often have over-qualified participants (Forfás, 2010b), and thus low cost-efficiency. The response to the crisis has largely relied on scaling up and further diversifying training and work experience offers (Table 2), which is appropriate given the lower expected payoff from job search in a recession. However, short courses, which were expanded the most, will not suffice to retrain former construction workers.

Table 2. Spending on active labour market programmes

As a percentage of GDP

	Ireland		Nordic countries		Other OECD Europe		OECD non-Europe	
	2007	2009	2007	2009	2007	2009	2007	2009
Public employment service and administration	0.12	0.18	0.20	0.30	0.15	0.17	0.07	0.07
Training	0.26	0.37	0.28	0.26	0.14	0.22	0.06	0.09
Direct job creation	0.21	0.26	0.03	0.03	0.07	0.08	0.01	0.05
Other active measures	0.05	0.06	0.43	0.46	0.19	0.23	0.04	0.07
Active measures (total)	0.64	0.87	0.96	1.06	0.56	0.70	0.19	0.28
<i>Memo: Unemployment rate</i>	4.57	11.74	4.79	6.40	6.52	8.38	4.88	6.87

Source: OECD, Employment Outlook 2011

Programmes should be focused on re-skilling and upskilling the jobless for employment in new sectors, taking account of both labour needs and of participants' background. For those unemployed who are qualified enough to immediately take advantage of the kind of training that tends to work best (long duration programmes providing advanced specific skills), it is important that courses match skills and labour shortages. Though at present most of these require third-level qualifications, opportunities exist which do not in areas as diverse as online sales and marketing, energy efficiency or technicians for lean manufacturing or the life sciences (Forfás, 2010c). Progression of craft workers to full-time or part-time higher education may also be a valuable route for upskilling, and opportunities for this have been increased by formal recognition of craft qualifications. However, many jobseekers have only modest qualifications (see Table 1) and, despite being relatively young (in their 20s or 30s), have been away from education for a long time. Prior to courses aimed at immediate employability, they may require general skills training to close gaps in areas like language and math ability.

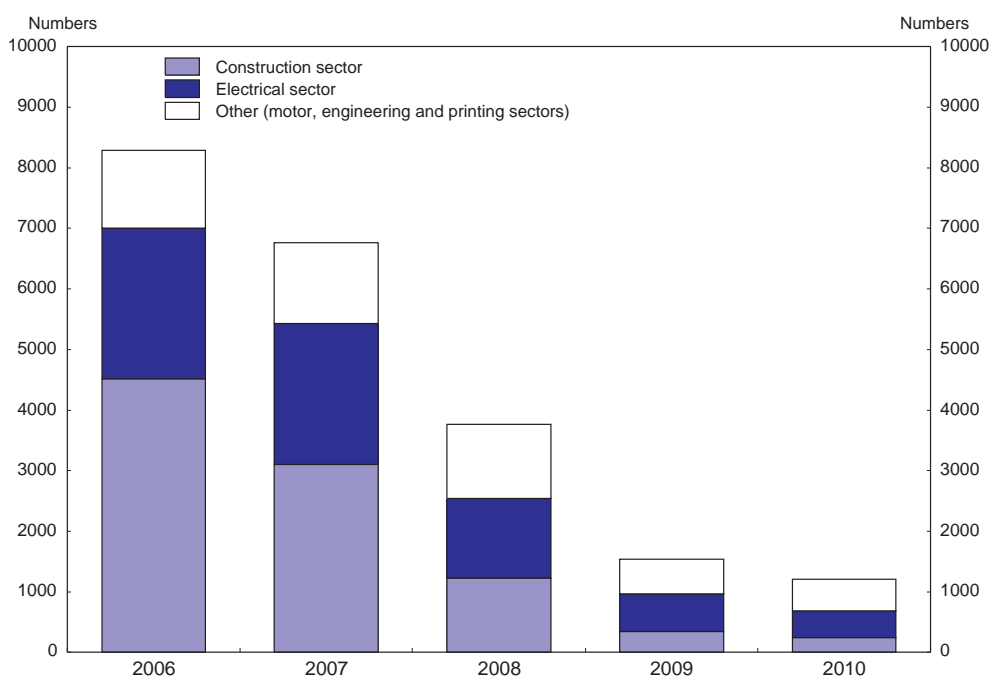
The institutional setup of training provision also has room for improvement. The fact that FÁS has both run the PES and provided training has arguably reduced incentives for cost-efficiency and labour market responsiveness of the training portfolio. The matching of training to participants' background may have suffered as well, as employment officers might be reluctant to make a unilateral and compulsory referral to the best-suited training programme if that implies imposing an unwilling trainee on a colleague (Grubb *et al.*, 2009). The ongoing integration of PES into DSP, hence making placement separate from training, should be taken advantage of to evolve towards greater contestability in training provision, with DSP (through the new National Employment and Entitlements Service) referring jobseekers – when appropriate – to the most suitable training programmes, which could be supplied by public or private providers (McGuinness *et al.*, 2011). There is scope for the new further education and training authority, SOLAS, which the government has recently announced will replace FÁS, to play a useful role in this regard. SOLAS will be mandated to work closely with the National Employment and Entitlements Service so as to enhance the integrated delivery of welfare and training supports. It is also welcome that SOLAS will bring training and vocational or further education, hitherto two separate strands, under one single authority.

Work experience opportunities are particularly important for facilitating the entry of youth into employment (OECD, 2009a), and can be provided by well-designed vocational education and training programmes. Vocational training in Ireland largely relies on the apprenticeship system, by far the country's biggest training programme (see below). Vocational education is offered at post-secondary level through a number of programmes, the largest of which – with close to 40 000 enrolments, significantly in excess of the sanctioned 30 000 places – are Post Leaving Certificate (PLC) courses. These are full-time

programmes, offered in over 60 disciplines and lasting for one or two years, and have been expanded in response to the crisis. However, their effectiveness is hampered by the very limited amount of workplace training provided, generally as short as 3 weeks per year (Kis, 2010). Workplace training periods should therefore be extended.

Though workplace training is abundant in apprenticeships, these have become overly concentrated on the construction sector as employers expanded apprentice recruitment. Apprentices, hired by firms, follow a sequence of seven on-the-job and off-the-job alternating phases, generally lasting for four years (Kis, 2010). Despite its clear structure and strong ownership by the social partners, the system offers training in mostly traditional, male-dominated trades which were hit hard by the crisis; as a result, new apprentice registrations have plunged (Figure 5). Further, costs are high in international comparison, due *inter alia* to the payment by FAS of an apprentice allowance in all three off-the-job phases, which also tend to require expensive equipment for hands-on practice (Kis, 2010). The crisis has also given rise to a growing problem of redundant apprentices, to which authorities have responded with a number of arrangements aiming at training completion – for instance, subsidising employers who engage redundant apprentices to complete on-the-job phases. While completion can be a laudable aim in some cases, it is definitely not so for apprentices in the early phases of construction trades, as it hinders labour reallocation in the economy³. The authorities should therefore stop subsidising completion for those apprentices (while ensuring that alternative training or further education offers are available) and temporarily close the system to new registrations in the construction sector⁴. More generally, there is a case for enlarging the set of trades covered and for making programme duration more flexible across trades and possibly individuals (who may learn at different speeds). Costs should also be cut by reviewing allowances and the balance of job-specific training between on-the-job and off-the-job phases. The question of a review of apprenticeship training is currently under consideration.

-
3. From the apprentice's viewpoint, completion is generally desirable even in construction trades, as certification can be valuable in foreign labour markets.
 4. Even in the current circumstances, construction firms may still have an incentive to hire apprentices as 'cheap labour', since towards the end of their training those in less technically-demanding trades are often as productive as regular workers.

Figure 5. New apprentice registrations

Source: Review of Labour Market Programmes, February 2010, Forfás and Training & Employment Authority (FÁS).

Job creation schemes should be used as a last resort activation tool

Irish spending on ALMPs is heavily tilted towards job creation schemes (see Table 2), which have so far remained essentially unreformed despite ample evidence of their ineffectiveness as an activation tool. The Community Employment (CE) scheme gave part-time occupation in the provision of non-market services for local communities to over 23 000 people (more than 1% of the labour force) at end-2010. It accounted for 27% of total spending on ALMPs in 2009. Participants tend to have a record of long-term unemployment or inactivity and low education, and roughly half are in receipt of either lone-parent or disability benefits, which can largely be retained while receiving the CE wage (Grubb *et al.*, 2009; Forfás, 2010b). After long participation spells (3 years on average, more for older workers), the outcome of exiting CE is often a return to long-term unemployment, with no discernible employability gains (Forfás, 2010b; McGuinness *et al.*, 2011). Similar problems – if anything, magnified – are found in the Job Initiative (JI) programme, which employs around 1 300 full-time workers: very low numbers exit JI for regular employment, probably because people can remain in the scheme until retirement (Forfás, 2010b). Despite these shortcomings, additional CE places were created during the crisis. Further, the authorities are rolling out a new programme, Tús (Community Work Placement Initiative), aiming to create 5 000 part-time jobs over the course of 2011: it shares CE's focus on the delivery of local services, though with a 12-month participation limit and targeting only long-term job seekers receiving unemployment benefit (and not lone-parent or disability benefit).

The authorities should use job creation schemes as a last-resort activation policy. Participation periods should be shortened: Tús' 12-month limit should be strictly enforced and extended to CE (with possible exceptions here confined to workers with severe impediments to employment). Consideration should be given to making JI a part-time scheme, which could merge into CE. As for financial incentives, indexing the CE wage (currently about 10% bigger than JA) to the proposed time-decreasing profile of

unemployment benefits should help to tackle the high marginal effective tax rates for certain groups of participants, like lone parents. To strengthen capabilities for progression into regular employment, the schemes' training and educational content should be further developed and tailored to address the literacy/numeracy handicaps of the most disadvantaged participants.

A final note on activation policies concerns the pervasive paucity of performance evaluations. This stems from both a lack of appropriate data and a loss of evaluation expertise within government departments as reliance on EU structural funds declined (Grubb *et al.*, 2009). The ongoing integration of FAS and DSP IT systems should be taken advantage of to ensure availability of datasets for formal assessment exercises. In turn, these should feed into periodic programme reviews, giving rise, if needed, to policy adjustments across the whole panorama of training and further education.

Tax wedge reductions could favour employment of the low skilled

Under the recent Jobs Initiative (Box 1), the authorities have decided to temporarily halve the 8.5% rate of employers' social security contributions on weekly wages up to EUR 356, which should favour employment of the low skilled and boost the cost competitiveness of hotels and restaurants. This tax wedge reduction is far more broad-based than previous job subsidies, such as those under the Employer Job Incentive Scheme, which required new net hiring and additional eligibility requirements (mainly targeting people who had been unemployed for at least 6 months). As a consequence, it will involve higher deadweight losses, but will also be easier to monitor and administer, and is less likely to be hampered by a relatively inelastic demand for vulnerable labour market groups (Immervoll and Pearson, 2009). The tax wedge reduction should not be withdrawn by end-2013, as scheduled, but rather stay in force longer. The authorities should reconsider its design (smoothing the discontinuity at EUR 356, beyond which a higher rate applies to the full amount of wages, to avoid distorting the wage distribution) and ensure that compensating budget measures are in place so as not to endanger fiscal consolidation targets.

VAT cuts in labour-intensive sectors have limited effectiveness

The merits of the VAT reduction to support tourism, also part of the Jobs Initiative, are controversial. It is an expensive measure (EUR 350 million per year, roughly half of the Jobs Initiative total costs), entailing increased tax administration and compliance efforts, some regressive impact on income distribution, and targeting tourism in an imperfect way (the non-tourist domestic demand component is large for restaurants and virtually 100% for hairdressing). The case for reducing VAT rates in low-skill sectors as a way to boost demand for low-skilled workers is unconvincing, though there is some anecdotal evidence that a similar measure taken in Ireland in 1986 was successful in promoting tourism (Copenhagen Economics, 2007). The authorities should commission an independent review of this measure's effectiveness, notably in terms of net job creation.

Box 1. The 2011 Jobs Initiative

The Irish government announced in May 2011 a package of measures aimed at employment generation. The Initiative is intended to be budgetary neutral, expenditure being financed through a pension funds levy of 0.6% on the market value of assets, to be in force during 4 years. The main measures are:

- A reduction from 8.5% to 4.25% in the rate of employers' social security contributions (Pay Related Social Insurance, PRSI) payable on weekly wages up to EUR 356 (5.5% above the national minimum wage), to stay in force from 1 July 2011 to end-2013. For the full amount of weekly wages above EUR 356, a rate of 10.75% continues to apply.
- The creation of a second reduced rate of VAT at 9% to apply from 1 July 2011 to end-2013 mainly to tourism-related services (like restaurants, hotels and entertainment activities), as well as hairdressing and publications. These goods and services formerly attracted VAT at 13.5%.

- An additional 20 900 activation places, with an emphasis on training for the unemployed in need of re-skilling to new sectors, adults returning to education and work experience placements.
- Some reallocation of capital expenditure towards smaller and more employment intensive projects, such as investment in schools, local and regional roads and retrofitting (energy efficiency).

The authorities have also committed to reform sectoral wage agreements (EROs and REAs, addressed below in this paper) and to introduce targeted initiatives to facilitate the provision of credit for SMEs, including a temporary, partial credit guarantee scheme.

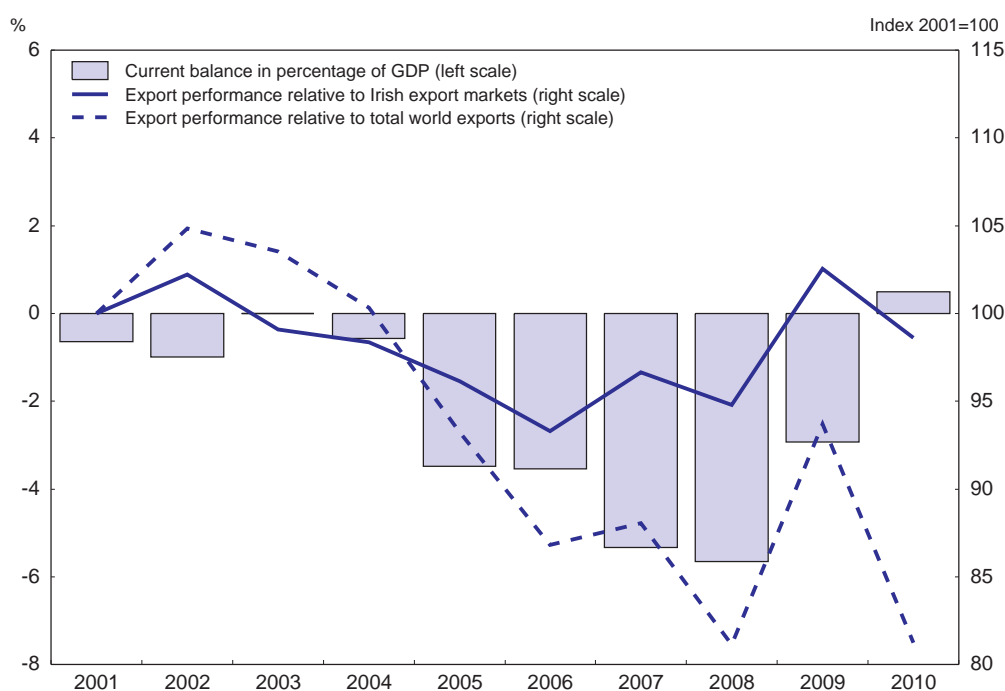
Box 2. Summary of recommendations to prevent a permanent increase in structural unemployment

- Decrease unemployment benefits with unemployment duration.
- 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. To avoid excessive levels of income replacement when out of work and high taper rates when re-entering employment, move away from rent supplement to other forms of housing benefits. Consider moving towards a single working age social assistance payment.
- Continue efforts to 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.
- Improve the alignment of training programmes with participants' background and labour market skill needs.
- Enlarge the set of trades covered by apprenticeship programmes and temporarily close apprentice admission in construction trades. Make programme duration more flexible across trades.
- Increase workplace training in vocational education programmes.
- Reduce participation periods in job creation schemes, and enable employment officers to impose compulsory participation as a last resort activation measure. Decrease payments to participants in line with the reformed unemployment benefits, and strengthen the schemes' training and educational content.
- Extend the duration of the recent cut in employers' social security contributions (PRSI) for low-wage workers. Budget neutrality should be ensured, possibly by base broadening measures in taxation.
- Promote an independent assessment of the job creation impact of the new VAT reduced rate.

Restoring competitiveness

An export-based recovery is under way

After the pre-crisis period of domestic demand-fuelled growth, net exports have rebounded and the current account has switched from a sizable deficit to a small surplus (Figure 6). This reflects the impact of private demand weakness on imports, but also an improved export performance, with Irish exports outpacing import growth of the main trading partners in 2009-10. Both merchandise and services exports displayed strong resilience in 2009, with sizeable gains in market shares, and robust growth in 2010 (5.6% and 7.1% in volume terms, respectively).

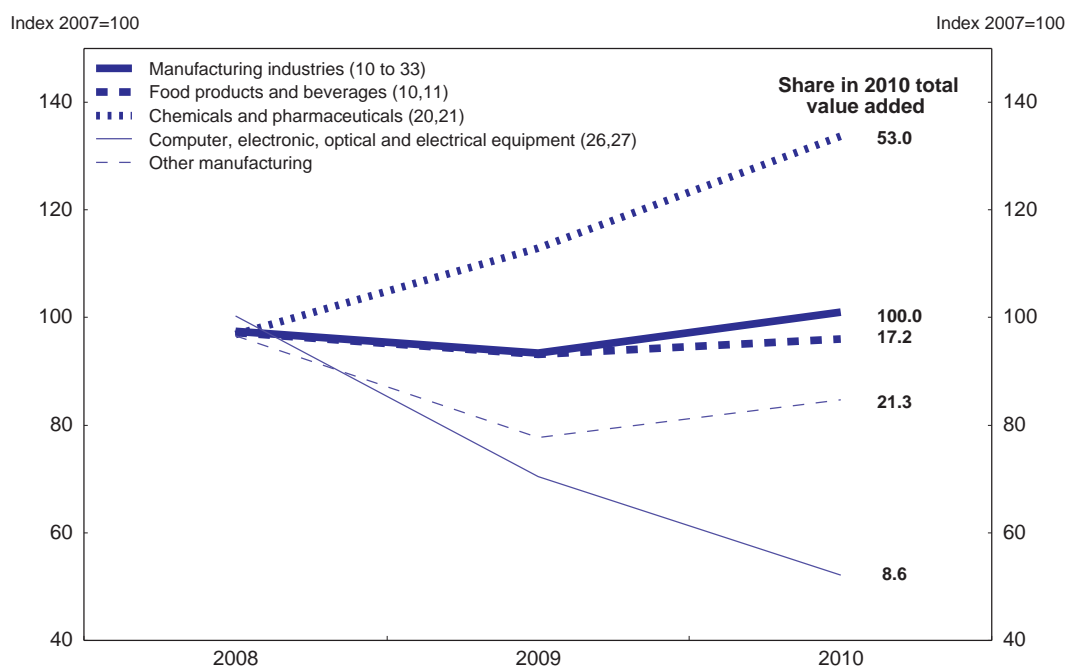
Figure 6. Current account and export performance indicators¹

1. Export performance refers to goods and services. Irish export markets are defined with reference to an average of import volume growth in 44 economic partners, weighted according to their importance in Irish exports, and therefore attaching modest weights to emerging markets. Total world exports avoid this problem, but are defined in nominal terms, and hence are affected by price developments (e.g. of oil).

Source: European Central Bank (ECB) and OECD Economic Outlook database.

However, the recent recovery in exports has largely relied on high-technology, MNC-dominated sectors, which tend to be among the least employment intensive. In merchandise trade, the contrast between the chemical sector and most other industries has largely mirrored the diverging trends in production volumes (Figure 7). Positive developments have been underpinned by pharmaceuticals and other chemicals, which fully account for the 2009 gains in market shares and whose fairly acyclical nature made Irish exports more resilient during the global crisis (Box 3). Progress in the largest indigenous exporting sector, food and beverages, has been far less spectacular, with slight losses in market share in 2009, though it has been gathering pace more recently, with strong growth in the first half of 2011. As regards services exports, the strong performance in business and especially computer services has been accompanied by a shrinking tourism and travel sector (Box 4), where signs of recovery have only become apparent in the second quarter of 2011.

Figure 7. Industrial production index¹, 2007=100



Note: The 2010 value added is estimated by applying industrial production index changes to the 2005 value added figures.

1. NACE sector, rev.2.

Source: Central Statistics Office (CSO).

Further, in both goods and services, export performance has also continued to suffer from a lack of significant penetration in fast-growing emerging markets. Over the past two years, despite recording gains in most of their main destinations (mature markets such as the UK, the US or Belgium), Irish exports have barely kept pace with world trade as a whole (Boxes 3 and 4 and Figure 6).

Box 3. Irish merchandise export performance: a constant market share analysis*

To shed further light on the merchandise export performance of Ireland, a constant market share analysis (CMSA) is carried out along the lines of Amador and Cabral (2008). Beyond gains or losses in market shares, CMSA quantifies to what extent the export structure of a country, as regards both product and geographical dimensions, affects its overall export performance. The latter, here defined as the difference between the growth rates of Irish exports (g) and of world exports (g^*), is therefore decomposed into (i) a market share effect (MSE), which aggregates the variation of shares in individual export markets (product i to destination j , e.g. pharmaceuticals to France) and (ii) a combined structure effect, itself subsuming (a) a product structure effect (PSE) and (b) a geographical structure effect (GSE), as well as (c) a residual term (mixed structure effect, MIX). Formally:

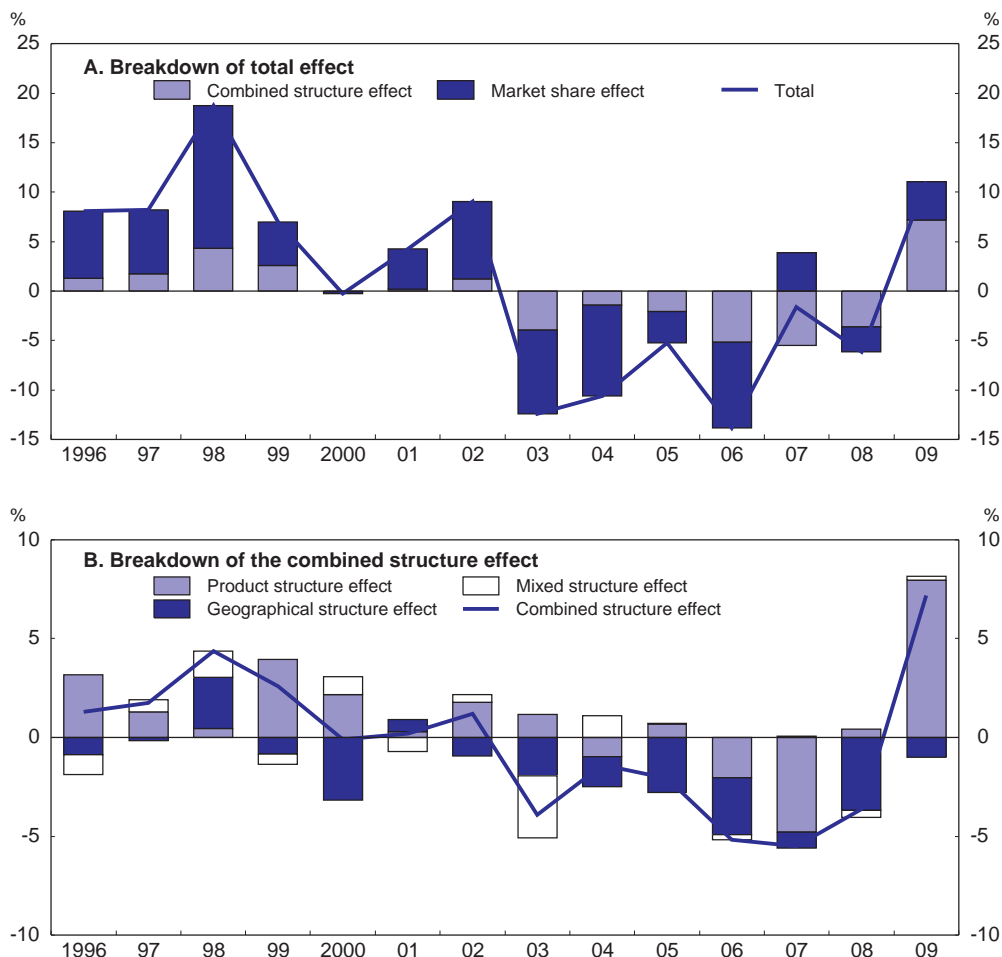
$$g - g^* = \text{MSE} + \text{PSE} + \text{GSE} + \text{MIX}$$

The PSE and GSE terms will be positive if a country has above-average specialisation in markets (defined in terms of products and of destinations, respectively) which grow faster than overall world merchandise trade. Conversely, high specialisation in slow-growing markets gives rise to negative structure effects. Due to data limitations, the CMSA is based on nominal export flows, rather than export volumes. Energy-related items are excluded, since their volatile prices could distort results. Annex A1 provides further details on the methodology and results, which are summarised below.

Except for the recent past, gains or losses of share in individual markets have been the main driving force behind Irish overall export performance. From the mid-1990s to 2002, the prevalence of above-average Irish export growth was accompanied by positive and sizeable MSE terms (Figure 8). By the same token, the 2003-08 period witnessed Irish exports lagging behind world exports and mostly negative contributions from MSE. Both the 1996-2002 gains and the 2003-08 losses were essentially spread across the main markets and products for Irish exports (Figure 9). The UK, the USA and Belgium-Luxembourg tended to account for the largest contributions (first positive, and then negative). As for products, pharmaceuticals, computer and communications equipment and other chemicals led the gains in the former period and – other chemicals excluded – the losses in the latter. In 2009, strong market share gains in pharmaceuticals and other chemicals have largely outweighed further losses in computer equipment and in traditional sectors, yielding a positive MSE.

*The data on which the analysis relies have been extracted in March 2011.

Figure 8. Main results of the constant market share analysis¹

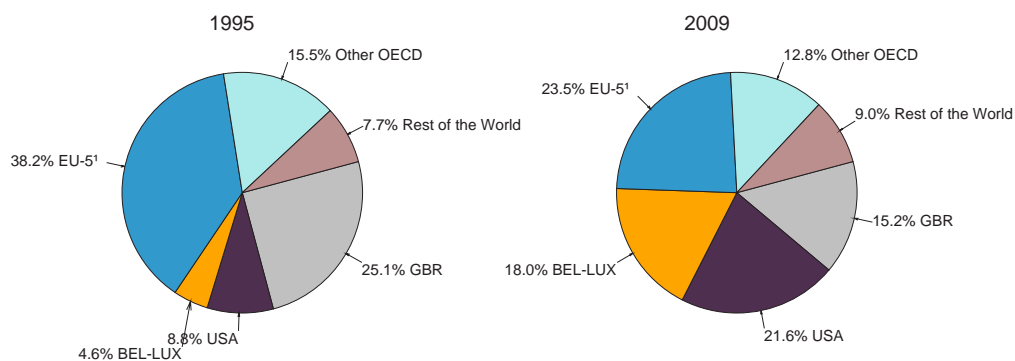
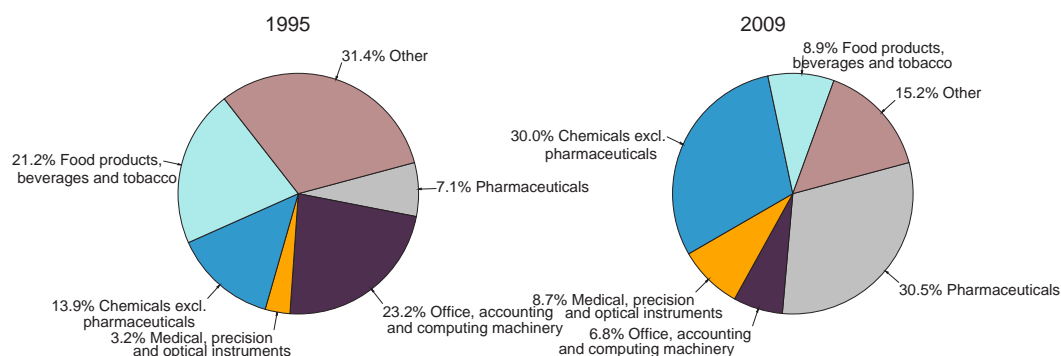


1. The analysis is based on nominal USD export flows, with a total of 81 destinations and 124 manufactured products. These correspond to the 4-digit level of the International Standard Industrial Classification (ISIC, rev. 3) excluding energy-related items (code 23).

Source: OECD ITCS database and Secretariat calculations.

Figure 9. Structure of Irish exports

Nominal, manufacturing excluding energy

A. Geographical structure of Irish exports**B. Product structure of Irish exports**

1. Germany, France, Italy, Netherlands and Spain.

Source: OECD ITCS database and Secretariat calculations.

Structure effects have been accounting for a growing part of overall export performance, and took centre stage in 2009. Geographical effects have tended to play against Ireland, due to its high dependence on mature destination markets, and to become gradually more negative, as emerging markets have gained prominence in world trade. Product effects have been more nuanced, yielding positive contributions until 2003 and turning negative in some of the following years. Strong market growth for high-technology items, which make up roughly half of Ireland's exports, accounts for most of the positive PSE in the 1996-2002 period. Over the past decade, however, the marked slowdown in the world market for computing machinery helped to drive total PSE to lower values, sometimes even negative. In 2009, the relatively acyclical nature of demand for pharmaceuticals and medical instruments helped Irish exports weather the world trade slump, and under-specialization in volatile sectors such as cars also contributed to a large positive PSE term. Though data for 2010 are not yet available at the time of writing, it is likely that similar cyclical reasons have generated a large negative PSE and helped explain below-average growth of Irish exports.

Box 4. Irish international trade in services

Services account for an increasing share of Irish total exports (47% in 2010, against 22% in 2000). In the run-up to the crisis, services exports, unlike their merchandise counterparts, made further gains in global market shares, due to sky-rocketing growth in business and computer services, and, to a lesser extent, in insurance and financial services. The growing reclassification of software sales from goods to services (as transmission by electronic means replaces physical media) has also played a role in surging services exports.

Irish services exports weathered the 2009 trade contraction well, with sizeable market share gains. In 2010, their growth also outpaced that in the largest European economies. Computer and business services have remained the most dynamic components during the crisis, in sharp contrast with the disappointing performance of labour-intensive tourism and travel (Table 3). Financial and insurance services returned to growth in 2010, though at still below-average pace. Despite the emergence of a dynamic indigenous software sector (Barry, 2011), its sales abroad are still dwarfed by those of MNCs. These have also led the mild recovery in finance and insurance and, more generally, dominate exports of services to an even greater extent than in manufacturing (Forfás, 2010d). As in the latter, Ireland mainly sells to mature markets. The European Union absorbs almost 70% of geographically allocated Irish services exports, with the UK alone purchasing 22% (2009 data). In contrast, the whole of Asia accounts for a meagre 9%, and South America for less than 1%.

Table 3. Value of services exports (index 2007=100)

	2008	2009	2010	Share in 2010 total (%)
Services, total	100.0	98.8	108.6	100.0
Transport	103.5	104.7	124.0	4.9
Tourism and travel	96.9	79.2	69.5	4.2
Communications	115.7	82.6	106.2	0.7
Insurance	92.7	83.0	88.4	10.5
Financial services	88.6	77.9	80.3	8.1
Computer services	109.9	112.1	129.7	38.2
Royalties/licences	117.6	140.6	196.0	2.3
All business services	97.5	101.6	108.6	30.2
Other services not elsewhere stated	51.0	83.1	90.1	0.9

Source: Central statistics Office (CSO).

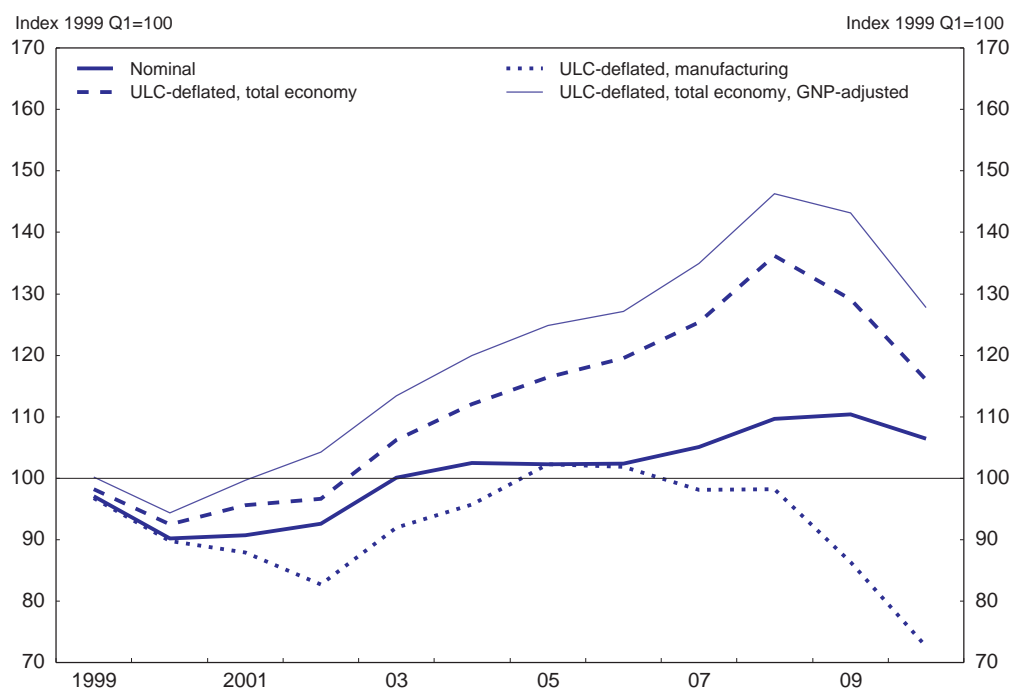
Despite strong export growth, the services balance has always remained in deficit over the past decade. This is mainly due to MNC-related items: most prominently hefty payments of royalties and licences, and also, to a smaller extent, positive net imports of business services, such as advertising, R&D and inter-affiliate management charges. In line with the dominant role of MNC-dominated sectors in the recent export recovery, the services deficit as a percentage of GDP has slightly widened from 2008 to 2010.

Cost-competitiveness has improved...

The Irish economy has made progress in regaining cost competitiveness, which has contributed to the recovery in exports (Figure 10). Starting from what probably was a super-competitive position at the turn of the century (O'Brien, 2010), rapid real appreciation in 2003-08 coincided with a deteriorating export performance, especially in manufacturing (see Figure 8). Relative total economy unit labour costs have since declined, with some help from nominal exchange rates (especially *vis-à-vis* the US dollar and the sterling), but mainly on the back of productivity growth and wage restraint. In 2008-10, Ireland recorded the largest decrease in unit labour costs among euro area countries (a 9% fall, against increases in most countries, Greece and Portugal included), and real depreciation relative to the euro area as a whole came

close to that vis-à-vis 36 trading partners (Figure 10). Wage cuts have gone beyond the public sector, with private firms trimming hours worked and even reducing earnings per hour, especially in those sectors hit hardest by the crisis (Table 4). Similar trends in private sector earnings have been observed in the first half of 2011.

Figure 10. Real effective exchange rate indices for Ireland



Note: The nominal and total economy ULC-deflated indices are harmonised competitiveness indicators from the ECB, computed vis-à-vis 36 trading partners. The GNP-adjusted measure computes Irish unit labour costs with GNP-based productivity (for the 36 partners GDP-based productivity is used). The manufacturing ULC-deflated index is OECD-computed and considers 48 partners.

Source: European Central Bank (ECB) and OECD Economic Outlook database.

Table 4. Wage developments during the crisis

	Annual percentage changes					
	2009			2010		
	Hourly earnings	Weekly hours	Weekly earnings	Hourly earnings	Weekly hours	Weekly earnings
All sectors	2.5	-2.4	-0.1	-1.5	-0.8	-2.2
Private sector	1.0	-3.2	-2.2	-0.1	-0.9	-1.0
Public sector	2.4	-0.5	1.9	-4.4	-0.3	-4.7
Manufacturing (C)	4.7	-3.7	0.9	0.3	0.6	0.8
Chemicals and electronics ¹ (19-21, 26-27)	5.8	-1.5	4.2	1.2	1.1	2.3
Others ¹	3.7	-4.5	-0.9	0.2	0.3	0.5
Construction (F)	4.2	-4.7	-0.7	-2.3	-0.6	-3.0
Trade (G)	-0.4	-2.3	-2.7	0.8	-0.2	0.5
Restaurants and Hotels (I)	0.9	-3.8	-2.9	-0.7	-2.8	-3.6

Note: Codes in brackets are NACE rev.2 classifications.

1. Excluding irregular bonuses.

Source: EHECS data (CSO) and Secretariat calculations.

... but headline progress overstates underlying improvement

However, sizeable compositional effects (downsizing of building and construction and rapid expansion of the high value-added chemical sector) have made aggregate productivity growth in recent years outpace the underlying productivity gains within each sector. Controlling for those effects makes business sector relative unit labour costs return to the levels recorded around 2005, rather than 2002, as the improvement between 2007 and the first half of 2010 becomes almost three times smaller (O'Brien, 2011a). Using GNP-based (rather than GDP-based) productivity also alleviates the impact of compositional effects (since strong growth in the MNC-dominated chemical sector tends to make GDP outpace GNP), and takes the real exchange rate back to 2006 levels (see Figure 10).

The impact of sectoral shifts is strongest in manufacturing. While a standard real exchange rate puts the competitiveness of Irish manufacturing at record-high levels (see Figure 10), analysis of developments in four individual manufacturing sectors (O'Brien, 2011b) tends to show protracted competitiveness losses until 2009, with a modest reversal taking place as late as 2010 (though earlier in chemicals)⁵. In the largest traditional sector, food and beverages, the euro-sterling exchange rate has been a major competitiveness driver.

Gaining competitiveness through medium-term wage restraint

Restoring cost competitiveness is not complete, and requires sustained wage restraint over the medium term, with support from social partners in the framework of the integrated strategy to promote a return to work. It has particular importance for traditional industries, such as food and beverages, which are more labour-intensive than MNC-dominated sectors (O'Brien, 2011b), and whose exports tend to be more price-sensitive. Besides promoting fiscal consolidation, tight control of public sector wage expenditure will also assist in achieving economy-wide labour cost restraint. Further to a political economy demonstration effect, there is evidence of bi-directional causality between public and private wages in Ireland, with interactions taking place via the price level: wage increases in one sector have repercussions on prices, which then feed back on wages in the other sector (Holm-Hadulla *et al.*, 2010).

Reforming collective bargaining mechanisms

In an otherwise decentralised wage bargaining environment, Employment Regulation Orders (EROs) and Registered Employment Agreements (REAs) are sectoral collective bargaining mechanisms estimated to cover around 15% and 8% of private sector employees, respectively (Duffy and Walsh, 2011). Applying in mostly low-skill sectors, such as retail, catering and accommodation, EROs are drawn up by Joint Labour Committees (JLCs), with a government-appointed independent chairman and representatives of workers and firms. They set sectoral wage floors, on average almost 10% above the national minimum wage (NMW), and regulate a number of other conditions of employment, such as overtime and Sunday pay, with more generous provisions than in the general labour law. REAs are collective agreements registered with the Labour Court, thus becoming legally binding on the individual firm concerned or, in the case of industry agreements (mainly construction and electrical contracting), on all employers and workers in the sector, even those not involved in the agreement negotiation.

EROs and REAs present several elements of rigidity, often failing to take into account firm-level circumstances. Sectoral level bargaining regimes may drive up labour costs and thus induce employment losses (Calmfors and Driffill, 1988). Opting-out from those agreements is hard: firms in covered sectors can deviate from an ERO through an REA, but only if the latter is at least as generous as the former.

5. Results should be regarded with some caution, due to important data limitations. For instance, compensation per employee, rather than unit labour costs, is taken as the sectoral deflator.

Furthermore, firms are not allowed to pay lower wage rates on grounds of economic difficulty or the need to protect employment. The absence of standardisation of conditions of employment adds to the record-keeping burden on employers (Duffy and Walsh, 2011).

To address the shortcomings of these bargaining mechanisms, as well as recent legal challenges to EROs (some of the provisions underpinning their enforcement were ruled unconstitutional by the Irish High Court in July 2011), the authorities have announced guidelines for reform. EROs will be retained but made more flexible, by halving their number (from 13 to around 6), drastically reducing the number of different wage rates each JLC can set, standardising Sunday working compensation, and allowing firms to derogate in cases of financial difficulty. Adjustment of REAs will be made easier in certain circumstances, and their record-keeping requirements reduced, as will those of EROs. These steps are welcome, and the authorities should proceed with implementation. Further, to ensure enhanced responsiveness to the prevailing economic and labour market conditions, firms should be allowed to opt-out of EROs and REAs through collective agreement (OECD, 2006). Provided proper worker representation is in place, local-level bargaining can best take account of firm-specific circumstances.

Competition in non-tradables

Besides labour costs, the competitiveness of tradable sectors also depends on the prices of goods and services which are mostly not traded internationally. Transport, property leasing and utilities are important intermediate inputs for industries exposed to international competition, carrying a joint weight in sectoral cost structures which often lies between a quarter and more than half of labour costs (O'Brien, 2011b). Even when not part of sectoral cost structures, non-tradables still have an indirect influence on wages through their impact on the general cost of living. While the latter has recently moderated due to the crisis, property prices have fallen and transport infrastructure has been substantially upgraded, some utilities and professional services remain expensive in international comparison. In contrast with the overall high flexibility of product markets, regulation of network industries in Ireland is somewhat more restrictive than the OECD average, competitive pressures in some professions are limited and, more generally, competition law needs more effective enforcement. Simulations in a DSGE model (Department of Finance, 2011b) show that increasing product market competition in Ireland can yield significant long-run output gains (GDP 0.66% higher 20 years after a 1 percentage point reduction of the price mark-up in the final goods sector), broadly in line with results obtained for the EU as a whole (Roeger *et al.*, 2008). Gains accrue not only through cost competitiveness and exports but also (and mainly) through higher investment and R&D.

More effective competition law

Enforcement of Irish competition law continues to be hampered because the emphasis on criminal rather than civil law and the ensuing very high standard of proof implies that in practice sanctions can only be imposed in case of flagrant cartel behaviour. While prioritising cartel punishment is appropriate, civil fines with a lower standard of proof should be introduced to deter other infringements (like vertical restraints or abuse of a dominant position) and hence promote stronger competition. It is also important to ensure that the relevant agencies have adequate resources to fulfil their tasks, and that budget savings and staff cuts (in the case of the Competition Authority, roughly a quarter over the past two years) do not go beyond what can be compensated through efficiency gains. Further, no exemptions from competition law should be granted for collective bargaining, as sought by some representative bodies in medical professions, as this would likely lead to higher health care costs for the State.

Competition in legal services should be increased

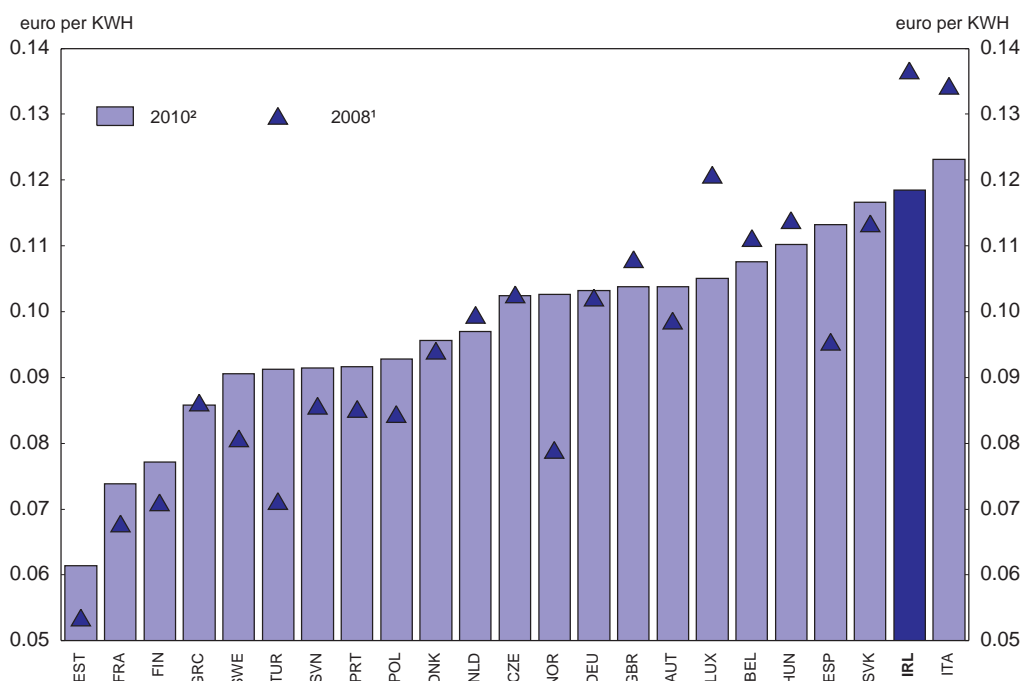
Restrictive practices and regulatory shortcomings in the legal professions generate higher prices. Barristers and solicitors bodies perform both regulation and professional representation, which is at odds

with arrangements applying to other professions in Ireland and to the legal profession itself in other countries. The potential for tension between pursuing the interests of the profession and those of society and consumers at large may help explain numerous restrictions to competition between lawyers, which mainly stem from the rules and practices of professional bodies, and the fact that legal fees are high by international comparison (Forfás, 2010e). To reform those rules and practices, an independent regulator for the legal professions should therefore be set up, in tandem, where needed, with changes in legislation enshrining anti-competitive rules. Areas of concern include *inter alia* restrictions on professional training, other barriers to entry in the provision of specific legal services, and non-transparent fees. As part of their commitments under the EU-IMF programme, the authorities are finalising legislative changes to implement reforms along these lines.

Vertical integration in electricity should be decreased...

Electricity remains expensive in international comparison, though over the past two years cheaper gas (which accounts for more than half of all electricity generated in Ireland) has helped to bring Irish prices closer to the European average (Figure 11). Higher wholesale prices do not necessarily reflect insufficient competition or regulatory failures. Devitt *et al.* (2011) argue that the all-island wholesale electricity market set up in 2007 has been delivering a price broadly aligned with long-run marginal cost, the higher wholesale price relative to Great Britain being largely due to greater use of cheaper coal and nuclear energy in Britain. However, the retail margin is probably too high (Devitt *et al.*, 2011), which could reflect inefficiencies in transmission, distribution and supply.

Figure 11. Electricity prices: simple average for households, SMEs and large industrial users



1. Italy 2007, Luxembourg 2009.
2. Italy 2007 for large industrial users and households; Austria 2008 for SMEs and large industrial users.

Source: Eurostat.

The sector is still characterised by a high degree of vertical integration. State-owned Electricity Supply Board (ESB), the only firm in the sector until the late 1990s, still owns the transmission and distribution networks, operates the latter (Eirgrid, also state-owned, was established in 2006 to operate the former), and remains a major player in generation and supply, now competitive segments. Diffney *et al.* (2009) suggest that limited competitive pressures on ESB have shown up in a large wage premium relative to manufacturing, which vastly exceeded the Euro area average in 2004 and has remained broadly stable thereafter. Vertical integration in the sector should be further decreased, by transferring the ownership of the transmission network to Eirgrid and possibly by additional reductions to ESB's generating capacity (Review Group on State Assets and Liabilities, 2011). This would promote greater competition and foster efficiency in investment, as transferring the ownership of the low-risk transmission assets should enable the grid operator to minimize its cost of capital, and avoid any implicit cross-subsidisation of ESB's cost of capital when investing in riskier generation assets (Diffney *et al.*, 2009). Further, while preserving high technical standards in the sector, the regulator (the Commission for Energy Regulation, CER) should ensure that retail margins contain no monopoly rents by pushing for cost reductions – for instance, through greater outsourcing of network maintenance and investment work (Fitz Gerald, 2011). Concerns about vertical integration also extend to the gas market, where ownership of Bord Gáis Éireann's (BGÉ) transmission network should be separated from its other businesses in electricity generation and electricity and gas supply.

... and renewables penetration should be achieved in a cost-efficient way

Renewable energy policy should seek to achieve environmental objectives at least cost, so as not to harm competitiveness. To deliver on its EU-level commitment to reach 16% of energy from renewable sources by 2020, Ireland set itself the target of sourcing 40% of electricity from renewables by that year, in conjunction with targets for renewables penetration in heating and road transport. A feed-in tariff scheme (REFIT) has been in place for several years to incentivise expansion of onshore wind and other renewable sources of electricity (*e.g.* offshore wind, tidal or wave). The required investment in both generation and transmission (including international interconnection) is very substantial and will ultimately be recovered from consumers through higher prices (more specifically, through the PSO – Public Service Obligation – levy). Targets for renewables penetration in electricity should therefore be reassessed in the light of changed circumstances, such as lower levels of output and energy demand, a much increased cost of capital and the prospect of cheaper gas, brought about *inter alia* by the boom in the supply of US shale gas. In the event of medium or high fossil fuel prices, Diffney *et al.* (2009) find expansion of onshore wind generation to be economically sound, but with cheap gas the current onshore wind targets become uneconomic, and should probably be revised downwards, as emphasized by the Review Group on State Assets and Liabilities (2011). However, prudence is called for. Diffney *et al.* (2009) find that, relative to the optimal mix of sources, the extra costs of too much wind in the event of cheap fossil fuels are smaller than those of too little wind under expensive oil and gas. Further, the costs of increased reliance on renewables in heating and transportation (to compensate less electricity from renewables, and thus stay on course for the 16% overall target) would need to be taken into account, and could be substantial (Fitzgerald, 2011).

Whether the 40% target for electricity from renewables is kept unchanged or revised downwards, the REFIT scheme should be made more cost efficient. Support for offshore wind, tidal or wave electricity, which currently enjoy guaranteed prices 2 to 3 times higher than those received by onshore wind generators, should be brought to an end, as those sources are high-cost and unnecessary for meeting environmental targets (Fitz Gerald, 2011). The fixed part of REFIT payments, paid per MWh produced in addition to guaranteed prices, should also be eliminated for all new generators (Devitt and Valeri, 2011; Fitz Gerald, 2011). Since increased interconnection is essential for the wind penetration targets to be economic, incentives should be in place to synchronise the expansion of wind with the delivery of further interconnection. Subject to compliance with EU rules, this might be achieved by making the cost of the

constraining off of wind (when supply exceeds the system's capacity to absorb it) fall on the latest wind generators to have entered the market (Fitz Gerald, 2011).

Better public transport would foster green growth

Inefficient bus services penalize commuters, public finances and the environment. State-owned Dublin Bus and Bus Éireann, which have long enjoyed near-monopoly status (in Dublin and in regional cities and surrounding areas, respectively), have recorded significant losses in passenger numbers over the past few years, despite Ireland's growing population. Some regulatory progress was made in 2010, with an independent regulator (the National Transport Authority, NTA) taking responsibility for the sector and a reform of licensing rules opening up licences for existing commercial (i.e., non subsidised) bus services to competition. This should be extended to subsidised (Public Service Obligation) routes. Efficiency gains can improve the trade-off between costs and the level of service provision, promoting modal shift away from private motoring and thus reducing congestion and CO2 emissions. Introducing a congestion charge in Dublin would also be of value on those counts. After a 156% increase since 1990, the transport sector accounted for 21.0% of total Irish GHG emissions in 2009, above the EU average of 20.2%. Despite some reduction due to the economic crisis, emissions from transportation will need to be further curbed if Ireland is to achieve its 2020 EU-level target in non-ETS sectors.

Supports to SME internationalisation should be streamlined

Irish-owned firms, mostly SMEs, must lie at the heart of a return to healthy growth and job creation, as they account for around 90% of private sector employment. Given macroeconomic conditions, their growth will require much greater focus on foreign markets, after a decade in which exports remained broadly constant as a share of total sales by tradable sectors' indigenous firms (Forfás, 2010d). Irish exporters will also need to reach beyond their traditional destinations, most prominently the UK, and seek entry into the more demanding emerging markets, which offer stronger growth prospects and where clients' different needs and tastes may spur greater investment in innovation. The authorities are aware of these challenges, and support to internationalisation through consultancy expertise, trade missions or funding for market research is provided by a number of government agencies. These include first and foremost Enterprise Ireland (EI), the enterprise development agency supporting export-focused Irish firms, but also, among others, regional-based agencies (e.g. Shannon Development), the 35 City or County Enterprise Boards (which specialize in support for micro-enterprises) and sector-specific organisations, such as Bord Bia in the food industry and Fáilte Ireland in tourism. As pointed out by the Special Group on Public Service Numbers and Expenditure Programmes (2009), there is considerable overlap and duplication both in the services provided by the agencies in Ireland and in the overseas networks of those represented abroad (EI and Bord Bia, but also IDA Ireland, responsible for the attraction and development of FDI, and Tourism Ireland, an all-island tourism promotion body). In export promotion and in other areas, like fostering start-ups, support to indigenous enterprise should be centralized in EI, and office networks abroad rationalised. The ensuing efficiency gains would make it possible to allocate more resources to penetration in emerging markets, for instance through more systematic engagement both with the Irish diaspora and with immigrant communities in Ireland (e.g. from China), which can be a valuable source of networking and market information.

Progress in R&D investment should be sustained

Innovation in the business sector has central importance for productivity growth and competitiveness, and can be supported by a range of policy interventions (Jaumotte and Pain, 2005). These include direct subsidies and tax reliefs, as well as increases in R&D performed at non-business organisations, provided the latter are accompanied by a growing supply of high-quality human resources for science and technology. The authorities can also foster innovation by preserving and enhancing favourable framework

conditions, such as competitive product markets and a high-quality education system (OECD, 2010a), addressed elsewhere in this paper. In times of fiscal consolidation, Ireland needs to achieve greater efficiency in public funding of R&D. This requires minimising deadweight losses and laying more and better-focused emphasis on technology transfer to the enterprise sector, as discussed below.

In the recent past, Ireland has managed to continue to make progress on the research and innovation front. Gross expenditure on R&D (GERD) rose from 1.1% of GDP in 2002 to 1.3% in 2007, and accelerated to 1.8% in 2009. Researchers as a share of total employment (or of total labour force) caught up to the EU average in 2008, and clearly exceeded it in 2009. Irish universities, traditionally stronger in teaching, have made strides in research, with major progress in scientific publications and their impact (Forfás 2011). Progress was also substantial among companies, with business expenditure on R&D (BERD) increasing from 0.8% of GDP in 2007 to the EU average of 1.2% in 2009⁶. Nonetheless, Irish investment effort in R&D still lags behind the OECD average (2.3% of GDP GERD in 2008) and the best EU performers. In the light of economic and budgetary difficulties, the target of making GERD reach 2.5% of GNP has been postponed from 2013 to the end of the decade. As envisaged by the authorities, public funding of R&D should at least be kept constant in nominal terms until 2014.

Deadweight costs from the R&D tax credit are non-negligible

R&D tax incentives were introduced in 2004 in the form of an incremental tax credit, applying to additional R&D expenditure relative to the 2003 base year. This credit is likely to have played a role in promoting BERD, as both the number of claimants and the associated tax cost increased rapidly until 2007 (Department of Finance, 2010)⁷, amounting in this year to almost 0.1% of GDP, around twice as much as direct government funding of BERD (OECD, 2010b). According to the B index, an indicator of the degree of subsidy implicit in the tax treatment of R&D, Ireland ranked in the middle band of countries in 2008 (OECD, 2010a). However, the scheme was made more attractive in 2009, *inter alia* by increasing the rate of relief from 20% to 25% (which is captured by the B index) and by introducing the possibility of cash refunds in case of insufficient corporation tax liability (which is not captured, but is nonetheless highly generous by international comparison). Multinationals took the lead in claiming this tax credit, which is an important tool to attract R&D related FDI projects, but a growing number of Irish-owned firms have also availed themselves of the incentive, especially in the software sector. Claims by indigenous companies reached 32% of the total value claimed in 2007 (Department of Finance, 2010), broadly in line with their weight in Irish BERD.

The 2009 reform also fixed 2003 as the permanent base year, implying that the scheme will over time effectively become volume-based (*i.e.*, applying to all relevant R&D expenditure, not to additional expenditure only), rather than incremental. This further increases generosity at the cost of a growing deadweight, as incentives to additional R&D are blurred. In this respect, it is of some concern that more than one third (36%) of surveyed claimants considered that the tax credit did not encourage additional R&D (Department of Finance, 2010). The authorities should continue to assess the effectiveness of the tax credit scheme, and increase the degree of incrementalism if significant deadweight costs are confirmed. A hybrid scheme, combining volume and incremental tax incentives, could be considered. In line with announcements made in the Jobs Initiative, the authorities should also introduce greater flexibility in the way firms can account for this tax credit. The option of above-the-line accounting (*e.g.* offsetting R&D tax credits against employers' PRSI, rather than against corporation tax payable by the company) can be of value in a context of international competition for R&D investment projects on the basis of pre-tax comparisons across different jurisdictions (Commission on Taxation, 2009).

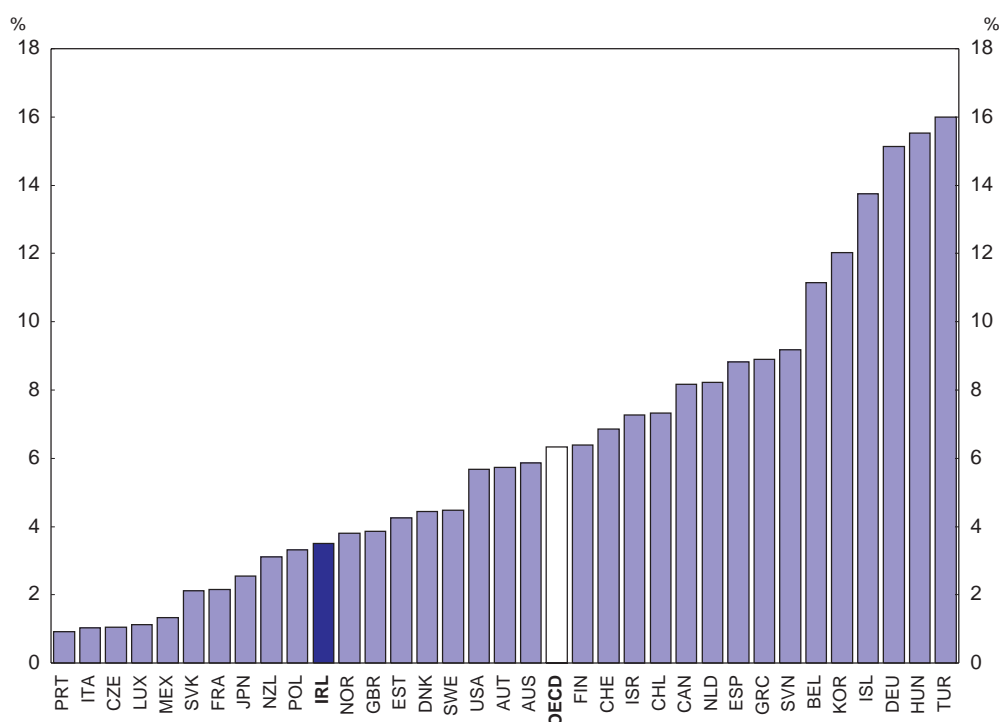
6. CSO data for 2010 shows a marginal fall in nominal BERD, implying a slight increase as a per cent of GDP.

7. In 2008 the number of claimants rose further, though with a slight decline in estimated total value (Forfás, 2011).

Technology transfer needs more and better focused efforts

Challenges remain in the area of linkages between research institutions and industry (Martin, 2009), as illustrated by the below-average business funding of R&D in the higher education sector (Figure 12). Technology transfer to the enterprise sector is also hampered by the lack of industry-specific research organisations (Teagasc, the agriculture and food development authority, being one of the few exceptions). The involvement of Irish SMEs in R&D remains low, despite some exceptions (such as the indigenous software sector), and foreign owned companies continue to account for around 70% of total BERD. Aware of these problems, the authorities have been developing a range of initiatives to bring researchers and industry into closer cooperation, often with a particular focus on SMEs (Box 5). While these efforts are welcome, they need to be expanded, which may entail reallocations within the overall R&D budget envelope. For instance, as emphasised by the Innovation TaskForce (2010), among others, the current level of R&D-intensive start-ups is still insufficient, and more needs to be done to promote inter-firm collaborations and knowledge transfer.

Figure 12. Higher education expenditure on R&D (HERD) financed by industry, 2009¹



1. Or latest data available.

Source: OECD Main Science and Technology Indicators (MSTI) database.

The need also remains for more concentration of resources in a smaller number of centres of excellence, to avoid spreading public funding too thinly. For instance, the high total number of researchers-industry collaborative undertakings of various types (Competence Centres, Centres for Science, Engineering and Technology and Strategic Research Clusters, described in Box 5) may entail dangers of under-financing or missing out on cross-field spillovers. Fewer and larger actors in the research arena will also contribute to ease interaction with MNCs. Along these lines, the authorities have established an expert group to carry out a prioritisation exercise, due to report in Autumn 2011. It is essential that any priorities are informed by a systematic performance assessment of the existing programmes and supported institutions, including those in the higher education sector. Performance

assessments themselves need to be expanded and improved, as there is still a lack of a strong evaluation culture.

Box 5. Policies to promote technology transfer and SME engagement in R&D

Innovation features as one of the five key action areas in *Building Ireland's Smart Economy* (December 2008), the authorities' framework document for economic recovery, and public agencies have been rolling out a number of initiatives to foster a knowledge-based economy. A study group – the Innovation Taskforce – has also been appointed to analyse in more detail public policy in this domain. Leading actors in the areas of industry-researchers linkages and support for SMEs R&D engagement are Enterprise Ireland (EI), IDA Ireland, and Science Foundation Ireland (SFI), which administers basic research funds for science and engineering, with an emphasis on biotechnology, ICT and energy.

EI and IDA launched the first five Competence Centres in 2010, bringing together research institutions, Irish companies and MNCs to undertake market-focussed, industry-driven R&D in areas such as nanotechnology and bioenergy. More such centres have already been set up in 2011, with plans to reach a total of 16. They can be seen as complementing SFI-funded higher education-enterprise linkages, such as its 10 Centres for Science, Engineering and Technology (CSETs) and 19 Strategic Research Clusters (SRCs), where collaborative research projects tend to be more distant from market. Nonetheless, to foster commercialisation of research outputs, commercial development managers were also appointed to 6 CSETs in 2010 under a EI/SFI collaboration programme. The EI-funded Technology Transfer Offices (TTOs), set up at higher education institutions, are yet another tool to foster linkages to industry and commercialisation.

EI also provides a range of supports – in the areas of finance, management and market development – for the creation and growth of R&D-intensive SMEs. Funding to about 70 to 80 high potential start-up companies (HPSUs) per annum has been approved in recent years. To provide equity finance to innovative firms, EI has entered into partnership with seed and venture capital funds and fostered business angel activity. A major development in this area has been the launching of Innovation Fund Ireland (July 2010), a venture capital fund with up to EUR 250 million aiming to attract leading international fund managers to Ireland. Half of that amount will be Exchequer-provided and managed by EI, while the National Pension Reserve Fund is to make commercial investments up to another EUR 125 million.

A related policy strand aims to incentivise R&D among indigenous firms, including those with no innovation background. Apart from availing of the R&D tax credit, Irish firms can take advantage of grants for in-company R&D under the EI R&D Fund, which foresees a bonus of up to 15% if there is collaboration between two companies on a project. Initiatives targeted at non-R&D performing small companies include advocacy efforts (subsidised consultancy support to assess R&D needs and prospects) and the Innovation Voucher Scheme (launched in 2007), which provides EUR 5 000 vouchers for firms to acquire R&D services from research institutions. The number of redeemed vouchers increased from around 200 in 2008 to more than 450 in both 2009 and 2010. Linkages are promoted not only with third level institutions but also among participating firms, as up to 10 vouchers can be pooled.

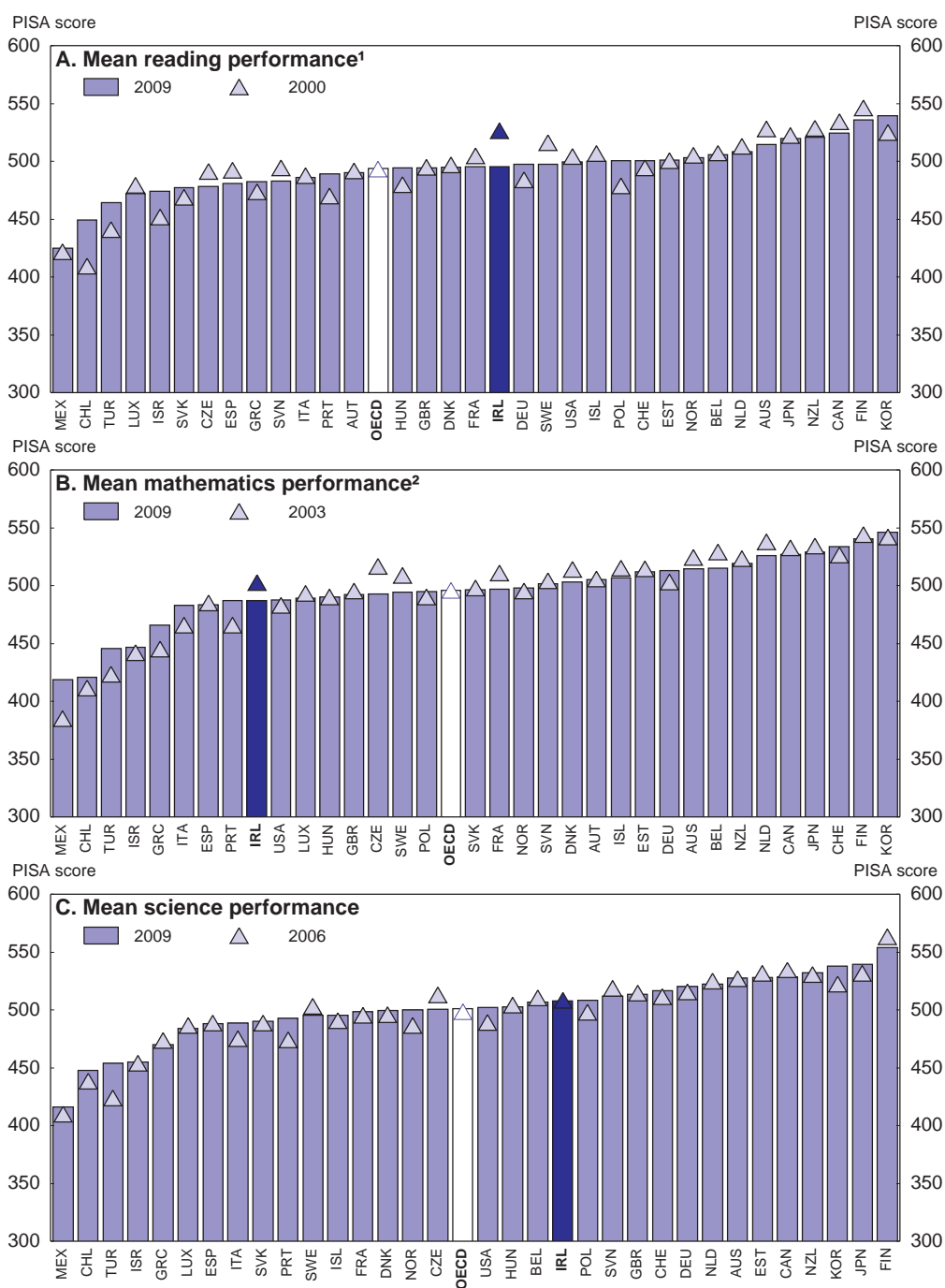
High-quality education is key to long-term economic growth and social cohesion

To preserve its strengths in human capital, Ireland needs to ensure a high quality of education. Yet serious concerns have emerged. The PISA 2009 outcomes (which measure achievement of 15-year olds) were particularly disappointing for Ireland, with reading and mathematics performance respectively recording the largest and the second largest declines in the OECD. Irish scores no longer differ (in terms of statistical significance) from average OECD levels in reading and lie below average in maths; they remain above the OECD average in science, where performance has not changed relative to 2006, the previous comparable result (Figure 13). This deterioration in performance has taken several observers by surprise, and is inevitably surrounded by a margin of error. However, neither sampling factors nor changes in the socio-economic composition of student populations can account for the bulk of the deterioration (OECD,

2010c; Perkins *et al.*, 2010)⁸. It should also be noted that not all the decline took place in the latest PISA round, as a sizeable fall in reading had already taken place between 2000 and 2003. Yet between 2000 and 2008 expenditure per student (in public institutions of primary, secondary and post-secondary non-tertiary education) increased 83% in real terms (OECD, 2011), bringing total expenditure in 2008 to a level above the OECD average as a percentage of GDP (4.1% versus 3.7%)⁹. There are no simple recipes for delivering high-quality education, nor an automatic translation of the latter into stronger economic growth. However, recent studies have highlighted Irish weaknesses in areas like assessment and accountability policies or teacher training, to which until recently a low coverage of pre-primary education should be added.

-
8. While demographic developments such as more migrant students with a non-English first language have plausibly put some downward pressure on scores, socio-economic factors as a whole probably have not (OECD, 2010c, pp. 49/50).
 9. A related indicator – cumulative expenditure per student aged 6 to 15 in equivalent USD converted using PPPs – places Ireland roughly 10% above the OECD average in 2007 (OECD, 2010c).

Figure 13. PISA results in OECD countries



1. Austria: 2000, 2006; Estonia, Slovenia and United Kingdom: 2006, 2009; Luxembourg, Netherlands, Slovak Republic and Turkey: 2003, 2009.
2. Austria 2003,2006; Chile, Estonia, Israel, Slovenia and United Kingdom: 2006, 2009.

Source: OECD, PISA 2009 Results: Learning Trends, Changes in student performance since 2000, Volume V.

The school system needs stronger accountability mechanisms

The Irish school system is characterised by comparatively limited accountability mechanisms. Results from TALIS (OECD, 2009b), an international survey focussing on lower secondary education teaching and learning environments implemented in 2007-08, show that 26% of teachers in Ireland had not received any appraisal or feedback in their schools, the 4th highest percentage among the 23 participating countries (18 of which are currently OECD members). Further, Ireland had the highest share (39%) of teachers working in schools where no evaluation from any source had been conducted over the past 5 years, as well as a strong perception of reduced impact of teacher appraisal and feedback, in terms of financial rewards, career progression or participation in professional development activities. Infrequent inspections, as well as an absence of required school self-evaluations, also hold at primary and upper secondary levels (OECD, 2011). In a related vein, the PISA 2009 study includes Ireland among the countries making an infrequent use of student achievement data for decision making or benchmarking and information purposes, with likely costs in terms of socio-economic equity (OECD, 2010d). Stronger accountability mechanisms are also associated with a smaller between-school variance in reading performance (OECD, 2010d), an indicator where Ireland recorded a large increase from PISA 2000 to PISA 2009.

The above weaknesses are mirrored in a number of constraints on the work of the Inspectorate of the Department of Education and Skills, and on the publication of performance data. Though nation-wide standardised tests or exams are carried out at two stages of primary school, at the end of lower second level (the Junior Certificate) and at the end of upper second level (the Leaving Certificate), limited data on comparative school performance is made public. Inspection of the work of individual teachers falls almost exclusively on primary teachers on probation, and most school inspections (all, at second level) are announced well in advance. Yet unannounced inspections carried out between October 2009 and October 2010 in 450 primary schools found teacher preparation for English and maths lessons to be unsatisfactory in around a quarter of all cases, and poor preparation to be strongly correlated to poor learning outcomes (Department of Education and Skills, 2010). The authorities have recently announced that unannounced inspections will be extended to second-level schools, which is welcome. In another positive development, the new national literacy and numeracy strategy for 2011-20 (Department of Education and Skills, 2011) proposes making greater use of assessment information (namely results from standardized tests of reading and mathematics) to improve the teaching practice, provide better feedback to parents and inform schools' self-evaluation and improvement plans. Alongside this required self-evaluation, the authorities should set up external evaluation mechanisms to systematically assess teachers' and schools' performance, and make the latter public once adjusted for socio-economic background. Evaluation results should have implications for career progression, and inform any needed corrective action in relevant areas.

Maths tuition has room for improvement

Shortcomings in teacher training and in the allocation of instruction time across subjects may be penalizing learning outcomes in mathematics, as well as decreasing the willingness of students to pursue further studies in this discipline. Primary teachers, who teach all subjects to their pupils, were found to vary widely in their mathematical knowledge for teaching (Delaney, 2010). At post-primary level, virtually half (48%) of the mathematics teachers did not have a mathematics teaching qualification, with an even higher figure (60%) among teachers aged 35 or under (Ní Riordáin and Hannigan, 2009). In 2009, mathematics accounted for only 12% of the compulsory core curriculum instruction time for Irish 9-11 year-olds (primary school pupils), below the 16% OECD average (OECD, 2011). Since 2005 there has been a steady decline in the share of students taking higher level maths in their Leaving Certificate examination (in 2010, only 16% of those taking the subject, the remainder 84% opting for the less demanding ordinary or foundation levels¹⁰), and mathematics, science and technology graduates have

10. Leaving Certificate mathematics is required for matriculation at almost all Irish tertiary education institutions.

essentially stagnated (relative to population) over the past decade (European Commission, 2011), thus eroding Ireland's lead on this count.

As a response, the authorities have been rolling out Project Maths, a revised second-level mathematics curriculum supported by a training programme for teachers, launched in 24 schools in 2008 and generalized to all in September 2010. Besides improved assessment and accountability tools, the new national literacy and numeracy strategy (Department of Education and Skills, 2011), launched in July 2011, also envisages reforms in curriculum content and in teachers' initial training and professional development at different school levels, and will *inter alia* reallocate primary school teaching time in favour of literacy and mathematics. The authorities should pursue these efforts to improve maths syllabi and teacher training, and at primary level could consider introducing specialist maths teachers, possibly shared among schools in areas where these are small or as a transitional measure. Teachers' performance evaluation should play a role in informing the need for, and modalities of, training, and the effectiveness of training itself should be systematically assessed.

The provision of pre-primary education should be extended

Pre-primary school attendance has both a positive impact on later educational performance and an equity-enhancing effect, reducing the persistence of educational inequality across generations (Causa and Chapuis, 2009). Ireland has traditionally lagged other European countries in this area: in 2009, the enrolment rate for 3 and 4-year-olds (as a percentage of children of that age) stood at 23%, only a third of the OECD average of 70% (OECD, 2011). In a welcome step, the government introduced in 2010 a free Pre-School Year, which replaced the Early Childcare Supplement (a welfare payment). This is open to 3 and 4 year-olds and intended to precede the so-called infant cycle of primary schools (lasting for two years, before first class), where children must be at least 4 years of age at the start of the school year (September). Provided at separate institutions (playschool or day care services), it has had very high enrolment in September 2010 (94% of all eligible children).

However, the duration of Pre-School Year daily classes is only 3 hours, which is internationally low (even by part-time provision standards) and compares with around 5 hours for primary school's infant cycle. Further, since entrants must be aged at least 3 years and 3 months, they tend to be slightly older (by around half a year on average) than their pre-primary counterparts in other countries. There is evidence that an early start at pre-school is linked with better intellectual and social development of children (Sylva *et al.*, 2003). The authorities should therefore reallocate budget funds to increase the provision of pre-primary education, by extending the duration of daily classes in the Pre-School Year and opening it to children soon to be three (with a similar lowering of the entry age at the infant cycle of primary schools). More pre-primary school attendance will also have a positive impact on the labour supply of young mothers.

Box 6. Summary of recommendations to restore competitiveness

Reducing unit labour costs

- Implement planned reforms to Employment Regulation Orders and Registered Employment Agreements, and go further by allowing firms to opt out through collective agreement.
- Keep a tight control of public sector wage expenditure.

Reducing non-labour costs

- Introduce civil fines in competition law.
- Set up an independent regulator for the legal professions.

- Decrease vertical integration in electricity and gas.
- 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.

Reassessing export-support, innovation and education policies

- Centralize support to the internationalisation of indigenous enterprise in Enterprise Ireland, and rationalize the overseas office networks of state agencies.
- Upscale efforts to promote cooperation between industry and researchers and concentrate resources in a smaller number of centres of excellence, with prioritisation informed by systematic performance assessment.
- 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.
- Systematically evaluate teachers' and schools' performance, and make the latter public once adjusted for socio-economic background. Evaluation results should have implications for career progression, and inform any needed corrective action in relevant areas.
- Further pursue efforts to improve the syllabi and teacher training in mathematics. Take teachers' performance evaluation into account when establishing training needs, and systematically assess the effectiveness of training itself.
- Reallocate budget funds so as to increase the duration of daily classes in the Pre-School Year and to open it to children soon to be three.

BIBLIOGRAPHY

- Amador, J. and S. Cabral (2008), “The Portuguese Export Performance in Perspective: A Constant Market Share Analysis”, *Banco de Portugal Economic Bulletin*, Autumn 2008, pp. 201-221.
- Barry, F. (2011), *Foreign Direct Investment, Inter-Industry Spillovers and the Emergence of an Indigenous High-Tech Export Cluster: The Case of Irish Software*, January, mimeo.
- Calmfors, L. and J. Driffill (1988), “Bargaining structure, corporatism, and macroeconomic performance”, *Economic Policy*, No. 6.
- Card, D., J. Kluve and A. Weber (2010), Active Labour Market Policy Evaluations: A Meta-Analysis, *The Economic Journal*, 120, F452-F477.
- Causa, O. and C. Chapuis (2009), “Equity in Student Achievement Across OECD Countries: An Investigation of the Role of Policies”, OECD Economics Department Working Papers, No. 708, OECD Publishing.
- Commission on Taxation (2009), *Commission on Taxation Report 2009*.
- Copenhagen Economics (2007), Study on reduced VAT applied to goods and services in the Member States of the European Union, Final Report, 21 June.
- Delaney, S. (2010), *Knowing What Counts: Irish Primary Teachers’ Mathematical Knowledge for Teaching*, Marino Institute of Education, Dublin.
- Department of Education and Skills (2010), *Incidental Inspection Findings 2010. A Report on the Teaching and Learning of English and Mathematics in Primary Schools*, Inspectorate Evaluation Studies.
- Department of Education and Skills (2011), *Literacy and Numeracy for Learning and Life. The National Strategy to Improve Literacy and Numeracy among Children and Young People*.
- Department of Finance (2010), *Review of the Research and Development Tax Credit Scheme*, Central Expenditure Evaluation Unit, May (internal working document).
- Department of Finance (2011a), Replacement Rates 2011, 2010 and 2009 (internal working document).
- Department of Finance (2011b), Ireland – Stability Programme Update, April.
- Department of Social Protection (2010), Report on the desirability and feasibility of introducing a single social assistance payment for people of working age, November 2010.
- Devitt, C., S. Diffney, J. Fitz Gerald, L. M. Valeri and A. Tuohy (2011), Goldilocks and the Three Electricity Prices: Are Irish Prices “Just Right”?, Working Paper No. 372, The Economic and Social Research Institute.
- Devitt, C. and L. M. Valeri (2011), The Effect of REFIT on Irish Electricity Prices, Working Paper No. 374, The Economic and Social Research Institute.
- Diffney, S., J. Fitz Gerald, S. Lyons and L. M. Valeri (2009), Investment in electricity infrastructure in a small isolated market: the case of Ireland, *Oxford Review of Economic Policy*, Volume 25, Number 3, pp.469–487.

- Duffy, K. and F. Walsh (2011), *Report of Independent Review of Employment Regulation Orders and Registered Employment Agreement Wage Setting Mechanisms*, April.
- European Commission (2011), *Progress towards the common European objectives in education and training. Indicators and benchmarks 2010/2011*, Commission staff working document.
- Fitz Gerald, J. (2011), *A Review of Irish Energy Policy*, Research Series Number 21, April, Economic and Social Research Institute.
- Forfás (2010a), Review of Labour Cost Competitiveness, 28 October 2010.
- Forfás (2010b), Review of Labour Market Programmes, February 2010.
- Forfás (2010c), Profile of Employment and Unemployment, February 2010.
- Forfás (2010d), Annual Business Survey of Economic Impact 2009.
- Forfás (2010e), Costs of Doing Business in Ireland 2010 – Vol 1, July.
- Forfás (2011), *Preliminary SSTI Monitoring Indicators: Report 2010*, March.
- Grubb, D., S. Singh and P. Tergeist (2009), Activation Policies in Ireland, OECD Social, Employment and Migration Working Papers No. 75.
- Holm-Hadulla, F., K. Kamath, A. Lamo, J. Pérez, and L. Schuknecht (2010), Public Wages in the Euro Area – Towards Securing Stability and Competitiveness, European Central Bank, Occasional Paper Series No 112, June.
- Immervoll, H. and M. Pearson (2009), A Good Time for Making Work Pay? Taking Stock of In-Work Benefits and Related Measures Across the OECD, OECD Social, Employment and Migration Working Papers No. 81.
- Innovation Taskforce (2010), *Report of the Innovation Taskforce*, Dublin.
- Jaumotte, F. and N. Pain (2005), “Innovation in the Business Sector”, *OECD Economics Department Working Papers*, No. 459, OECD Publishing.
- Kis, V. (2010), Learning for Jobs: OECD Reviews of Vocational Education and Training – Ireland, OECD.
- Martin, T. (2009), *ERAWATCH Country Report 2009: Ireland. Analysis of policy mixes to foster R&D investment and to contribute to the ERA*, JRC-IPTS, European Commission.
- McGuinness, S., P. J. O’Connell, E. Kelly and J. R. Walsh (2011), *Activation in Ireland: An Evaluation of the National Employment Action Plan*, Research Series Number 20, April, Economic and Social Research Institute.
- Nyssens, A. and G. Pouillet (1990), “Parts de marché des producteurs de l’UEBL sur les marchés extérieurs et intérieur”, Cahier 7, Banque Nationale de Belgique.
- O’Brien, D. (2010), Measuring Ireland’s Price and Labour Cost Competitiveness, Quarterly Bulletin, January 2010, Central Bank of Ireland, pp. 99-114.
- O’Brien, D. (2011a), Box A: Compositional Effects in Recent Trends in Irish Unit Labour Costs, Quarterly Bulletin, January 2011, Central Bank of Ireland, pp. 22-24.
- O’Brien, D. (2011b), Assessing the Cost Competitiveness of Irish Manufacturing Sectors, Quarterly Bulletin, April 2011, Central Bank of Ireland, pp. 91-104.
- OECD (2006), Boosting Jobs and Incomes – Policy Lessons from Reassessing the OECD Jobs Strategy.
- OECD (2009a) “Helping Youth to get a Firm Foothold in the Labour market”, Paper for the Meeting of the Employment, Labour and Social Affairs Committee at Ministerial Level.

- OECD (2009b), *Creating Effective Teaching and Learning Environments: First Results from Talis*.
- OECD (2010a), *OECD Science, Technology and Industry Outlook 2010*.
- OECD (2010b), *R&D tax incentives: rationale, design, evaluation*, October.
- OECD (2010c), *PISA 2009 Results: Learning Trends: Changes in Student Performance Since 2000 (Volume V)*.
- OECD (2010d), *PISA 2009 Results: What Makes a School Successful? Resources, Policies and Practices (Volume IV)*.
- OECD (2011), *Education at a Glance 2011: OECD Indicators*.
- Perkins, R., G. Moran, J. Cosgrove and G. Shiel (2010), *PISA 2009: The performance and progress of 15-year-olds in Ireland – summary report*, Dublin: Educational Research Centre.
- Review Group on State Assets and Liabilities (2011), *Report of the Review Group on State Assets and Liabilities*, April.
- Ní Ríordáin, M. and A. Hannigan (2009), *Out-of-Field Teaching in Post-Primary Mathematics Education: An Analysis of the Irish Context. A Research Report*, NCE-MSTL (National Centre for Excellence in Mathematics and Science Teaching and Learning), University of Limerick, November.
- Roeger, W., J. Varga and Jan in't Veld (2008), *Structural Reforms in the EU: A simulation-based analysis using the QUEST model with endogenous growth*, European Economy, Economic Papers 351, Directorate-General Economic and Financial Affairs, European Commission.
- Special Group on Public Service Numbers and Expenditure Programmes (2009), *Report of the Special Group on Public Service Numbers and Expenditure Programmes, Vols. I and II*, July.
- Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I., Taggart, B. and K. Elliot (2003), *The Effective Provision of Pre-school Education (EPPE) Project: Findings from the Pre-school Period*, Research Brief RBX15-03, October, DfES.

ANNEX A1. CONSTANT MARKET SHARE ANALYSIS: METHODOLOGY AND DETAILED RESULTS

Following Nyssens and Poullet (1990) and Amador and Cabral (2008), the total change in the share of Irish exports worldwide (i.e, the Total Effect, TE) is given by the difference between the growth rate of Irish merchandise exports (g) and the growth rate of world merchandise exports (g^*):

$$TE = g - g^* = \sum_i \sum_j \theta_{ij} g_{ij} - \sum_i \sum_j \theta_{ij}^* g_{ij}^*$$

where

$$g_{ij} = \frac{X_{ij,t} - X_{ij,t-1}}{X_{ij,t-1}}$$

$$\theta_{ij} = \frac{X_{ij,t-1}}{\sum_i \sum_j X_{ij,t-1}}$$

$$g_{ij}^* = \frac{X_{ij,t}^* - X_{ij,t-1}^*}{X_{ij,t-1}^*}$$

$$\theta_{ij}^* = \frac{X_{ij,t-1}^*}{\sum_i \sum_j X_{ij,t-1}^*}$$

X_{ij} (X_{ij}^*) denotes nominal Irish (world) exports of product i to market or destination j , with $i = 1, \dots, 124$ (ISIC rev. 3 manufactured products at the 4-digit level excluding energy-related items – code 23) and $j = 1, \dots, 81$ (the countries or country groups listed in Box.A1.1). Since Ireland is not an export market to itself, it is also excluded from the destinations for world exports.

TE can be algebraically decomposed into a market share effect (MSE) and a combined structure effect, itself comprising a product structure effect (PSE), a geographical structure effect (GSE) and a residual term (mixed structure effect, MIX). These are defined below.

$$TE = MSE + PSE + GSE + MIX$$

$$MSE = \sum_i \sum_j \theta_{ij} (g_{ij} - g_{ij}^*)$$

The market share effect for a given product i (market j), given in Table A1.2. (Table A1.3), is computed as the sum over j (i) in the above equation.

$$PSE = \sum_i (\theta_i - \theta_i^*) (g_i^* - g^*)$$

$$GSE = \sum_j (\theta_j - \theta_j^*) (g_j^* - g^*)$$

$$MIX = \sum_i \sum_j \left[(\theta_{ij} - \theta_{ij}^*) - (\theta_i - \theta_i^*) \frac{\theta_{ij}^*}{\theta_i^*} - (\theta_j - \theta_j^*) \frac{\theta_{ij}^*}{\theta_j^*} \right] g_{ij}^*$$

where

$$\theta_i = \sum_j \theta_{ij} \text{ (share of product } i \text{ in Irish exports)}$$

$$\theta_i^* = \sum_j \theta_{ij}^* \text{ (share of product } i \text{ in world exports)}$$

$$\theta_j = \sum_i \theta_{ij} \text{ (share of market } j \text{ in Irish exports)}$$

$$\theta_j^* = \sum_i \theta_{ij}^* \text{ (share of market } j \text{ in world exports)}$$

$$g_i^* = \frac{\sum_j \theta_{ij}^* g_{ij}^*}{\theta_i^*} \text{ (growth rate of world exports of product } i)$$

$$g_j^* = \frac{\sum_i \theta_{ij}^* g_{ij}^*}{\theta_j^*} \text{ (growth rate of world exports to market } j)$$

Box A1.1. Export markets: countries and country groups

OECD

Australia, Austria, Belgium-Luxembourg, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Israel, Italy, Japan, Korea, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovenia, Slovak Republic, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States

Non-OECD Europe

Albania, Bulgaria, Latvia, Lithuania, Romania, Russian Federation, other European countries

Africa

Algeria, Cameroon, Ivory Coast, Egypt, Gabon, Kenya, Libya, Morocco, Nigeria, Tunisia, South Africa, other African countries

Non-OECD America

Argentina, Brazil, Bolivia, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela, other American countries

Middle East Asia

Saudi Arabia, other Middle East Asian countries (Gulf), other Middle East Asian countries (non-Gulf)

Non-OECD East Asia

Bangladesh, Brunei, Cambodia, China, Chinese Taipei, Laos, India, Indonesia, Pakistan, Philippines, Malaysia, Singapore, Sri-Lanka, Thailand, Vietnam, other East Asian countries (LDC), other East Asian countries (non-LDC)

Table A1.1. Main results of the constant market share analysis of Irish exports (nominal, manufacturing excluding energy)

	Growth of Irish exports, %	Growth of world exports, %	Total Effect	Market Share Effect	Combined Structure Effect	of which:		
						Product Structure Effect	Geographical Structure Effect	Mixed Structure Effect
	(1)	(2)	(3)=(1)-(2) = (4)+(5)	(4)	(5)	(6)	(7)	(8)
1996	11.5	3.4	8.1	6.8	1.3	3.2	-0.9	-1.0
1997	11.0	2.8	8.2	6.4	1.7	1.3	-0.2	0.6
1998	21.9	3.2	18.7	14.4	4.4	0.5	2.6	1.3
1999	10.4	3.5	7.0	4.4	2.6	3.9	-0.8	-0.5
2000	7.9	8.2	-0.3	-0.2	-0.1	2.1	-3.2	0.9
2001	1.7	-2.6	4.3	4.1	0.2	0.3	0.6	-0.7
2002	14.8	5.8	9.0	7.8	1.2	1.8	-1.0	0.4
2003	5.2	17.6	-12.4	-8.5	-3.9	1.1	-1.9	-3.1
2004	10.9	21.6	-10.6	-9.2	-1.4	-1.0	-1.5	1.1
2005	5.9	11.2	-5.3	-3.2	-2.1	0.7	-2.8	0.0
2006	0.1	14.0	-13.9	-8.7	-5.2	-2.0	-2.9	-0.3
2007	12.2	13.9	-1.6	3.9	-5.5	-4.8	-0.8	0.1
2008	4.4	10.5	-6.1	-2.5	-3.6	0.4	-3.7	-0.4
2009	-8.4	-19.4	11.1	3.9	7.2	8.0	-1.0	0.2
Average ¹ :								
1996-2002	11.3	3.5	7.9	6.3	1.6	1.9	-0.4	0.1
2003-2008	6.5	14.8	-8.3	-4.7	-3.6	-0.9	-2.3	-0.4

1. Simple average.

Source: OECD ITCS database and Secretariat calculations.

Table A1.2. Product breakdown of market share effect

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average ¹	
															1996-2002	2003-08
High-technology products	3.3	4.2	10.1	-0.5	-1.5	9.7	5.0	-7.4	-5.1	-2.9	-8.1	0.6	1.6	1.6	4.3	-3.5
Aircraft and spacecraft	0.2	-0.2	-0.1	-0.3	-0.3	-0.2	0.0	-0.1	0.0	0.0	0.1	0.3	0.2	0.4	-0.1	0.1
Pharmaceuticals	1.5	0.5	6.9	-3.9	-0.1	-0.6	8.9	-3.6	-1.8	-2.6	-3.5	-0.5	2.6	3.5	1.9	-1.5
Office, accounting and computing machinery	-0.6	2.6	2.4	0.9	0.3	5.3	-4.3	-1.3	-3.6	-0.3	-1.0	1.3	-2.9	-2.1	0.9	-1.3
Radio, TV and communications equipment	1.6	0.9	0.7	2.8	-1.7	4.4	0.5	-4.3	-0.1	0.5	-1.3	-0.2	0.8	-1.3	1.3	-0.7
Medical, precision and optical instruments	0.7	0.4	0.3	0.0	0.3	0.8	-0.1	2.0	0.4	-0.5	-2.4	-0.3	0.9	1.1	0.3	0.0
Medium-high-technology products	4.7	5.8	4.7	5.7	1.7	-4.6	5.4	-0.7	-2.7	1.1	-1.4	4.5	-2.7	3.2	3.3	-0.3
Other electrical machinery and apparatus	0.2	0.7	0.5	0.0	-0.3	0.0	-0.7	-0.1	-0.4	-0.3	-0.2	-0.1	-0.2	-0.1	0.1	-0.2
Motor vehicles, trailers and semi-trailers	0.0	0.1	0.3	0.1	0.1	0.1	-0.2	-0.3	-0.1	-0.2	0.1	0.1	-0.1	0.1	0.1	-0.1
Chemicals excl. pharmaceuticals	4.4	4.7	4.3	5.5	2.3	-5.2	6.7	-0.1	-2.5	1.9	-1.2	3.3	-2.0	3.1	3.2	-0.1
Railroad equipment and other transport equip.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other machinery and equipment	0.0	0.3	-0.3	0.1	-0.5	0.5	-0.4	-0.2	0.3	-0.3	-0.1	1.2	-0.4	0.0	0.0	0.1
Medium-low-technology products	0.2	-0.4	-0.1	-0.2	-0.1	0.2	-0.5	-0.2	-0.3	-0.4	0.1	-0.1	-0.1	-0.2	-0.1	-0.2
Rubber and plastics products	0.0	-0.1	0.0	-0.1	0.0	0.1	-0.2	0.0	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
Other non-metallic mineral products	0.1	0.0	-0.1	0.0	0.0	0.0	-0.1	0.0	-0.1	-0.1	0.0	-0.1	0.0	0.0	0.0	0.0
Building and repairing of ships and boats	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	-0.1	0.0	0.0	0.0
Basic metals	-0.1	0.1	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	-0.2	0.0	0.0
Fabricated metal products, excl. machinery	0.2	-0.4	0.0	-0.1	-0.1	0.2	-0.1	-0.2	-0.1	-0.1	0.1	0.0	0.0	0.0	0.0	0.0
Low-technology products	-1.4	-3.2	-0.4	-0.7	-0.3	-1.2	-2.1	-0.2	-1.1	-1.0	0.7	-1.2	-1.3	-0.6	-1.3	-0.7
Other manufacturing and recycling	0.1	0.0	-0.1	-0.1	-0.1	0.1	-0.2	0.0	0.0	0.0	0.0	-0.2	-0.1	0.1	-0.1	-0.1
Wood, pulp, paper and printed products	0.9	-0.7	-0.4	-0.5	0.3	-0.7	-1.4	-0.2	-0.8	-0.2	0.2	-0.6	-0.1	-0.2	-0.4	-0.3
Food products, beverages and tobacco	-2.2	-2.1	0.3	0.1	-0.3	-0.6	-0.3	0.1	-0.2	-0.7	0.6	-0.3	-1.0	-0.5	-0.7	-0.2
Textiles, textile products, leather and footwear	-0.1	-0.3	-0.2	-0.2	-0.1	0.0	-0.2	-0.1	-0.1	-0.1	-0.2	0.0	-0.1	0.0	-0.2	-0.1
Total	6.8	6.4	14.4	4.4	-0.2	4.1	7.8	-8.5	-9.2	-3.2	-8.7	3.9	-2.5	3.9	6.3	-4.7

1. Simple average.

Source: OECD ITCS database and Secretariat calculations.

Table A1.3. Geographical breakdown of market share effect

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average ¹	
															1996-2002	2003-2008
United Kingdom	1.4	0.2	0.9	0.6	0.7	5.9	-0.1	-5.0	-1.7	-1.5	0.5	1.7	-0.3	-0.3	1.4	-1.0
United States	1.7	1.8	4.4	1.6	0.4	-3.5	7.7	1.0	-1.2	-1.5	-2.1	0.6	0.4	2.5	2.0	-0.4
Belgium-Luxembourg	0.8	0.7	2.3	0.0	-0.5	-0.3	9.6	-3.5	-1.4	0.2	-2.7	-0.2	-0.4	2.5	1.8	-1.3
Germany	-0.5	1.5	4.9	-2.3	-0.6	-0.4	-2.2	0.0	-1.2	-0.4	-0.3	-0.1	-1.0	0.6	0.1	-0.5
France	0.2	0.3	1.3	0.9	-0.4	-0.8	-1.1	0.0	-0.5	0.4	-0.8	0.3	-0.1	-0.4	0.1	-0.1
Italy	0.2	-0.1	0.5	0.8	0.5	-0.1	0.2	0.1	-0.7	-0.1	-0.3	-0.7	0.0	0.0	0.3	-0.3
Netherlands	0.9	0.8	-1.4	1.1	-0.6	-0.2	-1.1	1.0	-0.9	-0.1	-1.4	0.3	-0.7	0.1	-0.1	-0.3
Spain	0.0	0.5	0.3	0.2	-0.1	0.3	-0.3	-0.1	-0.2	0.5	0.1	0.0	0.4	0.0	0.1	0.1
Switzerland	0.3	0.1	0.4	0.6	0.3	0.7	-0.4	-0.1	0.0	0.3	-0.7	0.6	0.0	-0.3	0.3	0.0
Japan	-0.1	0.7	0.1	-0.2	0.5	0.4	-0.8	-0.5	0.1	-0.3	-0.6	0.1	0.0	0.1	0.1	-0.2
Other European OECD	0.3	-0.5	0.8	0.6	0.1	-0.2	-0.9	-0.4	-0.8	-0.2	0.0	0.2	-0.9	-0.3	0.0	-0.4
Other non-European OECD	0.7	0.8	-0.1	-0.6	0.5	0.7	-0.9	-0.1	-0.5	-0.2	-0.1	-0.1	-0.3	0.0	0.2	-0.2
BRIC	0.1	-0.1	-0.1	0.1	-0.1	0.3	0.0	-0.1	-0.3	0.0	-0.3	0.6	0.3	-0.3	0.0	0.0
East Asian ²	0.8	-0.6	0.2	0.9	-0.7	1.2	-1.0	-0.2	-0.1	0.0	0.1	0.2	0.3	-0.3	0.1	0.1
Rest of the world	0.1	0.5	-0.1	0.1	-0.3	0.1	-0.8	-0.5	0.2	-0.2	-0.1	0.3	-0.3	0.1	-0.1	-0.1
Total	6.8	6.4	14.4	4.4	-0.2	4.1	7.8	-8.5	-9.2	-3.2	-8.7	3.9	-2.5	3.9	6.3	-4.7

1. Simple average.

2. Thailand, Singapore, Malaysia, Indonesia and Philippines.

Source: OECD ITCS database and Secretariat calculations.

Table .A1.4. Breakdown of product structure effect

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average ¹	
															1996-2002	2003-2008
High-technology products	1.9	1.4	1.3	2.1	0.7	0.9	1.2	0.3	-0.6	0.0	-0.8	-2.3	0.4	5.3	1.4	-0.5
Aircraft and spacecraft	0.0	-0.1	-0.1	0.0	0.0	-0.1	0.1	0.2	0.1	0.1	-0.1	0.0	0.0	-0.1	0.0	0.0
Pharmaceuticals	0.3	0.3	1.0	0.7	-0.6	1.7	2.0	0.3	0.1	0.2	-0.1	1.0	1.0	4.4	0.8	0.4
Office, accounting and computing machinery	1.3	1.0	0.2	1.2	1.0	-0.9	-1.1	-0.5	-0.5	-0.2	-0.4	-3.4	-0.8	0.3	0.4	-1.0
Radio, TV and communications equipment	0.2	0.1	0.1	0.1	0.5	-0.1	-0.2	0.0	-0.1	-0.1	0.1	0.0	0.1	-0.1	0.1	0.0
Medical, precision and optical instruments	0.1	0.0	0.1	0.1	-0.1	0.3	0.3	0.3	-0.1	0.1	-0.3	0.0	0.2	0.8	0.1	0.0
Medium-high-technology products	-0.2	0.4	-0.7	0.0	1.0	-0.8	0.1	0.7	0.2	0.9	0.0	-2.1	0.1	1.6	0.0	0.0
Other electrical machinery and apparatus	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	-0.1	0.0	-0.2	0.0	0.0	0.0
Motor vehicles, trailers and semi-trailers	-0.1	-0.1	-0.5	-0.4	0.6	-0.4	-0.6	0.0	0.4	0.4	0.4	-0.3	0.8	1.0	-0.2	0.3
Chemicals excl. pharmaceuticals	-0.1	0.1	-0.3	0.1	0.2	-0.4	0.5	0.9	-0.1	0.5	-0.3	-0.4	-0.3	0.2	0.0	0.1
Railroad equipment and other transport equip.	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other machinery and equipment	0.0	0.4	0.2	0.4	0.2	-0.1	0.0	-0.2	-0.1	0.0	-0.1	-1.5	-0.2	0.3	0.1	-0.3
Medium-low-technology products	0.1	0.2	0.1	0.8	0.2	0.0	-0.1	-0.3	-1.0	-0.4	-1.4	-0.7	-0.6	1.3	0.2	-0.7
Rubber and plastics products	0.0	0.0	0.0	0.0	0.1	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0
Other non-metallic mineral products	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Building and repairing of ships and boats	0.0	0.1	-0.2	0.1	0.1	-0.1	0.0	0.1	0.1	0.0	-0.1	-0.1	-0.2	-0.2	0.0	0.0
Basic metals	0.1	0.0	0.2	0.7	-0.2	0.2	0.0	-0.3	-1.1	-0.4	-1.2	-0.5	-0.3	1.5	0.1	-0.6
Fabricated metal products, excl. machinery	0.0	0.0	0.0	0.0	0.1	-0.1	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	0.1	0.0	-0.1
Low-technology products	1.3	-0.7	-0.3	1.1	0.2	0.2	0.6	0.5	0.4	0.1	0.1	0.3	0.5	-0.2	0.4	0.3
Other manufacturing and recycling	0.0	0.0	0.0	0.0	0.1	0.0	-0.1	0.3	0.2	0.0	0.1	-0.1	0.0	-0.2	0.0	0.1
Wood, pulp, paper and printed products	1.9	-0.2	-0.1	0.9	0.1	0.1	0.8	0.0	-0.6	-0.2	-0.1	-0.2	0.1	0.2	0.5	-0.2
Food products, beverages and tobacco	-0.4	-0.5	-0.3	-0.1	-0.1	0.3	-0.2	0.0	0.0	0.1	-0.2	0.2	0.1	0.2	-0.2	0.1
Textiles, textile products, leather and footwear	0.0	0.0	0.2	0.3	0.2	-0.2	0.1	0.2	0.8	0.2	0.3	0.4	0.3	-0.3	0.1	0.4
Total	3.2	1.3	0.5	3.9	2.1	0.3	1.8	1.1	-1.0	0.7	-2.0	-4.8	0.4	8.0	1.9	-0.9

1. Simple average.

Source: OECD ITCS database and Secretariat calculations.

Table A1.5. Breakdown of geographical structure effect

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Average ¹	
															1996-2002	2003-2008
United Kingdom	0.3	0.9	0.6	-0.1	-0.8	0.4	-0.2	-0.8	-0.3	-1.0	-0.4	0.0	-1.0	-0.2	0.2	-0.6
United States	-0.1	-0.7	-0.4	-0.5	-0.3	0.3	0.2	0.5	-0.1	0.0	0.0	-0.2	-0.2	-0.1	-0.2	0.0
Belgium-Luxembourg	0.0	-0.1	0.1	-0.5	-0.2	0.1	0.2	0.1	0.3	-0.4	-1.0	0.3	-0.4	0.1	-0.1	-0.2
Germany	-0.2	-0.2	0.2	-0.2	-0.2	0.0	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0
France	-0.2	-0.2	0.2	0.0	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0
Italy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Netherlands	0.0	0.0	0.1	0.0	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spain	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0
Switzerland	0.0	0.0	0.0	0.0	-0.1	0.1	-0.1	0.0	-0.1	-0.1	-0.1	0.1	0.0	0.1	0.0	0.0
Japan	0.0	0.2	0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.1
Other European OECD	-0.3	-0.2	-0.2	0.1	0.1	-0.1	-0.1	-0.4	-0.2	-0.2	-0.3	-0.4	-0.1	0.3	-0.1	-0.3
Other non-European OECD	0.0	0.1	0.2	-0.2	-0.3	0.0	-0.1	0.0	-0.1	0.0	-0.1	0.0	-0.1	0.0	0.0	0.0
BRIC	-0.2	-0.1	0.3	0.2	-0.3	-0.4	-0.7	-0.9	-0.5	-0.6	-0.5	-0.1	-0.6	-1.4	-0.2	-0.5
East Asian ²	0.1	0.3	1.4	-0.2	-0.4	0.3	0.0	-0.1	0.0	0.0	0.1	0.1	-0.1	0.0	0.2	0.0
Rest of the world	-0.2	-0.1	0.0	0.7	0.0	-0.3	0.0	-0.2	-0.5	-0.5	-0.7	-0.8	-1.1	0.3	0.0	-0.6
Total	-0.9	-0.2	2.6	-0.8	-3.2	0.6	-1.0	-1.9	-1.5	-2.8	-2.9	-0.8	-3.7	-1.0	-0.4	-2.3

1. Simple average.

2. Thailand, Singapore, Malaysia, Indonesia and Philippines.

Source: OECD ITCS database and Secretariat calculations.

WORKING PAPERS

The full series of Economics Department Working Papers can be consulted at www.oecd.org/eco/workingpapers/

909. *Getting back on track: restoring fiscal sustainability in Ireland*
(December 2011) by David Haugh
908. *A welfare analysis of climate change mitigation policies*
(November 2011) by Alain de Serres and Fabrice Murtin
907. *Overcoming the banking crisis in Ireland*
(November 2011) by Muge Adalet McGowan
906. *Macroeconomic and structural policies to further stabilise the Mexican economy*
(November 2011) by Cyrille Schweltnus
905. *Reaping the benefits of a transition to greener growth in Slovakia*
(November 2011) by Caroline Klein
904. *Fiscal reform for a stronger fairer and cleaner Mexican economy*
(October 2011) by Nicola Brandt and Rodrigo Paillacar
903. *The demand for safe assets in emerging economies and global unbalances: new empirical evidence*
(October 2011) by Rudiger Ahrend and Cyrille Schweltnus
902. *Drivers of systemic banking crises: the role of bank-balance-sheet contagion and financial account structure*
(October 2011) by Rudiger Ahrend and Antoine Goujard
901. *Explaining the appreciation of the Brazilian Real*
(October 2011) by Annabelle Mourougane
900. *Raising investment in Brazil*
(October 2011) by Jens Arnold
899. *Refining macroeconomic policies to sustain growth in Brazil*
(October 2011) by Annabelle Mourougane
898. *Promoting infrastructure development in Brazil*
(October 2011) by Annabelle Mourougane and Mauro Pisu
897. *Austria: public sector inefficiencies have become less affordable*
(October 2011) by Karin Fischer, Rauf Gönenç and Robert Price
896. *Informality in Mexico*
(September 2011) by Nicola Brandt
895. *Reforming Austria's highly regarded but costly health system*
(September 2011) by Rauf Gönenç, Maria. M. Hofmarcher, Andreas Wörgötter

894. *Greener growth in the Belgian federation*
(September 2011) by Tomasz Koźluk
893. *Green growth and climate change policies in New Zealand*
(September 2011) by Alexandra Bibbee
892. *Has deregulation increased investment in infrastructure? Firm-level evidence from OECD countries*
(September 2011) by Sónia Araújo
891. *Ensuring a Sustainable and Efficient Fishery in Iceland*
(September 2011) by Gunnar Haraldsson and David Carey
890. *Japan's New Growth Strategy to create demand and Jobs*
(September 2011) by Randall S. Jones and Byungseo Yoo
889. *Labour market reforms in Japan to improve growth and equity*
(September 2011) by Randall S. Jones and Satoshi Urasawa
888. *Education reform in Japan*
(September 2011) by Randall S. Jones
887. *The Political Economy of Climate Change Mitigation Policies: How to Build a Constituency to Address Global Warming?*
(August 2011) by Alain de Serres, John Llewellyn and Preston Llewellyn
886. *Climate-Change Policy in the United Kingdom*
(August 2011) by Alex Bowen and James Rydge
885. *Improving Access and Quality in the Indian Education System*
(August 2011) by Sam Hill and Thomas Chalaux
884. *How Institutions Shape the Distributive Impact of Macroeconomic Shocks: A DSGE Analysis*
(July 2011) by Rudiger Ahrend, Charlotte Moeser and Tommaso Monacelli
883. *Can India Achieve Double-Digit Growth?*
(July 2011) by Richard Herd, Paul Conway, Sam Hill, Vincent Koen and Thomas Chalaux
882. *Predicting peaks and troughs in real house prices*
(July 2011) by Linda Rousová and Paul van den Noord
881. *Public sector spending efficiency in Estonia: healthcare and local government*
(July 2011) by Zuzana Smidova
880. *How to move Product Market Regulation in New Zealand back towards the frontier*
(July 2011) by Paul Conway
879. *Financial sector reform in India: time for a second wave?*
(July 2011) by Richard Herd, Vincent Koen, Ila Paitnak and Ajay Shah