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ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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

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

The economic situation and policies of Ireland were reviewed by the Committee on 24 January 2006. The draft report was then revised in the light of the discussions and given final approval as the agreed report of the whole Committee on 8 February 2006.

The Secretariat's draft report was prepared for the Committee by David Rae and Boris Courmède under the supervision of Peter Hoeller.

The previous Survey of Ireland was issued in July 2003.

BASIC STATISTICS OF IRELAND (2004)

THE LAND

Area (1 000 km ²)		Major cities (2002, thousand inhabitants)	
Total	70	Dublin (borough)	1 123
Agricultural	43	Cork	123
		Galway	66

THE PEOPLE

In thousands		Total labour force (thousands)	1 952
Population	4 044	Civilian employment (% of total)	
Natural increase (2003)	33	Agriculture, forestry and fishing	6.4
Net migration	32	Industry and construction	27.7
Number of inhabitants per km ²	58	Services	65.9

PRODUCTION

Gross national income (GNP)		Gross fixed capital investment	
In billion €	124	In % of GNP	29.2
Per head (\$)	38 157	Per head (\$)	11 145

THE GOVERNMENT

Public consumption (% of GNP)	21.0	Composition of Parliament (seats)	
General government (% of GNP)		Fianna Fail	81
Current and capital expenditure	38.8	Fine Gael	31
Current revenue	40.5	Labour	21
Net debt	35.2	Other	33
Last general elections: May 2002		Total	166

FOREIGN TRADE

Exports of goods and services (% of GNP)	99.5	Imports of goods and services (% of GNP)	81.1
Main merchandise exports (% of total)		Main merchandise imports (% of total)	
Office and electrical machinery	22.7	Manufactured goods and articles	28.4
Manufactured goods and articles	19.9	Office and electrical machinery	25.6
Medical and pharmaceutical products	18.2	Other machinery and transport equipment	19.1
Organic chemicals	17.6	Chemicals and related products	14.6

THE CURRENCY

Monetary unit: Euro		Currency unit per \$, average of daily figures	
		Year 2005	0.805
		January 2006	0.825

Executive summary

Ireland has continued its exemplary economic performance, attaining some of the highest growth rates in the OECD. After a remarkable decade, per capita income has caught up with and overtaken the EU average. Further progress will require strong productivity growth and continued increases in labour supply. These challenges are familiar to most OECD economies. But it also faces some issues that are less common: it is going through a transition phase in upgrading its social services; infrastructure levels need to catch up with the boom in activity and population that has occurred over this period; and it has to manage some sizeable macroeconomic risks.

Maintaining high rates of productivity growth. As Irish activity comes to rely less on foreign firms and more on home-grown services, productivity gains will become harder to achieve. The main areas where policy could make a difference in sustaining productivity growth are:

- **Boost competition.** There are too many sectors where producers are shielded from competition, raising prices and stifling growth. Reforms are needed in the electricity and telecom sectors, and unnecessary restraints in services such as law, pharmacies and the pub trade should be removed. In the retail sector, the government's decision to abolish the Groceries Order is welcome.
- **Improve education.** Funding is still an issue in universities. One option is to re-introduce tuition fees, but backed by an income-contingent loan scheme. In secondary schools, the key challenge is to target resources on students who are struggling.
- **Encourage innovation.** The science framework needs to improve before public spending is increased further. The many funding agencies could be amalgamated or better co-ordinated; public support could shift towards market-driven measures; and resources should not be spread too thinly.
- **Upgrade infrastructure.** Rigorous cost-benefit analysis of infrastructure projects, including those in the ten-year transport plan, should play a greater role in decision-making than has been the case in the past. Moreover, an increasing number of projects should be financed by users.

Boosting labour supply. An important option for boosting labour supply is to raise female participation. Expanding day-care for infants and out-of-school care for children will help. From the point of view of labour market participation, childcare supports such as the new Early Childcare Supplement should be linked to employment status or made conditional on actually using formal childcare. A mutual-obligations approach for sole parents would help reduce child poverty by assisting parents to get a foothold in the labour market. As regards older people, work incentives in the public-pension and welfare systems could be improved. Migrants will also continue to play an important role in alleviating labour supply bottlenecks. The attractiveness of Ireland for immigrants will be influenced by the overall price level (including house prices) and the quality of public services.

Macroeconomic risks are high. As one of the OECD's more open economies, Ireland is particularly exposed to external risks. But it also faces domestic risks. House prices may have overshot fundamentals to some extent, although this does not imply that they will fall significantly; and house building will eventually ease. A soft landing is the most likely scenario but a sharper fall cannot be ruled out. Hence, the government needs to leave plenty of breathing space by balancing the budget or running a surplus, curtailing tax breaks and pushing ahead with public management reforms to get better value for money from public expenditure.

Assessment and recommendations

Growth remains strong

The Irish economy continues to perform well. Growth remains strong, foreign investment is still coming in, industry has shrugged off global shocks and house prices keep on climbing. The question is: for how long will this continue? The economy doubled in size in the 1990s, achieving the fastest growth in the OECD over that period. It also achieved the highest growth rate in the first half of the 2000s despite being hit by the worldwide slump in the information and communication technology (ICT) sector. This resilience reflects strong economic fundamentals, including a business-friendly regulatory environment, a flexible labour market, moderate tax rates and sound fiscal policy. It has also helped that a construction boom has taken over from manufacturing in driving activity.

But sustaining strong growth in living standards requires a range of policy measures

While incomes have caught up with the European average, there is still room for further progress. To maintain a dynamic economy, Ireland faces challenges that are common to many OECD countries:

- First, productivity growth will need to remain high since this is the primary determinant of living standards in the long term. The country's remarkable productivity performance will become harder to sustain as activity shifts towards more labour-intensive services. Boosting competition will be important for meeting the productivity challenge, as will improving the education system and strengthening the research framework.
- Second, there is room to increase labour supply further. The main avenues here are to continue to attract immigrants – especially the highly skilled – and to facilitate the participation of women and older workers.

There are also some issues that are more specific to the Irish situation. The country's infrastructure has come under severe pressure due to the extraordinary growth in population and economic activity. Bottlenecks have emerged that are imposing costs and may be acting as a brake on growth. The country is also going through a transition period during which it is upgrading many of its social services. The choices made here can affect other policy objectives in positive and negative ways. For example, better childcare and healthcare facilities would make Ireland more attractive for migrants with families. However, poorly designed and overly expensive welfare policies can reduce labour supply and drive up tax rates over time. Policymakers also face macroeconomic risks. As one of the OECD's more open economies, Ireland is especially vulnerable to external shocks. But it also faces domestic risks. The most obvious of these concerns the housing market, but there is also a more general danger of the overall wage and price level overshooting its equilibrium level. Exports, foreign investment and immigration would all be harmed if Ireland priced itself out of the market. In this context, pursuing a prudent fiscal policy,

strengthening the medium-term fiscal framework, enhancing competition and containing wage pressures via the centralised wage-bargaining framework will all be important.

Boosting competition should be a central part of the reform agenda

Exposing the sheltered sectors of the economy to more vigorous competition is an important part of the challenge to boost productivity. It would also help reduce inflationary pressures, ensuring that exports remain competitive. Ireland has a legacy of policies that favour the interests of producers over consumers. But it has a golden opportunity to push ahead with regulatory reform while the transition costs are low. Unlike many other countries, the labour market is flexible and jobs are easy to find. Adjustment costs from regulatory reform should therefore be manageable.

Some of the network industries in particular need to be reformed. Insufficient competition is raising prices, creating bottlenecks and holding back growth:

- Despite six years trying to liberalise the electricity industry, competition has not increased by much. As a result of insufficient investment, there is a risk that demand will outstrip capacity in coming years, pushing prices even higher. The main problem is the dominance of the state-owned Electricity Supply Board (ESB). It owns the transmission grid and dominates generation. The transmission and production sides of ESB should be separated and the government should consider splitting the generation side into competing producers as well. Plans to upgrade inter-connection capacity with Northern Ireland and the mainland United Kingdom are welcome. This would have several benefits: greater security of supply, less need to build new generation plants, less dominance by ESB and the chance to diversify away from fossil fuels.
- The main problem in the telecoms sector is the slow take-up of broadband. This may be caused by insufficient competition. Eircom, the telephone incumbent, dominates the market and is dragging its feet in opening up the local loop. The regulator should fast-track this process.
- Entry restrictions are blocking competition in the bus market. This worsens the traffic bottlenecks because other forms of public transport are under-developed. The government is considering several options such as making the regulator independent, allowing private companies to compete with the incumbent on inter-city routes and letting private firms operate up to 15% of new routes in Dublin. It should go ahead with all of these, and go further by opening up all Dublin routes. Experience in other countries shows that this can be done without undermining public service obligations.

In some other sectors, regulations that have been designed for specific purposes are having side-effects that make consumers worse off:

- Inadequate retail competition pushes up consumer prices. The main culprit has been the Groceries Order which bans the sale of non-perishable grocery items below their invoiced price. The government's plan to abolish the Groceries Order is welcome, especially as current competition law is strong enough to deal with predatory pricing. In addition, the retail planning guide should be made more flexible to free up entry and allow bigger stores; currently, it sets up entry barriers that favour small shops over large ones, at the expense of consumers. Restrictions to market entry in the pub trade should also be removed.

- There are several barriers to competition in the pharmacy industry. The worst is the restriction on foreign-trained pharmacists. Even Irish citizens who train abroad are not permitted to open or run a new pharmacy – the best they can do is buy one that has been operating for three years. This does nothing to promote healthcare; it is purely an anti-competitive restriction that protects incumbents. The government’s proposal to remove this restriction should be implemented swiftly. However, liberalising the industry is more complicated than just lifting entry restrictions because the (regulated and negotiated) retail margin on pharmaceuticals is too high. The margin has to be lowered – or completely deregulated – before the gates are opened to new entrants.
- Unnecessary restrictions in the licensed trades, including legal, medical, dental and veterinarian professions, should be removed. These include controls on entry, fee competition, advertising, demarcation, training, recognition of foreign qualifications and organisational structure. As a general rule, licence holders should not be compensated by government when entry is liberalised.

On top of the sector-specific concerns, there is an issue with the broader competition framework. While competition law meets international standards on paper, it is hard to enforce in practice. The Competition Authority cannot impose fines and sanctions and offenders must be prosecuted under criminal law, which is difficult because the burden of proof is high and the legal system is slow and expensive. There may be constitutional constraints to giving the Competition Authority more powers, and a review of competition law is needed to examine the legal issues involved. The staffing of the Authority should be reviewed regularly to ensure it has adequate resources for enforcement actions.

Education reforms would help sustain productivity growth

Maintaining high rates of productivity growth will also entail continued efforts to upgrade skills. Reforms at all levels of the education system are needed. At the earliest stages, pre-school attendance is low while classes are large and of short duration. International experience shows that integrated systems, which combine pre-primary education and crèche-based day-care, have higher quality for children and provide greater parent satisfaction. Priority should therefore be given to reducing class sizes, extending sessions and creating seamless pre-school and day-care facilities at the same location.

In secondary schools, too many youngsters are leaving without upper-secondary qualifications. They are doing so not because of a hot job market – their employment performance is worse than their counterparts in other OECD countries – but because of inadequate help for students who are struggling. There is a shortage of remedial or catch-up classes and the special programmes that are available focus on children from disadvantaged backgrounds rather than those who are having learning difficulties. Overall, Irish 15 year-olds are good at reading but only average in maths and science. Recent changes to primary school curricula should help in this respect.

Fees could improve access and provide additional funding for tertiary education

Funding is an issue in the tertiary sector. This makes it harder to undertake research, attract staff from abroad and retain graduate students. It may also worsen human capital bottlenecks. Foreign investment could dry up if it becomes hard to find skilled staff. With a tight budget constraint and the need to spend more at earlier stages in the education pathway, there is a strong argument for additional funding to come from tertiary students themselves. Undergraduate tuition fees were abolished in 1995 in an attempt to improve equality of access across social groups, but it has not achieved its goal. One option is to re-introduce tuition fees but back them with an income-contingent loan scheme, similar to the successful systems in the United Kingdom, Australia and New Zealand. Apart from bringing much-needed resources, experience in other countries suggests it could make it easier for students from disadvantaged backgrounds to gain access, would make higher education institutions more innovative and responsive to the needs of students and would boost efficiency by encouraging students to choose useful courses and not waste time. This approach would differ from the pre-1995 system as fees would not be paid up front but would be repaid later only if the person's income is above a certain threshold. If the government is unwilling to do this, it will have to find the required funding from other areas of the budget.

The final step on the learning pathway is the re-training of adults. A distinctive feature of Ireland's skill set is the difference in educational attainment between the young and the old. Around three-quarters of those aged 25-34 have attained an upper secondary qualification, compared with just 38% of those over 55. People at work can be locked out of further education by financing constraints and because the supply of part-time courses is not responsive enough. But in general, public funding should be limited to the most vulnerable groups, leaving others to pay for their own job training.

The innovation system could be better organised

The functioning of the innovation environment is vital for Ireland's future development. As part of the EU's Lisbon Strategy, the Irish government has set a target of lifting economy-wide research and development (R&D) spending to 2.5% of gross national product (GNP) by 2013. This is ambitious. R&D spending by the business sector is low, and two-thirds of this is performed by foreign multinationals; consequently, the R&D intensity of Irish-owned firms is among the lowest in the OECD. In addition, after years of neglect universities have only recently had the resources to carry out high-quality research.

While public funding for research increased sharply in the National Development Plan for 2000-06, it has not kept pace with the growth of the economy. Before providing more money, however, the government needs to improve the science framework. The better the framework, the more chance it has of encouraging foreign firms to shift some of their research activities onto Irish soil. To ensure that R&D is more commercially focussed, public support for business R&D could be rebalanced away from direct grants and towards market-driven measures. The plethora of funding agencies poses risks for the efficiency and coherence of the system, so the structure of the system should be reviewed regularly. Co-ordination among the granting agencies will have to improve and in particular

infrastructure spending should be more closely tied to the other funding streams. Research in universities is probably under-funded, making it harder to attract top international talent, even though the 2006 Budget foresees increased funding for doctoral programmes. It is also important that resources should not be spread too thinly. The government may not be able to afford the luxury of having research centres in all regions; it may be better to concentrate resources on a few world-class centres of excellence. Finally, competition can be a major spur to innovation in the business sector: thus, the pro-competition reforms that were discussed above could have the added bonus of boosting innovation as well.

Infrastructure bottlenecks are imposing costs and may be holding back growth

Soaring activity and a rapidly growing population have created an infrastructure deficit that is constraining productivity growth. Major pressure is evident especially in the areas of transport, electricity transmission, landfill, waste water treatment and broadband internet. Insufficient investment in environmental infrastructure has led to pollution and soaring prices for some services such as landfill. The government has responded with a substantial infrastructure programme: public investment is expected to average 5% of national income for the next decade.

Rigorous cost-benefit analysis of infrastructure projects, including those in the ten-year transport plan, should play a greater role in decision-making than has been the case in the past. From now on, the marginal benefits of new projects are likely to become smaller and will need to be traded off against the other demands on the public purse. The Capital Appraisal Guidelines require a cost benefit analysis for projects above € 30 million and this requirement should be rigorously enforced. They allow exceptions in cases where benefits are “too difficult” to quantify; this exemption should be used to a minimum. It would also be worth creating a central oversight and appraisal unit, taking on board the lessons other countries have learned from their public-private partnership programmes. Delays in the planning system should be reduced. Finally, many of the projects should be financed by users. The success with waste management charges could be extended to areas such as water treatment and road pricing. Indeed, Dublin would be an ideal candidate for an inner-city congestion charge once the public transport network has been upgraded.

The public sector can become more efficient and responsive

The search for productivity improvements should also extend to the public sector. While Ireland is modernising its civil service, it needs to move faster to catch up with best practice. One requirement is to shift the focus of the budget and public management towards outputs instead of inputs and the government has announced that individual ministers will publish an annual statement on departmental outputs and objectives from 2007, while also reporting outturns from 2008. Hiring and promotion practices need to be modernised by moving to fully competitive and merit-based promotion and giving department managers greater freedom to recruit their own staff. Increasing demands on the public purse mean that the evaluation programme and value-for-money assessments will need to be improved. The expenditure review programme has had little success so far, with little impact on budget decisions. Recent changes to the process should improve

things, however. The government has decided to phase out several property-related tax reliefs and to cap the overall amount of tax reliefs granted to an individual. Remaining tax reliefs should remain under scrutiny and be removed unless they can be shown to be worthwhile.

Greater female participation is one of the main options for boosting labour supply

Ireland's labour supply is unusually elastic because it has been able to draw on its large diaspora community and it is one of three EU15 countries to have opened its doors to the new EU members. Since 2000, these two sources have added around 1% to the working-age population each year. This has been supplemented by a substantial increase in labour force participation by women. Despite this increase, female participation rates remain below the OECD average for all except the under-thirties. Cultural attitudes and low educational attainment among older women are factors, but policy settings play a role as well. The current tax-benefit system was appropriate when its main aim was to reduce poverty but reforms are needed to give all parents a good chance to engage in paid work if they prefer to do so:

- Child support is paid whether the parents are working or not. In order to help families, the 2006 Budget introduced a new cash transfer for families with young children. Similar to the existing Child Benefit, the Early Childcare Supplement is paid universally regardless of parents' labour force status and regardless of whether they are purchasing childcare services or not. This is an extremely expensive solution that involves considerable deadweight costs, but was chosen to reflect public preferences for not discriminating against mothers at home. From a labour supply point of view, it would be more effective if over time childcare supports such as the Early Childcare Supplement became linked to employment status or to the use of formal childcare. It is important to realise that this approach would not discriminate against mothers at home but rather eliminates the bias against mothers at work that is built into the current system. The Home Carer's Tax Credit should be phased out as it is a direct subsidy to staying at home.
- Out-of-school-hours care is almost non-existent and is one reason why the employment rate of mothers with children is especially low. The 2006 Budget announced measures to create 5 000 places in after-school care by 2010. Labour supply could be increased by encouraging school boards to make their facilities available for after-school care.
- A mixed strategy of demand and supply-side measures is needed to expand childcare capacity. Ultimately, policy should focus on the demand side of the market through measures to make childcare more affordable for parents. By providing funding directly to parents (tied to the use of childcare), they will be better able to choose public or private facilities that best match the needs of their family. But these measures would need to be phased in to allow time for supply to expand in order to avoid inflationary pressures. In its latest budget, the government is supporting the creation of 50 000 extra childcare places by 2010. Plans to increase the number of training places for childcare workers are welcome and should be implemented swiftly.
- The income tax system contains elements of individual and joint taxation. Therefore, even though they have been reduced significantly over recent years, marginal tax rates on second earners are higher than need be. This may explain why a relatively small

number of second earners work full time. The government should consider moving to individual taxation to make the system simpler and more neutral.

Ireland has a large number of sole parents and their employment rate is low. This reduces labour supply, but more importantly it contributes to child poverty: nearly half of children in non-working single-parent families live in consistent poverty. International experience shows that the most effective way to reduce child poverty is for the parent to be working. Ireland should move away from passive income support and instead move to a mutual obligations approach to assist and encourage single-parent mothers to find a foothold in the labour market, at least once their children have reached a certain age. Options include reducing the phase-out rate of the One Parent Family Benefit (because it creates a low-activity trap) and allowing parents who return to work to keep some of their other benefits such as the rent supplement and free medical care (perhaps for a limited time). As part of this package, job-search requirements should be increased for sole parents whose children are at school. Of course, most of this would have to wait until job support, childcare and out-of-school-hours care programmes are expanded.

The fiscal stance needs to leave enough room to cope with negative shocks

The fiscal position is healthy. The government savings rate (current revenue less current expenditure) is one of the highest in the OECD (being around 4% of GDP last year). After taking account of the high rate of public investment due to the infrastructure programme, the overall government accounts showed an estimated surplus of ½ per cent of national income in 2005. Gross debt is low (33% of GNP in 2005), long-term ageing-related spending pressures may be less severe than in many other countries and assets are being accumulated in a pension reserve fund. However, the government has budgeted for a deficit of ¾ per cent of GNP in 2006 through 2008, thus providing some untimely fiscal stimulus to activity. And some sizeable long-term social expenditure commitments are being locked in at what could be the peak of a revenue cycle. Moreover, there are some large downside risks to fiscal policy.

The key domestic risk is the housing market. In the past decade, house prices have risen faster than in any other OECD country: average prices have roughly tripled in real terms. Most of this increase is justified by the economic and demographic driving forces such as surging incomes, a rising population and changing living habits, with an additional fillip from low interest rates, but prices may have overshot to some extent. However, this does not imply that they will fall significantly: the housing market is not symmetric, and during a downswing people prefer to take their house off the market rather than sell at a loss. Thus, the most likely scenario is that prices will level out or decline slightly, housing construction will fall back gradually, turnover will decline and the market will remain subdued for some time. But even in such a scenario, government receipts would weaken sharply, so that a substantial structural budget deterioration would come on top of any cyclical weakening.

A soft landing is not guaranteed

While this is the most likely outcome, there are alternative scenarios on the upside and downside that could have significant macroeconomic implications. The first is that the housing boom may not run out of steam of its own accord, leading to serious overvaluation and imbalances throughout the economy. The eventual fall-out in this scenario could be severe. With monetary policy now set by the European Central Bank, taxation is the main policy lever left to influence the housing market. Ireland's tax system is significantly more favourable to housing than in most other OECD countries. To avoid the chances of this scenario unfolding, the government should avoid any tax changes that make housing more attractive; indeed, the tax bias should be phased out over time. Aside from not fuelling the housing market, there are efficiency and equity reasons for reducing the tax advantages. A property tax could be introduced to help fund local infrastructure. This would also redistribute some of the windfall gains that accrue to people living close to new roads and public transport links and shift the cost for local services such as water and sewerage facilities so that businesses and households each pay their fair share. While this makes economic sense, in an Irish context where over 80% of the population own their own homes, it is currently seen as a non-starter. The second scenario is that house prices fall sharply, either because they are more overvalued than they appear or because a negative shock hits the economy. The impact on activity and the budget could be large.

Even if house prices level out, there are macroeconomic and fiscal risks from a decline in residential construction, which currently accounts for 9% of GNP. The rate of house building will need to fall substantially to return to sustainable levels. Most forecasters predict that this adjustment will be gradual. A sharper decline would put a serious dent in the growth rate though it would be unlikely to lead to an outright recession. Overall, the forces that will drive activity in the medium term – immigration, productivity, female participation, foreign investment, house prices – are so powerful and difficult to predict that the outcome for growth could be substantially different from the central forecast. For all these reasons, a prudent approach to fiscal policy would be to leave sufficient room for manoeuvre – i.e. to plan for the worst but hope for the best. In practice, this means returning to balance or running a small surplus.

Is the fiscal framework up to the task?

Ireland has elements of a medium-term fiscal framework, especially with its rolling five-year capital expenditure envelope and its ten-year transport plan. Although the budget process has some top-down aspects, they need to be given more prominence relative to the bottom-up negotiation process. Ireland should take advantage of its current strong growth phase to strengthen the fiscal framework in order to prepare for negative fiscal shocks and to deal with them if they were to occur. Moving to a fully-fledged top-down budgeting process would help expenditure planning and control while a medium-term fiscal framework, as is in place for the multi-year capital envelopes, would give greater stability to policy and planning for other spending areas and would reduce the chances of repeating the sort of pro-cyclical spending that occurred earlier this decade.

Chapter 1

Overview of the key challenges

This chapter reviews the key challenges facing the Irish economy. Ireland has continued its exemplary economic performance, attaining some of the highest growth rates in the OECD. After a remarkable decade, per capita income has caught up with the EU average. Further progress will require strong productivity growth and continued increases in labour supply. The chapter looks at the roles of competition policy, the education and science systems and public sector management as ways of generating productivity growth. The labour supply challenge hinges on increases in participation of females and older workers and on immigration, particularly of skilled workers. Ireland is also going through a transition period during which it is upgrading its social services and physical infrastructure. Finally, the chapter reviews the large macroeconomic risks, especially those related to the housing market, and the importance of keeping inflation in check if the country is to remain an attractive location for foreign investors.

Recent performance – the 2000s so far

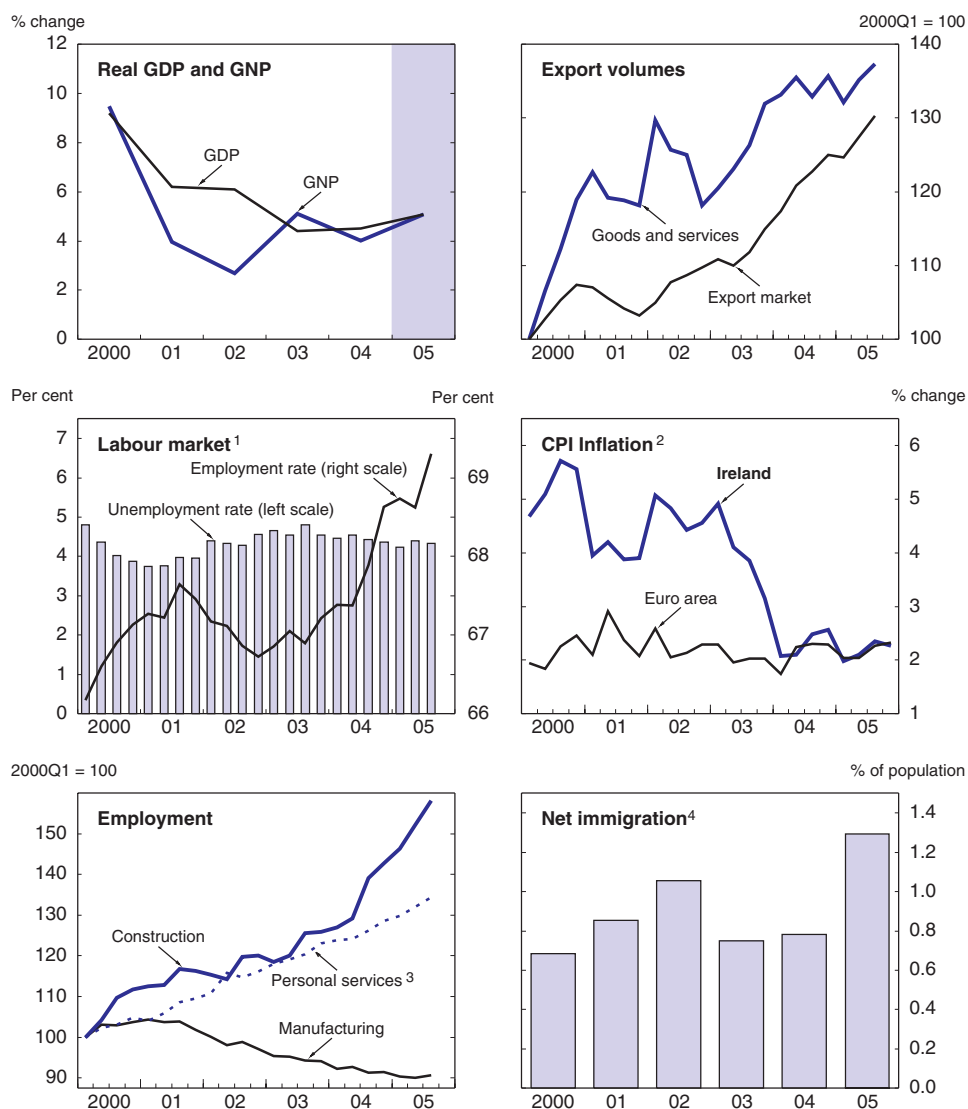
The first five years of the millennium have brought an abrupt change in economic performance and in the driving forces of activity. The growth rate of gross national product (GNP) tumbled from 9% in 2000 to 2.7% at the bottom of the cycle in 2002 (Figure 1.1). The direct cause was the export slowdown associated with the global information and communication technology (ICT) slump, amplified by the appreciation of the euro. But an over-heating economy at the turn of the decade, stoked by a poorly timed fiscal expansion, drove the inflation rate well above that of Ireland's trading partners. When these factors came together, export volume growth came to a virtual standstill – a pale shadow of the 20% growth rates in the second half of the 1990s. The simultaneous collapse in world prices of high-tech products meant that total export receipts fell by around 10% from their peak.

Nevertheless, a remarkable feature of this cycle is that even in its worst year, Ireland managed to grow at a rate that would be the envy of many European countries. Moreover, the unemployment rate edged up by just 1% even though the labour force was expanding rapidly. There are several reasons why Ireland rode out the storm with relative ease, including its flexible labour market, wage moderation during the downturn and an underlying economic resilience. But there is no doubt either that a well-timed construction boom helped plug the gap nicely. Residential investment alone contributed between 1½ and 2% to the growth rate in 2003 and 2004.

The slowdown was not only mild but short-lived. Export markets bounced back and are growing at a healthy pace, the construction boom has continued and the appreciation of the euro since 2002 has tamed inflation and brought it back towards the euro area average. The difference between Irish and euro area inflation is heavily influenced by exchange rate movements as Ireland is the euro area country with the highest share of trade outside the area (Honohan and Lane, 2004), although other factors have been at play in recent years. By 2005, GNP growth was back around 5% per annum and the unemployment rate had fallen to 4¼ per cent.

The shift in the sources of growth over the past few years is evident by looking at employment in different sectors (Figure 1.1). Manufacturing employment has shrunk steadily since 2000, while employment in the construction and service sectors – especially public services – has expanded. Most of the employment decline in manufacturing is accounted for by the high-tech industries, but the weakness has been widespread with few manufacturing sub-sectors managing to buck the trend. An impressive aspect of this economic transformation is that people laid off from one industry seem to have been able to find other jobs quite easily. In general, there does not appear to have been a significant rise in inactivity among older workers (quite the reverse in fact), nor are the unemployment gaps across regions becoming any larger.

Figure 1.1. The 2000s so far



1. Unemployment in per cent of labour force, employment in per cent of working-age population.
2. Harmonised consumer price index, per cent growth over the same quarter of previous year.
3. Public administration and defense, education, health and other services.
4. Estimates from the Central Statistics Office.

Source: OECD (2005), Economic Outlook 78 database and Central Statistics Office.

Productivity growth has been a key driver of rising living standards

Looking back over the decade since 1995, growth in real gross domestic product (GDP) per capita has averaged almost 6% per annum, with growth in GNP per capita averaging 5%. Roughly three-quarters of this is explained by labour productivity growth, with the remaining quarter being due to an increase in labour supply, especially among women. Growth in GDP per hour has averaged 4.3% per annum, while GNP per hour grew by 3.5% per annum.¹ This was by far the strongest productivity performance of any OECD economy over that period. Productivity growth has been highest in the manufacturing sector (especially in high-tech manufacturing), but it has been fairly strong in other industries as

well (Table 1.1). Labour productivity growth appears to have slowed since 2000, which partly reflects the cyclical slowdown but is also due to the shift towards more labour-intensive services and construction. Comparing the level of productivity in manufacturing with the EU15 average, Ireland measures up well in all sub-sectors (Figure 1.2).

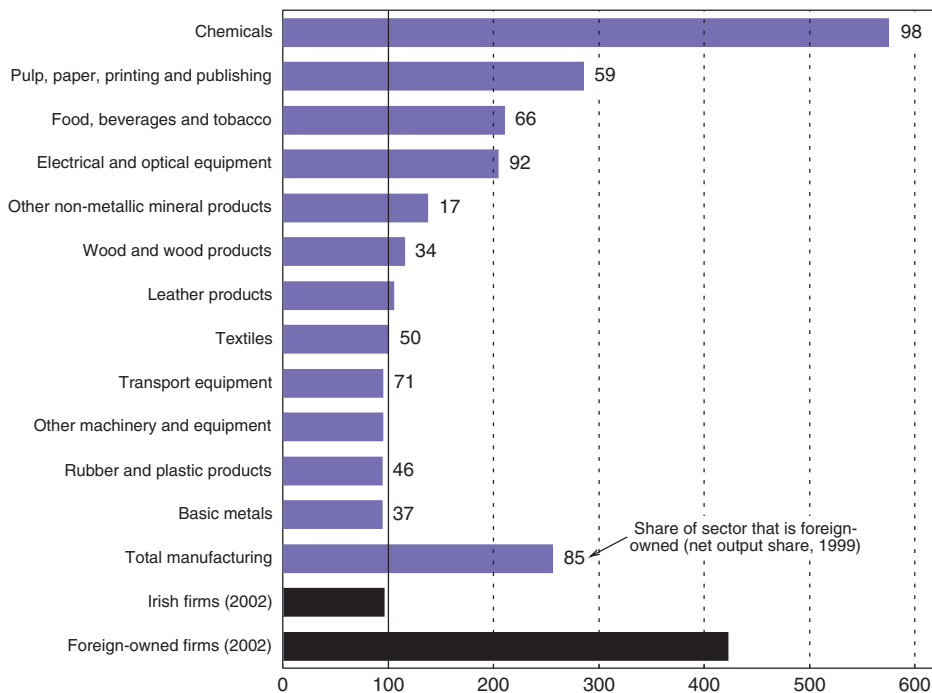
Table 1.1. Productivity growth by sector
Gross value added per employee, annual average percentage change

	Market services	Industry	Construction	Agriculture	Whole economy
1991-2003	1.9	8.4	-0.7	3.2	3.4
1991-1995	0.4	6.4	1.9	2.6	2.8
1995-2003	3.1	9.5	-2.1	3.7	3.8

Source: OECD calculations based on Cassidy, M. (2004), "Productivity in Ireland: Trends and Issues", *Quarterly Bulletin*, Central Bank and Financial Services Authority of Ireland, Spring, Dublin and Tansey, P. (2005), *Productivity: Ireland's Economic Imperative*, report presented to a conference organised by Forfás, Dublin, October.

Figure 1.2. Productivity levels in manufacturing relative to EU15

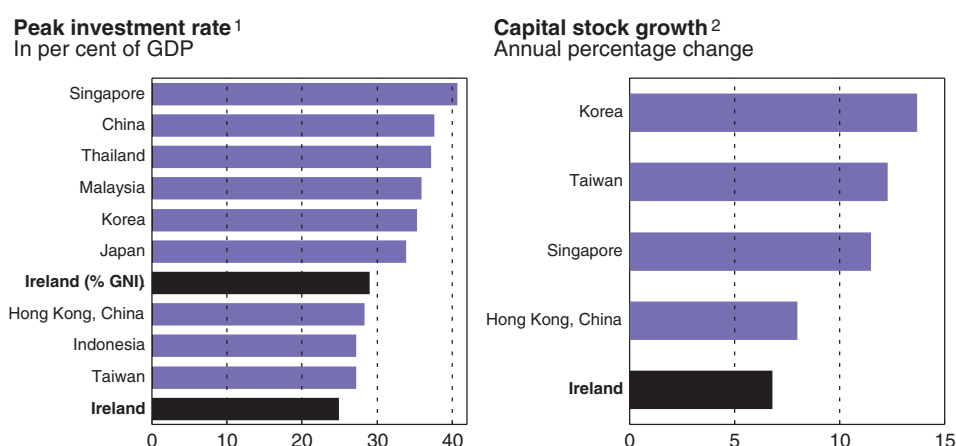
Gross value added per worker in 2000, EU15 = 100



Source: Cassidy, M. and D. O'Brien (2005), "Export Performance and Competitiveness of the Irish Economy", *Quarterly Bulletin*, No. 3, Central Bank and Financial Services Authority of Ireland, Spring, Dublin.

An interesting feature of Ireland's boom is that the contribution from investment in physical capital has not been particularly large, especially when compared with other countries that have undergone "growth miracles" (Figure 1.3). Consequently, a large proportion of income growth is accounted for by multifactor productivity growth, i.e. the efficiency with which capital and labour are used. Multifactor productivity also captures the contribution from inputs that are not included in the growth accounting exercise, such as human capital, land and intellectual property owned by foreign multinationals.

Figure 1.3. Investment rate during growth miracles



1. Peak investment rate is the peak of the 10-year average investment-to-GDP ratios.

2. Over the period 1966 to 1990; 1966 to 1991 for Hong Kong, China. For Ireland the data covers capital services only for the period 1995-2003.

Source: Datastream, November 2005; Young, A. (1995), "The Tyranny of Numbers: Confronting the Statistical Realities of the East Asian Growth Experience", *The Quarterly Journal of Economics*, Vol. 110, No. 3, The MIT Press; OECD Productivity database.

The success story has not been restricted to the foreign multinationals

The presence of foreign-owned firms has clearly been an important part of Ireland's success (for a review of the "Irish miracle" see Box 1.1). The four leading segments of Irish-based manufacturing (software; pharmaceuticals; computer and instrument engineering; and electrical equipment) are almost entirely foreign-owned. In 2003, these four industries accounted for less than 5% of total employment in Ireland but nearly a third of gross value added (Tansey, 2005). Productivity growth generated by foreign-owned firms has been spectacular, averaging 14% per annum in the 1990s (Table 1.2). Their level of productivity is also high – more than four times as high as the average Irish-owned manufacturing firm (Figure 1.2). There are several reasons why foreign-owned companies are so much more productive than local ones. First, most of them are involved in high-tech industries where technical progress has been unusually rapid. Second, they invest more heavily: around three times as much per worker as local firms (Tansey, 2005). Third, they spend around twice as much per worker on staff training. Finally, they generate a great deal of their value added from product innovations and research and development undertaken outside Ireland. Put another way, up to a fifth of GDP reflects royalties on foreign intellectual property (e.g. the production of drugs, software and soft drinks that were invented overseas). While this influences the numbers, it does not explain away the Irish miracle as productivity growth rates based on GNP rather than GDP are still high by international standards.

Although foreign firms have been responsible for a large proportion of the country's stellar performance, indigenous Irish firms have performed well in their own right. The level of productivity of locally-owned firms is on a par with the EU15 average (Figure 1.2), while productivity growth of Irish-owned manufacturers has averaged somewhere in the range of 2.8 to 4% per annum since the early 1990s, a respectable performance by any standard.

Box 1.1. What caused the Irish miracle?

It is impossible in a short box to do justice to the rich and complex story of Ireland's years of economic failure followed by its spectacular success from 1993 onwards. There were many factors involved. We will never be sure how much each factor contributed individually, partly because they are hard to measure, partly because they are so interrelated, and partly because many of them are endogenous responses to the boom itself. This box limits itself to listing a range of causes and refers the reader to several excellent studies of the Irish story.

In some ways, the interesting question is not why Ireland boomed, but why it took so long to take off. Many of the most important factors behind Ireland's success were in place long before the economy took off in the 1990s. While it was a relative latecomer when it came to *opening up trade*, it made a decisive shift away from protectionist policies in the 1960s. Its commitment to *education* was also late, with free universal secondary schooling in place only from 1967. That should have begun to pay dividends in the early 1980s, around a decade before the boom actually began. *Tax breaks for exporters and foreign investors* had been in place since the 1950s. The benefits of joining the *Common Market* began in 1973. These included access to a wider market, the opportunity to diversify away from the UK market and of course direct financial transfers. The introduction of the *single market* was also important as it raised the attractiveness of Ireland as an export platform, especially because it is English-speaking.

The ground work had to be put in place before many of these factors could begin to pay off. That began in 1987, with the *fiscal and monetary consolidation* that aimed at bringing the deficit down from its level of more than 15% of GNP. Wage moderation played a key role. The *social partnership arrangements*, which delivered tax cuts in return for *wage restraint*, possibly helped keep wages in check but some degree of wage restraint was inevitable given how tightly integrated are the Irish and UK labour markets. Alongside the tax cuts, *expenditure restraint* was also important. *Deregulation* of key sectors also helped, especially telecommunications and the airline industry. The mid 1980s also saw a decisive shift away from a policy of fighting a rearguard action to try to save dying sectors and towards a *policy of laying down the foundations for growth in the new industries*. The focus on getting the fundamentals right played a key role in the *foreign direct investment* boom, especially from US multinationals. A benign external environment contributed. Foreign direct investment was encouraged by the strength of the US economy and the global demand for high-tech products. Finally, and by no means least important, have been *demographic factors*. Until recently, exceptionally high birth rates have made Ireland one of the youngest countries in the OECD while emigration in the 1950s and 1960s means there are fewer elderly pensioners today than there otherwise would have been. The *fall in the dependency ratio* has given a considerable boost to activity. All these factors have contributed to, and been magnified by, what is perhaps the most striking feature of Ireland's performance: its ability to create jobs. A *highly elastic labour supply* (given the stock of Irish emigrants abroad, the initial high level of unemployment and the low level of female participation) helped sustain growth.

If there are any lessons for other countries, they are that there are no simple solutions; that not much will happen until a range of sensible policies coalesce (which means that countries cannot cherry-pick the bits of a reform agenda they like and leave out the rest); and that the catch-up process is not automatic – Ireland is a good example of Robert Lucas's dictum that “a successful theory of economic miracles should ... offer the possibility of rapid growth episodes, but should not imply their occurrence as a simple consequence of relative backwardness” (Lucas, 1993, p. 269). As John Fitz Gerald put it, “these policies, when considered individually, may be unexciting and unimportant. However, the cumulative impact can make the difference between convergence and divergence” (Fitz Gerald, 2004, p. 18).

Box 1.1. What caused the Irish miracle? (cont.)

For further reading:

Barry, F. (ed.) (1999), *Understanding Ireland's Economic Growth*, Macmillan Press, London.

Burnham, J.B. (2003), "Why Ireland Boomed", *The Independent Review* Vol. 7, No. 4, The Independent Institute, Oakland, CA.

Fitz Gerald, J. (2004), "Lessons from 20 Years of Cohesion", *ESRI Working Papers*, No. 159, Economic and Social Research Institute, Dublin.

Honohan, P. and B. Walsh (2002), "Catching up with the Leaders: The Irish Hare", *Brookings Papers on Economic Activity*, No. 1, The Brookings Institution, Washington DC.

MacSharry, R. and P. White (2000), *The Making of the Celtic Tiger*, Mercier Press, Dublin.

OECD (1999), "The Origins of the Recent Economic Boom", Chapter 1 of *OECD Economic Surveys: Ireland*, No. 14, OECD, Paris.

The Economist (2004), "The Luck of the Irish: A Survey of Ireland", *The Economist*, London, 14 October 2004.

Table 1.2. **Productivity differences between Irish and foreign firms**

Real gross value added per worker in manufacturing, annual average per cent change

	Irish firms	Foreign-owned firms	Share due to		
			Within-plant growth	Net entry	Other (between and cross effects)
From Ruane <i>et al.</i> (2005)					
1991-95	1.9	9.9	92	-1	9
1995-99	6.2	18.2	64	35	1
1991-99	4.0	14.0	55	32	13
From Forfás (2005)					
1991-2002	2.8	13.6	..	..	..

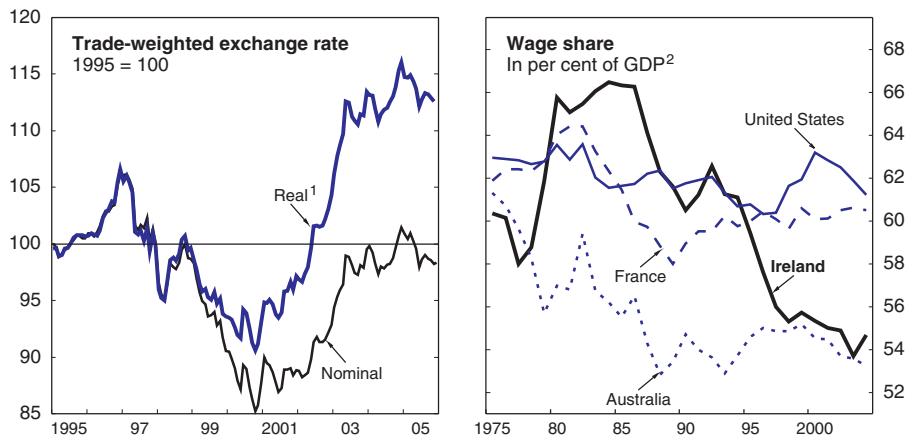
Source: Ruane, F. and A. Uğur (2005), "Labour Productivity and Foreign Direct Investment in Irish Manufacturing Industry: A Decomposition Analysis", *The Economic and Social Review*, Vol. 36, No. 1, Spring, Dublin and Forfás (2005), *Summary of Ireland's Productivity Performance and Forfás Work*, report presented to a conference organised by Forfás, Dublin, October.

External competitiveness must be preserved

This strong productivity growth has meant that the Irish economy has remained relatively competitive despite a sharp increase in wages and prices. Trends in the real trade-weighted exchange rate index since 1995 can be decomposed into three distinct sub-periods (Figure 1.4, left panel). From 1995 to 1998, Irish inflation was in line with its trading partners' and the nominal exchange rate was relatively stable. From 1999 to April 2002, the euro depreciated sharply and Irish inflation picked up. However, the increase in the relative price level was nowhere near enough to offset the depreciation of the currency, so by the early 2000s Ireland was in a "super-competitive" position. After April 2002, the euro rebounded and relative inflation levelled off a short time later. All in all, the real exchange rate was around 15% above its 1995 level a decade later.

The appreciation of the real exchange rate is justified in part by a superior productivity performance. Most measures of relative unit wage costs show an improvement in Irish competitiveness until the early 2000s and a levelling off since then.² In other words, aggregate wage developments have been consistent with economy-wide productivity

Figure 1.4. Indicators of competitiveness



1. Deflated by the consumer price index.

2. GDP at factor cost. GNP for Ireland. Wage share excludes self-employment income.

Source: OECD (2005), Economic Outlook database 78 and Central Bank and Financial Services Authority of Ireland.

growth. This can be seen by looking at the wage share of national income (Figure 1.4, right panel). To be sure, the rapid productivity growth has been concentrated in a small number of sectors and therefore the more traditional industries, which have had lower productivity growth but are forced to pay the rapidly-rising market wage, are being squeezed. From a macroeconomic point of view, this is a natural consequence of the shift towards skill-based exports; inevitably, some older industries will be unable to compete. What matters for economy-wide competitiveness is whether the aggregate wage level is consistent with full employment; so far, it has been. But wages at current levels will be sustainable only if the highly productive but footloose foreign firms stay in the country and if construction activity remains high. Moreover, the competitiveness of exporting firms is being squeezed by an increase in non-wage costs. These include office rents (which are the third highest among major cities, behind London and Paris), electricity prices, insurance premiums and local authority charges such as landfill costs (NCC, 2005).

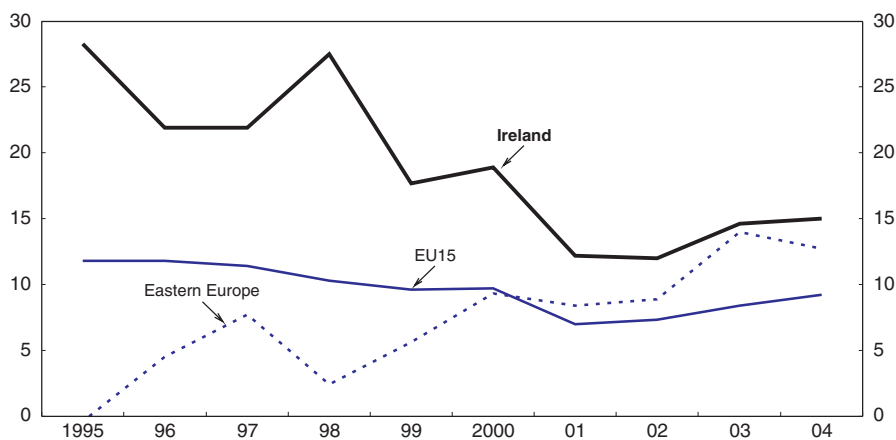
Because Ireland has so far avoided pricing itself out of the market, it has continued to attract reasonable amounts of foreign direct investment (FDI). Since 2000, total FDI inflows have averaged 4.8% of GNP (around half of which is re-invested earnings). However, measured FDI slumped in 2004, mainly because of large dividend payments by US companies. The US Job Creation Act provides a temporary window over which US firms can repatriate retained earnings at a special tax rate of 5.5% rather than the standard rate of 35%. This provision will be open for the rest of 2006. Moreover, new regulations in the US tax code that took effect in 2005 are intended to tighten up on accounting schemes that boost profits in countries where corporate taxes are low. These rules may reduce the inflow to some extent. More important from a longer-term point of view, the rate of return on investment in Ireland is substantially less than it used to be. Eastern Europe is catching up rapidly (Figure 1.5).

Ireland today – measures of well-being

By 2004, GDP per capita was fourth highest in the OECD and second highest in the euro area behind Luxembourg. However, this is not the best measure of Irish living standards

Figure 1.5. **Rates of return on US direct investment abroad**

Annual net income as a per cent of direct investment



Source: Bureau of Economic Affairs, US Department of Commerce; Tansey, P. (2005), "Productivity: Ireland's Economic Imperative", report presented to a Forfás conference, Dublin, October.

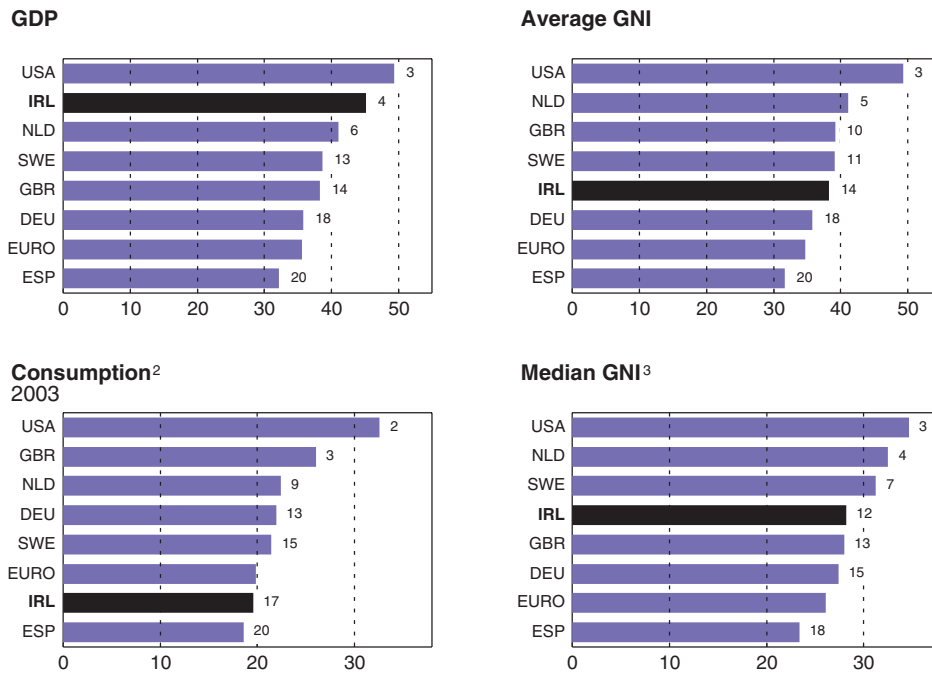
since a sizeable proportion of GDP is income that accrues to foreign companies. Other measures of well-being place Ireland around or slightly above the euro area average (Figure 1.6). For example, average per capita gross national income in 2004 was approximately 9% above the euro area average, with Ireland ranking 14th in the OECD. Its ranking in terms of consumption per capita is lower, reflecting its high savings rate. In some cases, average incomes can be misleading if the income distribution is skewed. An alternative is to look at median rather than average incomes. In this case Ireland's ranking is one notch higher, but there is considerable reshuffling amongst some of the other countries. For example, the United States and the United Kingdom both look noticeably worse as their unequal income distributions mean that the median income is considerably less than their average income. In contrast, Sweden, which has less income dispersion, looks better.

The fruits of the economic boom have been widely shared. The income gains for the bottom two deciles have been essentially the same as for the top two deciles, with middle-income earners being the biggest winners (Figure 1.7). As a consequence, measures of income inequality such as the Gini coefficient have fallen and by 2000 were around the OECD average (Förster and Mira d'Ercole, 2005). Poverty trends are difficult to assess in a country that has experienced such rapid across-the-board income gains. Relative poverty rates, which measure the proportion of people with an income below, for example, half the median income at a given point in time, have not decreased significantly. However, this can be a misleading way of looking at the issue because the poverty line shifts as the median income goes up. An alternative is to consider what happens if the poverty line does not change (in real terms). In 1994, around 12% of people had an income less than half of the median; by 2000, only 3.5% of people were below that same poverty line (adjusted for inflation – see Nolan *et al.*, 2005).

The boom has shifted the incidence of poverty from the active to the inactive population. Relative poverty rates are highest for sole parent families and the elderly, although for pensioners the assessment depends on which income threshold is used. A

Figure 1.6. **Alternative measures of well-being**

Thousand euros per capita, 2004¹

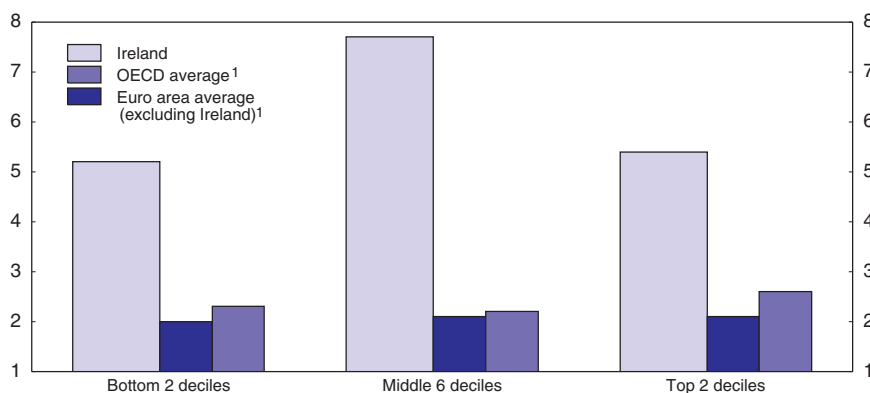


1. At current prices and purchasing power parities. The euro average is unweighted and excludes Luxembourg. The numbers shown are the OECD ranking (26 countries only for median GNI).
2. Actual household consumption which includes an estimate of government and non-profit institutions' services in kind provided to households.
3. Median GNI is estimated by assuming that the income distribution in each country follows a Pareto distribution (with the relevant parameters being determined by the observed mean and variance in each country).

Source: OECD Annual National Accounts database, January 2006 and Boarini, R. et al. (2006), "Alternative Measures of Well-Being", *Economics Department Working Papers*, No. 476, OECD, Paris.

Figure 1.7. **Trends in real household income at different points of the income ladder**

Average annual change mid-1990s to 2000



1. Unweighted averages of data available. The euro area aggregate excludes Austria, Belgium and Spain. The OECD aggregate also excludes these countries plus Iceland, Korea and Slovak Republic.

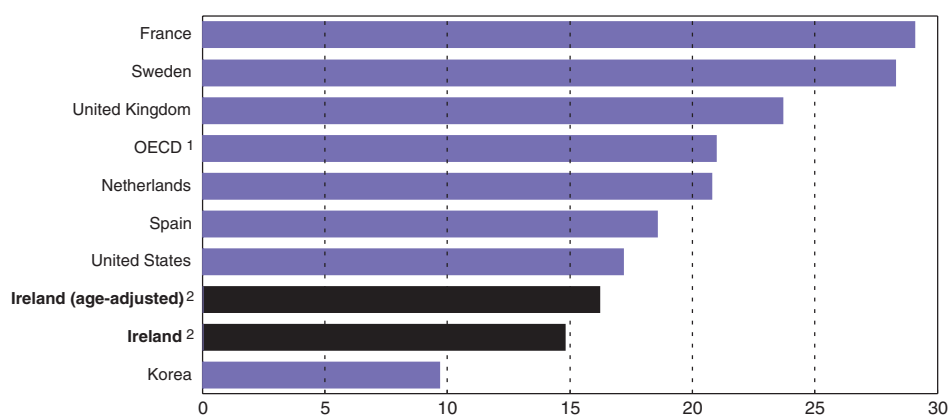
Source: Förster, M. and M. Mira d'Ercole (2005), "Income Distribution and Poverty in OECD Countries in the Second Half of the 1990s", *OECD Social, Employment and Migration Working Papers*, No. 22, OECD, Paris, March, www.oecd.org/els/workingpapers.

quarter of people aged over 65 have an income between 50 and 60% of the national median, so relative poverty rates based on a 60% threshold are much higher than those based on a 50% threshold.³ Despite these statistical effects, old-age poverty does appear to be more prevalent in Ireland than in most European countries (Förster and Mira d’Ercole, 2005). This is partly because the flat-rate pension is low (the level after tax is around a third of average earnings) and coverage is not complete, but also because today’s retirees have spent most of their careers in a country that was poor and have not accumulated substantial savings. The pension system is currently under review.⁴ The government faces the difficult task of alleviating poverty for current retirees without making unnecessarily expensive commitments to today’s workers, a majority of whom have tax-favoured voluntary occupational pension schemes. The fiscal cost of the existing tax incentives for retirement saving⁵ in net present value terms amounts to around 2% of national income – the highest level in the OECD (Yoo and de Serres, 2004). In a sense, therefore, the government is using tax expenditure in place of explicit spending, namely a publicly-provided earnings-related (second-tier) pension.

As part of its National Anti-Poverty Strategy, the government has been working towards the goal of increasing the level of standard benefits such as the unemployment benefit to 30% of the average wage. At the same time, there is considerable public pressure to spend more on social services such as childcare, maternity leave, long-term care and of course the ubiquitous need to improve the healthcare system. Most of these pressures are likely to intensify as the population ages. In 2001, net social expenditure (i.e. after-tax social expenditure, which is more comparable across countries than gross expenditure) was 6% of GNI below the OECD average (Figure 1.8). Approximately 1.3 percentage points of this gap is because Ireland has a younger population, and therefore its pension and healthcare costs should be lower, all other things equal. Another 0.5 percentage points of the gap is because it has a lower unemployment rate. The remainder largely reflects benefit settings, and in particular the relatively low replacement rates for most income support

Figure 1.8. **Social expenditure**

Net publicly mandated social expenditure in per cent of GDP at factor cost, 2001



1. Unweighted average of 23 OECD countries.

2. In per cent of GNP. The age-adjusted series shows net expenditure if Ireland's population had the OECD-average age structure.

Source: Adema, W. and M. Ladaique (2005), "Net Social Expenditure, 2005 Edition: More Comprehensive Measures of Social Support", *OECD Social, Employment and Migration Working Papers*, No. 29, OECD, Paris, www.oecd.org/els/workingpapers.

benefits, including old-age pensions. Between 2001 and 2005, gross expenditure on social services increased by more than 50% in nominal terms; this is estimated to be equivalent to a 2 percentage point rise in terms of the net expenditure shown in Figure 1.8. This would put it on a comparable level to the United States (which also has a young population).

The key challenge is to maintain strong growth in living standards in the future

There is no doubt that Ireland continues to be one of the OECD's best performers (see the short-term outlook in Table 1.3). But for various reasons, it will become increasingly difficult to maintain such high rates of growth into the future. First, productivity growth is likely to fall from its current very high rates because the rate of innovation in the global ICT and pharmaceutical industries is slowing and activity is shifting towards more labour-intensive products and services. Second, further increases in employment rates will be harder to achieve because demographic and social factors have largely played themselves out. For example, the demographic dividend due to the baby boomers from the 1970s entering the workforce is coming to an end. This alone is likely to reduce the potential growth rate by 1 percentage point. Additional increases in participation are likely to require explicit changes in policy. Over the next five years, with unchanged policy the potential growth rate is likely to settle into the 4 to 5% range (Table 1.4). But as recent trends have shown, the Irish economy can surprise in a number of ways. The driving forces – immigration, productivity, female participation, foreign and domestic investment, house prices – are so large and hard to predict that the outcome could be radically different from the central forecast. To take just one example, if Ireland could raise its employment rate to the level of the OECD's best performers, the growth rate would be 1% higher over the next 15 years (Table 1.4).

Table 1.3. **Short-term outlook**¹

Percentage change

	Outcomes				Projections	
	2002	2003	2004	2005 ²	2006	2007
Real gross domestic product (GDP)	6.1	4.4	4.5	5.1	5.0	5.0
Private consumption	5.8	3.8	3.3	4.4	5.1	5.8
Government consumption	1.2	2.4	3.9	3.9	5.5	5.5
Gross fixed investment	3.7	5.6	8.0	6.7	5.3	4.9
Total domestic demand	4.3	4.6	4.3	4.9	5.2	5.5
Net exports ³	2.2	1.7	0.8	0.9	0.6	0.4
Real gross national product (GNP)	2.7	5.1	4.0	5.1	5.0	5.0
<i>Memorandum items</i>						
Inflation: harmonised CPI	4.7	4.0	2.3	2.2	2.5	2.6
Inflation: harmonised underlying ⁴	5.2	3.9	2.1	1.8	2.1	2.7
Employment	1.8	1.9	3.0	4.1	2.5	2.5
Unemployment rate (% of labour force)	4.4	4.6	4.4	4.3	4.2	4.2
Current account balance (% of GNP)	-1.2	0.0	-0.9	-1.8	-2.0	-1.1
Government net lending (% of GNP)	-0.5	0.2	1.7	0.4	-0.7	-0.7

1. Projections are those published in *Economic Outlook No. 78* and were finalised on 22 November 2005.

2. Estimate.

3. Contribution to GDP growth.

4. Excluding energy, food, alcohol and tobacco.

Source: OECD (2005), *Economic Outlook 78* database.

Table 1.4. **Growth in GNP per capita over the long term**
Per cent per annum

	1995-2005	2005-10	2010s	2020s	2030s
Growth rate of GNP	7.1	4.6	4.0	3.7	3.4
Growth rate of GNP per capita	5.7	3.2	3.2	3.2	3.0
<i>Contribution from:</i>					
Productivity (per hour)	4.1	3.5	3.5	3.5	3.5
Employment rate ¹	1.6	0.2	0.1	-0.1	-0.2
Hours worked per person	-1.1	-0.5	0.0	0.0	0.0
Age structure ²	1.1	0.1	-0.4	-0.2	-0.3
Impact on GNP growth from alternative scenarios:					
No change from current employment rates ³	..	0.27	-0.24	-0.08	0.03
Rising to best-practice employment rates ⁴	..	1.87	0.63	-0.04	0.06
Zero net migration ⁵	..	0.33	-0.12	-0.09	-0.04
Productivity growth at current rates ⁶	..	-1.30	-1.30	-1.30	-1.30

1. Assumes that age-specific male employment rates remain unchanged at their 2004 level, but rates for females aged 30-60 continue to increase as a result of a cohort effect (i.e. they increase progressively as today's 30-year-olds shift into higher age groups).
2. Population of working age relative to total population.
3. Assumes female age-specific employment rates remain at their 2004 level (see footnote 1).
4. Assumes age-specific employment rates rise to the level of the three best-performing countries by 2015. The best performers are Australia, Austria and Iceland for women and Switzerland, Iceland and Japan for men.
5. The baseline follows the Central Statistics Office F2M2 scenario (medium fertility, medium migration). Thus the baseline has net migration of 20 000 per annum from 2006 to 2011, then 10 000 until 2016 and 5 000 thereafter.
6. Assumes average productivity growth of 2.2% per annum (the average from 2000 to 2005).

Source: OECD calculations based on data from Economic Outlook 78 database and Central Statistical Office.

For per capita incomes to increase further, Ireland needs to keep productivity growth as high as possible and find ways to increase labour supply even further. These challenges are hardly unique to Ireland; all OECD countries have their own policy weaknesses that affect productivity and employment. But it also faces some issues that are more specific to the Irish situation, including an infrastructure deficit and some large macroeconomic risks. These issues are outlined in more detail in the rest of the chapter.

In the longer term, productivity will be the main driver of income growth

As Irish activity comes to rely less on foreign firms and more on home-grown services, productivity gains will become harder to achieve. The main areas where policymakers could make a difference when it comes to business sector productivity are in competition policy, education, the science and innovation framework and the easing of infrastructure bottlenecks. In addition, the government can boost its own productivity by getting better value for money from public spending.

Boosting competition

While the overall regulatory environment is relatively business-friendly and pro-competitive, there are still too many sheltered sectors where competition is inadequate and the interests of producers and suppliers take precedence over the interests of consumers and the wider economy. The problems are caused by weaknesses in the general competition framework, sector-specific regulations and government ownership in certain industries. On the first point, enforcement of competition law is made more difficult because the Competition Authority is unable to impose fines and sanctions. Offenders must be prosecuted under criminal law, which is hard not only because the burden of proof is high but because Ireland has one of Europe's slowest and most expensive legal systems.

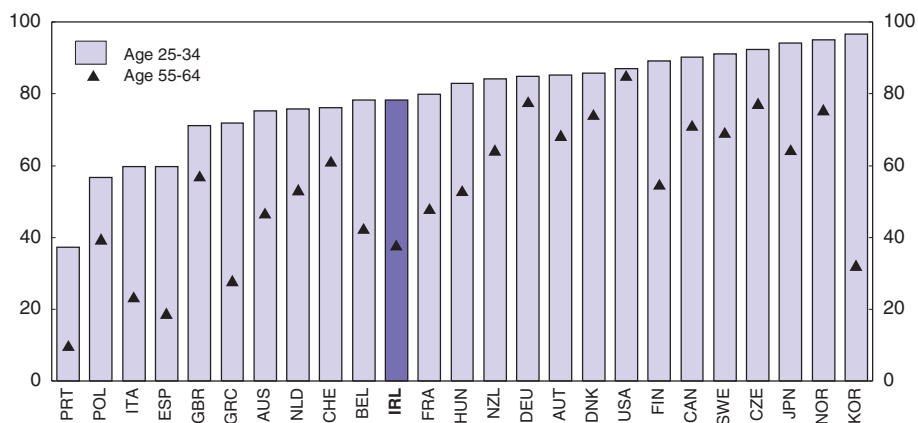
Various regulations in individual sectors also conspire to raise prices. These include the (soon-to-be-abolished) Groceries Order, which keeps food prices high, and entry restrictions in professional services such as pharmacy and law. Self-regulation in many professional services does not help as it is often used to protect sellers instead of buyers. Finally, some utilities are less efficient than they could be; one of several reasons is that government ownership can explicitly or implicitly deter entry. Dealing with these problems would make a considerable contribution to productivity growth and would help keep inflation in check.

Improving human capital

Raising the average educational attainment has played a large role in Ireland's economic performance. Around three-quarters of young people have an upper-secondary qualification, compared with a third a generation earlier (Figure 1.9). By one estimate, this accounts for a third of the increase in per capita incomes since 1980 (Bergin and Kearney, 2004). The foreign investment sector in particular is heavily dependent on having an adequate supply of skilled labour. Going forward, there are several areas for concern. First, student performance in international tests is just average and the drop-out rate from secondary school is too high. Second, funding constraints in the tertiary sector mean that the proportion of young people going on to higher education is only average, while the graduation rate for advanced programmes is low. Third, the funding issue also makes it more difficult for older students with weaker educational backgrounds to upgrade their skills.

Figure 1.9. **Many more young adults have attained upper secondary education than their parents¹**

Per cent of population in age group, 2003²



1. Excluding ISCED 3C short programmes for all countries except the United Kingdom where some are included.

2. 2002 for Italy and Netherlands.

Source: OECD (2005), *Education at a Glance*, Paris.

Encouraging innovation

Maintaining strong productivity growth will also require more emphasis on research and innovation. Until the late 1990s, Ireland spent very little on research and innovation. Universities, for example, were almost totally reliant on EU framework programmes to fund their research programmes and infrastructure. This changed in the late 1990s when

the government substantially boosted funding for research and development (R&D) and set up several granting agencies to deliver it. Even so, public funding has not kept pace with the underlying growth in the economy. Moreover, R&D in the business sector is extremely low and the majority of private research that does take place is undertaken by foreign multinationals. The R&D intensity of locally owned firms is extremely low, on par with countries such as Hungary, Portugal and Spain. Such a weak local research base makes it harder to deliver home-grown innovation and to capitalise on innovations and discoveries made abroad. Aspects of the science framework may be contributing to the problem. There are many funding agencies with agendas that overlap to some extent; the significant amount of money being spent on building up infrastructure capacity could be better co-ordinated with the funding streams for ongoing research; universities are not particularly good at commercialising their research or building links with industry; and the small amount of available funding may be spread too thinly.

Upgrading infrastructure

Rapid growth in population and economic activity has put infrastructure under considerable strain. Public investment was one of the main casualties in the fiscal consolidation that started in 1987, so the infrastructure was simply not ready for the boom that followed. By the turn of the millennium, bottlenecks were appearing in areas such as roads, electricity transmission, landfill and waste water treatment. These bottlenecks can have direct economic consequences, especially since foreign investors tend to put considerable weight on the quality of infrastructure in the host country. They also have social and environmental impacts. For example, commuting times are long, while insufficient landfill capacity has led to some illegal dumping in substandard sites, in breach of EU requirements, and a lack of tertiary water treatment capacity is contributing to water pollution in some parts of the country. In response, the National Development Plan for 2000-06 included a large infrastructure investment programme averaging around 4½ per cent of national income, and public investment is expected to remain in the 4.5 – 5% range for another decade or so.

Getting better value for money from public spending

The productivity challenge does not stop with the business sector. While there has been significant improvement in public sector management over the past few years, practices are still short of best practice. The top-down aspects of the budget process need to be given more weight relative to the bottom-up negotiation and “horse-trading” process among ministers. Doing so could increase the overall amount of expenditure control, especially in years where tax revenues are buoyant. The management information base remains patchy, although departments now have the tools to assist better management, and budgeting remains focussed on inputs rather than outputs (this will improve from 2007, however). Insufficient work flexibility and outdated work practices remain a weakness. While the civil service reform programme has delivered real improvements in the areas of merit-based promotion and the flexibility to hire from outside, there is still room to improve. Finally, most departments could be put under a little more financial pressure to spend efficiently.

In the long term, the potential gains from boosting efficiency in the public service, while important, are unlikely to be enough on their own to create sufficient room for expenditure increases. The government is caught between a desire to raise long-term

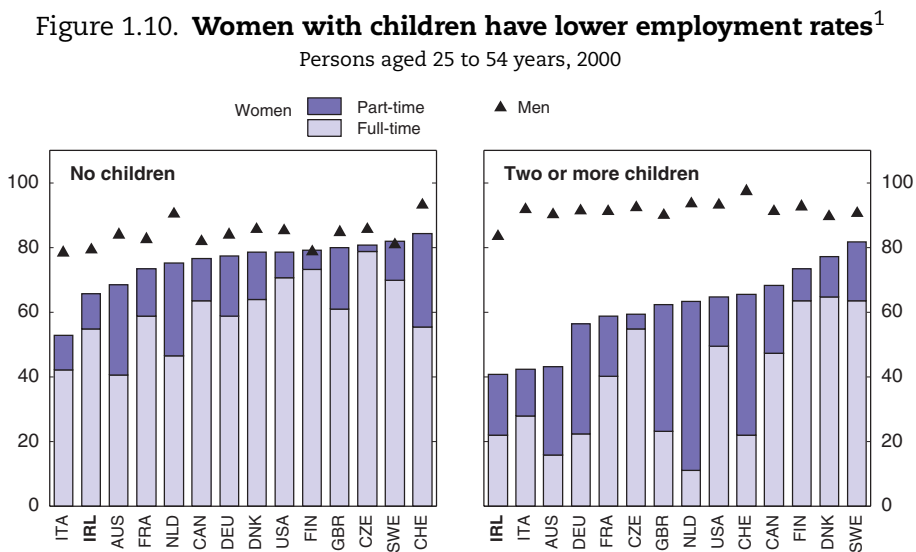
spending on social services and physical infrastructure on the one hand, and a preference for not raising tax rates on the other. Reallocating spending towards higher-priority areas will therefore be important. Although Ireland has an expenditure review programme, it has been of variable quality and has had little impact on decision-making. A rethink of existing spending programmes will be needed.

Continued growth will also require greater labour supply

The economy has avoided labour market bottlenecks so far due to a remarkable increase in female labour force participation and a surge in immigration. But the last ten years will be impossible to match. The easy pools of labour have been tapped and it will take some policy changes if the remaining sources, including older workers, are to be drawn on.

Female participation has increased but is below the best-performing countries

The female participation rate has increased enormously since 1990 – in fact, it accounts for nine-tenths of the increase in labour force participation over that period. Most of this increase has been among younger women and reflects changing social attitudes towards women in the workforce and a tendency for younger women to delay starting a family. However, the participation rate has risen from such a low base that it is still below the OECD average (slightly below for younger women, and significantly below for older women). Part-time employment is common, so the rate of full-time employment is among the bottom OECD countries. Fewer than half of mothers with children are at work, even part time (Figure 1.10). There is nothing wrong with this situation if it reflects free choices made by individual families. However, there are several policy settings in Ireland that may distort these choices. The current income tax system, which is somewhere between an individual and a family system, leads to a higher than necessary marginal tax burden on second earners, reducing the incentive to move from part-time to full-time employment. Second, while Ireland spends a large amount on family and child support, none of it depends on work status or job search. Third, there is minimal provision and support for



1. Children aged under 15 (16 for Sweden).

Source: OECD (2002), *Employment Outlook*, Paris.

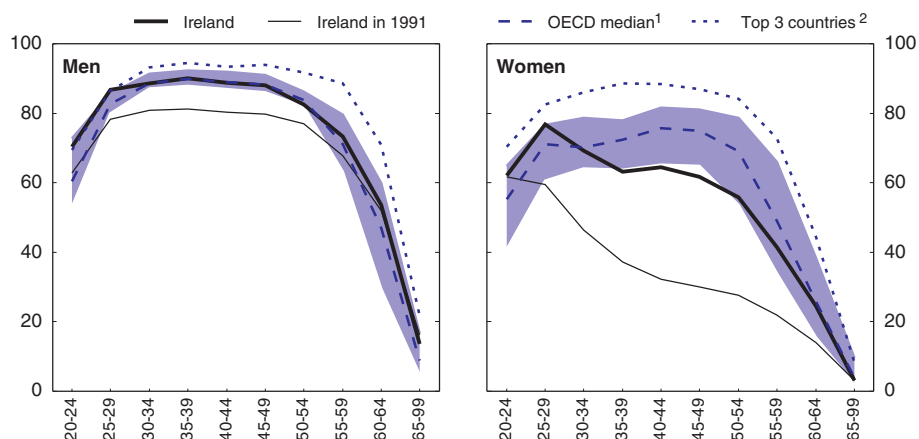
childcare of pre-schoolers and virtually no out-of-school care for children. Irish society and its Constitution have a strong preference for not discriminating against women at home, so policymakers have been wary of taking any steps that may look as though they favour working women. However, it needs to be realised that the tax system already favours women at home, so that some policy changes are required simply to level the playing field.

Sole parent families are a particular concern in Ireland. One fifth of households with children are single parent families, which is a particularly high rate by international standards. The employment rate among sole parents is very low compared with other OECD countries. This is caused partly by financial incentives embedded in the welfare system but also because Ireland remains one of the few countries where sole parents are not required to look for work until their youngest child is at least 18 years old (or 22 if studying). This undercuts labour supply but far more important is the impact it has on child poverty. In 2000, nearly half of the children in non-working single-parent families were in consistent poverty, compared with just 8% if their (sole) parent was working. International evidence shows that by far the most effective way to reduce child poverty is for the parent to be working (OECD 2003; Förster and Mira d'Ercole, 2005).

Older workers

Like all OECD countries, Ireland has considerable untapped labour supply potential amongst its older population. Employment rates among men begin to fall after age 50 (Figure 1.11) and while they are slightly above the OECD average for those aged 55 and older, a relatively large proportion of these older men are working on farms with relatively low value added. This also implies that the employment rate of older men may worsen over time as the agriculture sector shrinks. But as noted above, the shortfall is larger for women. For both men and women, employment rates at older age groups are well below the level of the OECD's best performers. This reflects a range of factors, including lower average education levels among older workers, but it is also influenced by policy settings such as subsidised pathways and weak job-search requirements that facilitate or encourage early retirement.

Figure 1.11. **Employment rates by age**
Per cent, 2004



1. The shaded area shows the middle two quartiles (i.e. half the countries fall in this range).
2. The three countries with the highest employment rates are Iceland, Japan and Switzerland for men; Australia, Austria and Iceland for women.

Source: OECD, Labour Force Statistics database, January 2006.

Immigrants and their impact on potential output

Migration has always been important for Ireland, creating an unusually elastic labour supply. An astounding total of 5 million people emigrated during the 150 years since the end of the famine in 1848. Apart from a minor blip in the 1970s, the flow reversed only in the mid-1990s. Since 2000, net immigration has averaged 1.1% of the working age population, perhaps 40% of whom are returning Irish citizens.⁶ In total, more than half of the increase in the labour force since 2000 is accounted for by net immigration so that by 2005 around 8% of jobs were filled by non-nationals (AIB, 2006). Immigrants are predominantly young (80% are aged 15-44) and well dispersed across the country (only 30% go to Dublin).

Along with the United Kingdom and Sweden, Ireland granted essentially unrestricted entry to the ten countries that joined the European Union in May 2004. In the twelve months after accession, around 30 000 immigrants from these countries entered the country (more than 1% of the working-age population). However, if account is taken of those who had entered shortly before May 2004, the total may be considerably higher. Twenty-nine per cent of recent migrant workers has found employment in the construction industry, thereby reducing a labour shortage in that sector, with an additional 15% working in the catering and hospitality industry. Their contribution to potential output is difficult to estimate, but if it is assumed that the average immigrant is relatively unskilled and works in either construction or retail services with a value added of € 45 000 per employee, collectively they would have added around 3% to potential GNP over the last couple of years (Barrett et al., 2005 produces a similar estimate for the cohort that arrived between 1993 and 2003).

While Ireland has essentially opened itself to a labour market of 208 million people, the Expert Group on Future Skill Needs (2005) argued that non-EU immigration will be needed to meet some of the country's high-skill demands. It pointed to skill shortages in many areas, including construction (architects, civil engineers, etc.), financial markets, information technology and healthcare. It proposed a Green Card system for non-EU nationals to replace the current system in which migrants are offered a temporary employment permit but must go through what the Expert Group describes as a cumbersome and time-consuming nationalisation process. They also suggested making it easier for students to stay after they graduate (currently, they must leave the country and apply from abroad).

Managing macroeconomic risks

On top of the long-term growth challenge, Ireland faces some short-term macroeconomic stability issues. As one of the OECD's more open economies, Ireland is particularly exposed to external risks. Obviously, however, it can do little to influence them. But it also faces some domestic risks. Foremost among these are developments in the housing market. Over the past decade, Ireland has enjoyed by far the biggest increase in house prices of any OECD country. To be sure, prices have risen from a very low base – the average house in 1995 was worth just € 75 000. Since then, prices have more than tripled in real terms. Most of this increase is justified by economic and demographic factors. The main economic influences have been the enormous increase in average disposable incomes and the decline in interest rates. Demographic changes have also supported the market. There has been significant growth in the population at the age where people

normally buy a house, the average number of people per dwelling has fallen but is still high by OECD standards and there has been significant immigration. Even so, most indicators – including econometric models – suggest that house prices may have overshoot their equilibrium level to some extent.

While house prices may be overvalued, this does not imply that they will fall. The housing market is not symmetric. Prices, construction activity and turnover all surge during a housing boom. After the peak, however, people prefer to take their house off the market rather than sell at a loss. The most likely scenario therefore is that prices will stabilise (or perhaps fall *slightly*), house building activity will fall back, turnover will decline sharply and Ireland will have a flat housing market for several years. By the end of that period, incomes should have grown by enough so that fundamentals catch up with actual prices, and the next cycle can begin.

Although this “soft landing” scenario is the most likely one, there are alternatives on the upside and the downside that could have large macroeconomic implications. On the upside, the market may not level off endogenously and prices may continue to rise. In this scenario, events could develop into a significant over-valuation with serious macroeconomic imbalances. Although short-term interest rates are back on the way up, the increase is likely to be fairly mild. It is therefore difficult to see what would prompt a slowdown in housing demand in the short term. While the enormous increase in supply over the past three years should take some pressure off prices, international experience shows that this process is rarely smooth and orderly – see Ahearne *et al.*, 2005). Obviously, the more that houses become over-valued, the greater the chances of a subsequent slump. The experiences of Japan, Sweden and Finland show that the aftermath of an asset price bubble can be serious and long-lasting. Now that monetary policy is set by the European Central Bank, the Irish government has few levers that could be used to avoid this scenario unfolding. But it can alter housing taxation and, as shown in Chapter 7, Ireland’s tax system is more favourable to housing than that of most other OECD countries.

The second possibility is that house prices fall by a significant amount over the next few years either because the economy gets hit by a negative shock or because houses are more over-priced than commonly thought. It is difficult to assess how big an impact this would have on consumption because the economy has changed so much recently and a lack of information on household finances means that little is known about the marginal propensity to consume out of wealth. International evidence suggests that the consumption impacts are higher in countries such as Ireland and the United Kingdom which have high home ownership rates, variable rate mortgages and high loan-to-value ratios (Catte *et al.*, 2004). Estimates of the short-run marginal propensity to consume out of housing wealth range from virtually zero in France, Italy and Germany to 0.08 in the United Kingdom where variable interest rates and mortgage equity withdrawal generate a considerable amount of over-shooting, though mortgage equity withdrawal is not common in Ireland.

Residential construction is also a risk

Even if prices level out, a decline in house building may have large macroeconomic consequences. The rate of house building has averaged 79 000 units per annum for the past two years. This is well above the medium-term sustainable rate of around 50 000 to 60 000 units (Table 1.5), reflecting demand due to very strong immigration and the desire for second homes (including holiday houses and investment properties). With housing

construction contributing nearly 14% of GNP in 2004, the direct impact of a decline in house building could be to lower GNP by perhaps 2-3%. The crucial question is whether this will occur gradually or suddenly. Most forecasters are assuming a soft landing but international experience shows that when the investment rate turns down, it usually falls sharply (see Box 7.1 in Chapter 7).

Table 1.5. Population pressures on housing demand

Thousands of houses per annum

	2001-06	2006-11	2011-16
Natural increase in the adult population	15.7	15.6	13.3
Change in headship (population per dwelling) ¹	17.1	17.0	20.7
Migration ²	16.8	11.4	11.4
Replacements and second homes	18.5	15.0	6.5
Total	68.1	59.0	52.0
Additional houses per year if:			
Net immigration stays at the current high rate ³	..	5.7	5.7
It takes 20 years to reach UK headship rate	..	-4.4	-5.9
Headship rate falls to the european average ⁴	..	7.9	11.3

1. The number of adults per dwelling falls from 2.1 now to the UK level (1.75) over 15 years.

2. Assumes net immigration of 20 000 adults per annum.

3. Assumes net immigration of 30 000 adults per annum.

4. The number of adults per dwelling falls from 2.1 now to 1.6 over 15 years.

Source: OECD calculations based on information from the Central Statistics Office and Economic and Social Research Institute.

The possible impact of a one-third decline in the rate of house building is shown in Table 1.6. A decline of this magnitude is not the most likely scenario but it is certainly possible; it implies that house completions return to the level that they were at in 2001. The direct impact would be to lower GNP by around 2% and raise the unemployment rate by around 2 percentage points. Note that this is just the impact from a decline in construction activity since it assumes that house prices do not fall or, if they do, there is no confidence or wealth effect on consumption; a double-shock in which house prices fall as well would have even larger impacts. The decline in construction activity leads to a worsening of the fiscal position of 1½ percentage points of GNP (and potentially more if a decline in housing turnover also led to a reduction in stamp duty and capital gains receipts).⁷ If the government were then forced to tighten fiscal policy to keep the budget sound, the impact on GNP could be up to 3%.

The payouts from the special savings accounts may also adversely impact on the economy

The government-subsidised Special Savings and Investment Accounts (SSIAs) are due to mature in 2006 and 2007. Set up in 2001, the government provides a top-up of € 1 for every € 4 saved. Because the implicit rate of return is so high, many account holders have over the past year increased their contributions to the maximum of around € 3 000 per annum. The accounts mature between May 2006 and April 2007, most of them in the very last month. During that period, cash amounting to 20% of private consumption will be paid out to households. The question is how much of this will be spent and how much will be diverted to other savings instruments, such as pension funds. International experience is that the marginal propensity to consume from windfall gains is fairly low and some of

that will leak out via greater imports. For example, the demutualization of building societies in the United Kingdom in the mid-1990s suggested that around 16% of wealth windfalls went to additional spending, with home improvements being the biggest category, followed by holidays, cars and other household goods.⁸ Nevertheless, there is still a risk that a considerable amount may be spent, giving an inflationary impulse to the economy, or providing a further boost to house building or renovation activity at what may be the wrong time. The government has stated that it will not introduce a follow-up scheme. Nor should it – the SSIA scheme is a blunt, expensive and untargeted way of trying to boost household savings. However, in early 2006 it took steps to mop up some of the cash by giving low-income savers a financial incentive to transfer their funds to a personal retirement savings account (PRSA).⁹

Table 1.6. Potential impact of a slump in construction output
Effect of an immediate 33% decline in housing completions, per cent difference from baseline

	With no fiscal response			With a cut in government spending ¹		
	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
GNP	-2.0	-2.0	-1.8	-2.5	-2.6	-2.6
Employment	-2.0	-1.8	-2.2	-2.2	-2.2	-2.6
Unemployment rate ²	1.7	1.3	1.5	1.7	1.4	1.7
Consumption	-2.3	-2.6	-2.4	-2.4	-2.9	-2.8
Inflation rate	0.0	-0.5	-0.1	-0.1	-0.7	-0.1
Fiscal balance ³	-1.0	-1.3	-1.3	0.1	-0.3	-0.3
<i>Memorandum item:</i>						
Additional impact on fiscal balance from reduction in stamp duty and capital gains tax ⁴	0.0	-0.9	-0.9	..	..	..

1. Assumes a cut in spending of 1.3 percentage points of GNP in an attempt to keep the government balance at or near surplus.

2. Assumes no change in net immigration. In reality, a construction slump is likely to reduce net immigration, so the unemployment rate will not rise by as much. That implies the fiscal balance would not deteriorate as much either.

3. In per cent of GNP.

4. These are assumed to halve in the second and third years.

Source: Economic and Social Research Institute (2004), *Quarterly Economic Commentary*, Winter 2004, ESRI, Dublin; OECD calculations based on INTERLINK model, October 2005.

The social partnership agreements can play a role in managing risks

Now that it is part of the euro area, Ireland needs to find tools other than the nominal exchange rate to control its relative price level and deal with macroeconomic shocks. The centralised wage bargaining framework has probably played a role in keeping wages in check over the past couple of decades and has certainly contributed to industrial peace. The first agreement, born out of crisis in 1987, delivered low wage increases and structural reforms in return for cuts in taxes and public expenditure. Subsequent social partnership agreements delivered further cuts in labour income taxes, with the standard rate falling from 35% in 1987 to 20% today (and the top rate falling from 65% to 42%). Although it has worked well until now, changes to the social partnership process may be necessary for the upcoming wage bargaining round. In particular, locking in wages for three years, as has been the habit in the past, may be too long given the short-term risks and the uncertainty about future productivity growth. In addition, the agreements may not be delivering the degree of wage flexibility that will be needed. This has not been a problem in the past because wage growth has consistently exceeded the bargained levels by a wide margin,

giving plenty of room for manoeuvre for slow-growing sectors, but it will become increasingly important as productivity growth settles down. The next wage agreement should run for a shorter period or have a built-in circuit-breaker mechanism (for example, the continued inclusion of an “ability to pay” clause) if the economy turns down. Finally, the agreements may be covering too much ground. Although social partnership is intended to cover more than just wage setting, they have become a forum for the entire social and economic agenda. The last round, for 2003 to 2005, involved 20 partners¹⁰ and covered issues as diverse as minimum wages, public sector modernisation, alcohol and drug abuse, infrastructure, the environment, cultural diversity and the cost and availability of insurance. The risk is that the central question of wage determination may get hijacked by side issues or that concessions on wages could be made in order to buy off some other matter (IMF, 2004).

Summing up

This chapter has reviewed the challenges that need to be met if the Irish economy is to end up among the top few in the OECD. The following chapters pick up on a selection of the more important issues and develop specific policy recommendations for meeting these challenges (progress in implementing the recommendations of previous *Surveys* is documented in Annex 1.A1). In particular, they discuss the competition framework, the education and innovation systems, infrastructure bottlenecks, female participation, the housing boom and the fiscal framework.

Notes

1. The gap between GNP and GDP (equal to net property income from abroad) is unusually large in Ireland. The foreign-owned sector earns a high level of net income, reflecting the large margins in activities such as information technology, pharmaceuticals and soft drink concentrates. The incentive to book large profits in Ireland to benefit from the low corporate tax rates may exaggerate how much of the value added of these multinationals is actually taking place in Ireland. Consequently, the GDP measure of real output may exaggerate the true productivity level. In that case, GNP is probably a more accurate measure of real output. Currently, GNP is around 84% of GDP and has grown more slowly over the past decade. Productivity estimates also depend on whether industries are aggregated using value-added weights or employment or wage-share weights (see Annex III of the 2003 *Survey* for a thorough discussion). While these adjustments will change the quantitative assessment of Ireland’s productivity performance, in qualitative terms all they do is downgrade the superlatives from “stunning” to “remarkable” or “impressive”. GNI, defined as GNP plus EU subsidies minus EU taxes, is in theory a better measure of living standards, but the difference between the two is small (GNI was only 1.2% above GNP in 2003-04).
2. While most measures of relative unit wage costs tell the same qualitative story, the quantitative picture varies considerably. Relative unit wage costs in total manufacturing have fallen by around 35% since 1995. Most of this decline is due to the pharmaceuticals industry which has had extremely strong productivity growth. Even so, relative unit wage costs in manufacturing excluding pharmaceuticals have fallen slightly. Using value-added weights, as these measures do, may be misleading so an alternative is to calculate employment-weighted or wage-share weighted indices. These have declined much more moderately, but they still point to an improvement in competitiveness (Cassidy and O’Brien, 2005).
3. CSO (2005) reports the following at-risk-of-poverty rate for over-65 year-olds in 2003: 49%, based on a poverty line at 70% of equivalised (i.e. adjusted for household composition) median income; 36% at a 60% threshold; 10.4% at a 50% threshold; and 6.7% at a 40% threshold.
4. Ireland is almost unique in having no public or mandatory-private earnings-related pension. It has a basic, flat-rate means-tested scheme and two contributory pensions (one available at age 66, the other at age 65 with slightly different contribution requirements).

5. Ireland has an “EET” system (contributions are tax-exempt; investment earnings are exempt; but returns are taxed on payout) and payouts are taxed at a favourable rate.
6. Latest figures show that the share of the inflow concerning returning Irish citizens has fallen from 55% in 1999 to 35% in 2003. The proportion of non-Irish is likely to have increased further since 2003.
7. The impacts shown here are broadly similar to an exercise done by the Central Bank (McGuire and Smyth, 2005) after taking account of the different size of the shock in the two studies. However, the Central Bank’s estimates for the worsening of the fiscal position are a little smaller.
8. The UK experience is based on a MORI telephone poll described in Bank of England (1997). Other experiences which show a low marginal propensity to consume are the demutualization of the AMP insurance company in Australia and New Zealand in 1998, where no detectable impact on consumption was found (Tan and Voss, 2000). An experiment with shopping coupons in Japan in 1999 showed a marginal propensity to consume of around 0.2-0.3 in the short term but 0.1 over a longer period (Hori et al., 2002).
9. PRSAs (personal retirement savings accounts) are portable, tax favoured savings products set up in 2003. At the end of 2004, around 56% of employees had some sort of voluntary occupational pension scheme, including PRSAs (the government wants to increase this to 70%). In the SSAs, only the accumulated interest is taxed at payout (the government’s top-up is tax free) and it is taxed at 23%, which is below the marginal rate for many investors. Thus, the potential tax loss from allowing a free transfer to PRSAs may therefore be fairly small.
10. The partners were the Irish Business and Employers Confederation; the Irish Congress of Trade Unions; the Construction Industry Federation; Irish Farmers’ Association; Irish Creamery Milk Suppliers Association; Irish Co-operative Organization Society Ltd.; Marca na Feirme; Irish National Organization of the Unemployed; Congress Centers for the Unemployed; The Community Platform (umbrella group for 26 organisations); Conference of Religious Ireland (CORI); National Women’s Council of Ireland; National Youth Council of Ireland; Society of Saint Vincent de Paul; Protestant Aid; Small Firms’ Association; Irish Exporters’ Association; Irish Tourist Industry Confederation; and the Chamber of Commerce of Ireland.

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ANNEX 1.A1

Progress in structural reform

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

Recommendations	Action taken since the previous <i>Survey</i> (July 2003)
Labour markets	
Curtail the Community Employment Scheme make-work programme.	Numbers in the various employment schemes continue to fall.
Focus on targeted employment subsidy programmes.	No action.
Shift the focus of training programmes onto vulnerable groups in order to avoid waste.	Active interventions are focussing more on specific needs and less on general training.
The tax-benefit system	
Ensure that increases in the minimum wage do not outstrip average wage growth.	Compared with most European countries, the minimum wage is high as a proportion of average earnings. It has increased by 20% since 2003, compared with a 9% increase in average industrial earnings.
Review the pre-retirement allowance, which reduces incentives to work.	No action.
Housing	
Reduce the tax incentive for speculative investment on properties.	No action.
Promote the supply of under-developed land.	The supply of zoned land has increased.
Public-sector management	
Adopt a top-down budgeting approach, so that the government makes a binding political decision as to the level of total expenditure and divides them among broad expenditure areas before approving detailed expenditure plans.	The budget process has been putting more emphasis on top-down control as part of its internal procedures. Top-down limits are set internally but are not announced publicly and there is some drift against them.
Develop and extend the multi-annual budget envelope.	The five-year capital envelope has been supplemented with a ten-year transport envelope.
Move towards results-focused budgeting and management. Include <i>ex ante</i> and <i>ex post</i> performance indicators in budget documents.	From 2007, departments will publish output and outcome objectives. From 2008, they will publish actual out-turns.
Introduce more flexible human resource management, including greater use of open recruitment and competitive promotions.	Slowly improving.
Strengthen accountability by improving the evaluation and value-for-money process and increasing the oversight role of Parliament and the Comptroller and Auditor General.	Recent changes to the expenditure review process should improve future evaluations.
Make more use of price signals and market mechanisms in publicly funded services, including wider use of contracting-out and benchmarking.	No action.
Extend competitive tendering and Public Private Partnerships (PPP), taking a prudent approach.	The PPP programme is being expanded. Tendering rules have been made more open.

Recommendations	Action taken since the previous Survey (July 2003)
Reform local government financing and responsibilities by:	
<ul style="list-style-type: none"> Considering giving local authorities powers to levy local property taxes 	No action.
<ul style="list-style-type: none"> Using <i>ex ante</i> estimation of standard costs and increasing co-financing of earmarked grants by local authorities. 	No action.
<ul style="list-style-type: none"> Moving towards block grants for those projects without spillover effects, while improving the distribution formula. 	No action.
Sustainable development	
Implement the EU directive establishing tradeable emission quotas for large emitters of carbon dioxide.	The process of allocating quotas was finalised in July 2004.
Implement the decision to introduce a carbon tax and ensure that tax rates are uniform across sectors.	The policy has been reversed: plans for a carbon tax have been abandoned.
Raise taxes on petrol and diesel in line with the corresponding externalities.	Tax rates have been raised on both fuels, but diesel remains taxed at a lower rate than petrol despite being more polluting.
Proceed with the introduction of waste charges for households and businesses.	All waste collectors were called on to have pay-per-use systems operating from 2005, and the target has been largely achieved.
Charges for the disposal of waste should reflect externalities.	No action.
Charge households for their use of water services.	No action.
Tax excess fertiliser application.	No action.

Chapter 2

Boosting growth through greater competition

This chapter discusses ways to strengthen competition in order to boost productivity growth and help restrain inflation. It reviews the general competition framework and discusses the regulatory barriers to competition in a range of sectors. These include retail trade, pharmacies and pubs along with network industries such as electricity, telecoms and buses.

There has been considerable reform over the past two decades in the overall approach to competition and in the regulation of individual sectors. A pro-competition culture is taking hold among policymakers and the general public. However, there are still too many sectors where producers are shielded from competition, at the expense of consumers. There is compelling international evidence that anti-competitive restrictions tend to lower growth, reduce employment and raise prices (OECD, 2005). At first glance, Ireland's stellar economic performance might suggest that it has relatively little to worry about. However, there are several reasons why policymakers should not be complacent. *First*, a great deal of Ireland's success can be attributed to its well-functioning and liberal labour market. This has helped cushion some of the problems in its product markets. *Second*, insufficient competition in certain industries creates welfare and efficiency losses that are hidden by the strong growth of the economy as a whole – growth that is largely generated by factors unrelated to competition in the more sheltered sectors of the economy. *Third*, competition issues in the utilities sectors in particular are only now starting to become a constraint, with the country facing bottlenecks in areas such as electricity, transport and waste disposal. *Finally*, while it may be hard to see the impact of a lack of competition on aggregate economic performance, it has had a clearer impact on how the gains have been shared. A striking feature of Ireland's economy is its high prices in certain sectors, implying that too many of the benefits of Ireland's boom have been captured by producers rather than being passed on to consumers in the form of lower prices. All these problems will become much more important now that Ireland's trend rate of growth has fallen towards more normal levels.

In 2001, the OECD's *Review of Regulatory Reform in Ireland* (OECD, 2001) concluded that there were many positive aspects of Ireland's regulatory reform regime such as its openness to international trade and the progress made in reforming the telecommunications, road freight and airline sectors. However, its assessment was that competition policy enforcement has been a weakness and pointed to a legacy of policy that favours the interests of producers over consumers. It also pointed to regulatory and competition weaknesses in a range of sectors, mostly services and utilities. In response, the government presented a report in January 2004 entitled *Regulating Better*. The aim of the report was commendable: to lay down guidelines for new regulations; to start a process of reviewing and streamlining existing rules; and proposing that a working group be established to follow up on the recommendations from the OECD *Review*. Implementation has been less impressive. As shown in Annex 2.A1, there has been little progress on the majority of the recommendations made in the OECD's report.

Ireland has a golden opportunity to push ahead with its regulatory reform agenda while the transition costs are low. Many European countries find regulatory reform difficult because they need to be carried out in a less favourable economic environment and with a dysfunctional labour market. In Ireland's case, job growth remains high, so adjustment costs from regulatory reform are likely to be low – people and resources displaced from one industry should easily find employment elsewhere. This almost-unique opportunity for reform should not be wasted.

Regulatory policies in individual sectors

Regulatory policies differ in focus and scope across different private service sectors. In some inherently competitive sectors, such as retail distribution and professional services, competition is hampered by entry controls and licensing restrictions. On the other hand, many network industries are characterised by “natural monopoly” segments and competition has been difficult to introduce. In these industries, some efforts have been directed towards securing non-discriminatory third party access to the networks and opening the potentially competitive segments to competition. A particular concern is the possibility for cross-subsidisation between monopoly areas and competitive activities, requiring a clear separation between the various activities. Moreover, the market power of incumbents often implies that the playing field is anything but level. International experience shows that the potential gains from opening up network industries to competition can be very large.

Anti-competitive restrictions in the retail sector are resulting in high prices

The structure and dynamics of the retail sector have changed dramatically over the past decade. Outlet density remains smaller than in most OECD countries and value added per unit of labour cost is the second highest in the European Union (Table 2.1), which

Table 2.1. **Key structural features of the retail sector**
2003 or latest year available¹

	Outlet density ²	Persons employed per enterprise	Value added ³	
			Per employed person	Per unit of labour costs
Ireland	47	9	96	125
Austria	52	7	93	89
Belgium	74	2	188	91
Czech Republic	137	3	52	92
Denmark	45	8	80	98
Finland	44	6	115	106
France	70	4	125	102
Germany	30	10	88	98
Hungary	113	3	35	80
Italy	124	2	82	74
Luxembourg	60	7	113	110
Netherlands	49	9	81	115
Norway	65	6	88	99
Poland	113	3	34	42
Portugal	138	3	63	96
Slovak Republic	9	15	58	121
Spain	124	3	89	95
Sweden	64	5	102	84
Switzerland	53	7	11	..
United Kingdom	34	15	85	118
Average ⁴				
European Union ⁵	68	6	100	100
EU11 countries ⁶	52	7	106	103

1. 2002 for Germany, Luxembourg and Poland; 2001 for Belgium and Switzerland.

2. Number of enterprises per 10 000 inhabitants.

3. Value added adjusted by current purchasing power parities. European Union = 100.

4. Unweighted average of EU15 countries.

5. Excluding Greece.

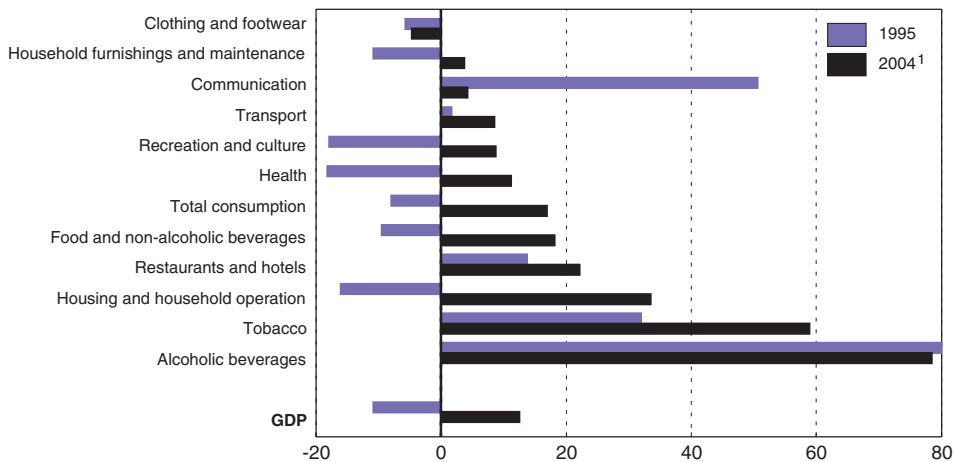
6. Excluding Greece, Italy, Portugal and Spain.

Source: Eurostat and OECD Annual National Accounts databases, January 2006.

suggests that entry barriers may be inflating profit margins. In 2003, all categories of consumer goods and services except clothing were more expensive in Ireland than in the EU15 (Figure 2.1). Not surprisingly, the sectors that are least exposed to competition from abroad tend to be the ones where the price difference is highest. Examination of individual products reveals especially large price differentials for branded products (Consumer Strategy Group, 2005). These gaps cannot be explained by differences in business costs or tax rates. Instead, they point towards weak competition. This section highlights the grocery sector, pharmacies and pubs, which stand out regarding inefficient regulation.

Figure 2.1. **Prices are high**

Price difference between Ireland and EU15, per cent



1. Provisional data.

Source: Eurostat database, January 2006.

The Groceries Order raises prices and reduces competition

One of the main impediments to competition in the retail sector has been the Groceries Order. Since 1987, it has prohibited selling most grocery items (except fresh and frozen food)¹ below the invoiced price and obliges wholesalers to charge the same price to all retailers. Its effect is that a large buyer can negotiate a discount for buying in bulk, but these typically are off-invoice and therefore the savings cannot be passed on to consumers. The result, not surprisingly, has been high prices. Average prices of processed food have increased much faster than in other EU countries since the mid-1990s – retail food prices have increased by 25% in five years, yet farm gate prices have increased by just 5% (Fingleton, 2004). Overall food prices are around 20% higher than in the EU15 (Figure 2.1). The Competition Authority estimates that the groceries order is costing the average household around € 480 per year. The perverse effect of the regulation on consumers was highlighted in 2005 when a grocery store was fined for selling baby food and nappies below the invoice price.

The government has recently announced its intention to abolish the Order. This is a very welcome proposal that would bring considerable benefits for consumers and little if any downside except for the large wholesalers who currently are the biggest beneficiaries of the rule. While rules about below cost sales, marketing practices and discrimination can be appropriate in some circumstances, they need to take account of the potential effects on

consumer welfare. A rule against discrimination, for example, should permit consideration of differences in costs, available alternatives and competitive responses rather than punish every price difference as an offence. In any case, the current provisions against predatory pricing in the competition legislation are good enough for that purpose.

Another obstacle to competition in the retail sector is the Retail Planning Guide, which is a government-issued guideline for local authorities that deals with retail development and includes guidelines on location and floor space. In effect, it has imposed a cap on floor space in an attempt to avoid “superstores” on the fringes of towns, either because they are viewed as a blight on the landscape or in order to protect small local shopkeepers. In this sense, it is clearly a barrier to competition. The government recently removed the 6 000 square metre cap on non-food retail outlets to allow an IKEA store to open up in Dublin. This is a good step, but there is no reason to restrict it to non-food outlets.

Restrictions in the pharmacy industry are out of proportion to their objectives

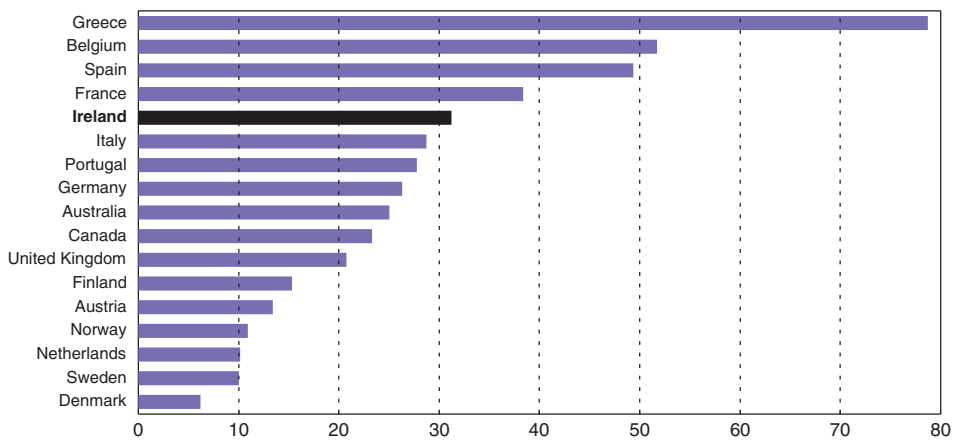
A combination of entry restrictions and price regulations has resulted in an uncompetitive, distorted and expensive retail pharmacy sector. Ireland is the fourth most expensive country in the euro area for medicines (Department of Health, 2003). Pharmaceutical prices at all levels of the distribution chain are set by government-industry agreement. Wholesale prices are set by comparing UK prices and an average of five other countries, taking the lower of the two. The retail margin depends on who is paying. For medical card holders, the government fully reimburses the patient and pays a fixed disbursement fee of around € 3 per item to the retailer; other prescriptions and non-prescription medicines have a 50% markup. Overall, the retail margin is around 33%, which is one of the highest in the European Union (Purcell, 2004). Moreover, unlike in many other countries, pharmacists are not permitted to reduce costs to the consumer and insurer by substituting a cheaper generic equivalent.

The industry also has severe entry restrictions. Pharmacies have exclusive rights to sell prescription-only pharmaceutical products as well as some over-the-counter drugs that in other countries are available in supermarkets. Unlike many other EU countries, however, ownership has not been restricted to pharmacists. There has been a chronic shortage of places at pharmacy school, in part because Trinity College had a monopoly on training until 2003, although training places have more than doubled since then. Entry of foreign-trained pharmacists is difficult. Even Irish citizens who are trained in the United Kingdom (or somewhere else in Europe) face the restriction that for the rest of their career they will be unable to open or manage a new pharmacy in Ireland. All they can do is buy into a pharmacy that has been running for at least three years. In 1996, additional restrictions were imposed whereby new pharmacies were not permitted to locate near existing ones, but these were abolished in 2002. All these restrictions (except perhaps the first) do nothing to promote health care; they are purely anti-competitive restrictions on entry. Consequently, pharmacies are changing hands at very high prices. In 2005, the government announced that it would remove the “three year rule” on foreign-trained pharmacists in conjunction with updated fitness-to-practice legislation. As with the removal of the Groceries Order, this is a very positive step and should be implemented swiftly.

Delivering lower prices and better service to the Irish people is more complicated than simply removing all entry restrictions. The essential problem is that the retail margin on pharmaceuticals is too high. Unless the reimbursement system is reformed as well,

removing restrictions on entry may just lead to an avalanche of new pharmacies as people try to capture the rents. Indeed, Ireland already has a relatively large number of pharmacies per capita (Figure 2.2). Free entry on its own would be unlikely to drive down retail prices because for most people drug costs are fully reimbursed by public and private insurers, so there is little incentive to shop around for the best price. A better option would be to: i) replace the 50% retail markup with a flat rate dispensing fee (as recommended by the Brennan Commission in 2003); and ii) auction the right to run a pharmacy (i.e. have pharmacists compete for the market, but not necessarily in the market). The auction would be over the retail margin, so this arrangement has the advantage that it would bid down the margin to a more sensible level. Subsidies or public service obligations could be incorporated to ensure adequate supply in rural areas.

Figure 2.2. **Ireland has many pharmacies**
Pharmacies per 100 000 population¹



1. 2002 for Australia, Canada and Ireland; latest year available for other countries (1998-2001).

Source: Purcell, D. (2004), "Competition and Regulation in the Retail Pharmacy Market", *Studies in Public Policy*, No. 14, The Policy Institute, Trinity College, Dublin.

Pubs are a good example of the perverse effects of barriers to entry

The pub market is another good example that illustrates how entry restrictions can be a clumsy way of pursuing social policy objectives and can have unintended consequences that make consumers worse off. In 2003, Ireland was the most expensive country in the EU15 for alcoholic drinks, with prices almost 80% higher than the EU average (Figure 2.1). In large part this is because alcohol taxes are the highest in the EU but it does not help that the industry was to all intents and purposes run by a cartel. Until recently, the two vintners' federations (one for Dublin, one for the rest of the country) made "recommendations" on prices and profit margins to their member pubs. Under pressure from the Competition Authority, the Associations agreed in 2005 to stop what amounted to price fixing. Entry restrictions are an additional explanation. The government's policy is to issue no new pub licenses. While licences can now be bought from existing pubs and transferred to another region, there are anti-competitive restrictions in that an application can be refused on the grounds that there are already enough pubs of a similar character in the neighbourhood. The scale of the rents that the system creates can be gleaned from the market price of a licence, which is currently around € 140 000 (and in the years prior to

being able to transfer licences across regions, a Dublin licence cost around € 450 000). The restriction also creates an incentive to build large “industrial” pubs rather than smaller cafés or the traditional neighbourhood pub. Aside from the efficiency considerations, this may worsen the health problems associated with a “binge boozing” culture. In effect, the system has become a tax on drinkers but with the tax revenue going to publicans or licence holders rather than the government. The government has proposed a partial opening up to competition by introducing a café bar license but the Competition Authority believes that this will not go far enough to promote competition. Instead, it would be more effective simply to remove the ceiling on the number of pub licences. The government can raise tax rates further if it is concerned about the health impacts.

Some professional services still have unnecessary anti-competitive restrictions

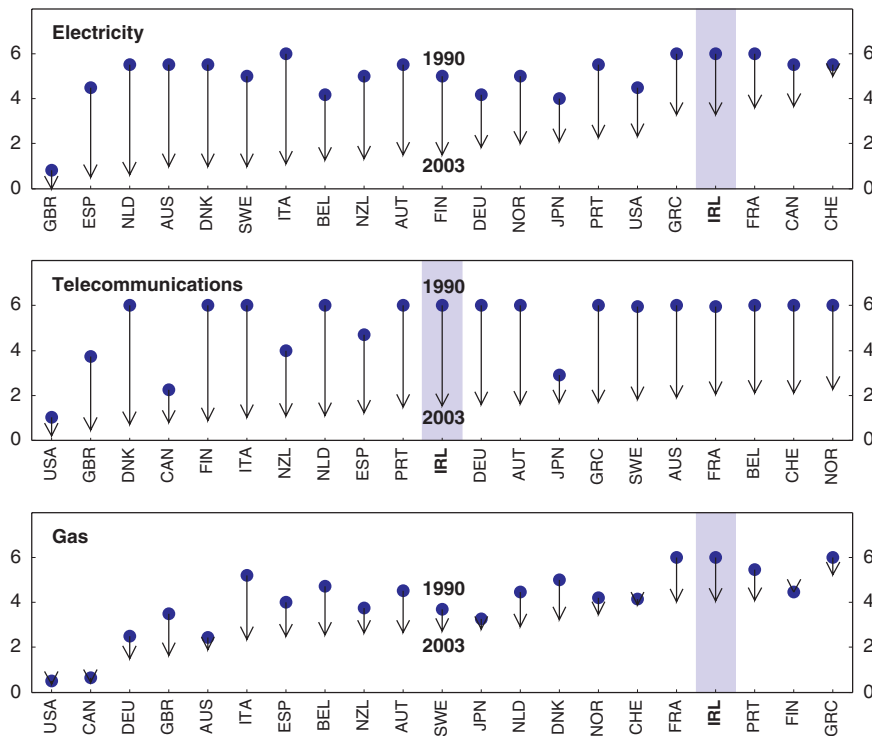
Although there has been some progress in recent years, regulatory barriers in various professional services are still excessive. Ostensibly at least, these rules are intended to protect consumers. but can lead to high prices, reduced quality and less innovation. The medical and legal professions are especially restricted in terms of entry requirements, fee competition, advertising restrictions, demarcation and rules on organisational structure (Indecon, 2003; OECD 2001). The Competition Authority has been a vocal advocate for reform to professional services, producing many recommendations for removing anti-competitive regulations and barriers to entry.

For solicitors, there are three entry restrictions that are especially harmful for competition. First, the Law Society has a monopoly on training. Second, solicitors who finish their training in Northern Ireland, England or Wales have to get three years experience there before being allowed to practice in Ireland. Third, barristers must get three years experience before they can transfer to practise as solicitors. Entry restrictions are severe for barristers as well. The bar council has a monopoly on training and restricts the number of places available in the law school. Moreover, restrictions on advertising that are stricter than necessary to prevent and discipline false and misleading representations may restrict normal competitive behaviour. Restrictions on forms of practice and prohibition of practice with other professions may also reduce competition. In February 2005, the Competition Authority issued a preliminary report on restrictions in the profession. A final report is expected soon.

There is only a limited number of study places for medical, veterinarian and dental services. This is compounded by the slow registration process for EU-trained professionals who want to work in Ireland and by the absence of recognition of qualifications for non-EU trained professionals. Restrictions on comparative and fee advertising also make it difficult for outsiders to establish a practice in Ireland.

Structural reform of various utilities would improve efficiency and lower prices

Government ownership and various regulatory barriers contribute to inefficiency in some of the major utilities which, by OECD standards, remain relatively highly protected (Figure 2.3). The most serious problems are found in the electricity industry. Energy demand has increased rapidly on the back of Ireland’s strong economic growth. Despite six years of government effort to liberalise the electricity market, neither generation capacity nor competition has increased much and bottlenecks are a distinct possibility in coming years. As a result of transmission constraints, net electricity imports are only 2% of total supply. The slow capacity increase combined with negligible imports has resulted in

Figure 2.3. Utilities are still protected to a considerable extent¹

1. The scale of the indicators is from 0-6, from least to most restrictive of competition.

Source: Conway, P. and G. Nicoletti (2006), "Product Market Regulation in Non-manufacturing Sectors in OECD Countries: Measurements and Highlights", *Economics Department Working Papers*, OECD, Paris, forthcoming.

electricity prices that are among the highest in Europe (Table 2.2). Ireland is especially reliant on fossil fuels to generate electricity (gas and oil account for 57% of production, with coal providing another third), so the increase in oil and gas prices throughout 2005 will drive Irish electricity prices even higher. The impact of capacity constraints can be seen by comparing the electricity and natural gas markets. There is ample spare capacity to import natural gas from the United Kingdom, so retail natural gas prices are below the EU average (Table 2.3).

Reform of the energy market has begun but is far from finished. The basic regulatory framework for both the electricity and gas markets has been improved since 1999 and an independent regulator, the Commission for Energy Regulation (CER), was established to oversee the reform process. Liberalisation of the electricity market began in 2000 when major industrial consumers of electricity were able to choose their supplier. The market has been fully liberalised to all customers since February 2005.

The benefits of liberalisation are severely curtailed by the fact that the state-owned and vertically integrated Electricity Supply Board (ESB) continues to dominate the market. This company owns the transmission grid and around three-quarters of the generation capacity (but has 90% of the pricing power as it owns most of the variable capacity). In addition, it appears that ESB still has some power to influence transmission system planning. There are considerable transmission bottlenecks within Ireland, which is one reason why there has been little interest by foreign operators in entering the market. Given

Table 2.2. Pre-tax electricity prices in Europe
In euro cents per kilowatthour (kWh), 1 July 2005¹

	Industrial consumers			Domestic consumers	
	Small	Medium	Large	Small	Large
Ireland	14.5	9.0	6.9	12.0	7.5
Austria	9.4	6.0	4.4	9.5	6.9
Belgium	11.6	7.5	5.6	11.0	7.5
Czech Republic	8.1	5.8	4.3	7.3	4.5
Denmark	7.6	6.5	..	9.6	8.1
Finland	6.1	5.0	3.9	7.8	4.8
France	..	5.3	..	9.1	..
Germany	16.8	8.1	7.0	13.5	7.6
Greece	9.5	6.5	4.5	6.4	5.5
Hungary	11.2	7.5	5.1	9.0	7.2
Italy	11.5	9.1	7.4	15.1	..
Luxembourg ²	16.0	7.0	3.9	13.1	7.8
Netherlands	11.0	8.1	5.3	11.1	7.1
Norway	6.7	5.5	3.5	11.8	6.5
Poland	8.0	5.0	4.1	7.2	4.4
Portugal	11.8	7.4	5.3	13.1	8.5
Slovak Republic	10.5	6.9	..	11.2	6.6
Spain	10.4	6.9	5.3	9.0	5.9
Sweden	7.0	5.4	4.5	8.1	6.5
United Kingdom	7.7	6.4	4.8	8.8	5.7
Unweighted average					
EU15	10.8	6.9	5.3	10.5	6.9
Liberalised markets ³	7.0	5.8	4.2	9.2	6.3

1. 1 January 2005 for France; 1 July 2004 for industrial consumers in Luxembourg. The level of consumption is based on an annual rate of 30, 2 000 and 70 000 MWh for industrial consumers, 3 500 and 20 000 kWh for domestic consumers.

2. Fifty per cent power reduction during hours of heavy loading for industrial consumers.

3. Nordic countries and the United Kingdom.

Source: Eurostat database, January 2006.

the conflict of interest that ESB faces as both a generator and an owner of the transmission network, the two functions of ESB should be split apart. Separating the natural monopoly elements from the potentially competitive parts of the industry in this way is becoming standard practice in other countries. Splitting the generator side into competing suppliers should also improve competition, but the issues here are more complex. A single coal-fired station (Moneypoint) supplies around half the night-time electricity load, with three stations providing most of the rest (Fitz Gerald, 2003). This means that even if ESB were split up, there would be few players in the market. The risk is that the uncertainty created by such a market environment would add to the cost of capital and potentially outweigh the benefits of competition. So when introducing competition among generators, it would be useful to develop financial instruments such as financial transmission rights and the auctioning of virtual capacity to help hedge some of this risk.

ESB's dominant position is not helped by the fact that Ireland is virtually a closed electricity market. Inter-connectors with Northern Ireland have a capacity of less than 7% of the south's production, and two-thirds of that is tied up under long-term contracts. The governments of Northern Ireland and the Republic are committed to developing an integrated electricity market for the whole island. This could be helpful because it expands the market and because Northern Ireland is connected to Scotland (although transmission

Table 2.3. Pre-tax natural gas prices for industry
By type of consumer, in euros per gigajoule (GJ), 1 July 2005¹

	Small	Medium	Large
Ireland	7.2	5.6	..
Austria	6.8	6.5	..
Belgium ²	6.1	5.2	3.8
Czech Republic	5.5	5.3	5.0
Denmark	10.6	5.8	4.8
Finland	8.5	6.8	5.0
France	..	6.2	..
Germany	8.1	7.8	6.3
Hungary	6.2	6.4	5.2
Italy	..	5.5	..
Luxembourg	7.0	7.0	4.3
Netherlands	6.6	4.6	4.0
Poland	6.4	5.6	4.8
Portugal	9.1	6.8	4.7
Slovak Republic	5.3	5.3	5.1
Spain	5.1	4.9	4.6
Sweden	9.7	8.1	6.2
United Kingdom	7.4	6.4	4.7
Average ³			
EU15	7.7	6.2	4.8

1. 1 July 2003 for medium consumers in Ireland and Italy; 1 January 2005 for France, Germany, Luxembourg and Sweden; 1 July 2004 for Belgium and large Swedish consumers. Small, medium and large consumers are defined using the following thresholds for annual consumption: 4 186, 41 860 and 418 600 GJ.

2. For small consumers in Belgium: fixed supply (non-erasable) for non-specific applications that can easily be substituted by residual fuel oils.

3. Unweighted average of data appearing in table.

Source: Eurostat database, January 2006.

capacity on that link is also limited). The first step is to build an integrated wholesale market with a single market operator. This is planned to be in place by July 2007. In the longer term, a significant upgrade of transmission capacity is required. A single market would allow greater security of supply, less need to build new generation plants, increased competition and the opportunity to diversify away from fossil fuels. The Irish government is also looking at building inter-connectors to the United Kingdom,² linking Ireland with the wider European market.

Problems in the telecommunications industry are contributing to a low take-up of broadband

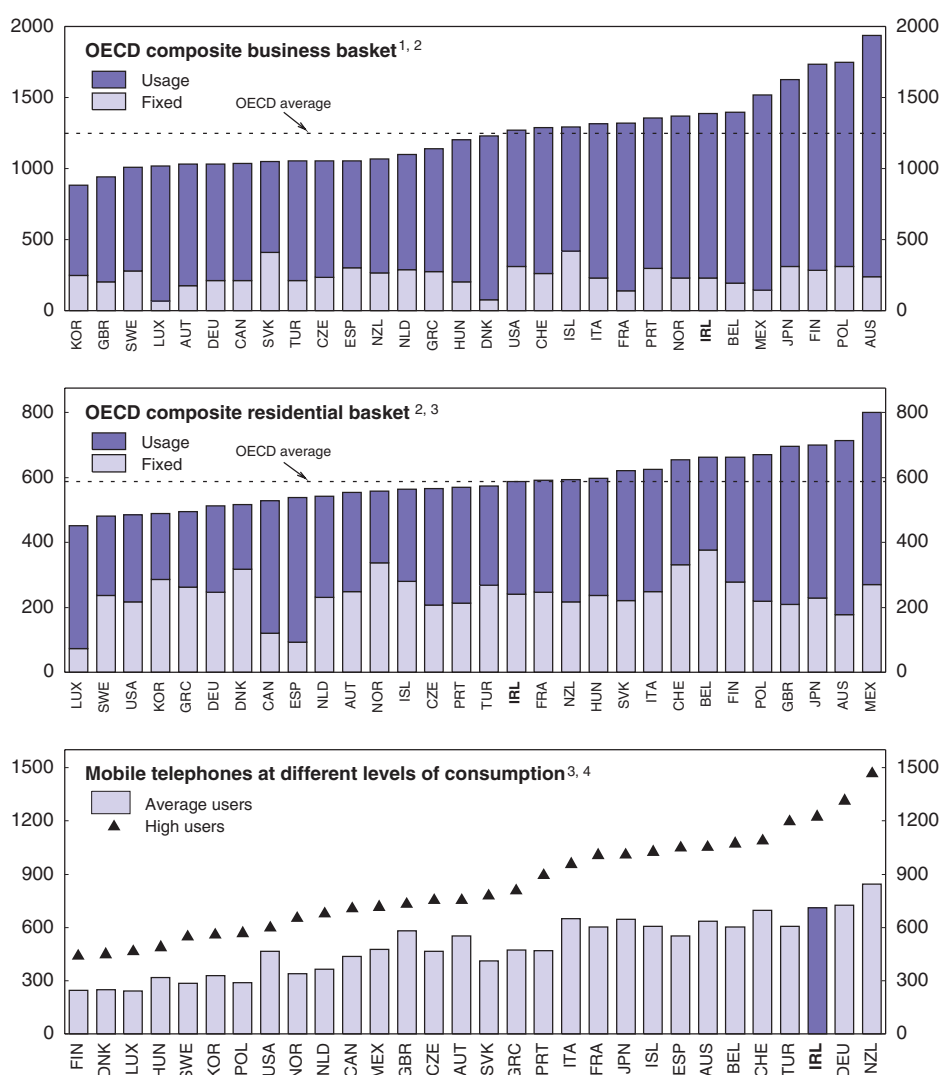
Ireland completed full liberalisation of its telecom market in December 1998. This liberalisation has been one of several factors making Ireland an attractive location for foreign investment. The market is developing in a similar way to telecom markets abroad – fixed line penetration has stagnated, the broadband market is expected to grow rapidly over the next two to five years and the introduction of 3G services should bring potential benefits to both operators and subscribers.

Eircom, which was state owned until 2001, remains the dominant player with 79% of the fixed-line market.³ The small size of the market may be one reason why there is little interest in entering, although the slow progress in unbundling the local loop may also be a contributing factor. Despite that, prices for residential customers do not appear particularly high by international standards although business customers pay slightly

above the average (Figure 2.4). Problems in the mobile market are more significant. Currently, there is an effective duopoly (the top two firms have 89% of the mobile market) although Eircom re-entered the market in 2005 by buying the third operator that has the remaining 11% of market share. Prices are high. The market has been affected by delays in several key areas. In particular, the granting of the third GSM licence was delayed by disagreements over specifications and subsequent court cases. Mobile number portability was introduced in July 2003 in an attempt to increase competition, but take-up has been slow. To promote competition further, ComReg stated in January 2005 that the two main networks will be opened to virtual operators.

Figure 2.4. **Telecommunications charges**

In US dollars, August 2005



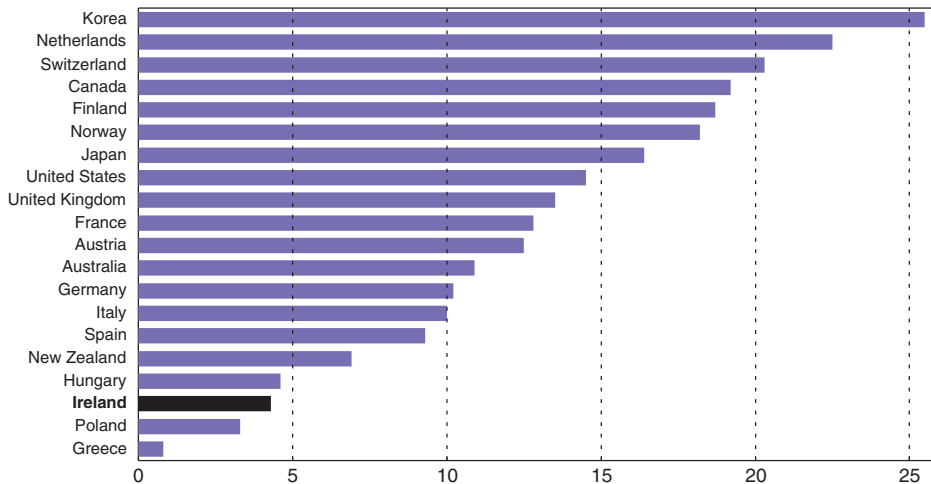
1. Excluding value added tax (VAT).
2. Calls to mobile networks and international calls are included.
3. Including VAT.
4. Pre-paid cards are excluded.

Source: OECD Communications database, January 2006.

The take-up of broadband internet has been surprisingly slow (Figure 2.5). Part of the explanation is the absence of competition from cable TV. A second factor is that the retail price of broadband⁴ and the cost that potential providers face to access unbundled local loop lines have for several years been more expensive than in most comparable countries. These issues are probably related to insufficient competition.

Figure 2.5. **Broadband take-up has been slow**

Broadband subscribers per 100 inhabitants, June 2005



Source: OECD Broadband Statistics, June 2005, www.oecd.org/sti/ictindicators.

Airports and buses are the main competition issues in the transport sector

Transport costs are important for Irish competitiveness, and much progress has been made in several areas such as taxis and airlines. However, little progress has been made in improving the competitiveness of airports and the reform of bus transport has been incomplete.

Taxis

Taxi reform has been a success. Until 2000 the number of taxi licenses was restricted and taxis were hard to get. A taxi licence cost more than € 100 000. Restrictions on the number of licenses were removed in November 2001. Since then, the number of taxis in the Dublin area for example has quadrupled. The industry is still subject to price control. The new Commission for Taxi Regulation, which has taken over the responsibility for setting maximum prices from local authorities, is also empowered to set standards regarding vehicle quality. It is important that these powers are used only to provide sensible protection for consumers and not as a backdoor route to re-regulation and protection of the existing operators. Moreover, it may be helpful for the taxi regulator – and many of the other sector regulators – to enter into Memorandums of Understanding with the Competition Authority to ensure a consistency of competition policy across sectors.

Air traffic

Airlines are largely deregulated and Irish consumers have considerable choice of carrier. At the end of 2003, there were 37 airlines operating regular scheduled services to

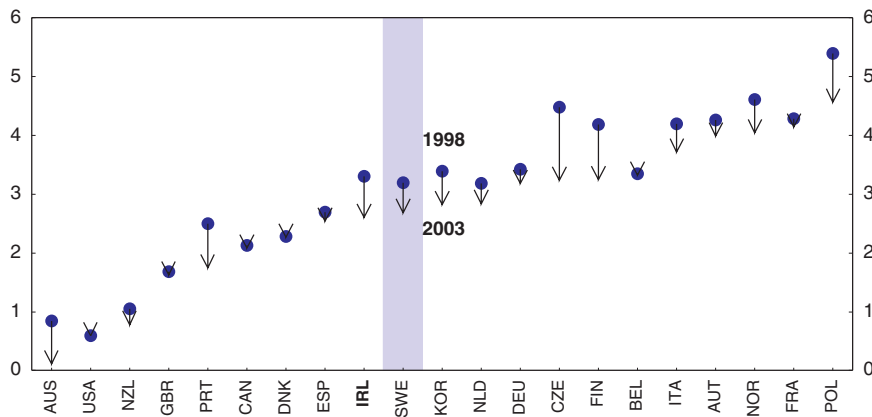
83 different destinations from Dublin, which is by far the predominant hub. Since the deregulation of the Ireland-UK air travel market in the mid 1980s and the EU market in the mid-1990s, increased competition has made low cost fares more available to the costumers. The government is also considering selling a majority stake in the national airline, *Aer Lingus*. The airports, in contrast, have suffered from regulatory problems. The three main airports (Dublin, Cork and Shannon) are all publicly owned. Dublin airport faces capacity constraints because over the past few years expansion has been put on hold by the government pending policy decisions. However, it announced in 2005 that a second terminal would be built. To encourage regional development, Cork and Shannon airports have consistently lost money by setting prices too low. As part of a regulatory overhaul that came into force on 1 October 2004, the Aviation Commission will no longer set the maximum price for Cork and Shannon in the hope that their new autonomy will increase incentives to earn a reasonable rate of return.

Buses

The bus market is far from competitive. In many countries this might be a comparatively small problem, but in Ireland it adds to the already severe problem of infrastructure bottlenecks, especially as the rail network and other forms of public transport are very limited. The Department of Transport, as regulator, controls prices and the operation of routes, frequency and the number of operators. The Department also has ownership responsibility for the dominant incumbent operator, CIÉ. This state-owned company has a monopoly on public service contracts. Competitors can find it difficult to obtain a licence if it would involve head-to-head competition with CIÉ.⁵ Under pressure from the European Court of Justice, the government is considering liberalising the bus market. It is looking at appointing an independent regulator, allowing private companies to bid for CIÉ routes and letting up to 15% of new routes in Dublin to be run by private operators. These steps, if taken, would be welcome and would contribute to a much needed expansion of the network. However, there is no reason to stop at 15%. If the market is well regulated and if public service obligations are delivered through an appropriate subsidy regime, there is no reason why private operators could not have the whole market if they are able to provide better and cheaper service than the state-run incumbent.

State ownership remains high

A final issue is that Ireland is well behind the best performers when it comes to the level of *state ownership*. Today, state-owned firms have a monopoly or dominant position in the post, energy, transport, health insurance, television and forestry industries. The government also has interests in airlines and hotels. Although there has been some liberalisation and privatisation since the late 1990s, Ireland remains around the middle of the pack when it comes to state involvement in commercial and potentially competitive industries (Figure 2.6). State ownership can be a barrier to competition even when there are no formal barriers to entry because state-owned companies can benefit from gentle regulatory oversight, a lower cost of capital due to implicit guarantees, implicit subsidies (or cross-subsidies) and from any dominant position they may retain from their days as protected monopolies.

Figure 2.6. **There is still considerable state ownership**¹

1. The scale of the indicators is from 0-6, from lowest to highest share of public enterprises; based on the extent of state ownership and (gross) proceeds from privatisations.

Source: Conway, P. et al. (2005), "Product Market Regulation in OECD Countries: 1998 to 2003", *Economics Department Working Papers*, No. 419, OECD, Paris.

Competition law is adequate but hard to enforce

Ireland updated its general competition law in the 1990s but at the time did not establish effective means of enforcing it. After further improvements in 2002, including stronger potential sanctions against hard-core cartels and a much-improved merger review process, the basic institutional structure is now adequate. The Irish Competition Authority (ICA) has more resources and has been using them to launch more investigations against hard-core cartels, issuing dozens of search warrants and summonses. But actual results so far have been limited as the ICA's initiatives have been challenged in the judicial process. As in all countries, enforcement effectiveness depends on persuading the courts about the importance of competition law infringements.

In principle, the sanctions that can be applied against hard-core violations are at least as strong as in other member countries. Firms and individuals face tough criminal penalties, including fines and imprisonment.⁶ However, the Irish constitution appears to rule out imposing fines by administrative order: they can only be imposed by a court as punishment for conviction of a crime. The 2002 amendments tried to facilitate conviction for hard-core offences by providing for something close to a *per se* rule: the law does not permit the defendant to avoid liability by claiming ignorance of the cartel's likely effect on competition. The Act is up for review in 2006 or 2007. It is expected that enforcement processes, including administrative fines, will be considered.

In practice, though, enforcement against hard-core conduct has shown limited results so far, largely because of the need to use criminal-law processes and to meet criminal-law standards of proof. While enforcement against hard-core offences is complex and difficult, the ICA has been proactive in acting against anti-competitive behaviour. It was the first enforcement agency in Europe to secure a criminal conviction for a criminal offence and will become the first to hold a criminal trial in front of a jury for breach of competition law. Nonetheless, substantial cases must be tried by the independent Director of Public Prosecutions (DPP) on referral from the Competition Authority (the Authority can bring a summary proceeding before a lower-level court, but the sanctions there are much smaller).

There have been few convictions so far, although it has taken time to adapt to the post-2002 regime and there are several cases currently before the courts. Instead, the Authority has found it more productive in some cases to reach out-of-court settlements that involve promises of good behaviour but no punishment of past violations. For example, price-fixing cases against pub operators were recently concluded by settlement agreements, with no admission of guilt. Some small fines have been imposed against resale price maintenance and boycotts but there have been no convictions for hard-core collusion.

Weak sanctions and uncertainty about the DPP's role also undermines the leniency programme. The programme itself is similar to that in other EU countries, except for the separation of roles between the two bodies. The Authority can recommend immunity but the DPP has sole discretion about whether to grant it. This separation between the Authority and the prosecutor is similar to arrangements in some other countries, such as Canada, Denmark and the United Kingdom, where a separate prosecuting office must handle criminal matters. But the lack of successful leniency cases suggests something is amiss. The leniency programme looks sound in principle, but in practice it may be neither sufficiently asymmetric nor sufficiently transparent and certain. With no reason yet to fear significant penalties, and perhaps some uncertainty about whether coming forward to the ICA will result in a binding commitment from the DPP, parties do not yet have enough incentive to use the leniency programme. Until they do, prosecutions will continue to be difficult.

The merger control system is functioning better since its revisions in 2002. The principal improvement was to remove all ministerial involvement. Decisions about mergers are now made solely by the Authority, applying a competition test⁷ (although the final decision in the media sector still involves the minister and parliament). The ICA prohibited a merger for the first time in 2004, and it applied conditions on two other matters, also for the first time. Reviews are being handled quickly and efficiently.⁸

Ireland has adapted its enforcement methods to the decentralised EU process that took effect in 2004. Individual exemptions and negative clearances are no longer granted. Ireland has a few "category declarations" covering general classes of agreements, which are analogous to EU block exemption regulations. The most important one concerns vertical agreements, and this has been revised to be consistent with the corresponding EU block exemption, providing for a safe harbour at a market share of 30%. Because Ireland's 1991 law did not create an effective public enforcement agency, private competition litigation has been unusually important. Ireland's experience with these cases, mostly about discrimination and refusal to deal, confirm some fears about out-of-control litigation. Court rules are therefore being revised to give the judges more power to manage complex cases, after a private competition case occupied 92 trial days.

The Authority's enforcement capacity has improved significantly, although its resources remain below the peer group of small-country competition agencies. After being chronically under-staffed in 2000, the ICA's authorised staffing level of 59 is now similar to the competition agencies in Greece and Portugal. An increase to about 75 would bring it close to those of Denmark and Finland, but it would remain below those in New Zealand and Norway. The ICA has tried to clarify responsibilities for sectoral issues, which had been a point of controversy, through a series of co-operative agreements with the sectoral regulators for broadcasting, energy, aviation, communications and consumer affairs. As the ICA has emphasised how competition enforcement benefits consumers, awareness of the relationship between competition and consumer policies is improving.

Box 2.1. Summary of recommendations

- Examine the legal issues associated with giving the Competition Authority power to impose sanctions in order to improve enforcement. Review staffing of the Authority. Try to speed up and lower the costs of court proceedings.
- Go ahead with plans to abolish the Groceries Order. Make the retail planning guide more flexible to allow bigger stores.
- For pharmacies, replace the 50% retail markup with a flat dispensing fee, auction the right to run a pharmacy and swiftly implement plans to abolish the “three year” rule for pharmacists who were not trained in Ireland’s own limited facilities.
- Remove the ceiling on the number of pub licenses.
- Remove unnecessary restrictions in the legal profession (along the lines of recent reforms in the United Kingdom), especially by abolishing the bar council’s monopoly on legal training. Speed up the registration process to make it easier for foreign-trained doctors, dentists and vets to set up a practice in Ireland. As a general rule, licence holders should not be compensated when entry is liberalised.
- As a matter of urgency, integrate the electricity market with Northern Ireland and the rest of the United Kingdom. Split up ESB by separating the transmission grid from the generation capacity. Consider also splitting the generation side into competing firms.
- Liberalise the bus market. Appoint an independent regulator and remove restrictions on the number of bus routes that can be operated by private firms.
- Reduce state ownership.

Notes

1. The Groceries Order covers normal grocery items, which essentially covers food and drink but excludes perishables such as fresh fruit and vegetables and fresh and frozen fish and meat.
2. The government is considering a public-private partnership arrangement to build two 500 MW connectors to the UK. This would be equivalent to around 4% of Ireland’s electricity consumption.
3. The government sold Eircom by way of an IPO in July 1999. In December 2001 it was taken over by a consortium of financial institutions, Valentia telecommunications. It was floated on the Irish and London Stock Exchanges in March 2004 (ComReg, 2005).
4. It matters whether price comparisons for broadband are adjusted for purchasing power parities. Broadband is a technology in which the component costs are largely set on international markets (i.e. it is a traded product), so it is more appropriate to not make purchasing power parity adjustments when comparing prices across countries. Broadband appears to be less expensive in Ireland when these adjustments are made because the overall price level is high in Ireland.
5. In 2004, for example, the private operator Citylink was refused a licence to operate a Galway-Limerick-Cork service. The Department of Transport told the company that there was no indication of demand for such a service (Irish Times, 2005).
6. The fine for horizontal price fixing can now be up to € 4 million or 10% of annual turnover (whichever is greater). An individual violator faces both a fine and imprisonment of up to five years.
7. The substantive test for merger control in Ireland (and the United Kingdom) is the somewhat more general “substantial lessening of competition” standard, rather than the traditional EU test based on dominance. The new EU test, of “substantial impediment to effective competition”, is approximately the same in practical effect.
8. Of the 94 transactions the ICA assessed in 2004, 89 were cleared within the one-month “phase one” deadline. Notification thresholds were raised and simplified in order to reduce the number of transactions requiring pre-notification.

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ANNEX 2.A1

Follow-up on regulatory reforms

This annex reviews action taken on the main sector-specific recommendations from the OECD's 2001 *Review of Regulatory Reform in Ireland*. It does not deal with the large number of recommendations concerning the legal framework and the administration of competition law.

Recommendations	Action taken
Remove licensing constraints on free entry, particularly those with quantitative limits.	No action.
Eliminate special-interest rules that inhibit efficient competition, such as the Groceries Order.	In 2005, the government announced its intention to abolish the Groceries Order.
Expand competition in the provision of public services at the local authority level. An effective means would be competitive tendering of public services, within the framework of quality standards and monitoring.	No action.
Vigorously enforce competition policy in the self-regulated professions.	The Competition Authority has published a review of anti-competitive practices in various professions and is following this up.
Eliminate both the restriction on economic freedom of pharmacists educated in other EU countries and the location restrictions on pharmacies.	Location restrictions were removed in 2002.
In legal services, move the control of education and entry of legal professionals from the self-governing bodies, but maintain close ties as regards quality of entrants and content of education and training, and maintain the freedom of solicitors to advertise their fees and areas of specialisation.	No action.
Increase competition in the electricity sector by:	
<ul style="list-style-type: none"> Prohibiting further additions to ESB's generating capacity. 	No action.
<ul style="list-style-type: none"> Requiring ESB to sell some plants. 	No action.
<ul style="list-style-type: none"> Ensure that rules and charges for access to the transmission grid are cost-based and non discriminatory. 	No action.
<ul style="list-style-type: none"> Separating transmission from generation if transmission constraints are not relieved or if there is discrimination in access. 	No action.
<ul style="list-style-type: none"> Increase transmission capacity with Northern Ireland. 	There are plans to upgrade transmission capacity with Northern Ireland and Wales, but they have not yet been finalised.
<ul style="list-style-type: none"> Ensure that long-term contracts do not block further liberalisation. 	No action.
<ul style="list-style-type: none"> Free choice for consumers by 2005. 	Achieved
In the gas sector:	
<ul style="list-style-type: none"> Shift responsibility for transmission access to the Commission for Electricity Regulation. 	No action.
<ul style="list-style-type: none"> Ensure tariffs are cost-based, which may mean they vary across the country. 	No action.
<ul style="list-style-type: none"> Separate transmission from the potentially competitive activities. 	No action.

Recommendations	Action taken
Eliminate peat subsidies and replace them with more efficient regional support.	No action.
In the telecoms sector:	
<ul style="list-style-type: none"> ● Streamline licensing using general authorisation rather than individual licensing. 	Relevant EU Directives have been implemented.
<ul style="list-style-type: none"> ● Do not extend the five-year exclusive licence granted to cable operators past 2004. 	Achieved.
<ul style="list-style-type: none"> ● The cost of the universal service obligation should be calculated and charged to consumers. 	No action.

Chapter 3

Investing in skills

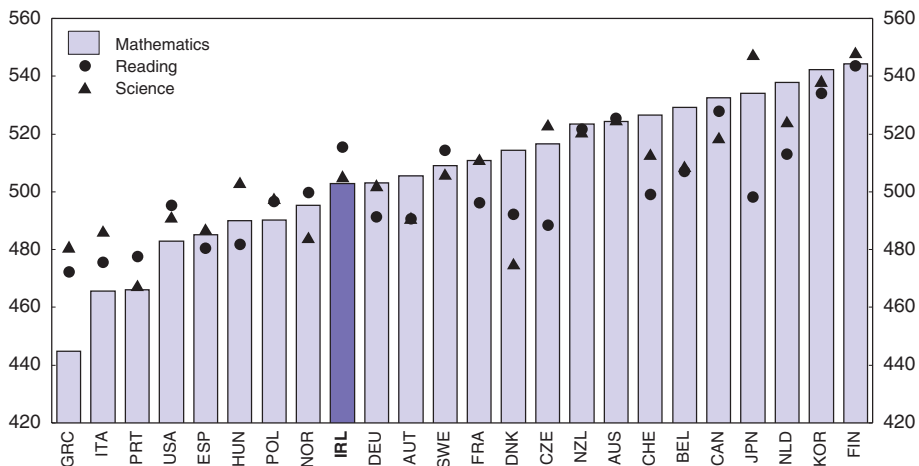
Impressive gains in labour productivity have boosted Ireland's economic growth since the early 1990s. They were underpinned by a steep rise in the educational attainment of the working-age population. This largely represents the pay-off on the investment that was made from 1967 onwards with the provision of free secondary education to all. Educational outcomes are now broadly in line with the OECD average but still far below the results achieved by the best performers in the OECD. Further efforts at all levels, from pre-primary school to tertiary education and continued learning, are needed to bring the education system nearer to best practice.

Pre-tertiary education

The share of the population with upper secondary education is rising rapidly. More than three out of four people aged 25-34 have completed upper secondary education compared with just 38% of those aged 55-64 (Figure 1.9). The rapid increase in human capital has had a particularly beneficial effect on economic growth because it happened when global demand for skilled labour rose significantly. Using a growth accounting framework, Hamilton (2005) estimates that, by raising employment and labour quality, the increasing educational attainment has contributed 2.1 percentage points per annum to economic growth over the period 1994-2003. With a different approach based on a production function, Bergin and Kearney (2004) estimate that, had the educational attainment of the Irish population remained at its 1980 level, national income per head would be 20% below its current level. But despite this improvement, the proportion of young people who have completed upper-secondary education, while above the OECD average, is still much lower than in the best performing countries.¹

The performance of students of school leaving age can be gauged by standardised testing under the OECD Programme on International Student Assessment (PISA; OECD, 2004a). Ireland is among the best countries for reading but the scores in mathematics and science are average (Figure 3.1). In mathematics, Ireland's score is more than one standard deviation below the average score obtained by the five best performers (Canada, Japan, Finland, Korea and the Netherlands).

Figure 3.1. **Basic skills of 15-year-olds in mathematics, reading and science**
Mean score in PISA 2003



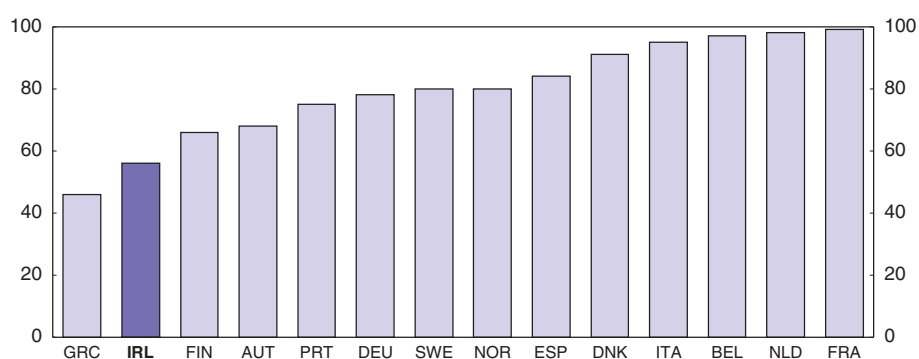
Source: OECD (2004), *Learning for Tomorrow's World: First Results from PISA 2003*.

The number of people leaving the education system with no upper secondary education is a cause for concern. Some 14% of those aged 20-24 have dropped out of the education system without having completed upper secondary education. This proportion is close to the OECD average, but far less satisfactory than in the best performing countries: in Norway, for instance, the proportion is less than 5% and it is below 10% in Austria, Sweden, Switzerland, the Czech Republic and Poland (OECD, 2005a). In a country where the minimum wage is high in comparison with average wages, low-skilled people have serious difficulty finding jobs. In 2003 for example, the employment rate of men and women without upper secondary education was 3 percentage points below the OECD average (OECD, 2005b).

Expanding early childhood schooling

Access to early childhood education can improve educational attainment later in life. In Ireland, pre-primary education is provided mainly by primary schools in so-called infant classes. While four-year-olds and five-year-olds are entitled to attend infant classes, provision is truly universal only for five-year-olds: only half of children aged four and few children aged three are enrolled. A programme called *Early Start* provides schooling for three-year-old children living in disadvantaged areas. Overall, the proportion of children aged 3-6 who are receiving pre-primary education is only 56% – a very low rate by international standards (Figure 3.2). In addition, those who are enrolled often attend large classes. The teacher-child ratio is in principle capped at 29, but one in four pupils are attending classes of 30 or more (OECD, 2004b). Moreover, the school day is short in infant classes, where sessions last four hours and forty minutes daily. It is even shorter in the *Early Start* programme: two and a half hours a day.

Figure 3.2. Access to pre-primary education is limited
Percentage of children aged 3-6 enrolled in early childhood services¹



1. Data cover the latest available year which is between 1998 and 2000.

Source: OECD (2004), "Early Childhood Education and Care Policy: Country Note for Ireland", Directorate for Education, OECD, Paris, April, www.oecd.org/edu/earlychildhood.

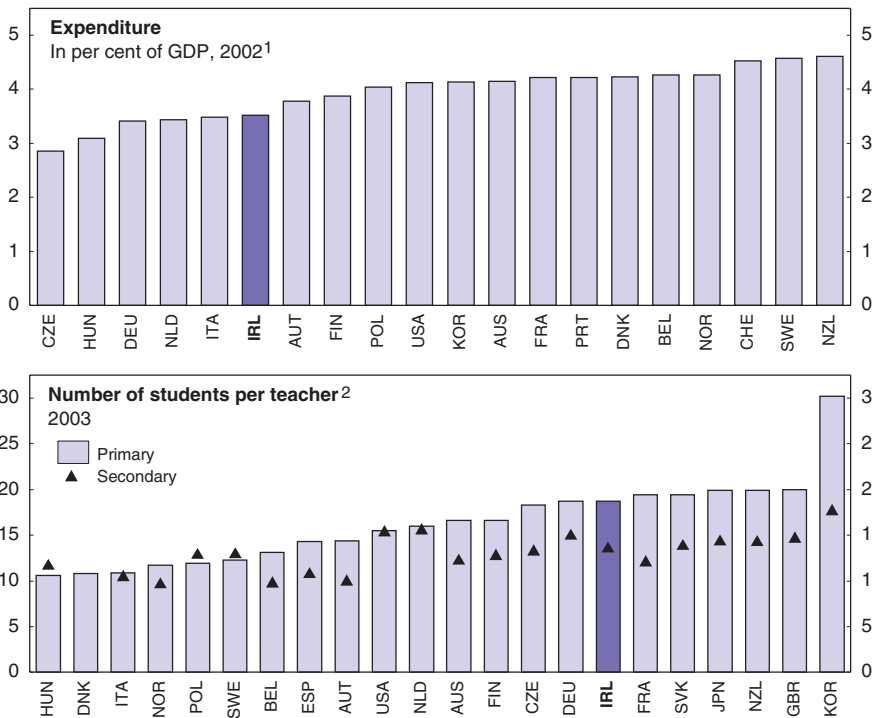
Low enrolment and short school days probably contribute to limiting the educational performance of pupils later and call for more investment. Most studies have concluded that early childhood education brings long-lasting benefits: enrolled children are more likely to have better school outcomes and stronger social skills later in their lives (Brooks-Gunn, 2003; Campbell et al., 2001; Barnett, 1995).² For children to benefit most from

expanded early schooling, the government should aim at reducing class sizes and extending sessions, especially in the *Early Start* programme.

Improving outcomes in primary and secondary education

The low amount of investment in primary and secondary education means that few resources are available to help the students with difficulties in order to reduce their risk of dropping out.³ Spending on primary and secondary education is just 2½ per cent of national income, which is well below the OECD average (Figure 3.3, top panel). As teachers are relatively well paid by international standards,⁴ the limited amount of financial resources translates into high numbers of pupils per teacher, especially in primary schools (Figure 3.3, bottom panel). Large class sizes limit the time that teachers can use to help underperforming pupils to catch up with the rest of the class and are generally considered to exacerbate the risk of dropping out.

Figure 3.3. Spending on primary and secondary education is low



1. Direct expenditure from public and private sources, including international. In per cent of GNI for Ireland.
2. Public institutions only for Norway. For secondary education, the series for Australia and the United Kingdom only cover general programmes.

Source: OECD (2005), *Education at a Glance*, Paris.

The approach taken in Ireland to address the needs of children with difficulties has been to “mainstream” such pupils in ordinary classes while providing them with specific support. A consequence of this approach is that there are few remedial or catch-up programmes for children who fall behind: less than 1% of pupils with severe learning disabilities are enrolled in special classes or schools against 90% in Germany and almost 100% in France (OECD, 2004c). A number of special programmes, including the Action Plan

for Educational Inclusion adopted in May 2005, are targeting pupils from disadvantaged backgrounds rather than specifically those who are experiencing learning difficulties.

Despite the low spending, there are signs of inefficiencies in the provision of secondary education. Using data envelopment analysis,⁵ Afonso and St. Aubyn (2005) found that the average performance of Irish students, as measured by the OECD Programme on International Student Assessment, could be about 10% higher with unchanged resources. The rigid pay scale that applies uniformly to nearly all teachers is another likely source of inefficiency because it prevents salaries from reflecting different labour market conditions across subjects. With such a compensation system, retaining qualified mathematics and science teachers, whose skills are in increasing demand in an ever more high-technology oriented economy, may become challenging at a time when the education system needs more of them with the planned introduction of science education in primary schools and its expansion in the junior high school curriculum (ICSTI, 1999; Coolahan, 2003; Dempsey, 2004).

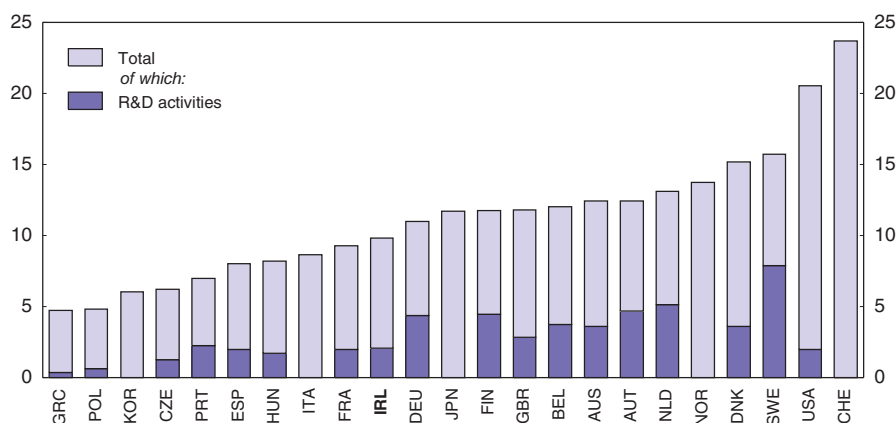
Further investment in primary and secondary education appears warranted. In funding primary and secondary education, the priority given to helping pupils with difficulties is welcome and should be reaffirmed. Targeting efforts on underperforming children is more efficient than gearing resources towards children with characteristics that are only poorly correlated with school outcomes (such as their socio-economic backgrounds). Moreover, in the longer term, the authorities could consider making pay more decentralised and flexible so that schools can adapt teachers' salaries to labour market conditions in a given subject.

Fees could improve access and provide additional funding for higher education

Below-average investment in tertiary education is unlikely to be sufficient to sustain strong labour productivity gains. At € 9 830 a year per student in 2002, expenditure on higher education was fairly low by OECD standards and below half the US level. With an additional € 251 per student per year, the Strategic Innovation Fund created by the 2006 Budget will not fundamentally change the situation (Figure 3.4). Another cause for concern

Figure 3.4. **Investment in human capital through higher education is lagging behind other OECD countries¹**

Annual expenditure per student on higher education in equivalent US dollars, 2002²



1. Public institutions only for Hungary, Italy, Portugal and Switzerland.

2. Based on full-time equivalents. Data converted to US dollars using current purchasing power parities for GDP.

Source: OECD (2005), *Education at a Glance*, Paris.

with the higher education system is the low level of research budgets in universities and institutes of technology (Chapter 4).

Taxpayers pay for 85% of national expenditure on higher education. The Irish higher education system is primarily structured around twenty government-funded institutions: 7 universities and 13 institutes of technology (which have a more vocational orientation). The share of public funding rose considerably in 1995 when the government abolished fees for undergraduate university studies. The aim was to improve equality of access across social groups but it does not appear to have worked (Harmon and Sheehan, 2004). The main reason is probably that lower-income families were exempt from tuition fees prior to 1995, implying that the main beneficiaries of the change have been middle-income families. In 2002, transfers by the state on behalf of students added up to 30% of universities' resources (OECD, 2005c). Fees remain in place only for part-time students, graduate students and non-EU nationals, while all students must pay a "registration charge" of € 750 per year (with exemptions for low-income families).

Moving to a tertiary education system that would give universities more financial autonomy and the possibility to levy student fees – two key recommendations made by the recent *OECD Review of Higher Education in Ireland* – would present many benefits. Experience in other countries is that the benefits far outweigh any drawbacks. For example:

- Fees would increase the resources of higher education institutions. In New Zealand, for instance, the policy of "money following the student" (quasi-vouchers) combined with a fee and loan system led to an enormous expansion in the resources available to the tertiary sector and a corresponding increase in access by students of all socio-economic backgrounds.
- Fees encourage better resource allocation because they strengthen the incentive for students to follow – and for universities and institutes of technology to offer – programmes with a high return to education. By this channel, tuition fees can boost the return on investment in human capital.
- Fees make higher education institutions more responsive to the needs of students and, perhaps even more importantly, would-be students. In countries that have introduced them, there has (with some caveats) been a visible rise in the quality of teaching as students feel they are paying for the service and demand better performance.
- The overall cost to society of a given amount of investment in higher education is lower when private expenditure makes up a higher share of the resources.
- They are fairer, since most of the benefits of tertiary education accrue to the individual and the majority of tertiary students come from higher-income backgrounds.

A key requirement when introducing tuition fees is to ensure that they do not work as obstacles to the participation of students from disadvantaged backgrounds. Australia and the United Kingdom offer concrete examples of ways to attain this objective without diminishing the benefits attached to fees: both countries have introduced tuition fees that are not paid at the time of study but repaid later from earned income (OECD, 2004d and OECD, 2005d). A scheme of this nature appears advisable for Ireland as it creates an incentive to maximise the return on education (the main benefit of fees) while eliminating the risk that credit constraints might prevent would-be students from disadvantaged backgrounds to study. The alternative of subjecting fees to means testing (or equivalently granting allowances to students from low-income families) is less attractive because the

incentive is lost and it raises marginal effective tax rates of the parents, thus exacerbating poverty traps.

An important caveat is that, to produce the expected benefits, fee income should come on top of a pre-determined amount of public funding. If higher education institutions were made free to raise tuition fees from their students but found themselves engaged in a process where higher fee revenues were offset by reductions in public grants, the desirable incentive for education providers would vanish. The importance of this point is illustrated by the current situation of part-time students. That part-time students pay tuition fees should encourage higher education institutions to design programmes for them. However, because of the perception that tuition fee income may be offset against recurrent grants, the supply of part-time programmes by universities and institutes of technology remains scarce (OECD, 2005c).

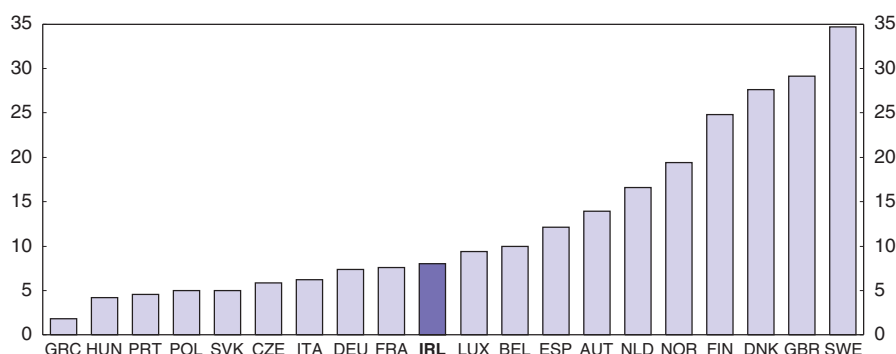
It should be noted that the scheme proposed here would not amount to merely re-introducing undergraduate tuition fees since the scheme differs from and would improve on the pre-1995 regime in at least two ways. First, everyone would be treated equally whether they go to university or to an institute of technology (where fees were absent before 1995). Second, the fees would not be paid up-front but would be repaid from earnings later. The introduction of fees should be seen as a desirable long-term objective, even if prevailing views about such fees mean that the odds of rapid implementation are low. The recommendation in the *OECD Review of Higher Education in Ireland* for introducing fees, even though it gathered support from the academic community (Barrett et al., 2004 and Sheehan, 2005), prompted a lively debate that led the government to make the policy decision not to implement it in the near term.

Creating favourable conditions for lifelong learning

Relatively few employees attend education programmes or participate in training activities (Figure 3.5). The low take-up of lifelong learning raises concerns because of the high degree of specialisation in high-technology sectors, which is the highest in the European Union (ECB, 2004). The situation of weak investment in continuing education is all the more surprising since the adult population has a comparatively low level of

Figure 3.5. Few employees are engaging in lifelong learning activities

Percentage aged 25-64 who received education or training in the four weeks preceding the survey, 2005¹



1. Provisional data for Luxembourg and the United Kingdom; 2004 for Germany.

Source: Eurostat database, Structural indicators, January 2006.

educational attainment: 38% of people aged 25 to 64 did not complete high school, against 12% in the United States and 13% in Switzerland. Plant-level data for Ireland suggest that the apparent paradox of a high level of labour productivity despite low educational attainment and limited lifelong learning can be explained at least in part by the fact that training is widespread in plants where it is found to have a strong positive effect on productivity (Cassidy *et al.*, 2005).

Do any market failures warrant measures to encourage more training and adult education? Since effective training or adult education translates into higher productivity and higher wages (especially in a well-functioning, competitive labour market such as Ireland's), the *prima facie* case for government intervention is weak. In other words, because workers and companies bear the cost of continuing learning and reap its benefits, they have every incentive to invest optimally. Some factors can however nuance this conclusion (OECD, 2001 and Blöndal *et al.*, 2002). At least four appear to be relevant in the case of Ireland. First, workers, and especially the low-skilled, can have difficulty securing loans or face borrowing rates that exceed the social discount rate, thus leading to under-investment in continuing learning. Second, businesses have little incentive to help employees to overcome liquidity constraints or to pay for continued education themselves since they face the risk that employees may leave after training. Third, individuals are likely to be more risk-averse than society as a whole. Fourth, taxes on income reduce the return on investment in continuing education, all the more so when they are steeply progressive as in Ireland.

Considering these factors, the amount of public funding for continuing education of adult employees appears to be on the low side at 0.03% of GDP. An important consideration, however, is that public funding for the education and training of employed individuals must take full account of all costs, including foregone production, when weighing them against the benefits of the programmes. In particular, any increase in public funding for the training of older workers should focus on helping the most vulnerable groups and avoid subsidising general higher education. Private returns to higher education are usually strongly negative from the age of 50 onwards (Blöndal *et al.*, 2002), suggesting that social returns may not be positive either.

Access to further education could be improved without additional spending by correcting imperfections in current public policies. A majority of adult workers willing to receive higher education are looking for part-time programmes that would allow them to combine work and study. As noted above, and in contrast to full-time students, part-time students pay tuition fees for higher education programmes. However, because universities and institutes of technology are operating under the assumption that tuition fees paid by part-timers will be partly offset by reductions in grants from the Exchequer, they have little incentive to adapt to the needs of part-time students (OECD, 2005c). There are indications that universities may be using poor Leaving Certificate grades (obtained at the time of high school graduation) as a way of turning down some would-be older students. It is no coincidence that, despite its small share in higher education, the private sector has specialised in part-time tertiary education and is an important provider thereof. The main privately funded institution, the National College of Ireland, counts around 3 000 part-time students and only 900 full-time students.

Increasing investment in human capital in an efficient way

There is a clear rationale for more investment in human capital, not so much through additional public spending as through reordering priorities. The recommendations in Box 3.1 could be implemented without much additional public spending by shifting resources from higher education institutions, where private financing would play a greater role, to pre-tertiary education, where the main focus should be on improving early schooling.

Box 3.1. Summary of recommendations

- Invest more in pre-primary schooling by:
 - ❖ Generalising pre-primary education from the age of three.
 - ❖ Avoiding infant classes of more than thirty children.
 - ❖ Expanding the duration of daily classes.
- Improve outcomes in primary and secondary education by targeting efforts on children with learning difficulties (rather than on those from disadvantaged backgrounds).
- Give universities the means to increase their resources and the incentive to be more responsive to students' needs by:
 - ❖ Levying fees that students (including part-time students) repay from their subsequent earnings.
 - ❖ Ensuring that fee income is not offset against a pre-determined level of public funding.
- The suggested changes to the funding of higher education institutions should go a long way towards helping would-be adult students to find programmes that suit their needs better. Publicly-funded training programmes should be limited to the most vulnerable groups.
- If a general move towards fee-based financing of higher education institutions proved impossible, at least a level playing field should be established between full and part-time students regarding fees and funding.

Notes

1. At 78%, the proportion of people aged 25-34 who have completed upper-secondary education is slightly above the OECD average of 75% and well below the rates of 87%, 94% and 95% in the United States, Japan and Norway, for example (OECD, 2005e).
2. See OECD (2004b) for more references of studies appraising the returns on early childhood education.
3. The issue is not one of Ireland having more underachievers than the best performing countries: PISA marks obtained by pupils in the lower decile are relatively high by international comparison. The problem is that, compared with the situation in the best performing countries, underachievers are at a higher risk not to complete high school.
4. See Chart D3.1a in OECD (2005e).
5. This technique sets outputs against inputs (costs) for various OECD countries and thereby defines an efficiency frontier. For countries that are not on the efficiency frontier, the technique produces an estimate of the possible improvement in outputs for the same level of inputs.

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Chapter 4

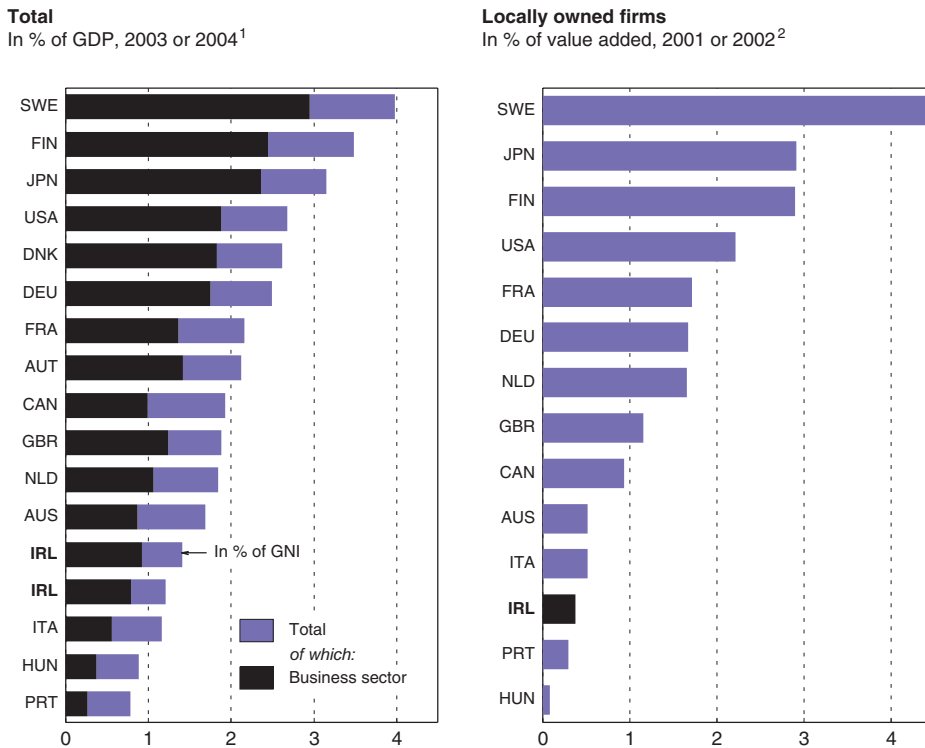
More innovation, better results

In the years to come, productivity growth will need to play the primary role in sustaining Ireland's strong economic performance because labour supply is already relatively high and there are speed limits to increasing it further. While the productivity performance has been stunning over the past decade, Ireland has relied to a large extent on foreign corporations as the main generator of innovation and research. The local research base remains thin and public funding of R&D, although having grown quickly, has barely kept pace with economic output. This chapter reviews Ireland's innovation performance and discusses policy options for better focussing scarce funds on delivering commercially-oriented innovations.

Ireland's innovation performance

The level of spending on research and development has increased sharply over the past decade (by 42% since 1996, after adjusting for inflation). But even this expansion has not been fast enough to keep pace with the underlying growth in output. Ireland's R&D intensity (research and development as a percentage of GDP or GNP) has therefore barely changed over the past one or two decades and remains well below the OECD average (Figure 4.1).

Figure 4.1. R&D intensity is low



1. 2002 for Australia, Austria and Italy.

2. 1999 for Australia and 1998 for Hungary.

Source: OECD (2005), *Main Science and Technology Indicators*, Vol. 2 and OECD (2005), *OECD Economic Globalisation Indicators*.

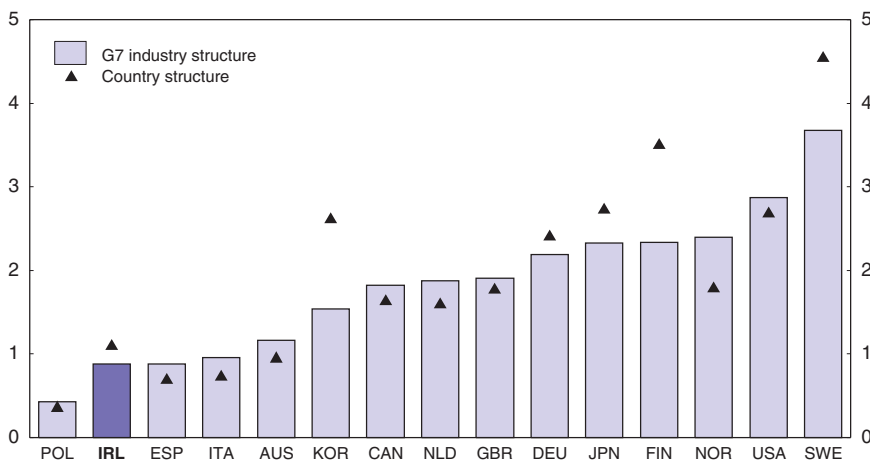
Around two-thirds of R&D expenditure is undertaken by the business sector. Two-thirds of that is performed by foreign multinationals operating in Ireland. Hence, the R&D intensity of locally-owned firms is especially low, and is similar to the level seen in countries such as Portugal, Hungary and Spain (Figure 4.1). As in most countries, a large proportion of business-sector research is performed by a handful of companies, with only

70 indigenous and foreign firms spending more than € 2 million a year on research. Spending is also concentrated in a small number of industries. The lion's share of R&D takes place in the ICT sector (which includes software development); much of the remainder goes to the food and drink industry (for indigenous firms) and the pharmaceutical and medical instrument sectors (for foreign companies).

Staffing bottlenecks are among the factors that have limited the growth of R&D expenditure: there is a limit to how quickly the number of researchers can be increased. A combination of time lags and funding constraints in universities has limited the number of home-grown scientists, although this has been offset to some extent by an inflow of foreign researchers and the return of many of the well-educated citizens who emigrated during the 1970s and 1980s (Barrett, 2001). Despite this inflow, the share of researchers in total employment remains relatively low. This is particularly the case for the most advanced and specialised staff: around 90% of researchers in the business sector do not have a PhD.

The low R&D intensity is even more surprising when it is considered that the country has such large ICT and pharmaceutical sectors. These industries are three to four times bigger (in relation to the size of the economy) than in the G7 economies and are very R&D intensive, implying that if Ireland's industrial structure was more like the G7's then its relative R&D performance would be even worse (Figure 4.2). Of course, this reflects the fact that these two sectors are almost entirely foreign owned and multinationals tend to do most of their R&D at home. The challenge is to encourage them to do more of their research in Ireland.

Figure 4.2. **R&D intensity in the business sector**
Adjusted for variations in industry structure, in per cent of value added, 1999-2002



Source: OECD (2006), *Going for Growth*, Economic Policy Reforms.

Research in the universities and technical institutes

Historically, research by higher education institutes has been a particular weakness. Universities were largely incapable of carrying out high quality research due to a lack of infrastructure and minimal funding of researchers. The EU framework programmes were the only substantial source of funding available to Irish researchers (Forfás, 2004). Government funding until 1998 was in the form of a block grant to cover both tuition and

research but cost pressures concerning teaching crowded out the research capability of the institutions. This is probably why expenditure on basic research, including by enterprises, was among the lowest in the OECD, similar to the levels (as a proportion of GDP) of the Slovak Republic, Spain, Portugal and Poland. It also explains why many science and technology buildings built in the 1960s and 1970s are no longer fit for the purpose and are seriously in need of renewal.

Government funding for research was increased significantly in the National Development Plan for 2000-06 and several arms-length councils were created to allocate the resources (Box 4.1). In particular, the Programme for Research in Third Level Institutions (PRTLTI) has invested considerable sums in the capital and equipment infrastructure needed for science. There is a consensus that the PRTLTI and its sister programmes operated by agencies such as *Science Foundation Ireland* have dramatically improved the research landscape. There has been a considerable boost in capital spending and in the funding of individual researchers. While the improvement has been impressive, it has come from a low base. Public funding for R&D remains well below the OECD average, and research funding per student and per faculty member is much less than in similar universities elsewhere (Figure 4.3).

Box 4.1. The main players in the science arena

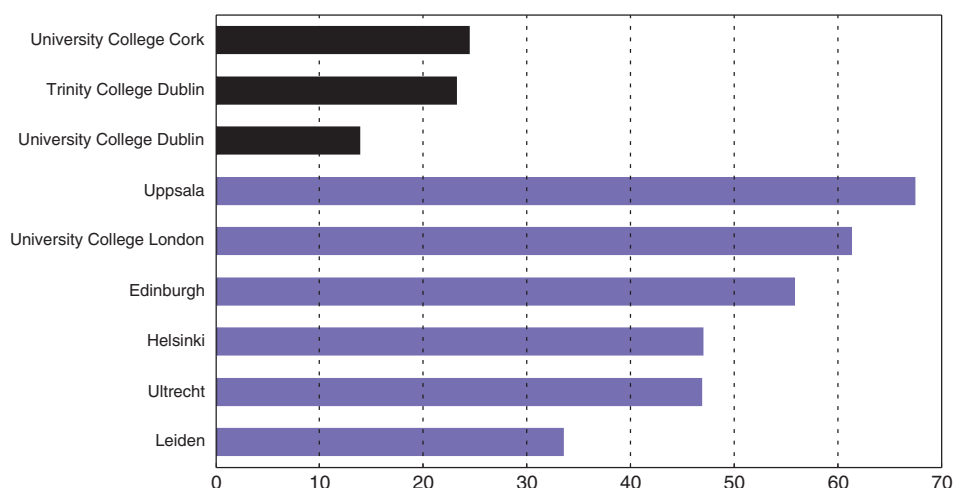
The **Programme for Research in Third Level Institutions** (PRTLTI) is administered by the Higher Education Authority and is the main funding source for upgrading Ireland's science infrastructure. It allocates funding on a competitive basis to universities and technical institutes and has spent around € 600 million (0.6% of this year's GNP) since 1998. It has had an enormous impact on the ability of higher education institutes to do science: floor space for research has tripled, for example, and PRTLTI funding has enabled the establishment of 24 major research centres, while around 800 post-graduate research posts were created and 1 900 publications generated (Forfás, 2004; HEA, 2002). About half of its money has gone into the bioscience and medical fields.

Science Foundation Ireland (SFI) provides peer-reviewed grants to researchers and research teams in the biotechnology and ICT fields. It funds professorships, research centres and collaborative efforts between academics, government and industry. Its emphasis is on funding people rather than specific projects, so the researchers themselves have considerable flexibility over their research programmes. It will spend € 646 million from 2000-06, including € 42 million on three new research centres to connect Irish universities with world-leading research corporations and with local ICT and biotech firms.

Two **Research Councils** (for Science, Engineering and Technology – IRCSET – and Humanities and Social Sciences – IRCHSS) are the main funding agencies for basic and applied research in their respective fields. Between them, the research councils will spend € 163 million from 2000 to 2006. They are overseen by the Department of Education and Science.

The **Office of Science and Technology** (OST) provides a co-ordinating role among the institutions and programmes listed above as well as the R&D activities of the business development agencies. It also gives independent advice on the research environment to the government. It is also responsible for basic research funding allocated to the SFI and applied research and commercialisation funding given to *Enterprise Ireland*.

Figure 4.3. University funding is lower than in comparable institutions
 Research funding per faculty member, 2004 for Irish faculties, 2002 for others, in thousand euros



Source: Irish Higher Education Authority.

Outputs from innovation

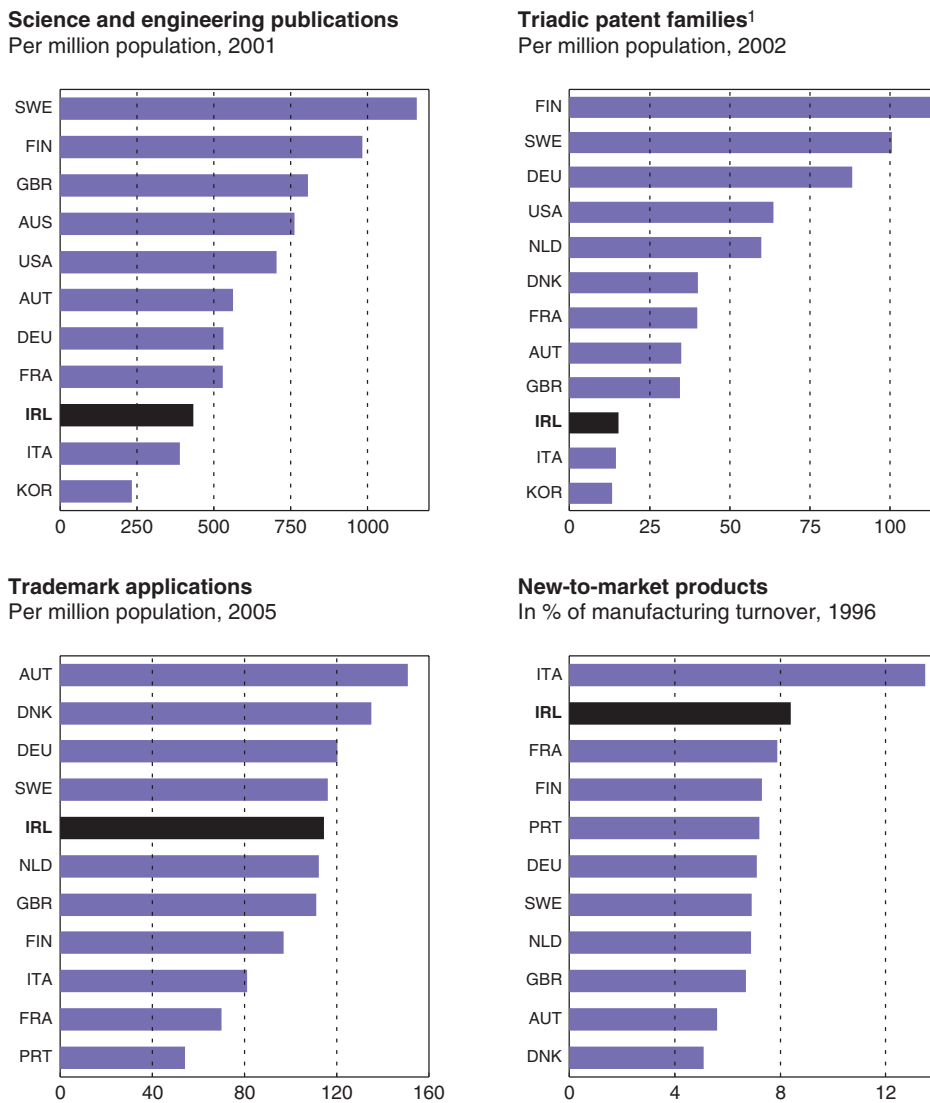
There are few good measures of the outputs from R&D expenditure and those that exist tend to give a mixed picture (Figure 4.4). The number of scientific and engineering publications per capita, for example, is below the OECD average; but the number of publications per euro of R&D spending is in line with other countries, suggesting that the basic or public good research that takes place in Ireland is fairly productive. Indicators of intellectual property protection also give conflicting signals. The number of triadic patents granted to Irish firms and researchers is consistent with the low level of R&D expenditure but trademark figures, which may be a better measure of non-technical innovation, paint a brighter picture: the rate of applications for European Community trademark protection is above average, having increased markedly since the mid-1990s. Moreover, the number of new-to-market products is comparatively high.

Policy and framework influences on R&D

Recent OECD empirical work has shown how innovation is affected by framework conditions and policy settings (Jaumotte and Pain, 2005). Perhaps the key finding from this work is that both formal research and informal product innovation are more likely to flourish in countries that have got their fundamentals right. It helps to have low inflation, a stable macroeconomic environment and well developed financial markets (and Ireland scores well in these areas). Policies aimed specifically at the science framework also have an influence, including subsidies and tax incentives for R&D, although factors such as intellectual property rights and links between industry and universities also matter. Competition is another important factor, whether it be competition from abroad (foreign investment and import penetration, for example) or from within (which is affected by the scope and severity of product market regulation). Some of the findings from this research are especially relevant for Ireland. In particular, R&D expenditure is influenced by:

- **Product and labour market regulation.** While theoretical arguments can be made both ways, the evidence is fairly unambiguous that competition helps to boost innovation. Less

Figure 4.4. Research outputs



1. According to the residence of the inventors and by priority year (the year of the first international filing of a patent). Triadic patent families are patents filed at the European Patent Office (EPO), the US Patent and Trademark Office (USPTO) and the Japanese Patent Office (JPO) to protect the same invention.

Source: OECD (2004), *OECD Science, Technology and Industry Outlook*; OECD (2005), *Main Science and Technology Indicators*, Vol. 2; Office for Harmonization in the Internal Market, OHMI Statistics; European Commission, Community Research and Development Information Service (CORDIS), *European Innovation Scoreboard 2002*.

stringent product market regulation and reduced employment protection tend to raise R&D intensity and patenting. Overall, Ireland has a relatively low level of product market regulation, so red tape and weak competition are not holding back innovation as much as they do in many other countries. Even so, there are some sectors where Ireland does not perform so well. These were described in detail in Chapter 2, and include some of the major utilities such as electricity and telecoms, along with parts of the service sector including retail trade and various professional services. Thus, the policy recommendations in that chapter aimed at enhancing competition may have spin-offs in terms of boosting innovation and research as well.

- *Public research.* Basic and applied research performed in universities and government laboratories can have sizeable impacts on business-sector R&D. Publicly performed research can often generate innovations that are useful for the business sector even if the potential commercial applications were not evident when the research began. To work well, this requires close linkages between the firms and government institutions. It is also important that the public institutions have incentives to protect and commercialise their intellectual property. Aside from such spillover effects, public-sector institutions can fill a gap by acting as contract researchers. This is especially useful in countries such as Ireland where most firms are too small to establish their own research team. Ireland's performance in this area is mixed. As noted above, public R&D remains low, and this may be one reason why business-sector R&D is below average. Links between industry and universities (measured by the amount of co-funding) used to be comparatively strong by OECD standards but fell sharply in the early years of this decade. Part of the problem may be a lack of funding and expertise in technology transfer and commercialisation. Another factor may have been the ownership of intellectual property rights in the past. Intellectual property is retained by the institution, although the new National Code of Practice recommends that the benefits be shared in a way that provides incentives for researchers and institutions to commercialise their inventions. If followed, these guidelines would be in line with emerging best practice in other countries.¹
- *Foreign exposure.* Trade enables a country to buy foreign innovations that are embodied in imported goods and services. It can also boost innovation by stimulating competition. Inward foreign direct investment (FDI) is an important channel for knowledge diffusion, while outward FDI is a means of sourcing technologies and knowledge from elsewhere. The evidence in Jaumotte and Pain (2005) suggests that foreign multinationals tend to boost R&D in the host country, implying they do not do their entire R&D at home. In this respect, Ireland clearly benefits from being one of the OECD's most open economies. It also benefits from having relatively high co-patenting rates.
- *Capacity to absorb innovations made elsewhere.* While foreign exposure helps, small countries cannot simply free-ride on research done abroad. Applying foreign know-how requires a local research base and a well educated workforce. As noted above, Ireland has a relatively low number of scientists (in relation to its population), the average educational attainment of the labour force is relatively low and the scientific and mathematical literacy of children of school-leaving age is only average (OECD, 2004a).

In summary, this suggests that Ireland should focus on improving the basic framework conditions – notably by boosting competition where it is weak – and improving the funding and delivery mechanisms to enhance the quality of research, while making it more commercially focussed. Mechanisms for doing so are discussed below.

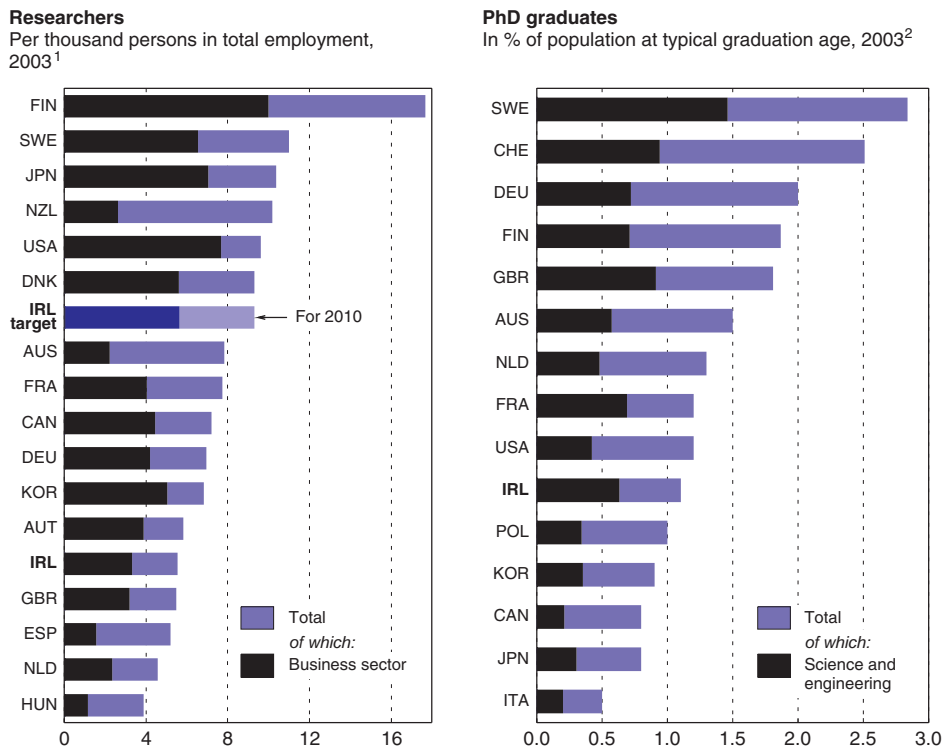
Policy issues

Is the government's R&D target realistic?

In concert with commitments made by other EU members as part of the Lisbon strategy for growth, the Irish government has set a target of boosting R&D intensity to 2.5% of GNP by 2013. As part of the goal, business expenditure on R&D should double to 1.7% of GNP. This is ambitious. After adjusting for differences in industry make-up, the only OECD countries that exceed this level of research expenditure are those with large defence

industries, such as Sweden and the United States. Moreover, unless the type of research is to change radically, this level of expenditure would require an additional 8 000 researchers by the end of the decade. But the country's education system is producing comparatively few scientists each year (around 500 to 600 PhDs for example, not all of whom will stay in Ireland), so it will need to import more than half of the required number of personnel. If it did manage this, Ireland would be one of the better-performing countries in terms of the share of the workforce employed as researchers (Figure 4.5).

Figure 4.5. **Human resources in R&D**



1. In full-time equivalents. 2002 for Australia, Austria, Canada and the United States; 2001 for Belgium and 1998 for United Kingdom.

2. 2002 for Finland and Italy, 2000 for Canada.

Source: OECD (2005), *Main Science and Technology Indicators*, Vol. 2 and calculations based on the OECD Education database, September 2005.

Having said that, compared with other countries Ireland has large foreign-owned pharmaceutical and ICT sectors. If these two sectors were to raise the domestic R&D intensity to typical OECD levels that would be enough to achieve the 2.5% target. This underscores the importance of creating the right framework conditions to encourage multinationals to shift part of their research programmes onto Irish soil.

What is the right balance between tax breaks and direct funding?

Most countries fund R&D with a combination of tax breaks and direct grants. For many years, royalties received from the use of patents have been exempt from income and corporate tax while spending on R&D equipment and facilities has enjoyed generous accelerated depreciation allowances. In 2004, these measures were augmented with a 20%

tax credit for incremental R&D spending.² The merits of tax breaks relative to direct funding depend on what type of research the government is trying to encourage (*e.g.* the relative weights given to basic science and subjects with high social returns *versus* research aimed at developing commercial products) and on the obstacles that firms face in undertaking R&D. Tax credits have the advantage that the research agenda becomes market driven, so that funding agencies do not have to pick winners and it is more likely that the research will have commercial applications. However, it does raise the chances of duplication, can generate substantial deadweight cost and can be less effective than direct grants at encouraging basic science or research with substantial social rather than private benefits or where some of the benefits spill over to other firms or industries. Grants, on the other hand, provide a better opportunity to focus incentives on domestic firms that might become better intertwined in the supply chains of the multinational sector. International experience and the econometric evidence (Jaumotte and Pain, 2005) suggest that fiscal incentives do work and that tax breaks for private R&D provide a stronger stimulus than direct government subsidies. However, their overall impact is estimated to be small, possibly because in the past the various measures have been implemented poorly. In addition, they have little effect when corporate profits are high, suggesting that they work primarily by easing cash flow constraints.

Who should distribute the funds?

Ireland currently has at least 15 different funding streams for its direct support. The OECD's Review of Higher Education in Ireland (OECD, 2004b) recommended reducing the number of agencies in order to improve strategic focus and minimise overlap. For example, Science Foundation Ireland (SFI) could become the major funding agency, modelled on the US National Science Foundation. It would then take on the roles of the two other research councils (IRCSET and IRCHSS) and some of the smaller granting agencies. In doing so, the system as a whole would be better able to prioritise among the different disciplines and between basic and applied research. In principle, there is little rationale for having such a separation between agencies except that it enables the allocation of funding across disciplines to be directly decided at a political level. The main dangers from such a fragmented system are that each research proposal is being traded off against only a limited subset of the others and that, in areas where they overlap, different agencies may either duplicate each other or pull in contradictory directions. There is some evidence that, at least in the past, there has been insufficient co-ordination and a degree of confusion among some of the players (HEA, 2002; OECD 2004b). However, the evidence is not clear-cut. The structure of the system will need to be reviewed regularly to make sure that these problems can be avoided. At a minimum, there is a need for very much improved lines of communication and co-ordination among the major players. Regardless what institutional setup is ultimately chosen, all grants should continue to be awarded on a competitive basis. But that does not imply that they must all be project based. Provided that they meet basic quality standards, institutions need a stable base level of funding in order to be able to make long-term capital commitments and be able to attract international researchers.

Despite the role played by the PRTL, infrastructure deficits persist and will be exacerbated the closer the government gets to achieving its long-term target for R&D spending. Closer co-ordination between the capital and other funding streams would be helpful to ensure that infrastructure expenditure is aligned with programme funding and with the investment being made in human capital. Once facilities are built there will be

strong pressure on granting councils to fund specific projects simply because the floor space is available (and under current arrangements, capital is “free” in the sense that projects are not charged for capital and other overheads).

This leaves the role of *Enterprise Ireland*. It filled a major gap in the years before the funding councils were created and has helped create business incubator centres in all the institutes of technology. Its role in funding basic research was recently transferred to SFI, thus reducing overlap that used to exist between the two institutions. Going forward, *Enterprise Ireland* should focus more narrowly on product-specific R&D support for small enterprises. It could also take a lead role in improving links between universities and industry, in particular by encouraging a rationalisation of business incubator facilities into a small number of higher-quality specialist units.

Who should undertake the research?

Small economies face the particular challenge of making sure they do not spread research funds too thinly. The government may face pressure to embed research centres right across the country, partly for regional development purposes. However, Ireland may not be able to afford this luxury. Network and critical mass effects in cutting-edge research mean that the country may be better off limiting its funding to a few centres of excellence, probably centred around the main universities. This could also help attract back Irish researchers from abroad. A strategic decision has to be made before the next round of infrastructure spending gets too far advanced. Spending would be more likely to gravitate naturally towards the highest quality research teams and facilities if funding were allocated largely on a competitive basis, with the level of automatic or institutional financing being no higher than necessary and if all providers compete on a level playing field. New Zealand provides a good role model in this respect. Public and private

Box 4.2. Summary of recommendations

- The first priority should be to improve framework conditions as they are the most important determinant of R&D. Stability in policies and funding streams is also important.
- Research in the universities is probably under-funded. Additional resources can be brought into the higher education sector by re-introducing student fees and a student loan scheme. This would also help deal with the shortage of research staff that Ireland is likely to face for the rest of the decade.
- There is an argument for rebalancing the science budget by making more use of market-led measures, and scaling back direct grants. The new tax incentive should be monitored and evaluated, and if successful then more of the funding envelope could be channeled through it.
- Consider whether public funding is being spread too thinly and whether Ireland would be better off concentrating its resources in a small number of world-class centres of excellence.
- Improve co-ordination among the different players. In particular, infrastructure spending needs to be better aligned with programme funding and with the investment being made in human capital. Review the structure of the innovation system to see whether combining some of the agencies would be the best way to improve coherence. There may be a need for fewer but more specialised business incubators.

researchers can bid for funding from the granting councils, which helps the business sector with its financing constraints. Tied or institutional funding is around 25 to 30% of the total (it did get as low as 10% but that created too much instability in research teams' budgets, hampering their ability to invest in capital and attract overseas talent).

Refocusing the budget must involve rethinking the role of the institutes of technology. Currently they are restricted to applied research with an industry or regional focus. They are funded by the Department of Education and Science but several are keen to branch out and access more of the research infrastructure support. One alternative would be for Enterprise Ireland to take over the funding role to ensure that the institutes retain their focus on industry and regional priorities. Another option is that they be required to bid for funds from the granting councils. In general, they should not receive non-targeted research funding on an ongoing basis.

Notes

1. See Table 1.2 of OECD (2003) for a comparison of intellectual property rights in public research organisations.
2. This subsidy means Ireland is close to the median in terms of its tax subsidy to R&D (as measured by the B-index). Of the 25 OECD countries for which information is available, nine have essentially no subsidy while the Netherlands and Ireland have small positive net subsidies. See Figure A.12 of OECD Science, Technology and Industry Scoreboard (www.oecd.org/sti/scoreboard) for details and for a description of the B-index.

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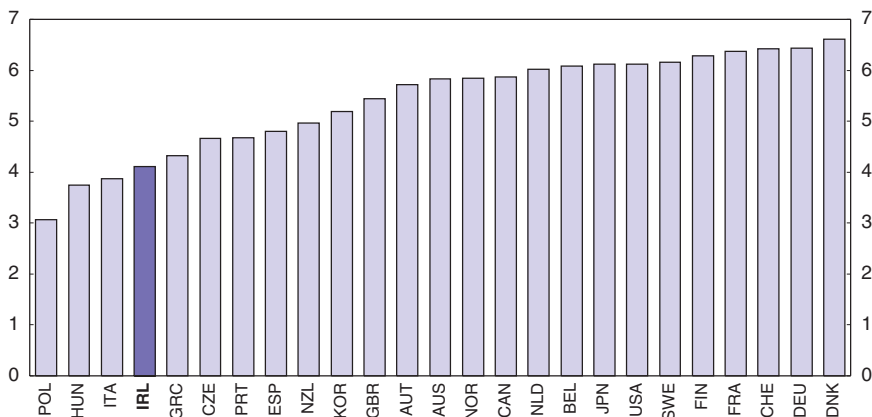
Chapter 5

Closing the infrastructure gap

Investment in infrastructure has not kept pace with Ireland's very rapid economic growth. Infrastructure deficits are beginning to show in a number of areas: road congestion, a lack of broadband access and a shortage of waste disposal capacity could become bottlenecks restricting long-term growth. High targets have been set for investment in public infrastructure over the medium term, involving traditional government funding together with public private partnerships. For this programme to fulfil its objectives of improving living standards and providing a base for sustained growth, it is crucial to guarantee that public funding is allocated to projects with the highest priority and to aim for value for money. Another key to a successful strategy is to avoid the pitfall of overinvestment by ensuring that infrastructure is used efficiently via generalising user charges.

Sustaining high rates of output growth in an environmentally sustainable fashion requires a sound infrastructure base. There are indications that infrastructure bottlenecks are imposing costs on the economy and may be acting as a brake on growth. Business surveys, for instance, rate Ireland among the worst in the OECD for the adequacy of its basic infrastructure (Figure 5.1). Equally important is the need to provide adequate levels of environmental infrastructure, such as waste and sewage treatment facilities, to ensure that production and consumption can expand without imposing an excessive burden on the environment.

Figure 5.1. Infrastructure is judged to be below OECD standards
Survey-based index of the ability of basic infrastructure to support economic activity¹



1. Global competitiveness index where the scale varies from 1: infrastructure is poorly developed, to 7: infrastructure is among the best in the world. The index combines publicly available data and the results of country surveys of business executives.

Source: "The Global Competitiveness Report 2004-2005", World Economic Forum.

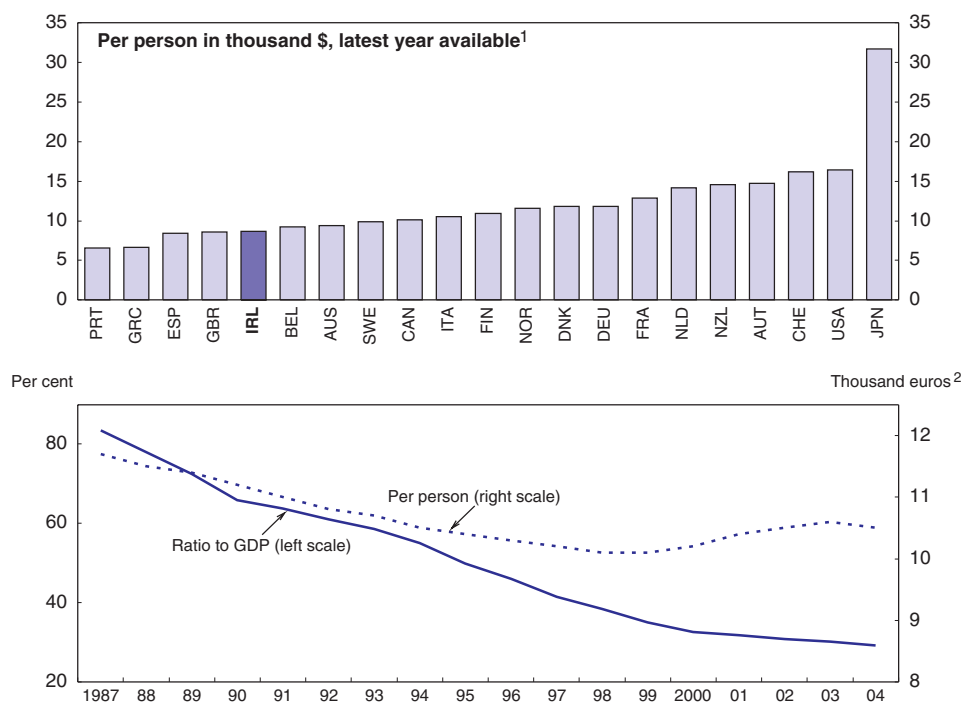
Large public investment programmes are currently underway to expand the stock of infrastructure, and the level of government investment is set to remain high over the medium term since a considerable amount of resources has been committed under multi-year capital spending envelopes. Infrastructure needs are a reality and high levels of public investment are undoubtedly warranted. Nonetheless, as projects with high rates of return become less abundant, it will be increasingly important to secure the best value for money and to avoid over-investment.

Infrastructure is lacking

Ireland has one of the lowest stocks of public capital per head in the OECD (Figure 5.2 upper panel).¹ This is because the country was among the poorest industrialised economies until the economic take-off of the last fifteen years. Moreover, government investment bore a disproportionate share of the decade-long fiscal consolidation that

started in 1987. OECD estimates based on Kemps (2004) suggest that in the decade between 1987 and 1997 investment was not even sufficient to maintain the existing capital stock. As a result of strong population growth over the period, public capital per person, was 10% below its 1987 level in 2004. The ratio of the public capital stock to total output fell dramatically during the economic boom period (Figure 5.2 lower panel).

Figure 5.2. **The stock of public capital is low and has been lagging behind output growth**



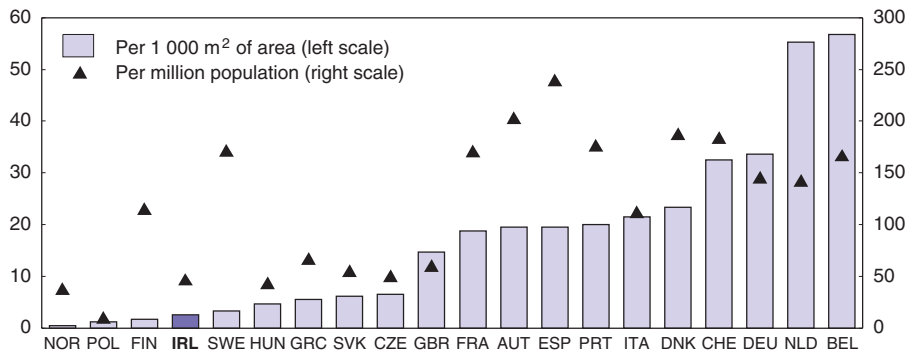
1. At 1995 prices, using 2000 purchasing power parities. Data cover 2004 for Ireland, 2000 for other countries.
2. At 2003 prices.

Source: OECD (2005), Economic Outlook 78 database and Kemps, C. (2004), "New Estimates of Government Net Capital Stocks for 22 OECD Countries: 1960-2001", *IMF Working Paper*, No. 67, International Monetary Fund, Washington DC, April.

Economic infrastructure

Insufficient road infrastructure is probably the most commonly cited bottleneck. Motorways are fairly new to the Republic: the network was only 26 kilometres long in 1990. With 192 kilometres as of early 2005, the motorway network remains relatively short by European standards although a substantial expansion programme is underway (Figure 5.3). Combined with limited urban and long-distance rail transport, the lack of motorways creates difficulties for businesses and households. Business persons surveyed by the International Institute for Management Development (2004) ranked Ireland 28th in the OECD for the capacity of its infrastructure to help distribute goods and services efficiently. Half the members of the Irish Business and Employers Confederation (2004) reported that congestion costs accounted for 10% or more of their production costs.

Figure 5.3. **The motorway network is fairly sparse**
Kilometres of motorway, 2002¹



1. 2004 for Ireland; 2001 for Greece, Netherlands, Sweden and United Kingdom; 2000 for Norway.

Source: European Commission, *Energy & Transport in Figures 2004*, Eurostat and Irish National Roads Authority.

The government's strategy has been to improve the network in a way that does not encourage peak hour commuting. Thus, it has focussed on upgrading the orbital road network around Dublin (such as the M50 ring road) rather than increasing radial roads within the M50. While the rationale is understandable, it has in some sense been unhelpful because radial roads are important to a city that follows a pattern of urban development where most jobs remain located in the city centre while population grows primarily in the commuter-belt hinterland. The government has also emphasised public transport, including buses and light rail. However, the significant increase in public transport capacity has merely kept pace with underlying demand – to date it has not led to a reduction in the share of trips made by car.

An infrastructure deficit also exists in broadband Internet access, where Ireland is lagging behind (Figure 2.5). As of mid-2005, two-thirds of Internet connections were dialup (Commission for Communications Regulation, 2005). Offering “always-on” access and a much improved Internet experience, broadband is central to the development of e-commerce and, more broadly, to the take-up of advances in information and communications technology. Its comparative underdevelopment in Ireland raises concern in a country that is highly specialised in technology-dependent industries. As explained in Chapter 2, the surprisingly low take-up of broadband services is related to a lack of competition in the sector. The incumbent telecommunications operator Eircom has kept a strong grip on the infrastructure: Eircom still controlled 98% of the local loop as of 2005.

Environmental infrastructure

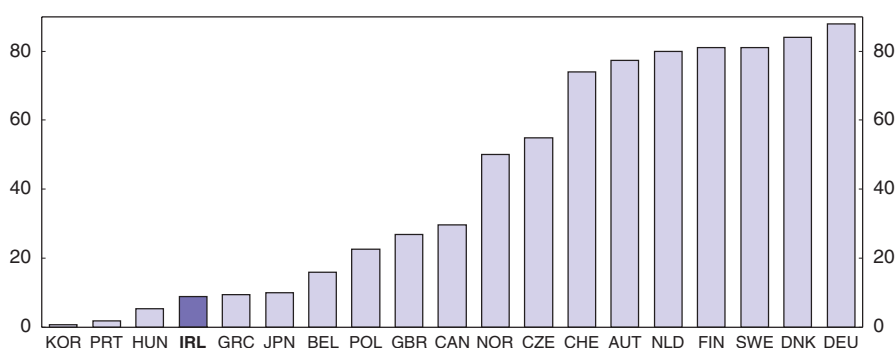
The environmental infrastructure also shows a number of gaps. Waste management probably is the most urgent issue. With no incineration plants, all refuse has to be recycled or land-filled. The 2003 *Survey* pointed out that shortages would develop if no incineration plant was built and investment in landfill was not stepped up. This has now materialised. Some waste has had to be disposed of in substandard landfill sites (EPA, 2005). This led the European Court of Justice to find Ireland in breach of its obligations under a 1975 EU directive that sets minimum requirements for the landfill of waste.² The lack of waste disposal capacity is imposing a high cost on businesses as local authorities raise prices to ration the limited supply. To take one example, the Cork County Council more than tripled

its waste charge between 2000 and 2004 to € 230 per tonne – a rate well above the full cost of landfill, including environmental externalities, which OECD (2005a) estimated to be in the range of € 60 to € 80 per tonne. Another consequence of insufficient waste disposal capacity is the occurrence of backyard burning by households, which is reckoned to contribute over half of all dioxin emissions in Ireland (EPA, 2005). Current plans to increase the recycling of municipal waste from the current rate of 13% to 35% by 2013 could help to ease the lack of waste disposal capacity. However, lacking cost-benefit analysis, there is a risk that the 35% target might exceed the point where the economic and environmental costs of recycling start outweighing its benefits. Ireland's limited market size and geography imply that recycling is particularly expensive for many waste streams: reprocessing capacity has to be built on the island or the waste has to be shipped for treatment, and both options are costly.

Waste water treatment is another area where a lack of infrastructure undermines the sustainability of economic development. Preserving clean rivers and streams is difficult unless a high proportion of sewage receives primary and secondary treatment.³ Under EU legislation, Ireland was committed to equipping all towns with more than 15 000 inhabitants with primary and secondary treatment facilities by the end of 2000. By 2004, however, nine of these 40 towns still had no secondary treatment plant (EPA, 2004). Construction work began during 2005 in most of these municipalities, but it will be several years before the plants start operating. Completing the coverage of the urban population with secondary treatment plants will not mark the end of investment needs in the sector. Water bodies in several parts of the country show a high concentration in nutrients, substances which require special chemical treatment (tertiary treatment) to be effectively removed from sewage. Investment will also need to be made in tertiary sewerage treatment plants to bring the country up to international standards (Figure 5.4).

Figure 5.4. **Few households are connected to tertiary sewage treatment plants**

Per cent, 2002¹



1. 2003 for Ireland.

Source: OECD (2004), *OECD Environmental Data: Compendium 2004*, Paris and EPA (2004), *Urban Waste Water Discharges in Ireland: A Report for the Years 2002 and 2003*, Environmental Protection Agency, County Wexford.

Investment in infrastructure is given high priority

National Development Plans

The government has given high priority to public investment. Most of it is financed and managed within the framework of the National Development Plan for 2000-06 (NDP). Over the period 2000 to mid-2005, investment in infrastructure under the NDP amounted to 4% of gross national income. The breakdown in Table 5.1 shows that more than a third of the investment has gone to social housing. From an economic point of view, dwellings are private goods. If housing is subtracted from the total, investment in public infrastructure under the NDP totalled only 2.8% of gross national income over the period 2000 to mid 2005.

Table 5.1. **Investment in infrastructure under the National Development Plan**

Expenditure from January 2000 to end June 2005

	Billion euros
Housing	7.3
National roads	5.5
Public transport	2.7
Environmental infrastructure	2.6
Health facilities	2.4
Other	3.6
Total	24.1

Source: Submission by the national authorities.

Spending targets have been met, but physical outputs have lagged behind. A mid-term review of the NDP endorsed the overall NDP strategy and in particular showed that transport investment was generating significant economic returns (ESRI, 2003). The review found that infrastructure spending during the first three years of the seven-year programme was in line with plans. Outputs, however, were behind schedule, especially for roads. Planned for the end of 2003, the final sections of the M50 motorway, Dublin's ring road, were completed in June 2005. The Dublin tunnel, a key project that will take lorry traffic from the port away from the city centre to the M50 ring road, is now scheduled to open in mid-2006 instead of end 2004. Most inter-urban routes are also behind schedule, with the exception of the Dublin-border motorway.⁴

Difficulties in physical planning processes and protracted court proceedings to deal with challenges have been a recurrent cause of the accumulating backlog of infrastructure projects. The mid-term review of the National Development Plan judged the delays encountered in planning "abnormal" by European standards (ESRI, 2003). However, matters would appear to have improved with the Planning Board meeting an objective of deciding cases within 18 weeks in 85% of cases in 2004 as compared with 74% in 2003. Delays have arisen from at least two issues with the planning process (which is outlined in Box 5.1).

- First, in contrast to other European countries, anyone can challenge any given project in front of the local authority and bring the case to the Planning Board, regardless of whether they are affected by the project. Even though some criteria have been introduced with the Planning and Development Act of 2000 as to who can bring cases to the judicial system, they are easily fulfilled. Anyone who considers being affected by the

Box 5.1. The planning process

The planning authority lies with local authorities in the first instance. In general, they have to decide planning applications within eight weeks. When considering the merit of the application, the authority must base its decision not only on local interests but also on any applicable national plans. The legislative framework expressly specifies a hierarchy of plans where the National Development Plan comes first and local plans last.

After the decision has been made, any individual or association can lodge an appeal against the decision with the Planning Board (*An Bord Pleanála*). The board considers the application anew, independently of the planning authority's earlier consideration. New submissions can be made to the board, which is not tied in any manner by the earlier consideration given to the case by the planning authority. Like the planning authority, the board must comply with the hierarchy of plans when making its decision.

Decisions made by *An Bord Pleanála* can be challenged within eight weeks by way of application for judicial review in the High Court. This possibility is restricted to applicants who have a substantial interest in the matter. However, the Planning and Development Act of 2000, which introduced the restriction, expressly mentions that the court can receive applications based on interests other than financial or related to property.

In 2005 the government decided to introduce a legislative programme to restructure *An Bord Pleanála* and provide for the introduction of fast-track mechanisms for strategic infrastructure. It is expected that the Strategic Infrastructure Bill will be published in the near future. The government also decided to conduct an examination with the Courts with the aim of ensuring that infrastructure cases get heard earlier. On foot of this the High Court has already put in place listing arrangements to prioritise hearings related to infrastructural projects.

Source: Forfás, www.forfas.ie and submission by the national authorities.

project in a broad sense can appeal to the judicial system even in cases when the project has no bearing on their financial or property interests.

- Second, time limits on planning authorities to issue building permits and the planning appeals board are not always adhered to.

Public financing

In the wake of the Mid-Term Review and its conclusion that delays were accumulating, the government reaffirmed the high priority placed on addressing infrastructure needs. Public investment amounted to 4½ per cent of gross national income in the period 2001-05 and a 5% target has been set for the following five years. High levels of expenditure are likely to continue and preparations have been initiated for a new National Development Plan to cover the period 2007-13. Already, as part of the Transport 21 initiative, the government has announced € 34 billion of investment in the transport infrastructure over the next ten years, including € 6 billion in the form of unitary payments on public-private partnership (PPP) contracts and € 2 billion in toll-based road investment (Box 5.2).

Ireland's entitlement to EU funding for regions whose development is lagging behind will end soon. This results in heavier reliance on the national budget but also in a policy to give a more important role to alternative sources of financing such as public-private partnerships and user charges (see below). The National Development Plan for 2007-13 will be the first in which the EU contribution will be truly insignificant: high income levels

Box 5.2. The Transport 21 Plan

Transport 21 is a ten-year investment strategy to upgrade the transport infrastructure. The initiative foresees investment of over € 34 billion in the period 2006-15. The government will fund three fourths of the total (€ 26 billion), and private finance will provide the remaining € 8 billion under public-private partnerships (PPPs). Compared with the National Development Plan 2000-06, Transport 21 marks a shift towards greater focus on public transport with an envelope of € 16 billion.

In Dublin, Transport 21 mainly foresees the construction of:

- Two metro lines, one of which will serve Dublin Airport.
- A rail tunnel linking the northern and southern suburban train lines.
- Prolongations of suburban train lines.
- Seven light rail projects (extensions of existing lines or new lines).
- A large interchange station located in the city centre (at St. Stephens Green).
- A third lane each way on the M50 ring road.

In the rest of the country, major projects under Transport 21 include:

- The completion of the five motorways linking Dublin to Cork, Galway, Limerick, Waterford and the border in the direction of Belfast.
- The development of an Atlantic Road Corridor linking western cities from Letterkenny through Galway, Limerick and Cork to Waterford.
- The re-opening of the Western Rail Corridor.
- The introduction of a commuter rail service from Athenry to Galway.

A potential source of inefficiency in the Transport 21 plan is that particular projects have been cited with no indication that they have been subjected to rigorous cost-benefit analysis. However, this in part reflects the preliminary planning and design status of many of the projects. The only reference in Transport 21 to benefits outweighing costs relates to the assessment by ESRI (2003) that most infrastructure projects undertaken in the period 2000-02 under the umbrella of the National Development Plan proved beneficial (Cowen, 2005). It will be important that the projects listed in Transport 21 are subject to rigorous, independent cost-benefit analysis before tendering. Another risk is that a number of other projects may be absent from the plan despite offering high returns. The decisions regarding interurban public transport in the west of the country, where Transport 21 plans investment to re-open an old rail link without discussing the alternative of a bus service, illustrate how comprehensive cost-benefit analysis could lead to a better allocation of resources. On current plans, capital expenditure will be substantial to renovate a rail line that, because it has only a single track, will necessarily offer a limited timetable while a bus service on the Atlantic Road Corridor (set to be thoroughly upgraded) could probably serve western communities better at lower cost.

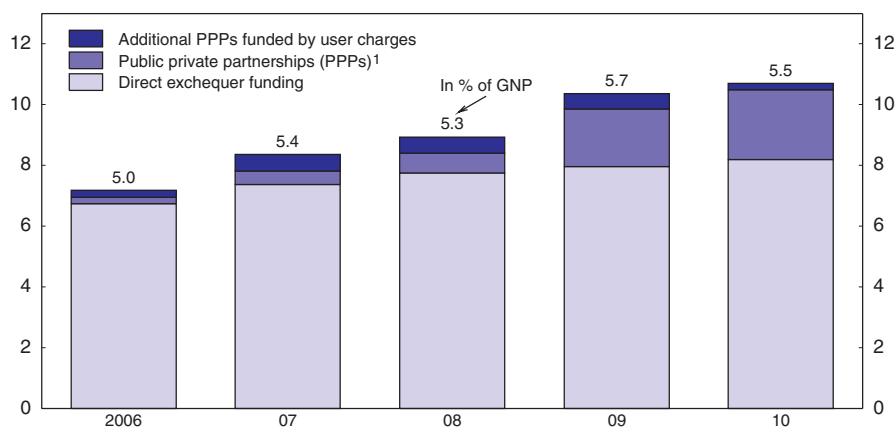
imply that Irish regions no longer qualify for the higher levels of assistance under EU regional policy as from January 2007. Apart from the Border Midland and West region which will receive transitional funds to smooth the phasing-out of EU assistance until 2011, EU co-financed infrastructure will be primarily consist of rural development projects under the Common Agricultural Policy. The transition towards a diminishing role of EU financing had started with the 2000-06 National Development Plan where EU funds accounted for under 7% of the total, down from a 37% contribution in the 1989-99 period.

Public-private partnerships

Public-private partnerships are a key part of the government's infrastructure development plans. The government has set a target that around 13% of capital spending in the 2006-10 period should be delivered by PPPs (Figure 5.5). When measured as a proportion of national income, this would make Ireland's programme by far the largest in the OECD – more than three times as large as in the United Kingdom, for example. The main aim is to get better value for money in the provision of infrastructure. When the private sector puts its own capital at risk, it is more likely to deliver on time and maintain high service standards as its revenue is (or should be) based on how well it performs. The opportunity for the private partner to make a profit also creates an incentive to reduce operating costs over the lifetime of the project. If a contract is long enough, or if there is an expectation that good performance will be rewarded when the contract is renewed, then there should be little incentive to make short-term profits by skimping on maintenance and running down assets. A further advantage for the government is to transfer some risk to the private sector. Private companies are often in a better position to manage certain risks, either by using financial instruments or through the secondary market in PPP contracts that is emerging in the United Kingdom and which Ireland should be able to tap into.

Figure 5.5. **PPPs are set to make a sizeable share of public investment**

In billion euros



1. Allocation, not actual PPPs.

Source: Department of Finance, *Budget 2006*, www.budget.gov.ie.

As at June 2005, there were around 50 PPP projects with a capital cost of € 20 million or more in operation, at planning or procurement stage. Not all of these involve private finance. The majority of the water treatment projects, for instance, are “design-build-operate” schemes where the government provides the funding. The biggest projects are for road construction. These take the form of concessions, similar to those existing in many other European countries, in which private companies construct and operate the road and recover their costs by charging tolls. There are also several contracts to build and maintain schools, third level education and justice facilities, etc.

While Ireland has made headway in delivering PPPs in domains such as toll roads and environmental infrastructure, progress has been slower in the area of PPPs funded by unitary payments where the private sector showed limited interest. More generally, skills and capacity issues have arisen from the complexity of the procurement process. The United Kingdom and Australia had a similar problem early in their PPP programmes, and private investment did not really take off until the procurement process was centralised and simplified (Box 5.3). After experiencing difficulties similar to theirs, Ireland is repeating their solutions. In the middle of 2005, the government announced that it would centralise its PPP procurement for all new projects except roads and rail. The aim is to speed up the delivery of PPP projects by creating a “centre of expertise” to manage the procurement and construction phase of each project. Individual ministers will continue to be responsible for all aspects of the assessment and approval of PPP projects, including the decision to set up a PPP, and will set project budgets, output specifications, etc. The central agency will then take over and hand over the completed project after construction.

PPPs are not appropriate for all public services. They can bring advantages where the required services can be clearly defined, where the provider can be made accountable for delivery, where there is an incentive for a private company to deliver value for money and where there is enough certainty so that the services and assets can be valued on a long-term basis. On paper at least, Ireland’s guidelines on the use of PPPs recognise these issues. It will be important to ensure they are adhered to. There are also some practical matters that influence whether PPPs live up to expectations (Box 5.3). First, transaction costs can be reduced (and mistakes avoided) by setting up a central expert agency and standard contracts. Second, experience so far suggests that most of the efficiency gains stem not from the tender itself but from the permanent exposure of potential contractors to competition (OECD, 2002). Hence, open competitive tendering is necessary, especially when contracts are renewed. The incumbent franchise or concession holder needs to face the risk of losing a contract should it under-perform. Finally, the government needs to commit credibly to not bailing out a partner which gets into financial trouble.

Ensuring efficiency in the provision and use of public infrastructure

Getting value for money in infrastructure projects

Frequent cost overruns led to questions about the adequacy of the Irish framework for public investment in infrastructure. The national accounts provide a bird’s-eye view of the problem: the deflator for government investment (which summarises a wide range of contract-level data) has been rising at 10% per annum since 1997 – more than 6 percentage points above consumer price inflation. Soaring costs can in part be attributed to the strong acceleration in volumes that occurred in the late 1990s. After a decade of low public investment, public infrastructure projects had to compete for scarce construction capacity with very strong demand from house-builders. The surge in construction also pushed up land prices. As Ireland again prepares to accelerate public capital formation, this experience suggests that attention should be paid to the timing of the projects so as not to stoke inflation in the construction sector. However, the pressure may come off a little if house building activity slows down. Another promising development is the planned introduction (from 2006) of fixed-price contracts which should shield public contracting authorities from the risk of cost-overruns.

Box 5.3. International experience with public private partnerships

The OECD has generally been lukewarm towards public private partnerships (PPPs). The main concerns are: a) it is hard to write contracts that are robust yet flexible enough to accommodate changing circumstances (and the contractor, who owns the asset, holds the upper hand if the government wants to renegotiate – the “hold up” problem); b) risks may not be transferred successfully if governments are tempted to bail out failing companies; and c) in some cases, PPPs may be used not to improve efficiency, but simply as an accounting ruse to shift long-term financial commitments off the government’s balance sheet (Joumard *et al.*, 2004). Many countries have learned from experience how to reduce these problems, and recent evidence puts PPPs in a better light.

Experience in the United Kingdom, Australia and Chile

PPPs are not new. In the early Roman Empire, water supply in the major cities was franchised to private contractors (Scullard, 1963); in the 17th and 18th centuries the British Empire granted franchises to companies such as the East India Company to pursue her colonial interests; and Paris’s Place des Vosges was a joint venture between Henry IV and private investors (Jones, 2004).

More recently, the **United Kingdom’s** private finance initiative (PFI) has been the most comprehensive and carefully studied PPP programme. By 2003, more than 450 projects had been completed and were in operation across a broad range of public services. The share of public investment delivered through the PFI has stabilised around 10%. Reviews by HM Treasury and the National Audit Office (NAO) have generally judged the programme to be successful. The NAO found that three-quarters of PFI projects were delivered on time or early (compared with 30% of traditional procurement), and in no case did the public sector bear the cost of construction overruns. The NAO concluded that “there is strong evidence that the PFI approach is bringing significant benefits to central government in terms of delivering built assets on time and for the price expected in the public sector” (NAO, 2003). It also found high levels of service delivery after the assets had been constructed: 89% of PFI projects were performing adequately or better than the specification. The virtual collapse of one prominent PFI contractor, Jarvis plc, shows on the one hand that risk transfer to the private sector is working, but it does raise questions about the status of unfinished and ongoing projects (although several have been sold in the secondary market for PFI contracts). The UK’s programme has evolved with experience. In particular, the guidelines on what types of projects are suitable PFI candidates have become clearer while the shift to a single agency with standardised contracts has helped disseminate best practice and has significantly reduced transaction costs. Finally, the lessons learnt from the PPP process are spilling over to traditional procurement (Regan, 2005). The UK has introduced a “gateway” review programme that is designed to reduce optimism bias (“rosiscenariosis”) and improve decision making for conventional projects.

Around 10% of public investment in Victoria, **Australia**, has been delivered through PPPs in recent years. Projects have included roads, the central railway station, hospitals, water, waste management and telecommunications. In some early projects, the public was unhappy with the quality of service. The state government then became more careful about specifying service standards and avoiding projects where quality was too difficult to monitor and control. A review of eight projects in Victoria showed considerable cost savings relative to a risk-adjusted public sector benchmark. Additional benefits included completion on time and within budget, greater technical and design innovation and improvements in construction quality (Fitzgerald, 2004). However, as with the early UK experience, the long and complex bidding process (four rounds of short-listing for a road project in Melbourne, for example) has been criticised by private players.

Box 5.3. International experience with public private partnerships (cont.)

In **Chile**, PPPs have played a large part in filling its infrastructure gap since 1994. The IMF (2004) and the OECD (2005b) have judged Chile's experience to have been by and large successful, mainly because it had a solid institutional framework for selecting and managing projects. Private financiers were also reassured by the clear legal framework that dispelled fears of expropriation. All projects are awarded on the basis of open competitive tenders, and in most cases the government has guaranteed a revenue floor (typically around 70% of projected revenues) in return for which it shares some of the upside. The main issue in Chile is that contract renegotiations have been common, either because the contractor was under financial pressure or because the government requested additional work. This opens up the risk of "low balling", where bidders submit low offers in the expectation that they will be bailed out later on.

A common criticism of PPPs is that they can be expensive because the government can borrow at a cheaper rate (as private firms must be compensated for risk). This is incorrect. Public financing does not reduce the risk inherent in a project; it just hides it. Implicitly, the taxpayer is under-writing the risk that the project may fail. If the taxpayer were to be compensated for this, then the true (or effective) cost of public funds would include almost exactly the same risk premium as private firms. Because the risk premium has to reflect bankruptcy costs for private firms and not for government-funded activities, there can be a small difference – but practically it is negligible for infrastructure projects where outlays dwarf the expenses due for bankruptcy proceedings.

Most PPPs are for the long term – indeed, the UK Treasury regards anything with a project horizon of less than ten years as unlikely to benefit from PFI-type arrangements. It is therefore still too early to say whether these initial cost savings can be maintained over the long term. There is also the potential worry about whether there can be real competition among bidders when contracts are renewed, as the incumbent is likely to have an information advantage over its potential rivals.

Ultimately, success in the provision of infrastructure demands that only those projects where benefits exceed costs should be selected. Cost-benefit analysis is a key instrument to this end and has been used extensively, being mandatory for all EU-funded projects of € 50 million or more, with the European Commission reviewing the analyses. In the revised *Capital Appraisal Guidelines*, the Department of Finance (2005) has introduced a comparable requirement for all public projects above € 30 million. A difference, however, is that the *Guidelines* allow replacing cost-benefit analysis with a cost-effectiveness study when the benefits are too difficult to quantify. When invoked, this exemption seriously reduces the scope of the requirement since a cost-effectiveness analysis assesses whether the project's goal is achieved at least cost but does not question its economic relevance. The exemption clause was introduced on the grounds that quantifying benefits can be arduous in certain cases, a concern which would be better addressed by encouraging the use of recent advances in valuation techniques for non-monetary benefits and costs.

Outside (dwindling) EU-funded projects and PPPs, the review of cost-benefit analyses is not centralised but lies within the sole responsibility of line departments, an arrangement that poses a number of challenges. When an implementing agency, for instance the National Roads Authority, seeks approval for a project, it produces the cost-benefit analysis, which is then reviewed with the rest of the dossier by the line ministry concerned, in this example the Department of Transport. In such a setting, a bias may arise

in the production and review of the analysis because an implementing agency and its sponsoring ministry have incentives to produce favourable cost-benefit studies to ensure that their favourite projects go ahead. Another difficult challenge posed by the lack of central co-ordination is to make sure that analysts in different areas use a coherent set of assumptions and methodological choices. To cope with these challenges a central oversight and quality-control unit should be established as an independent body. International experience suggests that such a change can make a big difference: after Korea transferred the responsibility for reviewing preliminary studies from line ministries to an independent unit in 1999, the unit rejected 78 of the 153 projects pre-approved by the line ministries (OECD, 2004).

Implementing user charges

User charges should be widely used to raise funds and, more importantly, to create price signals that encourage an efficient use of infrastructure and help to avoid overinvestment. A good example has been seen recently in waste management. Implementing one of the recommendations made in the previous *Survey*, the Department of the Environment directed waste collectors to introduce weight or volume-based charges from January 2005. Early indications suggest that the policy has resulted in a fall in the amount of landfill waste and has at the same time given a much-needed boost to investment in landfill and recycling facilities, even though the waste crisis is not yet over. The charges are also likely to encourage users to press their local authorities to look for the most economically efficient ways of disposing of waste.

Progress in the implementation of user charges to promote sustainable development has been less impressive in the area of water management. Since residential water charges were abolished in 1997, taxpayers and businesses have been paying for all investment and running costs associated with the provision of drinking water and the treatment of sewage. The local government act of 1997 expressly forbids local authorities charging domestic users for water services. The previous *Survey* argued that the lack of pricing could in the long run lead to excessive and economically inefficient levels of capacity in water services and warned about the risk of spiralling costs. Even though available information does not allow an appraisal of where economically efficient investment in water services stops, the 19% average annual rate of increase in investment expenditure since 1997 suggests that the risk of excessive provision may have materialised. In contrast, a positive yet limited development in the water policy framework is that, from 2006, all non-domestic users will be equipped with meters and charged the full cost of sewage treatment services.⁵

Urban road traffic is another domain where user charges could bring welfare gains by ensuring that the infrastructure is used efficiently and that there is no over-investment. Congestion unambiguously involves an externality, and the absence of a proper price to reflect it entails excessive use and welfare losses. With an average speed of 14 km per hour on radial routes to the city centre, traffic is slower in Dublin than in New York City and central London before the congestion charge: there is a compelling case for introducing a road pricing scheme. With a city centre largely delimited by geographical boundaries, Dublin could easily replicate the successful experience of the London congestion charge (Box 5.4). Proost *et al.* (1998) estimated that the costs of congestion, pollution and noise added up to an estimated € 8.2 per peak period trip (at 2005 prices), a value that should be seen as a lower bound for today's external costs given the increase in congestion since the time the study was conducted. In an experiment, a sample of Dubliners who were asked to

Box 5.4. Congestion charges in London and Rome

Congestion charging was introduced in an area of central London in February 2003. The congestion charge is now an £8 daily charge (€ 12) for driving or parking a vehicle on public roads within the charging zone between 7 am and 6.30 pm, Monday to Friday. There are substantial concessions for residents living inside the charging zone. The scheme does not use either toll booths or barriers, but relies on automated equipment that captures images of licence plates in the charging zone and compares them with a database of users who have paid.

The main results of the charge have been:

- Congestion has been reduced by 30% inside the charging zone. Congestion is measured as the time delay relative to the travel time during the night.
- Costs of operation in 2005 were running at about € 130 million per annum, less than half the € 340 million revenue per annum.
- The charge has had very little impact on boundary areas, contrary to initial concerns that charging would significantly raise congestion in the area immediately outside the charging zone.
- The reliability of buses operating in and around the zone has improved and excess waiting times fell considerably. Bus passenger traffic has increased by 40%, but this may also reflect increased capacity that was put in place at the beginning of the scheme.

In Rome, an electronic access control and flat-fee road pricing system was introduced in the city centre in 2001. It uses a combination of cameras and transponders to monitor the 23 access points to the historic centre of the city. It led to a 20% reduction in traffic, a 10% fall in the average journey time and a large improvement in air quality. Traffic on the fringes of the restricted area has remained virtually unchanged.

pay the estimated external costs for their trips reduced their number of peak period journeys by 22% (O'Mahony *et al.*, 2000).

Conclusion: preparing for the longer term

Ireland still has some way to go before closing existing gaps and being equipped with the infrastructure needed for long-term growth and environmental sustainability. On current plans, simulations based on Kemps (2004) suggest that the stock of public capital per inhabitant will not catch up with the OECD average until around 2020.⁶ Given the amount of resources that are allocated to the formation of public capital over the catching-up period, it is essential to guarantee value for money in investment projects and to ensure that infrastructure is used efficiently. Box 5.5 sets out a number of recommendations to this end with robust cost-benefit analysis and the widespread use of user charges as the two key elements.

Box 5.5. Summary of recommendations

Reduce the length and uncertainty of challenges during the planning process. To guarantee a balance between giving due regard to the concerns of people affected by projects and the need to ensure that public goods be delivered timely and efficiently:

- Restrict the possibility of challenging planning decisions to persons whose financial interests would be affected by the project.
- Introduce a provision that considers the absence of a decision within time limits as a positive decision, so as to give *An Bord Pleanála* an incentive to comply with them.

Ensure that projects provide benefits greater than costs. To this end:

- Suppress the possibility for project sponsors to avoid cost-benefit analysis.
- Create a central unit responsible for the oversight and quality control of cost-benefit analyses, and ensure that it is independent from project sponsors.

Avoid overinvestment in infrastructure and ensure its efficient use by generalising user charges. More specifically:

- Subject all users of water services to charges that reflect the full costs of providing drinking water and of collecting and treating sewage.
- Introduce a congestion charge in central Dublin as public transport alternatives improve.

Notes

1. As a lot of public infrastructure serves individuals (e.g. a patient in a hospital bed, a driver on a public road, a pupil in a school, etc.), the stock of public capital per person is used as the main indicator here.
2. Judging case C-494/01, the grand chamber of the court found on 26 April 2005 that Ireland failed to comply with its obligations under articles 4, 5, 8, 9, 10, 12, 13 and 14 of Council Directive 75/442/EEC of 15 July 1975 on waste, as amended by Council Directive 91/156/EEC of 18 March 1991.
3. Primary treatment describes technologies that separate sludge mainly by sedimentation and other mechanical processes. Secondary treatment employs biological processes to reduce the pollution load of effluents after primary treatment. Tertiary treatment includes more advanced technologies, usually involving chemical processes, which are aimed at specific categories of pollutants such as nutrients.
4. See ESRI (2003) for a more detailed assessment of delays in the physical delivery of projects halfway through the Plan.
5. For water supply, local authorities are under the obligation to charge non-domestic users for all operating costs, but are under no similar obligation for investment costs.
6. Simulations are based on the main assumptions that the share of public investment in GNI remains in the middle of its 4½-5% target range from 2010 onwards in Ireland and that the stock of public capital per inhabitant in other OECD countries keeps rising at the same rate as in the 1990-2000 period. The methodology follows Kemps (2004). "OECD average" denotes the unweighted average of the capital stock per head across the countries, namely: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, United Kingdom and United States.

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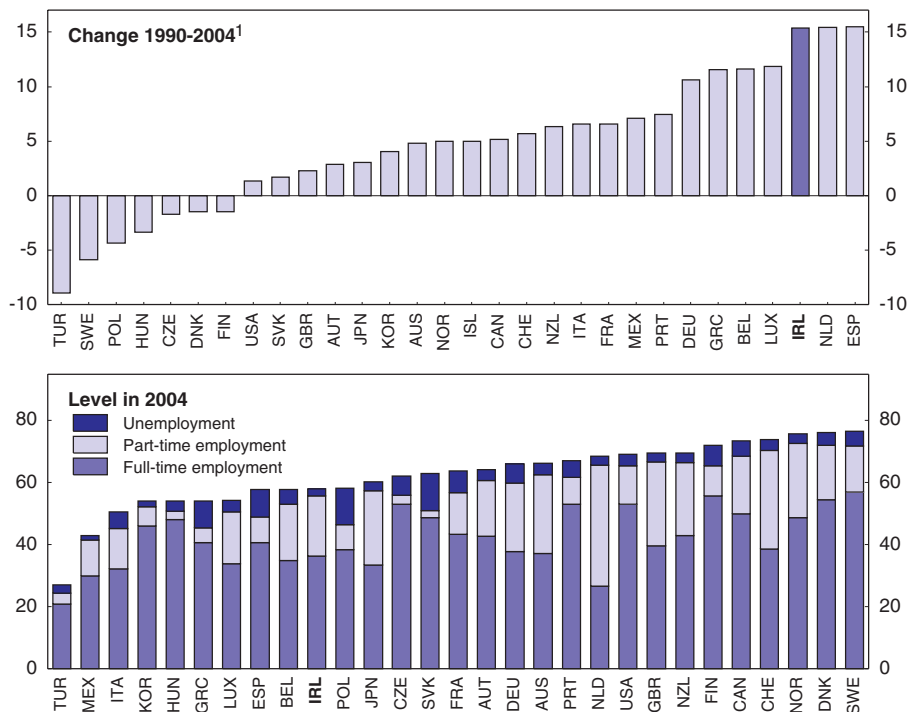
Chapter 6

Removing obstacles to employment for women

Women have contributed a great deal to Ireland's economic growth, including by joining the labour force in large numbers. The rise in female participation since 1990 has been amongst the strongest in the OECD, but from a low base. Female participation rates remain below the OECD average for all except the under-thirties. Cultural attitudes and low educational attainment among older women are factors, but policy settings play a role as well. Support to families is not targeted at working parents, implying that the return to work is low for many mothers. Working parents of school-age children also face difficulties in reconciling employment and work because out-of-school care is insufficiently developed. The tax system should be further improved to support second earners, most of whom are women, so as to strengthen their incentive to enter the labour market and reduce the bias in favour of the home production of services such as childcare. This chapter reviews these issues and offers recommendations to continue to create a more favourable environment for women who want to enter the labour market.

The boom in the Irish economy owes a lot to women, who have entered the labour market in large numbers. Indeed, women account for more than nine tenths of the increase in labour force participation since 1990, and the Celtic Tiger has been described as the Celtic Tigress (O'Connor, 1998). But even though the rise in female participation since 1990 has been among the strongest in the OECD, it was rising from such a low level that the participation rate is still a little below the OECD average (Figure 6.1). Maintaining rapid income growth into the future will require further efforts to remove barriers and disincentives to work for those women who choose to combine bringing up children and pursuing a career. Changes implemented in recent years have reduced the extent to which the tax and welfare systems are geared towards traditional single-breadwinner families. Nonetheless, there is still scope for further progress to create an environment that enables families to make their own choices about the right balance between work and family life.

Figure 6.1. **Female participation has risen a lot but is still low**
Percentage of women aged 15-64 in the labour force



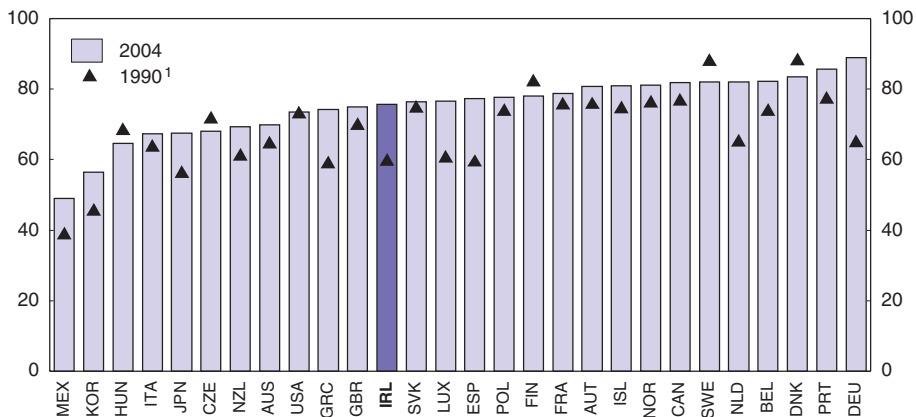
1. 1991 for Iceland, Mexico and Switzerland; 1992 for Hungary and Poland; 1993 for Czech Republic; 1994 for Austria and Slovak Republic.

Source: OECD database on Labour Force Statistics, January 2006.

Female participation is still relatively low

Young women are much more likely than their mothers to be working or looking for a job. The participation rate of younger women (those aged 25 to 34) has increased from 30% in 1975 to 76% in 2004. In contrast, only a third of women aged 55 to 64 have a job, not only because of social attitudes but also because their education levels are comparatively poor. Even so, participation by the younger cohorts is still below the OECD average and around 13 percentage points below the best performing countries (Figure 6.2). In addition, there is a striking difference in labour market participation between women with and without children. Among women aged 25-54 who have two or more children below age 16, the full-time employment rate is only 22% – one of the lowest in the OECD and well below the 59% average among the Nordic countries (Figure 1.10). Effective labour supply is even lower than these figures suggest since about half of those who work do so part time, which is one of the highest incidences of part-time work in the OECD.

Figure 6.2. **Young women's participation is below OECD best performance**
Female labour force in per cent of population, age group 25-34



1. 1991 for Iceland and Mexico; 1992 for Hungary and Poland; 1993 for Czech Republic; 1994 for Austria and Slovak Republic.

Source: OECD database on Labour Force Statistics, January 2006.

One reason for taking policy action is the risk that the higher participation of young women could actually go into reverse as generations are renewed. Despite the combination of relatively high tax rates on second earners and limited support for childcare (see below), many of the young mothers who have been able to work can do so because they can rely on free or low-cost help from older women, friends or relatives who are not working (OECD, 2003a). The supply of such helpers may dry up as today's young female cohorts grow older.

Removing obstacles to higher participation

Many mothers choose to work part-time. One reason is that when a mother takes up a full-time job, childcare costs and additional taxes paid by the household absorb a substantial share of her income. Table 6.1 shows that, in typical situations and using national averages, effective tax rates on full-time work, when combined with childcare costs, reach 65% or more. Effective tax rates are even higher in Dublin, where day care is about 50% more expensive than elsewhere. For a Dublin-based family with two young

Table 6.1. Taxes and childcare costs absorb most of working mothers' income
Childcare costs and tax dues as a percentage of the income of the second earner, 2002¹

Level of income of the second earner ²	33%	67%	100%
Young children ³	64	82	65
School-age children	21	65	54

1. The first earner is paid the average production wage (APW). In the situation where the earnings are 33% of the APW, the second earner works part-time and takes care of the children during the rest of the working day. In the two other situations, both parents work full-time and must pay for full-time childcare and/or out-of-school care depending on the age of the children.
2. As a per cent of the APW.
3. Aged 1 and 4, the older child is in infant class.

Source: OECD (2003), *Babies and Bosses: Reconciling Work and Family Life*, Vol. 2, OECD, Paris.

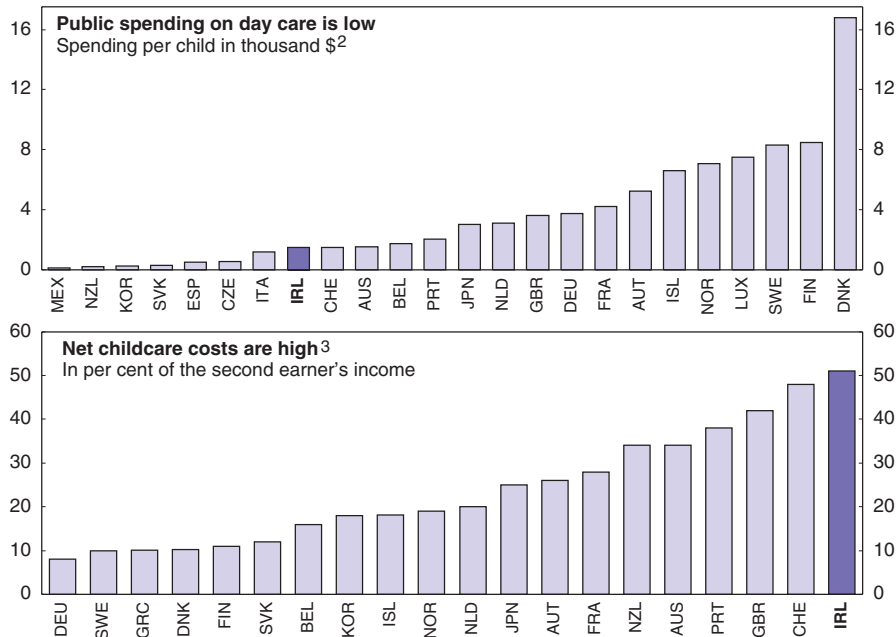
children where one spouse works and earns the average production wage (APW), there is little point for the other spouse to take up a job paid at two-thirds of the APW: the effective “tax plus childcare” rate is 93% (against 82% as shown in Table 6.1 if the same family had access to childcare at a cost equal to the national average).

A lack of childcare is a key reason why participation rates are low

In international comparison, public spending on childcare was very low in Ireland until recently, and as a result parents face the highest level of net childcare costs among OECD countries (Figure 6.3). Only 12% of children under age three are in registered childcare against an OECD average of 29% and rates reaching 54% and 65% in the United States and Sweden (Immervoll and Barber, 2005). As female participation rises further and informal carers such as non-working mothers and sisters become harder to find, affordable childcare becomes increasingly important for female participation. The Budget 2006 set out an investment programme targeting an extra 50 000 childcare places by 2010 (one additional place per five children below age four). When implemented in full, this programme will bring the coverage rate of non-parental childcare services close to the current OECD average and should facilitate the work decision of many mothers. A difficulty, however, is the absence of clear rules giving priority access to community childcare to those most needing it (OECD, 2003a). Existing places should be allocated in priority to children whose parents are both at work.

Mothers still encounter difficulties in reconciling work and family life when their babies grow older. Public supply of pre-primary education is limited: so-called infant classes enrol only half of children aged 4-6 and only for half the day. Access to schooling is universal from age five, but the difficulty for parents is a lack of after-school care: only 2.2% of primary school pupils were enrolled in after-school programmes in 2002 (CSO, 2003). Primary schools provide very little extended care: only 1.2% of all 6-12 year olds used this form of provision in 1999-2000 (National Women's Council of Ireland, 2005). As the number of children is declining with demographic change, capacity is becoming available in schools, but school boards have been reluctant to open up their facilities to provide extended care or to make them available to other providers. On-premises extended care is an economically sensible use of available capacity as well as a favourable option for children who are spared being transported from the school to the after-school facility. The package announced in the 2006 Budget included an initiative to increase the supply of out-of-school-hours care by 5 000 places (which corresponds to 1.3% of the population aged 6-12) by 2010.

Figure 6.3. **Parents face high net childcare costs**
2001¹



1. While results relate to the latest year for which the necessary data is available (2001 unless otherwise mentioned), the situation has changed since then, particularly in Ireland where the 2006 Budget included significant increases in public expenditure on the supply of day care from 2006 onwards.
2. Public spending on non-parental day care for children aged under 3 years old. At current prices and purchasing power parities.
3. Each parent earns the average production wage and they have two children, aged 2 and 3. Results for Belgium, France, New Zealand, Sweden, United Kingdom and United States relate to 2002.

Source: OECD (2005), Social Expenditure database; OECD (2005), *Education at a Glance*; Immervoll, H. and D. Barber (2005), "Can Parents Afford to Work? Childcare costs, Tax-benefit Policies and Work Incentives", *OECD Social, Employment and Migration Working Papers*, No. 31.

Family support measures are not targeted on childcare

The main measure to help parents and encourage fertility – the Child Benefit – does not create an incentive for parents to work. The Child Benefit is a cash transfer that depends solely on the number of children. It comes with no employment condition or job search requirement. After several rounds of increases in the recent past, it now absorbs 1½ per cent of national income. The Child Benefit is relatively high by international standards: it raises the disposable income of a typical family by 10%, against an OECD average of 7½ per cent.¹

The Early Childcare Supplement introduced by the 2006 Budget is also a cash transfer that is paid to parents regardless of their labour force status and is not tied to the purchase of childminding services. Effective from the second quarter of 2006, this payment of € 1 000 per year for each child under age six will add 5% to the disposable income of a typical family with two young children.² Even though the new benefit increases beneficiaries' income, it does not reduce the net childcare costs that a previously non-working spouse faces when she takes up market work. Because it has not been made conditional on the purchase of childcare services or on both parents working, the Early Childcare Supplement

is a missed opportunity to help families face the costs of childcare while encouraging female labour force participation.

Another family support measure, the home carer tax credit, is a direct subsidy to staying at home and should be phased out. A rebate of € 770 on the household's tax bill for income earned in a tax year, the home carer tax credit is deducted from the tax bill of families where one spouse cares for the children at home. Eligibility to the tax credit is compatible with only a very limited degree of activity in the labour market: the credit is phased out between 18% and 23% of the average production wage. The impact of the home carer tax credit is not negligible: it adds 3% to the disposable income of a family where the one working spouse earns the average production wage. The cost of this tax relief amounted to an estimated € 94 million (0.2% of government receipts) in 2005 (McCreevy, 2004). While the home carer tax credit contains provisions aimed at easing the transition to work such as an income disregard and a taper, their effect is limited since the tax credit is lost in full as soon as income exceeds 22% of the average production wage.

More focus on childcare is warranted

There are good reasons for the government to subsidise part of childcare costs. First, early childhood care and education has positive spillover effects on the performance of children in their further education and socialisation, though the evidence is less clear for children below the age of one.³ This would be especially beneficial for the integration of children of immigrants. Second, childcare subsidies reduce the effective tax rate on mothers. Third, childcare subsidies for low-income mothers may allow them to break away from welfare dependence, generating savings in welfare spending for the government. More generally, increased female participation, especially in full-time jobs, would reduce precariousness of women and children in cases of marital separation and promote gender equity. However, not all of childcare provision should be financed publicly because this could quickly lead to cost inflation in provision, as is illustrated by the example of Denmark where public spending on day care has reached 1.7% of GDP. The way subsidies are provided should also provide incentives to choose childcare in a cost-conscious way. Schemes that offer a certain amount of assistance and maintain an incentive at the margin should be preferred to alternatives where parents get refunded for the full cost of childcare they have incurred.

From a labour supply point of view, resources should over time become focused on parents who work or use childcare services. Paying childcare supports such as the Early Childcare Supplement only to families which use childcare services and where both parents are in employment (or actively looking for a job) would boost the labour supply by mothers and could at the same time provide an incentive for parents to choose childcare in a cost-conscious manner. A conditional benefit of this nature would provide resources to working parents and help them to pay for childcare while bringing more of the childcare sector in the formal economy. An important proviso is that the payment should be determined *ex ante* and not calculated *ex post* to cover the amount parents have spent on childcare, so that they have an incentive to shop around for good, but low-cost childcare.

A reform along those lines was considered and rejected in 2004 and instead the government chose to increase the Child Benefit substantially (Tax Strategy Group, 2004). An important principle determining policy in this area is the belief that mothers at home should not be discriminated against. Again in 2005, the authorities decided against making the Early Childcare Supplement conditional on parents being in the labour force. However,

it needs to be recognised that support for working families is not discriminating in their favour, it is just trying to counteract the bias against them that is created by other parts of the tax system (notably, that care at home is not taxed while paid childcare is taxed) – i.e. it is attempting to create a level playing field. It should also be recognised that encouraging women's participation in the labour force will require creating rewards for dual income couples and that this cannot be done under the constraint that the relative financial position of one-income families be untouched.

There is also a concern that demand-side measures might just push up the price of childcare and ultimately do little to help parents. If measures supporting the purchase of childcare services were to be introduced suddenly and at high levels, such a risk could materialise for a limited period: prices would rise until supply has adjusted to the increased level of demand. However, especially given that the construction of childcare facilities receives favourable treatment in the planning process and gives rise to generous tax breaks for developers, there is little reason to fear that supply would not adjust over the medium term. In short, the concern over price inflation in the sector is no justification for a pure supply-side strategy but calls for ensuring that any increase in demand-side support be gradual.

Support to the supply of childcare appears least attractive and should be only temporary. The childcare package announced in the 2006 Budget foresees the government financing the supply of childcare facilities. The main rationale behind this approach lies in the observation of shortages in the supply of affordable childcare services. However, it is not obvious how much of the problem reflects issues of affordability (i.e. something that should be dealt with on the demand side) or supply. Indeed, generous “brick and mortar” tax breaks were already available for the construction of childcare facilities, even though the main supply bottleneck appears to be a shortage of training for qualified staff – there are more women who want to become qualified childminders than there are training places in educational institutions. Current plans to increase the number of training places, as announced in the 2006 Budget, are welcome and should be implemented swiftly.

Making the tax system more neutral

Alongside the lack of childcare support, the tax system discourages married women from joining the labour force because it imposes a higher burden on second earners than on single persons and first earners. A one-income married couple with no children where the husband earns the average wage pays 9½ per cent of its income in income tax and social security contributions. If the wife takes up a job paying two-thirds of the average wage, the additional amount of income tax and social security contributions paid by the household will absorb 17% of her earnings: in other words, she faces an effective tax rate of 17%. If the same woman earned the same wage but were single, her effective tax rate would only be 9%. The main reason for the difference in effective tax rates is that one-income married couples get a much higher tax allowance than single persons.

Even though they have been reduced significantly over recent years, the marginal tax rates on second earners (alongside the lack of childcare) may explain why women work comparatively short weeks in Ireland. At 31.4 hours, the number of hours worked per employed woman is well below the OECD average of 35.4. Over a sizeable part of the wage distribution, the tax system imposes high marginal tax rates on second earners, creating a disincentive for them to increase their numbers of hours worked. For instance, for a second earner married to someone earning 133% of the average production wage, the higher rate of income tax (42%) kicks in at just 76% of the average wage. Adding social contributions, a

person in this situation faces a marginal effective tax rate of 48% on every extra hour worked. In contrast, a single person pays the higher rate of income tax on an additional hour of work only when their income exceeds the average production wage.⁴ Moving to individual taxation offers a practical way of reducing the number of second earners who face marginal effective tax rates of 48%. Such a change would boost labour supply by increasing the return to working longer for many women who currently work part-time.

International evidence shows that income tax can act as a particularly strong disincentive to take up paid work for married women. When deciding whether and for how many hours to join the labour market, married women, because of their traditional role in (untaxed) home production, are typically found to be more influenced by the after-tax wage than men and single women (Jaumotte, 2003). A consequence is that the distortionary effect of income tax on the labour supply decision will be higher for married women than for others: theory even suggests that an optimal tax system should tax their income at a lower rate (OECD, 2005). For mothers, the impact of taxes is compounded by the cost of childcare.

In international comparison, while Ireland has one of the lowest tax rates on single persons and one-income families, the effective tax rate on second earners is closer to (but still below) the OECD median (Table 6.2). Because it reduces the need for additional earnings, the low average tax rate makes non-working spouses in one-income couples more sensitive to their effective marginal rates when they ponder entering the labour force. In other words, the low average rate of taxation implies a weak income effect, and gives more importance to the substitution effect in the work decision of prospective second earners (Smith *et al.*, 2003).

Reforming the childcare sector and the tax and benefit system in tandem

More public funding for childcare is warranted to help more women enter the workforce, but it should not crowd out efforts to reduce the tax burden on second earners. Experience in OECD countries suggests that a neutral tax system is more effective than childcare subsidies in increasing female participation because it benefits more women (i.e. more than just those with young children) and public childcare support substitutes in part for privately paid childcare (Jaumotte, 2003). OECD (2005) estimates suggest that even a fivefold increase in public spending on childcare per child would raise female participation by just 1.4 percentage points. The same study estimated that if the effective tax rates on second earners and single persons were made equal, as is already the case in a large number of OECD countries (Finland, Greece, Hungary, Korea, Luxembourg, Mexico, Sweden and Turkey), the participation rate could rise ten times as much.

Nonetheless, the experience of countries such as Finland, France and Sweden suggests that narrowing the tax difference between first and second earners works best as a complement to supporting day and out-of-school care. When only one of the policy levers is used, progress can be difficult or very costly. Without more public funding for childcare, the female participation rate can remain low even when first and second earners face identical effective tax rates as is the situation in Korea and Mexico. In Denmark, where second earners face high effective tax rates, female participation is strong but comes at the cost of very high levels of public spending on childcare (expenditure per child is four times as high as the OECD average).

A joint approach, combining a reduced effective tax rate on second earners (on average and at the margin) and assistance to the purchase of childcare, appears warranted.

Table 6.2. Tax rates penalise second earners¹
Per cent, latest available year

	Women earning two-thirds of the average production wage			One-income married couple earning the average production wage
	Second earner	Single	Difference	
Ireland	24	15	9	7
Australia	26	20	6	24
Austria	25	23	2	26
Canada	31	19	12	21
Czech Republic	42	21	21	18
Denmark	48	39	9	36
Finland	25	25	0	30
France	24	20	4	21
Germany	51	35	16	18
Greece	16	16	0	17
Hungary	18	18	0	18
Iceland	44	20	24	14
Italy	32	22	10	21
Japan	20	17	3	14
Korea	8	8	0	8
Netherlands	35	28	7	29
New Zealand	20	19	1	21
Norway	30	25	5	26
Poland	39	30	9	30
Portugal	17	13	4	11
Slovak Republic	25	18	7	8
Spain	21	13	8	11
Sweden	28	28	0	31
Switzerland	23	18	5	16
Turkey	28	28	0	30
United Kingdom	27	20	7	17
United States	30	22	8	10
<i>OECD median</i>	<i>26</i>	<i>20</i>	<i>6</i>	<i>18</i>

1. The relevant effective tax rate for a married woman's decision to participate or not in the labour market is the average tax rate on the second earner's earnings, defined as the proportion of these earnings that goes into paying increased household taxes. The husband earns 100% of Average Production Worker earnings (APW), and the couple has two children. In other words, the effective tax rate on a second earner is equal to the difference between the tax due by a "(100% + 67%)*APW" household and a "(100% + 0%)*APW" household, as a ratio to the second earner's income (67% of APW). This tax rate is compared to the average tax rate for a single individual without children and a two-child, one-income family, both earning the average production wage. The tax rates include employee social security contributions and are net of universal cash benefits. They do not include employer social security contributions, indirect taxes, nor means-tested benefits (except child benefits that vary with income).
2. The rates are calculated with the rules applying to income earned in year 2006 in the case of Ireland. For other countries, the reference year is 2004 for the effective tax rate on one-income couples and 2003 for second earners and singles.

Source: OECD (2005), *Going for Growth*, Economic Policy Reforms; OECD (2004), *Taxing Wages* and OECD calculations.

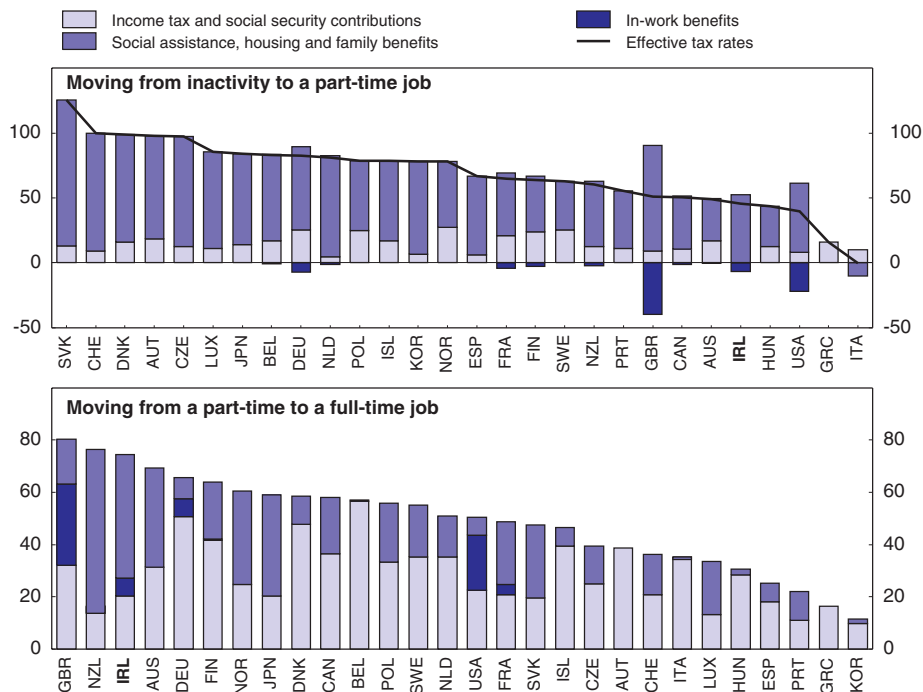
Moving towards more tax neutrality is desirable but cannot remove the distortion entirely: mothers cannot realistically be taxed for caring for children at home, and exempting working mothers from income tax altogether would raise serious issues of equity across households. In this regard, childcare subsidies (if they are effectively tied to the use of childcare) offer a second-best, indirect way of making market work more attractive when compared with producing childcare services at home (OECD, 2005). Helping parents to work can also reduce the loss of skills that can result from a long period out of work. Russell *et al.* (2002) followed a group of women who were in full-time home duties in 1994, 90% of them

having been so for more than two years, and observed their labour force status in 1999. They found that those returning to employment experienced significant occupational downgrading. Only 10% of those who returned found white-collar jobs, while 24% of them had been in such occupations before leaving the labour force. Furthermore, 64% of them worked in personal service jobs (shop assistant, waitress, housekeeping, childminding, etc.) even though only half of them had been in this occupational group before.

Encouraging and helping lone parents to work

Sole parent families are a particular issue in Ireland. One fifth of households with children are single parent families (CSO, 2002), a proportion that is much higher than in most OECD countries. Moreover, the employment rate among sole parent families is relatively low at 39%. This has obvious economic costs, but far more important are the social costs associated with child poverty, which has abated in the Irish society during the Celtic Tiger years but has at the same time become more concentrated in lone parent families (Whelan *et al.*, 2005). By far the most effective way of reducing child poverty is to ensure that parents are in work. The design of the social assistance system does not help in this respect. At around a third of the average wage for a two-child family, the One Parent Family Benefit provides only a minimal level of income support. Furthermore, as in many countries (Figure 6.4), social assistance to lone parents creates an unemployment trap: lone parents moving from inactivity to a part-time job face a marginal effective tax rate of 52%.

Figure 6.4. **Benefits and tax create a low activity trap for lone parents**
Effective tax rates on lone parents with two children, 2002¹



1. Part-time is defined as 20 hours of work per week at 50% of the salary of an average production worker (APW), full-time is defined as 40 hours of work per week at 100% of the APW salary. The graphs show how much of the increase in income following a move to part-time work from inactivity, or to full-time work from part-time work, is taken away in the form of higher taxes and lower welfare benefits.

Source: OECD (2005), *Employment Outlook*, Paris.

High marginal effective tax rates are an inevitable side-effect of any income-tested benefit and there is a trade-off between work incentives and the fiscal cost of income support. Helping sole parents regain a foothold in the labour market will require greater assistance by the government combined with stronger obligations on the individual:

- The government should improve active employment support such as assistance with finding work, preparing a CV, etc.
- The implicit tax rate on work could be reduced by allowing sole parents to keep some of their benefits, including their medical insurance, for a limited time after they have gone back to work. The government could also introduce a time-limited back-to-work benefit, along the lines of Canada's experimental benefit for sole parents (OECD, 2003b).
- At the same time, job search requirements on sole parents whose youngest child is of school age should be strengthened. Ireland is almost unique now in having no job search requirement until children reach the age of 18 (or 22 if they are in tertiary education). Most other countries that had a similar system have moved away from it, realising that it is usually better for the children if their mother is in work, at least part time. However, the out-of-school care programme will need to be improved before work testing can be introduced.

The design of the social assistance system also involves a poverty trap: lone parents gain very little from moving from part to full-time work at average levels of earnings. Amongst OECD countries, Ireland has one of the highest marginal effective tax rates on lone parents for the transition from part to full-time work at the average production wage (Figure 6.4). The main reason is that the One Parent Family Payment is income tested with a fairly sharp phase-out rate (nearly 50%). Other benefits, including the rent supplement and free medical care, are lost as well when moving to full-time work at average wage levels (OECD, 2003a). This poverty trap could be alleviated by raising the income threshold above which the One Parent Family Payment starts being withdrawn and by reducing the phase-out rate. Both measures would have to be implemented with care because they involve trade-offs: they have a fiscal cost and imply that marginal effective tax rates on lone parents will increase further up the earnings distribution.

Gender pay differentials can also hinder female participation

By reducing the return to work, lower pay for women can also depress female participation. Data for 2004 show women's hourly earnings are on average 18% below men's (CSO, 2004). The gender pay gap is very wide in high status occupations: women managers and senior officials are, on average, paid 28% less than their male colleagues. The difference is also large at the other end of the spectrum in elementary occupations, where women's hourly earnings are 25% below men's. Using individual-level data, Russell (2003) found that a great deal of the gender pay gap (40%) cannot be explained by relevant labour market characteristics such as the number of years worked or out of the labour force and the level of educational attainment.

Anti-discrimination law could probably do more to reduce the pay gap. Using time series regressions, Cassidy *et al.* (2002) found that anti-discrimination legislation has had little effect on the pay differential. If established following an investigation by a specialised officer of the Labour Court, sex-based differences in pay do not subject offending employers to a fine but simply a non-binding recommendation to make pay equal. Against this background, use of the legislation has been very limited with on average only

23 individual recommendations issued annually. An avenue for improvement in this area would be to introduce fines set at a sufficiently high level to create an incentive for employers to refrain from sex-based differences in wages.

Recommendations for sustaining growth in women's labour force participation

The large increases in the number of women who joined the labour force over the last fifteen years have been a driving force behind Ireland's outstanding economic performance. Further reforms are needed to give all women a good chance to engage in paid work if they prefer to do so. Box 6.1 summarises the recommendations that would help progressing in this direction while preserving the social protection of women enshrined in the constitution.⁵

Box 6.1. Summary of recommendations

- Encourage county childcare committees and school boards to facilitate the provision of out-of-school-hours care in particular where existing school facilities are suitable or readily adaptable.
- Swiftly implement plans to increase the supply of training places for childminders.
- Over time, link childcare supports such as the Early Childcare Supplement to employment status or to the use of formal childcare.
- Phase out the Home Carer's Tax Credit.
- Give priority access to community childcare to working parents, especially lone parents.
- In order to reduce child poverty, provide job-search assistance and childcare support to lone parents. In return, boost job search requirements for lone parents on income support whose children are of school age. Consider allowing lone parents to keep some of their benefit for a limited time after going back to work.
- To encourage lone parents to take up full-time work, raise the threshold from which the One Parent Family Payment starts being withdrawn and reduce its phase-out rate.
- Continue to reduce average and marginal effective tax rates on second earners. To attain this objective and make the tax system simpler and more neutral, consider moving to individual taxation.
- Introduce fines for employers found in breach of Equal Pay legislation.

Notes

1. The OECD average and the figure for Ireland refer to a two-child family where both parents work and respectively earn 100% and 33% of the average production wage (APW). The Irish figure is for 2005. The OECD average is for 2001 and is taken from Jaumotte (2003).
2. The family is the same as the one described in note 1, with the extra hypothesis that the two children are below age six.
3. See Chapter 3 for a more detailed discussion of early childhood education.
4. The threshold is € 29 400 per year or 102% of the average production wage.
5. Article 41.2.2 states that "by her life within the home, a woman gives to the State a support without which the common good cannot be achieved" and that "mothers shall not be obliged [to work] by economic necessity".

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Chapter 7

The housing boom

The Irish housing market is very buoyant. The housing boom is driven by strong economic growth, dynamic demographics and low interest rates. However, large tax advantages and relatively lenient credit policies by banks have also played their part, and prices may have become overvalued. To the extent that high house prices reflect favourable tax treatment, they may lead to economic inefficiencies by drawing excessive resources into residential construction. While a soft landing appears the most likely prospect, a disorderly correction of house prices would pose risks for macroeconomic and possibly financial stability. In this context, one policy lever available to the government would be a phased removal of the tax advantages associated with housing. In addition, banks should remain cautious in their lending and provisioning policies.

House prices across the industrialised world have surged since the mid-1990s – with the notable exceptions of Germany and Japan which are both still grappling with the aftermath of real estate busts in the early 1990s. In many countries, housing demand is underpinned by an easy monetary stance (Otrok and Terrones, 2005), while over a longer period tight zoning regulations have exacerbated the upward movement in property prices in and around growth centres (Glaeser *et al.*, 2005). Yet Ireland stands out by its extraordinarily strong increase in house prices over the past decade. It is important to understand what has been driving this increase in order to judge the likelihood, timing and size of any fall. A sharp decline in house prices would be a concern for homeowners and could have serious consequences for macroeconomic and financial stability. Meanwhile, the booming market combined with the tax treatment of housing may be impacting on the economy's productive potential by diverting a large amount of resources into residential construction. It may also be acting as a brake on labour supply by making it more expensive for people to immigrate and settle in the country.

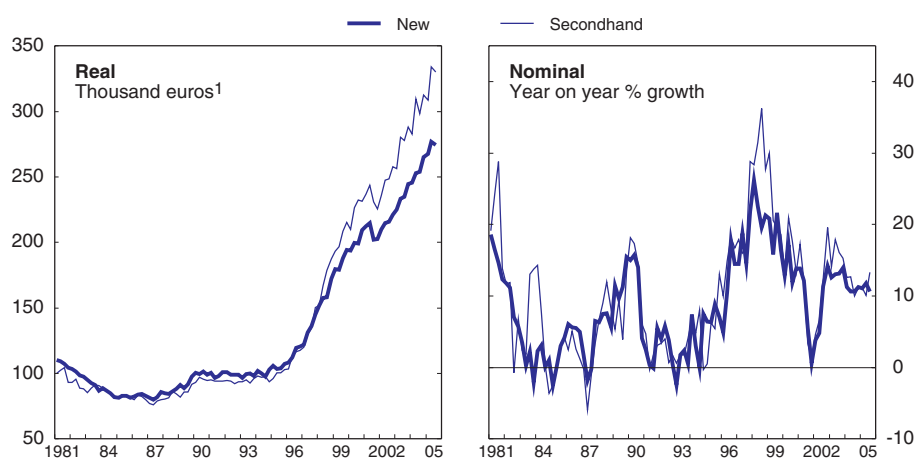
This chapter argues that *most* of the increase in Irish house prices is justified by the economic and demographic driving forces. It should be remembered that in 1993 the average Irish house cost a mere € 75 000, which was extraordinarily low for a European country. Since then, remarkable growth in incomes, low interest rates, strong population growth, especially among the younger house-forming age groups, a surge in immigration and changing living patterns have all contributed to the boom. However, prices have probably over-shot to some extent, and taxation may have contributed to fuelling the speculative boom. Looking ahead, the most likely scenario is that prices stabilise and the housing market stays flat for some years. But there is some risk that house prices will fall, and the market is certainly exposed should the economy be hit by a negative shock. This chapter looks at the past and the future of the housing market and discusses the role that policy can play going forward.

Forces driving the housing market

Ireland's house prices have risen dramatically since the mid-1990s. From 1995 to 2005 the price of second-hand houses more than tripled in real terms (Figure 7.1, left panel). House price inflation eased temporarily in 2001 but it has reignited since. Compared with other countries, the Irish housing boom has been extraordinarily vigorous: both in real and nominal terms the increase in house prices since the mid-1990s has been the highest in the OECD, with the United Kingdom and Spain ranking second and third respectively.

More favourable demand factors in comparison with developments elsewhere have surely played a role in shaping the buoyant price developments in Ireland. Growth in real disposable income since the mid-1990s has been stronger than in any other industrial country and real interest rates were among the lowest (Figure 7.2). The decline in inflation has also contributed by front-loading mortgage repayments. Furthermore, demographic trends were particularly favourable to housing demand in the 1990s, including strong

Figure 7.1. House price growth remains high



1. Nominal prices deflated using the harmonised consumer price index (base 2005).

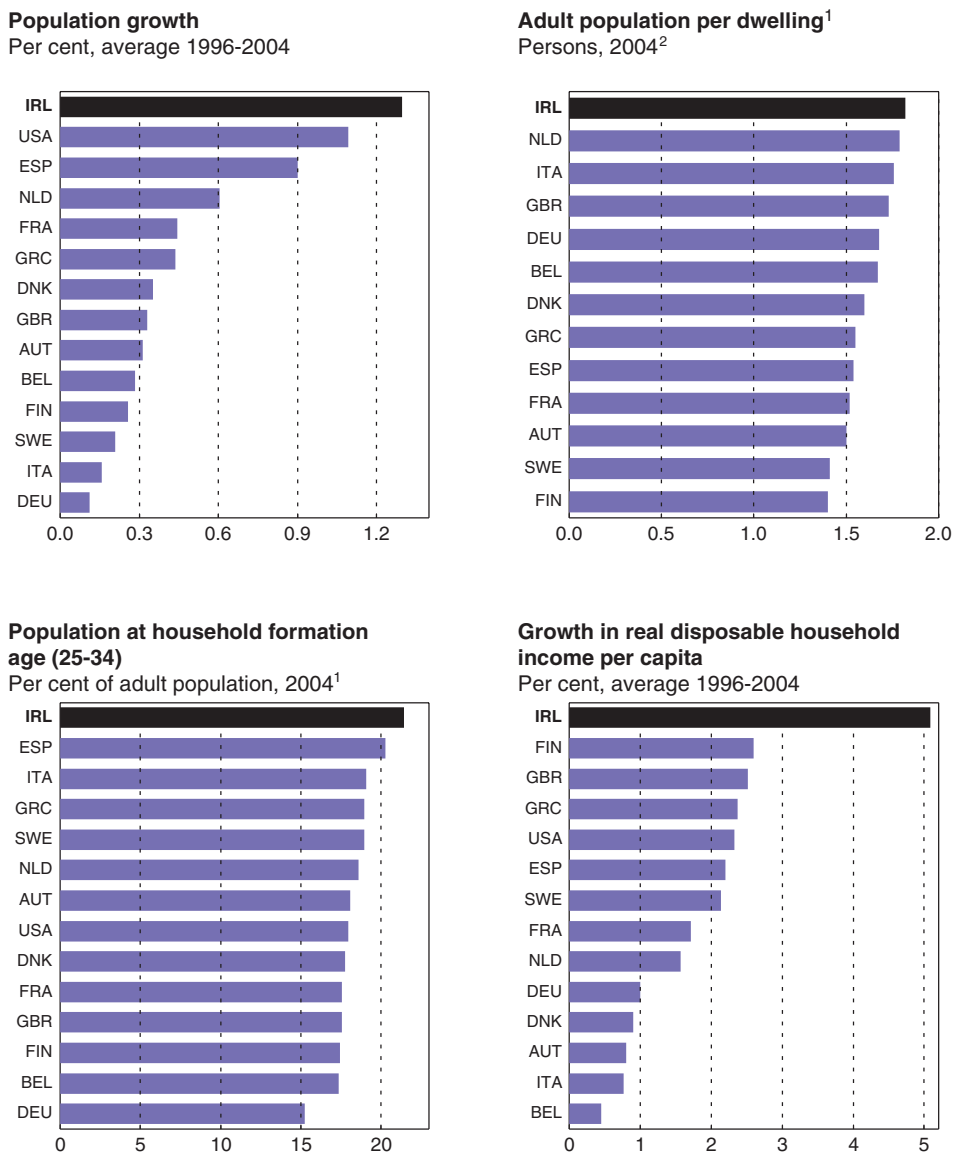
Source: Department of the Environment, Heritage and Local Government, *Quarterly Housing Statistics* and OECD, Main Economic Indicators database, February 2006.

population growth, a sharp fall in household size from a high level, a rapid acceleration in the growth of population in the household formation cohort and sizeable net immigration. Other demographic developments include the increase in the number of double income households and higher divorce rates. Another factor is the number of baby boomers investing in the buy-to-let market because of increasing worries about inadequate pension provisions for retirement.

In addition, the tax treatment of housing in Ireland has been more favourable for home ownership than in most other EU countries (van den Noord, 2005). This is reflected in a low user cost of capital. The user cost for homeowners is analogous to the cost of rental accommodation for tenants. It includes the after-tax mortgage interest rate net of capital gains, the opportunity cost associated with equity financing (usually the after-tax deposit rate), property tax (if any) and depreciation. There have been extended periods when the user cost has been negative, in particular in the late-1970s and from the mid-1990s onwards, implying a strong incentive to invest in housing.¹ The main driving factor keeping the user cost negative has been the untaxed capital gains (on owner-occupied homes), whereas the importance of income tax deductions has diminished with the gradual decline in marginal income tax rates and a series of other tax reforms (Box 7.1). Since taxation of capital gains has an important negative influence on the user cost, its absence could have acted as a catalyst for the upward spiral in house prices.

Access to mortgage finance is also less restrictive in Ireland than elsewhere, especially compared with continental Europe (Table 7.1). Financial market liberalisation during the 1980s and 1990s has supported demand by allowing a rapid expansion in credit. The full effects of liberalisation were beginning to be felt in the mid-1990s, just at the time when housing demand was growing fast. Loan-to-value ratios have risen from an average level of 60% in the 1980s to around 80% at present. The trend towards securitisation of bank loans is another factor. In general, securitisation makes interest rates on new borrowing more responsive to financial market developments. It also enhances competition, which lowers the costs of taking out a mortgage and makes it easier for households to access their

Figure 7.2. Forces shaping house prices



1. Adult population covers persons from age 20 onwards.

2. 2003 for Austria, Finland, France, Greece and Italy.

Source: OECD (2005), Labour Force Statistics and Economic Outlook 78 databases; European Mortgage Federation (2005), *Hypostat 2004*.

capital through housing equity withdrawals (Catte *et al.*, 2004). The adoption of the euro has been another important influence in helping to increase the elasticity of supply of mortgages. The exchange rate risk disappeared, removing one of the obstacles to the freer flow of funds within the euro area. This means that the domestically-based Irish banks have a hugely expanded pool of funds available. The removal of the exchange rate risk premium, by lowering interest rates, has also acted to stimulate demand for mortgages. Finally, most mortgages in Ireland are variable rate loans, so the reduction in short-term interest rates (until recently) has further boosted demand.

Box 7.1. Tax breaks for housing and policy flip-flops

Ireland has some of the most generous tax provisions for owner-occupied housing, largely because it is the only OECD country that allows households a tax deduction for mortgage interest payments at the same time as not taxing property values, capital gains or imputed rent (Barham, 2004 and van den Noord, 2005).^{*} The following provisions are the most important ones:

- Ireland introduced a residential property tax in April 1983. The rate was 1½ per cent for properties above a certain value and where the owner's income exceeded a certain rate. The 1994 Budget adjusted these price and income thresholds, but those measures were scrapped in the following budget, with a return to the previous system. The property tax was abolished altogether two years later. A private residence of up to one acre is exempt from capital gains tax, which is large enough to cover virtually all houses.
- Mortgage interest can be deducted against income tax. Prior to 1974 there was no limit as the full cost of mortgage interest could be deducted at the marginal tax rate. A ceiling was introduced in 1974 and increased on two occasions, in 1993 and 2003. Both these increases followed prolonged periods in which interest repayments normally exceeded the ceiling. Mortgage interest relief was phased in at the standard rate of tax (as opposed to the marginal rate) in 1994. This saw a reduction in the benefit accruing to homeowners with the deductibility rate falling from 48% in 1993 to 26% in 1997. Meanwhile, the imputed rental income is not taxed, unlike rental income to a third party.
- A package of tax measures was introduced in 1998 in an attempt to deflate what appeared to be a housing bubble. Stamp duty on new houses that were not owner-occupied was increased, while stamp duty on second-hand houses was reduced; capital gains tax on disposals of qualified residential land was reduced; and tax breaks for rental income were removed. These were successful in stopping house price inflation – possibly too successful, as they were reversed in the 2002 Budget. Meanwhile, another package of measures was introduced in 2000 in order to discourage investors from buying rental property. This included a 9% stamp duty on the purchase of property for rent. That also worked but had the predictable side effect of driving up rents, so it was abolished just a year later. Stamp duty was changed again in the 2005 Budget, this time lowering the tax for first-time buyers.

^{*} Finland, Portugal and Spain are the only other countries which, like Ireland, give a tax deduction for mortgage interest payments but do not tax imputed rent or capital gains on the principal owner-occupied dwelling. However, all three have municipal taxes on property values ranging from 0.4% to 1%. The size of the tax bias in Ireland has been reduced over time as the ceiling on mortgage interest deductibility has not kept pace with the increase in house prices. Updating the estimates by van den Noord (2005) shows an overall tax wedge of -0.57% for the first seven years and -0.36% thereafter, giving Ireland the fifth-largest tax bias in the EU15.

The rise in housing demand triggered a strong response in supply, which again is unprecedented by international standards (Figure 7.3). House construction and residential permits per capita are among the highest in the OECD. Around a third of the housing stock is younger than ten years old. Half of the stock is detached houses, with apartments accounting for just 6%. The enormous increase in housing supply was accompanied by significant increases in real construction costs and land prices. The significant cost increases did not deter the supply of housing, which was aided by more relaxed zoning rules. Yet, despite the massive increase in the housing stock, it will almost certainly increase further in the medium term (even ignoring the effect of population growth) given

Table 7.1. **Mortgage and housing market indicators**

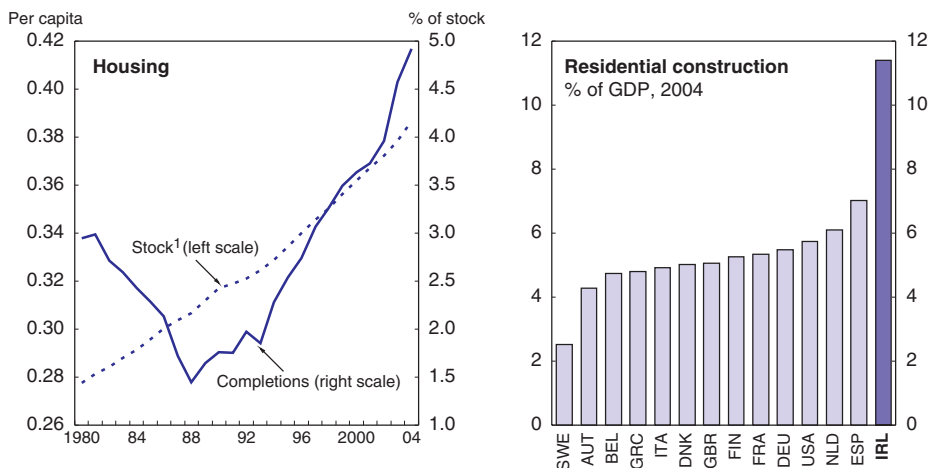
	Residential mortgage debt (% of disposable income, 2003) ¹	Typical loan-to-value ratios of new loans (%)	Typical loan term (years)	Variable interest rates (% of all loans, 2002) ²	Securitisation of mortgages	Home ownership rate (% , 2002) ²
Ireland	106	70-100	20	85	Limited	77
Australia	120	90-100	25	73	Yes	70
Austria	..	..	20-30	..	..	56
Canada	77	70-80	25	25	Yes	66
Denmark	188	80	30	15	Yes	51
Finland	71	75-80	15-18	97	Limited	58
France	40	80	15	20	Limited	55
Germany	83	70-80	25-30	72	Limited	42
Italy	20	50	15	56	No	80
Japan	58	80	25-30	..	No	60
Netherlands	208	87	30	15	Yes	53
New Zealand	129	..	..	..	..	65
Norway	24	70	15-20	..	No	77
Portugal	33	..	15	..	..	64
Spain	67	..	15	75	Yes	85
Sweden	98	80-90	<30	38	Limited	61
United Kingdom	105	75	25	72	Yes	69
United States	78	80	30	33	Yes	68

1. 2002 for Norway and Portugal, 2005 estimate for Ireland.

2. Or latest year available.

Source: OECD (2005), *OECD Economic Outlook*, No. 78, Paris; OECD (2004), *OECD Economic Outlook*, No. 75, Paris; Tsatsaronis, K. and H. Zhu (2004), "What Drives Housing Price Dynamics: Cross Country Evidence", *BIS Quarterly Review*, Bank for International Settlements, Basel, March; Ahearne, A.G. et al. (2005), "House Prices and Monetary Policy: A Cross-Country Study", *International Finance Discussion Papers*, No. 841, Board of Governors of the Federal Reserve System, September; Central Bank and Financial Services Authority of Ireland.

that in Ireland there are significantly more adults per dwelling than in other OECD countries. If preferences in Ireland were similar to those in other EU countries, this would, *ceteris paribus*, lead to falling numbers of (adult) persons per dwelling. This gap has undoubtedly been a factor in the buoyant demand for housing and a driving force behind

Figure 7.3. **Residential construction is booming**

1. OECD estimate of stock of permanent dwellings, end of year.

Source: Department of the Environment, Heritage and Local Government (2005), *Annual Housing Statistics, Bulletin 2004*, The Stationery Office, Dublin and OECD (2005), *Economic Outlook 78* database.

the escalation of house prices, and is likely to act for several more years. Indeed, the high cost of accommodation in Ireland may be discouraging people from forming an independent household (Fitz Gerald, 2005).

Are house prices overvalued?

The question of whether the fundamentals can fully explain the Irish housing boom can be addressed by different methods. One approach is to use an econometric model and see if house prices deviate from their long-term equilibrium level. Another is to treat housing as an asset that reflects the discounted present value of its future earnings. However, these indicators need to be complemented by other evidence such as price-to-rent ratios, measures of affordability and benchmarking against other countries. A range of evidence is discussed below.

Econometric evidence

Econometric models can be used to estimate the “fundamental” price, as determined by demand factors, such as real disposable income and real interest rates, and supply factors. A price level in excess of the fundamental price could be a sign that prices are inconsistent with demand and supply conditions and instead may be driven by irrational expectations of future capital gains. In such a house price bubble, home buyers consider that a house that would normally be too expensive for them (or much more expensive than renting) is worth buying because they will be compensated by significant further price increases (Meen, 2000 and Case and Shiller, 2003).

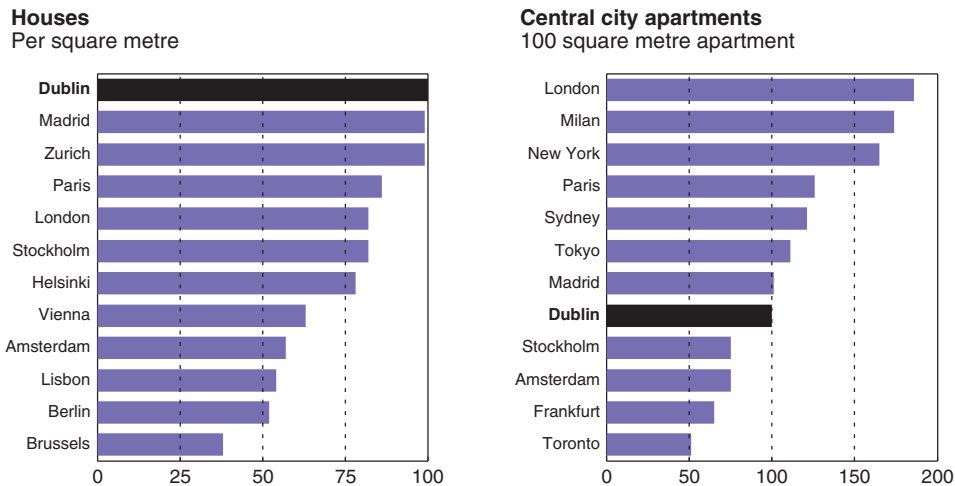
The available econometric evidence does suggest that prices have overshot their fundamental value. It is worth noting, however, that around 80 to 90% of the increase in house prices since 1995 is justified by the fundamentals – rising incomes, lower interest rates, demographic factors, etc. The remainder appears to be speculative froth. The model described in the annex to this chapter estimates that average house prices have been diverging from their fundamental level in recent years and were perhaps 10-20% overvalued in the middle of 2005 (although all econometric models obviously are subject to considerable uncertainty, due to modelling error, omitted variable bias and so forth). This estimate is broadly consistent with a similar analysis conducted by the IMF (2004). Some models presented in the central bank’s *Financial Stability Report 2005* show an estimated over-valuation ranging from essentially zero to more than 70%, highlighting that it is necessary to look at more than one indicator (and to make judgements about which indicators may be more reliable than others).

International comparisons

It is difficult to compare prices across countries because the size, quality, location and amenities of houses can differ substantially. Comparisons are a little easier if they are restricted to the major cities, but this does not solve the problem entirely. Bearing this in mind, the available evidence suggests that average prices in Dublin are higher than in comparable cities. In a comparison of average sale prices in 2004 across a dozen European cities, the price per square metre was higher in Dublin than everywhere else (Figure 7.4, left panel). Some further evidence comes from cost-of-living comparisons conducted by various private-sector consultancies. These usually focus on prices or rents of inner-city apartments typically bought or rented by business executives. Here Dublin does not stand out so dramatically (Figure 7.4, right panel).² This may be because rents are not especially

Figure 7.4. **Average house prices**

Dublin = 100, 2004



Source: OECD calculations based on data from ERA Immobilier (left panel) and The Economist Intelligence Unit (right panel).

high in Ireland but it may also reflect urban sprawl. Anecdotally at least, there is not a great deal of diversity in the housing stock. The centres of the main cities have not been taken over by apartment complexes and there is relatively little high-density in-fill housing. If preferences change and Irish people become more comfortable living in downtown apartments or in higher-density housing with no garden, then the distribution of prices may become more uneven: house prices in the central city may rise significantly relative to prices in the suburbs and city fringes. There is some evidence this may be happening already (Policy Exchange, 2005).

Owning versus renting and the “great ratios”

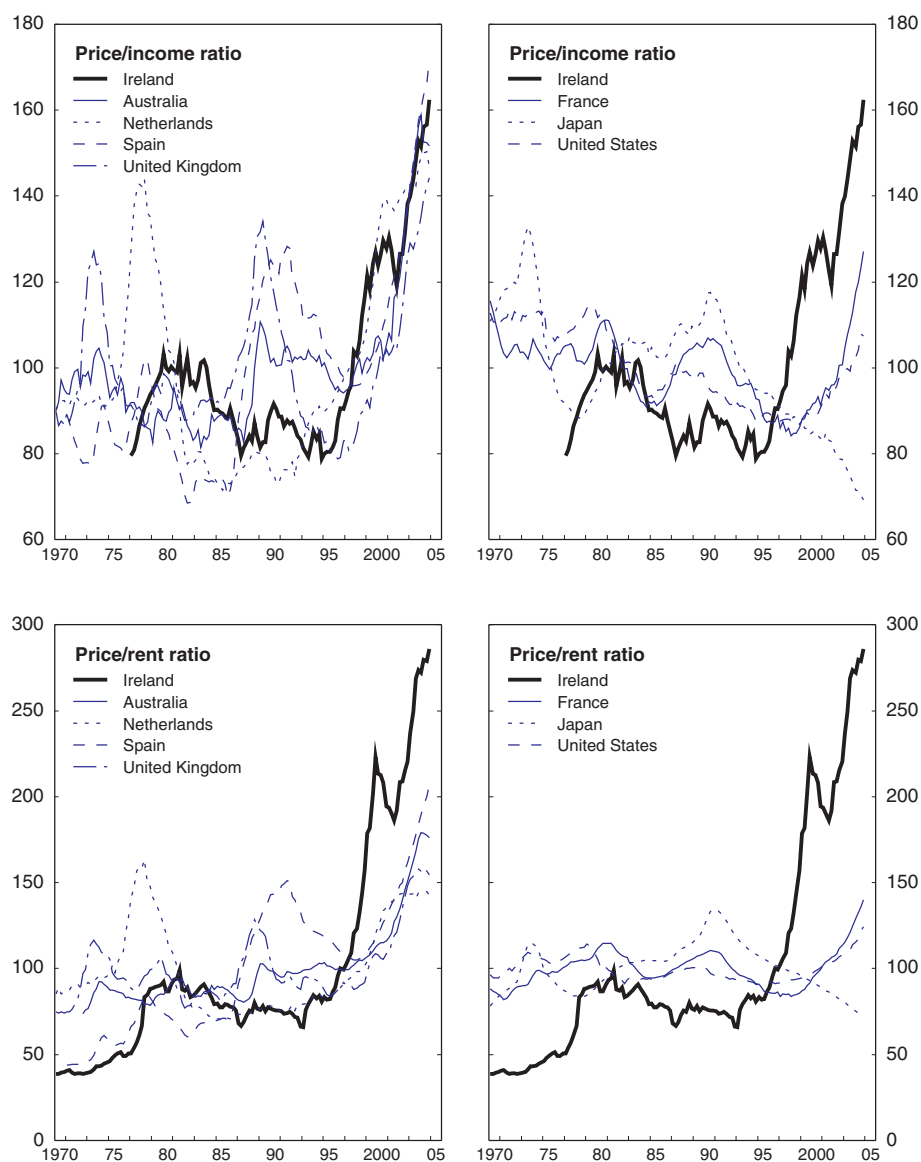
In a majority of countries, the ratios of prices to rents and prices to disposable income do not have strong trends when considered over long periods of time. The ratios may rise sharply during housing booms, but they usually fall back again through a combination of falling real house prices (*i.e.* a lower numerator) and rising rents or incomes (the denominator rising to catch up). In Ireland’s case, the increase in these two ratios far outstrips the cycles that have been seen in other countries before the most recent global housing boom (Figure 7.5), although the increase in the price-to-income ratio is in line with some other countries that have also enjoyed booming house prices in the last five years.

The forward-looking present value approach

In theory, permanently lower interest rates should lead to permanently higher price-to-rent and price-to-income ratios. Therefore, *some* increase in these ratios, as identified in the previous paragraph, is justified by the decline in Irish real interest rates. Whether the run-up is *fully* justified can be assessed using the forward-looking present value approach. It determines the fundamental house price as the present discounted value of expected future rental income from the property and has the advantage over econometric models that it relates the fundamental price to expectations of the future rather than comparing it to past developments. Real incomes have now converged to the euro area average but

Figure 7.5. **House prices are generally high relative to rents and income**

Sample average = 100

Source: OECD (2005), *OECD Economic Outlook*, No. 78.

house prices have substantially overshot the European average. This would imply that people expect growth in Irish incomes to remain above the euro area average for some time to come, and this is probably a fair assumption. If the annual rental income on private housing remains at € 13 000 and assuming a discount rate of 2%, the present value model would give a fundamental house price that is close to current levels. That is, this model concludes that current prices can be justified so long as interest rates remain at their current low level. However, assuming a more reasonable discount rate that reflects long-term expectations of interest rates of around 4%, the present value model yields a 20% overvaluation.

Affordability

The concept of housing “affordability” is popular in public discussions and with the real estate industry, perhaps because of its simplicity. While it is not particularly useful for assessing house price over-valuation, it is a useful measure of cash flow pressures. In 2005, the average mortgage repayment burden for a first time buyer was estimated to be 30% of disposable income (Central Bank, 2005), which is higher than in 1994/95, but is actually slightly lower than it was in 1991, when interest rates were much higher. Thus, the repayment burden is not out of line with past levels – provided, of course, that interest rates remain low.

Other evidence

The effects of increased housing wealth and equity withdrawal on household saving have never been strong in Ireland. The savings rate has been fluctuating around 9% throughout the housing boom. However, this does not imply that no housing equity is released, but rather that it may be recycled back into the housing market. This shows up especially in the buy-to-let market and in the rapid growth in the number of secondary or otherwise mostly vacant homes. This suggests that demand is driven, at least in part, by expectations of capital gains, which may confirm the impression of over valuation emerging from some of the quantitative indicators.

The buy-to-let market is small but has been growing fast.³ New buy-to-let mortgages constituted 20% of all mortgage transactions in 2004 while 30% of second-hand dwellings sold during the first half of 2004 were previously held as investment properties. The buy-to-let market is dominated by small, mostly inexperienced investors, whose primary objective is to provide for retirement. With property investors taking such an active part in the market, the question is to what extent they have driven up house prices. Attracted by the substantial capital gains and small carrying costs, many investors have entered the buy-to-let market, possibly displacing first time buyers and contributing significantly to housing demand and house prices. The main concern – and another indication of overshooting prices – is the growing divergence between property prices and rental income. Indeed, rents actually fell from 2002 to early 2005. The position of those in the buy-to-let segment of the market will continue to be sustainable only if interest rates stay low. However, if mortgage rates were to rise many of these investment positions would be loss making.

Demand for second homes appears to be another important factor in the housing market. Although housing supply has risen tremendously in recent years, a surprisingly large proportion of it appears to be satisfying demand for second-home properties (in 2005, around 15% of homeowners aged 35-54 owned a second home). As in the case of the buy-to-let market, some properties may have been acquired with the expectation that house prices would continue to grow at a fast pace for the indefinite future. More generally, an important element of the boom over the last decade has been the growth in the number of dwellings that are vacant, for whatever reasons, for most of the year. Fitz Gerald *et al.* (2003) calculated that the number of vacant dwellings in Ireland had increased by 80 000 from 2000 to 2003, which is equivalent to half the houses constructed over that period. On the basis of modelling work in that paper it was estimated that this additional demand would have added between 15 and 20% to house prices over the same period, which roughly corresponds to the estimated overvaluation reported in Annex 7.A1.

Key policy issues

Risks to financial stability

An over-valued housing market may have implications for financial stability, but that depends on many factors. The first point to note is that an overvaluation does not imply that prices will drop, at least if the degree of overvaluation is moderate. The housing market is unlike other asset markets in that house price dynamics are not symmetric. Prices rise quickly during booms, but in a market slump most people prefer to take their house off the market rather than sell at a loss. Hence, a *small* fall in prices followed by several years of a flat market is more likely than a sharp drop in house values. Put another way, the price level may remain fairly high as the market waits for the underlying fundamentals to catch up. Another factor working in favour of this benign scenario is that, in the past, house price slumps have usually been triggered by a hike in interest rates, and while interest rates in the euro area are back on an upward path, the increase is likely to be relatively mild – a hike in rates has usually been the trigger for price slumps in the past. But even if they are not overvalued, concerns about stability still arise. If the fundamental drivers were themselves subject to severe negative shocks – such as a slowdown in the expected growth rate of disposable income – then house prices could still fall substantially. This would be particularly difficult for households that are highly leveraged in the buy-to-let and secondary home markets. The sensitivity of these markets to changes in financial conditions may be illustrated by the hit to confidence and the subsequent halt in real house price growth in 2001-02 when the budget announced an increase in the stamp duty and the introduction of an anti-speculative property tax (Box 7.1). The potential magnitude of the problem is difficult to gauge. Average debt levels are high and are growing rapidly (Table 7.1), but there is little up-to-date information on how this is distributed across households. The current level of rents is not adequate to cover debt service costs for new or very recent investors (*i.e.* those with a loan-to-value ratio of at least 80%), so their financial position will be squeezed if prices do not rise as fast as they had hoped. Even if house prices level off, there is a potential macroeconomic and financial stability issue that could arise from decline in residential construction. As noted in Chapter 1, the rate of house building will need to fall to some extent to return to its sustainable long-run level. International experience shows that this process is seldom smooth: when the investment rate turns down, it usually falls sharply (Box 7.2).

Stress testing by the central bank suggests that the banking system has adequate capacity to absorb a modest fall in residential construction and house prices. However, it is more exposed to a negative shock that reduces residential and commercial property prices simultaneously as more than half of the banking sector's loan book relates to property. Hence, it would be worthwhile for banks to err on the side of caution. Loan provisions are currently in line with international norms, despite Ireland's financial risks possibly being higher than in other countries.⁴

Longer-term economic efficiency

Aside from the question of whether house prices are currently overvalued, there are also issues of longer-term welfare related to the housing market. The share of the average household budget that is spent on housing is very high by international standards – it is the second highest in the European Union after the United Kingdom.⁵ This suggests there may

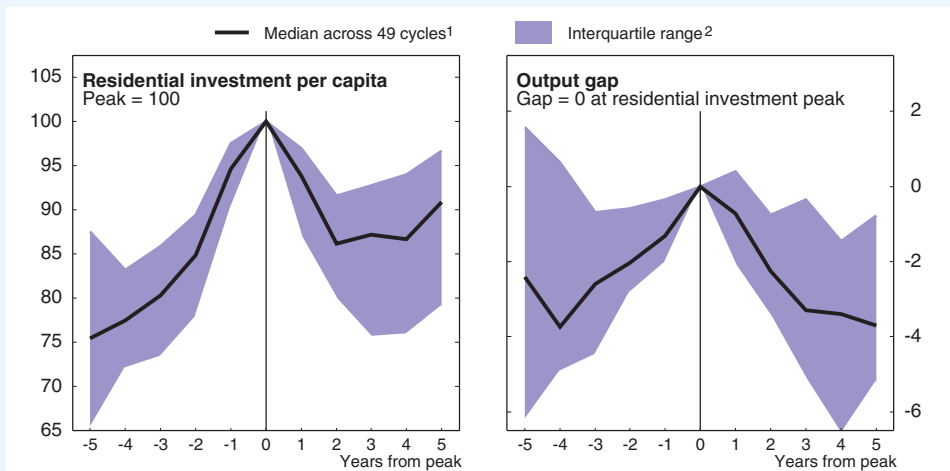
Box 7.2. Has residential construction ever had a soft landing?

Residential investment is characterised by a pronounced boom-bust cycle. This box looks at how often a construction boom has been followed not by a slump but by a soft landing.

Between 1960 and 2004, 49 residential construction booms have occurred in 23 countries for which data is available. A boom is defined (rather generously) as a rise in the level of real per capita residential investment of at least 15% over a five-year period. In order to avoid identifying false peaks and data blips, a peak is defined as the highest point in a window of the preceding four years and the subsequent three years. By construction, the latest peak that can be identified is 2002; the analysis therefore omits the housing booms that are currently underway. In the cycles that have been identified, the average increase in real per capita residential investment from trough to peak is around 40%. The largest occurred in Korea from 1973 to 1978 (where investment rose by 160%). The trough-to-peak increase has exceeded 50% in 16 cases.

The downturn that follows is usually rapid. On average in the first year after the peak, 40% of the increase during the trough-to-peak upswing is reversed, with another 40% lost in the second year (Figure 7.6). Investment stabilises at that level for two years, before beginning to recover about five years after the peak.

Figure 7.6. Has there ever been a soft landing?



1. In each cycle, real per capita residential investment is scaled so that the peak equals 100.
2. The shaded area shows the middle two quartiles (i.e. half the countries fall in this range).

Source: OECD (2005), Economic Outlook 78 database.

How common are soft landings? If a soft landing is defined as a relatively small reduction in the investment rate, they are not especially common. There have been only four cases where the decline in per capita residential investment has been smaller than one-third of the increase that occurred during the boom years (these are the Netherlands after 1978, Belgium after 1990, the United Kingdom after 1998 and Finland after 2000). Soft landings are more common if they are defined as *gradual* declines, i.e. where it takes at least three years to hit the trough. There have been around 20 examples of these. But all of these were comparatively deep declines. If a soft landing is defined as something that is *both mild and gradual*, there has not been a single case out of the 49 boom-bust cycles.

Box 7.2. Has residential construction ever had a soft landing? (cont.)

It is also revealing to look at the behaviour of monetary policy before and after the construction peaks. Of the 34 booms for which there is also data on short-term interest rates, monetary policy tightened before the investment peak in only a little over half of all cases. Thus, there appear to be factors other than a tightening of monetary policy that have been responsible for many of the downturns.

be over-investment in housing and a corresponding under-investment in more productive assets.

The scarcity of accommodation in Ireland is partly a matter of misallocation of resources. To the extent that the increased stock of dwellings is absorbed as secondary or vacant dwellings, there are fewer dwellings available to meet the rise in the number of households driven by the changing age structure of the population. This has also put pressure on the resources of the building industry. Moreover, as noted by Fitz Gerald (2005) the high demand for secondary homes makes it more expensive for individuals to live and run businesses in the regions. The provision of the necessary infrastructure for new dwellings, such as sewerage and water connections, is very expensive, especially in urban areas. Where such dwellings are held vacant for investment purposes,⁶ there is not an occupier to generate tax revenues to help defray the costs. Moreover, the government's social housing policy may be putting undue pressure on property prices (Box 7.3).

Furthermore, the level of house prices could reduce the growth potential of the economy by discouraging potential migrants, shifting the balance of labour market growth from employment to wages, with a consequent deterioration in competitiveness. Rises in house prices lead to unambiguous welfare gains for current home owners while immigrants, first time buyers and those with lower labour market skills miss out.

Tax policy issues

Some landowners are reaping large capital gains as a result of the major investment in infrastructure by the state and the rezoning of land for development. It would be appropriate for part of this windfall to be siphoned off by taxation to partly fund the infrastructure investment that creates the gain in the first place. The higher development levies that have been implemented go some way in this direction but they do not affect existing home owners. In contrast, the state is intervening in a number of different ways to encourage demand for housing, thereby pushing up the price. The tax relief on mortgage payments and the under-pricing of infrastructure encourage higher demand and higher prices, especially for land. Restrictive zoning, while popular with existing suburban residents, fuels an artificial shortage and encourages urban sprawl. Hence there is a strong argument for a property tax. But this has so far proved unacceptable to the public. As a softer alternative, some have advocated a property tax on vacant or second dwellings only (Fitz Gerald, 2005). This would help defray infrastructure costs, reduce demand and therefore reduce price pressures, thereby enhancing the productive potential of the wider economy. A very important side effect is that it would reduce the share of this potentially most volatile element in the housing stock.

Box 7.3. Housing support may not be provided in the most cost-effective way

The government has substantially increased expenditure on housing support for people on low incomes. In 2004, public social expenditure on housing was more than 1½ per cent of national income – around four times the OECD average. It is unclear whether this money is well spent. There are around 15 different schemes but the government appears to have a strong preference for encouraging home ownership rather than providing rent assistance (Fahey, 2004). In 2004, only 16% of total expenditure went towards rent subsidies (housing benefits); approximately two-thirds went to capital expenditure, especially the construction and maintenance of local authority housing. Local authorities rent out 107 000 units at an average rent of just € 32 per week, so it is no surprise that there is a long waiting list for such housing. Expenditure on social and affordable housing schemes in 2004 amounted to € 1.88 billion and benefited 12 145 households. This subsidy is therefore equivalent to € 155 000 per household. Instead of building new houses for these families, that sum could cover all their rent for 10 to 15 years depending on the type and location of the rental accommodation. In its latest attempt to encourage home ownership, the government announced in 2005 that a further 10 000 houses would be built under its Affordable Housing scheme. People who would otherwise have to spend more than 35% of their net disposable income on a mortgage can apply to buy one of 10 000 new houses at up to a third off market value. The scheme is income tested, and is available to households earning up to around 130% of the average wage. This is in addition to the tenant purchase scheme under which social housing tenants can buy their properties at a considerable discount.

Policy needs to shift to a more tenure-neutral stance. The private rental sector, which currently is small by European standards, could expand if the government shifted more resources towards rent assistance instead of constructing houses and selling them or renting them and controlling the system through queues. Constructing houses and selling them at a low price seems especially ineffective as government assistance only takes into account a household's current, but not permanent income. It has aspects of a lottery, and its irreversibility makes it impossible to adapt to changes in situation or to households' often transitory needs. It is also a high-cost measure, so that less is available for lower cost, but more effective measures. Subsidising low-rent housing, while not suffering from irreversibility to the same extent, still often does not cater to the poorest households as it can be difficult to dislodge renters whose incomes have risen above the threshold for being placed in a low-rent flat. In addition, the owners of social housing parks usually have little incentive to maintain the property. Providing assistance by a housing benefit or housing vouchers would be entirely tenure neutral if households were free to use their means-tested benefits to cover rent or a mortgage. Means-tested housing benefits necessarily increase marginal effective tax rates on low-income earners but Ireland has relatively low marginal rates (at least on first earners) and therefore has more scope than most countries to deliver its housing policy through the income support system and let households make their own choices about whether to own or rent from the private or social sectors.

Box 7.4. Summary of recommendations

- Phase out the strong bias towards housing that is embedded in the tax system. For example, mortgage interest should not be tax deductible unless a tax on imputed rental incomes or a broader capital gains tax is introduced.
- Introduce a property tax in order to fund local infrastructure and services, and as a way of redistributing some of the windfall gains that accrue to people living close to new roads and public transport links.
- Encourage banks to be sufficiently prudent in their lending and loan-loss provisioning practices.
- Social housing policy should become more tenure-neutral by scaling back house building and providing more by way of income support and/or housing vouchers.

Notes

1. For Ireland, the user cost is computed by Barham (2004) following the method of Poterba (1984).
2. The figures in the right-hand panel come from the Economist Intelligence Unit and are based on a 100 m² apartment close to the city centre. They are highly correlated with the Union Bank of Switzerland's cost of living comparison in different cities (correlation coefficient of 0.78).
3. In 2004, around 8% of the housing stock was for private rental.
4. Loan loss provisions fell from 1.4% of loans in 2000 to 0.7% in the second quarter of 2005 (Central Bank, 2005). This level is in line with other European countries (Hoeller et al., 2004).
5. The simple way to see this is to compare the level of house prices in Ireland relative to other countries. More rigorous statistical comparisons of the cost of living across countries compiled by Eurostat generate the same conclusion (see Eurostat data table COLC_NAT under subject Prices, Intra-EU correction coefficients).
6. There was a strange tax loophole until 2002 which meant that it could be worthwhile for a landlord who owned multiple properties to buy an additional property and keep it vacant.

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ANNEX 7.A1

Determinants of real house prices: an econometric approach

After tracking each other closely for many years, the prices of new and second-hand houses began to diverge in the mid-1990s. Since 1995, average second-hand house prices have risen by around 340%, compared with 240% for new houses. The different trajectories are not surprising as the two types of housing are not perfect substitutes (for example, the average new house is smaller and further from the city centre) and the supply of new houses can expand more rapidly than existing dwellings, the supply of which is less elastic. Because the markets are so closely related but are not perfect substitutes, the prices of new and second-hand houses are modelled together in a joint estimation framework based on a cointegration error-correction approach. Long-run or equilibrium prices are assumed to depend on real per capita disposable income, y , the real after-mortgage interest rate, r , and the stock of each type of dwelling, H . The basic estimation framework is shown below:

$$p_t^{sh} / p_t^c = \alpha_1 + \beta_1 y_t - \gamma_1 r_t - \theta_1 (h_t^{sh} - pop_t^{25-44}) + \lambda_1 (pop_t^{25-44} / pop_t)$$

$$p_t^{new} / p_t^c = \alpha_2 + \beta_2 y_t - \gamma_2 r_t - \theta_2 (h_t^{new} - pop_t^{25-44}) + \lambda_2 (pop_t^{25-44} / pop_t)$$

where lower case letters denote natural logarithms, p^n is the price of new houses, p^{sh} is the price of second-hand houses and p^c stands for consumer prices, here measured by the core harmonised consumer price index (HICP; excluding food and energy). The housing stock, h_t , is based on a cumulation of housing completions after adjusting for depreciation (see the box at the end of this Annex for a more precise description of the variables). In the estimation described below, the stock of new dwellings was not found to be a statistically significant determinant of the price of new dwellings, and therefore was dropped from the estimation. To some extent this is not surprising as supply is fairly elastic. The demographic variable (the share of the population that is around the household-formation age) is included to capture the hypothesis that a younger population is likely to put extra pressure on the housing market.

The two equations are estimated on quarterly data from 1977 to 2004 using the Seemingly Unrelated Regressions (SUR) estimator. Short-run error correction models are then estimated, again using SUR. The final results from the system are:

Second-hand house prices: long run

$$p_t^{sh} / p_t^c = 6.811 + 1.6883 y_t - 1.9289 r_t - 1.6785 (h_t^{sh} - pop_t^{25-44}) + 2.9862 (pop_t^{25-44} / pop_t)$$

(3.88) (48.4) (9.16) (6.63) (6.36)

New prices: long run

$$p_t^n / p_t^c = -2.6130 + 1.5279 y_t - 2.0471 r_t$$

(10.4) (57.6) (14.8)

Second-hand prices: short run

$$\Delta(p_t^{sh} / p_t^c) = 0.0119 \Delta(p_t^{sh} / p_t^c)_{t-1} + 0.1127 \Delta(p_t^{sh} / p_t^c)_{t-2} + 0.2517 \Delta(p_t^{sh} / p_t^c)_{t-3}$$

(0.16) (1.58) (3.47)

$$+ 0.9916 \Delta y_t + 0.4052 \Delta y_{t-4}$$

(5.76) (2.13)

$$- 0.4817 ECM_{t-1} + 0.3382 ECM_{t-1}^{new\ prices} + 0.0403 DUM$$

(6.405) (4.37) (3.35)

$$R^2 = 0.5127; \quad s.e. = 0.0238; \quad DW = 1.75$$

New prices: short run

$$\Delta(p_t^n / p_t^c) = 0.1584 \Delta(p_t^n / p_t^c)_{t-3} + 0.1939 \Delta(p_t^n / p_t^c)_{t-6} + 0.7948 \Delta y_t + 0.4171 \Delta y_{t-4}$$

(2.21) (2.56) (5.57) (2.74)

$$- 0.1708 ECM_{t-1}^{negative} - 0.0598 ECM_{t-1}^{pos} - 0.00326 + 0.0408 DUM$$

(2.82) (1.03) (1.11) (4.14)

$$R^2 = 0.4927; \quad s.e. = 0.0199; \quad DW = 1.81$$

The main findings are that:

- The long-run income elasticity is estimated to be 1.5 for new houses and 1.7 for second-hand houses. Both estimates are higher than the ones estimated by Fitz Gerald et al. (2003) and IMF (2004), which are 1.07 (for new houses) and 1.20 (for a weighted-average of new and second-hand houses) respectively. The demographic variable affects second-hand house prices in the expected way, but is not significant in the equation for new houses.
- The interest rate semi-elasticity is around -2.0 in both cases. This also is larger than estimates in other recent studies.
- The per capita housing stock has a significant negative impact on the price of second-hand houses.
- The short-run income elasticities are high in both equations, meaning that prices respond quickly to changes in household incomes.
- For new house prices, the error-correction coefficient is asymmetric. It implies that house prices rise more easily than they fall. More precisely, negative disequilibria (prices below fundamentals) tend to be corrected by a subsequent increase in prices. In contrast, if prices are above fundamentals they tend not to drop but to “wait for fundamentals to catch up”.
- The error-correction coefficient for new house prices enters the equation for second-hand house prices with a positive sign. This means that disequilibrium in the market for new houses spills over into the market for second-hand houses.
- A dummy variable (DUM) was included to capture a confidence crisis in 2001 associated with the announced (but rapidly withdrawn) introduction of a flat-rate 9% stamp duty (to

replace the existing progressive rate schedule with a top rate of 9%) and a 2% anti-speculative property tax. The coefficient implies that the policy change led to a temporary fall in house price inflation by around 10 percentage points, although it may also be picking up other factors such as the hit to confidence coming from the bursting of the high-tech bubble.

- In terms of the statistical properties of the equations: a) the fit is relatively good for such a volatile variable, with a standard error around 2% in both equations; b) the error-correction coefficients are relatively large and statistically significant, implying that the long run equations are cointegrated (this is confirmed by a direct ADF test of the residuals from the long-run equations); c) there are no signs of mis-specification from residual tests of autocorrelation, heteroscedasticity and non-normality; and d) the coefficient estimates are relatively stable over time.

Actual and fitted values are shown in Figure 7.A1.1. The long-run equation can be used to estimate the “fundamental” price level of housing. The result, shown in Figure 7.A1.2, suggests that house prices have been above their fundamental level since early 2003. By the end of 2004, given interest rates prevailing at that time, second-hand house prices were around 10% overvalued and new house prices around 20% higher than their fundamental level. If long-term interest rates were to return to a more reasonable estimate of their long run level (i.e. 2 percentage points higher than at the end of 2004) then the overvaluation would be 16% and 26% respectively.

Figure 7.A1.1. **Actual and fitted house price growth**

Per cent, annualised rate

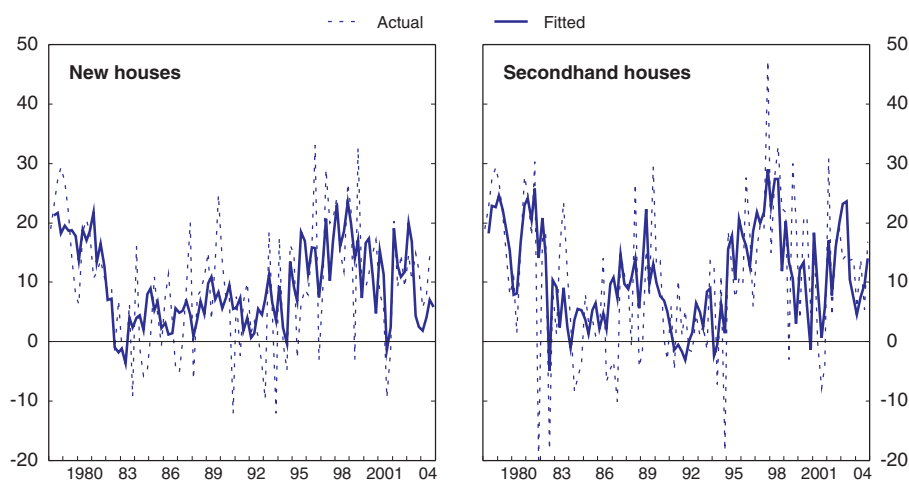
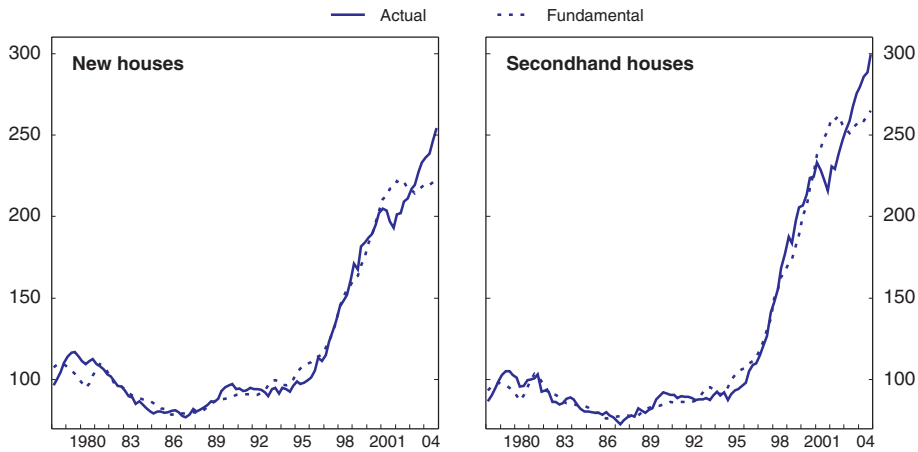


Figure 7.A1.2. **Actual and fundamental house prices**In thousand euros, real prices¹

1. Nominal prices deflated using the harmonised consumer price index.

Box 7.A1.1. Description of the data

House prices are average sales prices recorded by the Department of Heritage and Local Government. They are not adjusted for quality or composition (an alternative quality adjusted index is constructed by TSB Permanent Bank but this starts only in 1996). They are deflated by the core HICP (HICP excluding food and energy). Series for the stock of dwellings and pre-tax mortgage interest rates have been provided by the Economic and Social Research Institute (ESRI). The total dwelling stock is based on summing up dwelling completion figures, adjusting for depreciation and benchmarking to census estimates in 1991, 1996 and 2002. This is split between new and second-hand houses as follows. The stock of new houses is estimated by summing completions (less depreciation) and assuming that 15% of new houses “fall” from the new to the second-hand market each year. That is, the half-life of a new house before it becomes part of the “established” or second-hand stock is approximately 4-5 years. The stock of second-hand houses is equal to the total stock (as estimated by ESRI) minus the new stock. The after-tax mortgage interest rate has been computed as the pre-tax mortgage interest rate multiplied by one minus the relevant marginal income tax rates as published in Barham (2004). The real after-tax rate is the nominal after-tax rate minus the core HICP inflation rate. Real disposable household income is taken from the OECD Economic Outlook database. Demographic variables (population by age) are from the Central Statistics Office.

An extended three-equation model was also tested. This had an additional equation for dwelling investment because the housing stock is likely to be an endogenous variable, and in particular to be a function of house prices. The additional equation did not materially alter the estimates in the house price equations so the results are not reported here.

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Chapter 8

Keeping public finances on track

This chapter reviews Ireland's recent fiscal record and discusses the challenges that policymakers will face in coming years. Revenues have been extremely buoyant, giving the government an opportunity to substantially boost spending across the board. As economic activity slows towards more normal rates of growth, the budget may come under increasing pressure from social spending and the large infrastructure programme. The fiscal framework needs some strengthening to keep public finances on track. This will include various public management reforms – such as improving personnel practices in the civil service – and putting greater focus on getting value for money from public outlays, including the various tax expenditures.

Public spending has expanded enormously in recent years. General government expenditure increased by close to 70% from 2000 to 2005, or by 31% in real per capita terms (Table 8.1). Adjusted for inflation, this is by far the largest increase in public spending by any OECD country except Korea. Most of the increase in current (or operating) expenditure has gone into social services. Spending on healthcare, for example, has more than doubled since 2000. These developments reflect a variety of factors. First, there has been a considerable expansion in service provision in some sectors. For instance, employment in the public health system increased by a quarter between 1999 and 2001. Second, public sector wages have grown considerably faster than those in the private sector. This is a direct result of the public-sector pay benchmarking exercise which tried to bring public sector salaries into line with comparable jobs in the private sector. Third, capital expenditure has been particularly strong, reflecting the infrastructure construction programme that has been going on under the National Development Plan (Chapter 5).

Table 8.1. **General government fiscal position**
In per cent of GNP

	2000	2001	2002	2003	2004	2005 ¹	OECD forecasts		% increase 2000-07 ²
							2006	2007	
Total receipts	42.2	40.7	40.5	40.3	42.1	40.2	39.9	39.9	8.1
Taxes	31.0	29.3	28.9	28.8	30.2	30.3	30.5	30.6	8.2
Personal	11.2	11.0	9.6	9.7	10.1	10.2	10.2	10.2	6.9
Corporate	4.4	4.2	4.5	4.4	4.6	4.6	4.6	4.6	9.2
Social security contributions	6.6	6.8	7.0	7.0	7.3	7.3	7.4	7.4	10.1
Expenditure	37.0	39.7	41.0	40.1	40.3	39.8	40.6	40.6	10.4
Investment	4.2	5.0	5.1	4.5	4.3	4.8	5.1	5.3	12.1
General government net lending	5.2	1.0	-0.5	0.2	1.7	0.4	-0.7	-0.7	..
<i>Memorandum items</i>									
Saving	8.2	5.1	3.2	3.4	4.5	3.8	3.9	3.9	..
Gross debt	44.5	42.3	39.3	37.2	35.2	32.6	32.7	33.1	..
Expenditure per person (thousand €, 2005 prices)	10.3	11.3	11.9	12.2	12.7	13.9	14.1	14.6	5.2

1. Estimate.

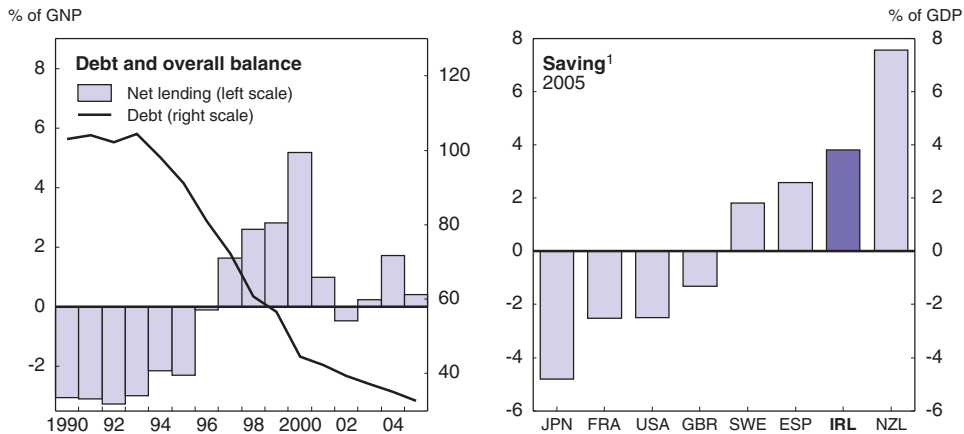
2. Annual rate for current price level data. The GDP deflator increased 3.3% per annum over this period.

Source: OECD (2005), Economic Outlook 78 database, Department of Finance, *Budget 2006* and OECD calculations.

Despite this expansion, the fiscal position remains healthy. The general government is expected to record a surplus of ½ per cent of GNI in 2005.¹ This is less than the levels recorded in the run-up to the millennium but is better than the OECD average. Comparing Ireland's overall budget balance with other countries is also a little unfair because of the large amount of capital expenditure that is being undertaken. Clearly, public investment will not remain at 4.5% of GNI forever. It is more informative to compare operating

surpluses, where Ireland is one of the OECD's best performers (Figure 8.1). Hence, when public investment returns to more "normal" levels, the general government fiscal position should settle into a comfortable surplus.

Figure 8.1. Fiscal performance has been sound
General government sector



1. OECD forecasts; current revenue less current expenditure. Ireland in per cent of GNP.

Source: OECD (2005), Economic Outlook 78 database; Department of Finance, Budget 2006 and OECD calculations.

The challenge is to make sure this happens. While there is clearly an infrastructure deficit, the government needs to have a clear view about when the infrastructure bottlenecks will have been eased sufficiently, and therefore when it can scale back its investment programme. It also needs to consider who should pay for the infrastructure and in particular how much should be recovered through user charges. In addition, if it is to remain committed to being a relatively low-taxed economy, it needs to get better value for money from public expenditure.

Recent budgets have continued the trend towards higher social spending

The 2004 Budget delivered a 7% increase in current expenditure, one of the weakest increases for some years (Table 8.1).² The biggest winners were healthcare and education, while social welfare benefit rates were raised by around 8%. In doing so, the government returned to its policy of progressively raising benefit replacement rates (increases were fairly modest in the previous year's budget – see Table 8.2). It aims to raise the standard personal benefit level (which covers the unemployment, invalidity, illness, single parent and widows benefit, but before the add-ons for dependent spouses and children) to 30% of the average wage by 2008. On the basis of these measures, the government had budgeted for a deficit in 2004. However, tax revenues ended up € 2.2 billion (1.8% of GNP) higher than expected, so the accounts actually recorded a healthy surplus.³

The 2004 Budget also saw the introduction of a five-year rolling envelope for capital spending. In each budget, the government now sets a total for capital expenditure over the next five years and allocates that expenditure across departments. The purpose is to give departments some stability in their capital budgets in order to help them plan the large amount of spending on infrastructure that the government intends to undertake. Gross

Table 8.2. **Social welfare payment rates**
Weekly rate

	Single person				Couple with two children			
	1992	1997	2001	2005	1992	1997	2001	2005
In constant 2005 euros								
Unemployment (short-term)	95	109	121	149	219	266	286	352
Unemployment (long-term)	104	120	123	149	229	278	288	352
Old age (contributory) pension	122	150	153	179	269	332	343	392
Child benefit	..	..	..	..	..	..	49	71
In per cent of average weekly earnings								
Unemployment (short-term)	21	23	23	27	49	55	55	64
Unemployment (long-term)	23	25	24	27	51	57	55	64
Old age (contributory) pension	27	31	29	33	60	69	66	71
Child benefit	..	..	..	..	..	..	9	13

Source: OECD calculations based on Department of Social and Family Affairs (2001), *Statistical Information on Social Welfare Services*, The Stationery Office, Dublin, www.welfare.ie/publications/annstats/01/index.html.

investment within the envelopes amounts to around 4½ per cent of GNI each year. This represents one of the highest rates of public investment in the OECD.

The following year's budget (for 2005) showed a sharper rise in current expenditure, at more than 8%. The major change was another large increase in social welfare benefit rates. Weekly payments were increased by around 7% for pensioners and 8.5–10% for other beneficiaries such as the unemployed.⁴ Health and education got an extra 10% and 9% respectively. In the past two budgets, a large proportion of the rise in health and education spending represented an increase in the price rather than the volume of services. Between 2003 and 2005, the wage bill for these two expenditure categories increased by 18%, which comprises a 3% rise in staff numbers and a 15% increase in average wage rates.

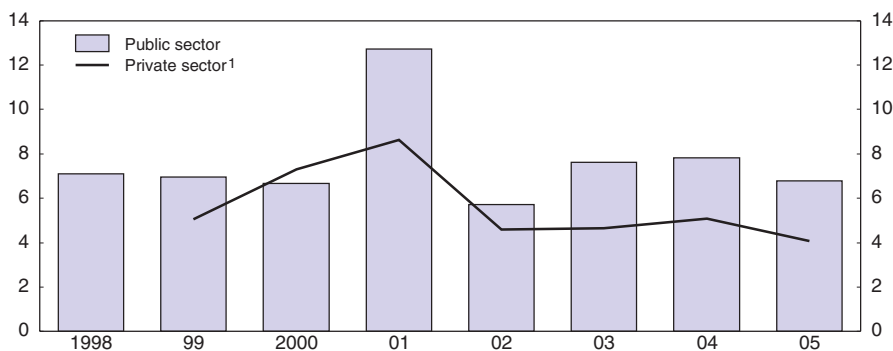
On the revenue side, the main measures in the 2005 Budget were to increase the employee tax credit – which has doubled since 2002⁵ – and to raise the income tax thresholds in line with wage growth. With these steps, the government temporarily removed from the tax net those workers on the minimum wage. Most of the other tax credits were increased, and those that were due to expire were extended. The housing market was also given a boost by cutting stamp duty for first-time buyers (the reductions apply only to owner-occupied homes). The new stamp duty schedule means that the average first-time buyer will pay no stamp duty at all. The five-year rolling capital envelope was pushed out a year, with spending for 2009 being in line with the target public investment rate of 5% of GNP. The preliminary outturn showed revenues running considerably above the budget estimate, which largely explains why the outturn was an estimated surplus of ½ per cent of GNP rather than the budgeted deficit of ¾ per cent of GNP.

The 2006 Budget again tables spending growth of close to 8%. It has targeted a deficit of ¾ per cent of GNP. The budget announced the allocation of € 300 million to the Strategic Innovation Fund for higher education for the next five years; welfare payments will again increase considerably; a five-year childcare strategy will be implemented; and people at the minimum wage will be moved outside the tax net by increasing tax credits while the standard rate income tax band will be widened to take more average income earners out of the higher tax rate. On the other hand, several property-based tax reliefs will be phased out, while a cap on the total amount of tax reliefs was introduced. At the same time a

package of tax reliefs for the farming community was granted, worth around € 22 million in a full year. Under the five-year rolling capital envelope, public capital expenditure including PPPs is planned to average 5% of GNI over the period 2006-10. Even though the revenue estimates look prudent, the budget is likely to provide some stimulus to economic activity.

A significant fraction of the expenditure increases in recent years has gone towards higher wages for public employees. This was underpinned by the public sector pay benchmarking exercise that was set up in July 2000, reflecting a view that public service pay rates were falling behind those in the private sector. Substantial pay increases have been granted since then on the basis of recommendations from the Public Service Benchmarking Body (PSBB),⁶ although some doubts were expressed at the time about whether wage levels were substantially out of line or whether the civil service was experiencing widespread recruitment problems (O’Leary, 2002). Boyle *et al.* (2004) show that in 2001, and after adjusting for personal characteristics such as age and education, public servants were substantially better paid than those in the private sector. Since then, public sector wage growth has continued to outstrip the private sector (Figure 8.2). Pay levels in some sectors, especially concerning healthcare professionals, are now substantially higher than in other countries. Whether the past pay increases were justified or not is largely water under the bridge. Looking to the future, the next benchmarking round will need to be more transparent and should present clear evidence to justify its wage recommendations. Moreover, it should focus on total remuneration (taking more account of relatively generous public sector pensions) and should further advance its own principal of tying pay increases to improved flexibility of work practices.

Figure 8.2. **Public sector pay has risen faster than in the private sector**
Per cent growth



1. Private sector includes industry, financial institutions, distribution and business services.

Source: OECD estimates based on data from the Central Statistics Office.

Public finances in the medium and long term

The revised Stability and Growth Pact allows Ireland to run a structural deficit of 1% of GDP, since it is a high growth, low debt country that has given priority to spend on investment. The government’s target for 2007 and 2008 are in line with this. It also has an implicit policy of not increasing tax rates. The government has begun work on the next National Development Plan which will set out broad policy goals for 2007 to 2013. There is

a long expenditure wish-list from all sectors, so it therefore will be important that these are offset by cuts in non-priority areas.

Like every other OECD country, an ageing population will put pressure on public finances over the long term. In contrast to most countries, however, Ireland has time on its side as it benefits from a “demographic dividend” related to a baby boom in the late 1970s. The old-age dependency ratio in 2020 will be around the same level that the average OECD country has today. The European Commission (EC) estimates that demographic forces will push up social security and public pension expenditure by around 4½ percentage points of GNI by the middle of the century. This is relatively mild by OECD standards, not just because Ireland has a young population but also because the flat-rate pay-as-you-go pension is less generous than in most countries.

In a strict sense, current fiscal settings are not sustainable as the rise in age-related spending will eventually exceed the increase in revenues, so if policies remain unchanged public debt is likely to rise quickly from the 2030s on. The EC estimates that Ireland has a fiscal gap of around 2% – i.e. the tax ratio would need to rise (or the spending ratio fall) by around 2% of GDP in order to satisfy the government’s inter-temporal budget constraint. However, there is considerable uncertainty surrounding calculations of this nature. Some other estimates show a larger long-term problem (e.g. the projections presented in the 2005 Stability Programme Update and Barrett and Bergin, 2005). In any case, the gap may be easier to close than in many countries. The EC’s calculations assume unchanged policy across the board, including an assumption that government investment will remain around its current level of 5% of GNP. That is both unlikely and unnecessary. Bringing the investment rate back down to levels prevailing in other advanced economies would close a large part of the long-term financing gap.

Moreover, the government has taken steps to shore up public finances in the face of these demographic forces. By law, it sets aside 1% of GNP each year in order to partially pre-fund future pension liabilities (and receipts from the privatisation of Eircom were lodged in the fund). The assets of the National Pension Reserve Fund, which is now worth around 10% of GDP, cannot be drawn down until 2025 and are predicted to still amount to around 20% of GDP by 2050. Second, the civil service pension was reformed in 2004 by raising the minimum pension age, introducing some flexibility by allowing early retirement with actuarially-adjusted⁷ benefits and removing the compulsory retirement age for most new public servants. Third, the tax ratio and general government debt are low as well.

Even so, there is no room for complacency. There are considerable public pressures to enhance social spending to bring it closer to European norms. Substantial reviews have been undertaken or are underway in the areas of childcare, pension reform and the financing of long-term care. The healthcare sector is also likely to require a sizeable injection of additional public funding. There is a risk that long-term social expenditure commitments are being made at the peak of the revenue cycle. A negative shock, such as an FDI outflow or a slump in the housing market, could leave the government with little alternative but to raise taxes in order to finance the social commitments that it has made; and higher tax rates could exacerbate the problem if they made Ireland a less attractive place for foreign investors and immigrants. Hence, fiscal policymakers should regard part of the current revenues as “windfall” or non-sustainable income. In particular, stamp duty, capital gains tax and corporate tax receipts could all turn sharply downwards in response to events that are largely outside the government’s control. A prudent fiscal strategy would

be to leave sufficient room for manoeuvre in case these risks materialise – i.e. to hope for the best but plan for the worst.

The fiscal framework is lagging behind best practice

The government is modernising its public service to make it more efficient and responsive. The previous *Survey*, in 2003, included an in-depth review of ways to get better value for money from public expenditure. While there has been some progress on its recommendations (Annex 1.A1), it needs to move faster to catch up with international best practice. The following sections discuss the areas of the fiscal framework where more improvement is needed.

Move towards results-focussed public management

A key part of the government's Strategic Management Initiative (SMI) has been to shift the focus towards outputs and outcomes, rather than concentrating on inputs. Progress here has been slow. The first stage of the Management Information Framework (MIF) is now in place in almost all departments in the sense that the required software has been installed. The MIF is designed to provide departments with integrated financial accounts and outcome measures, but its capabilities are not being fully used. Experience in countries such as the United Kingdom, Australia and New Zealand shows that possibly the most important of the many public sector reforms they undertook was to clarify what agencies were supposed to be doing (controlling them by telling them what they were required to deliver, not what inputs they were permitted to use) and giving managers a relatively free rein over how they went about their business (managerial freedom plus accountability) – see Rae (2002) and Jourard *et al.* (2004). From 2007, ministers will publish an annual statement on the outputs and objectives of their departments and from 2008 will publish outcome statements. This is an overdue but welcome step towards best practice in these areas.

Improve human resource management

An important part of the shift towards results-focussed public management is the decentralisation of responsibility for personnel management and the ability to be able to reward individuals who perform well, either financially or through promotion. The latest agreement with public sector unions goes some way towards making work practices more flexible and breaking the expectation of automatic promotion that was built into the previous system. Here again, however, progress has been slow.⁸ It is now possible for departments to recruit certain staff directly rather than using the centralised procedure, but few posts have been filled this way. Rules that have made it difficult to hire experts from outside is one reason why Ireland has had a disturbing number of project over-runs. It does not help that fully competitive, merit-based promotion is used to fill only two-thirds of all posts in the civil service. Mobility between departments is improving but is still low (half of general service posts will be filled by inter-departmental competition from March 2007, up from a third in the recent past). It is only from this year that department heads will have direct responsibility for managing their staff, including dealing with disciplinary issues.

Improve the accountability framework

There is also a need to improve evaluation. The government has had a formal expenditure review programme since 1997. Experience with the first wave of reviews was fairly negative and, although they improved, there is still a long way to go. The reviews initiated up to 2004 were of mixed quality. They tended to cover minor programmes, were frequently behind schedule, were often done part-time, and in some cases were of poor quality with little information to help assess the programme's effectiveness.⁹ What is more worrying is that there are few signs that the reviews are having an impact on budgeting decisions.

The expenditure review process needs to play a greater role in decision-making, with an emphasis not just on whether a particular output is being delivered efficiently, but on whether it is a high priority for public expenditure in the first place. The suggestions of Canada's Auditor General would be a useful starting point (Box 8.1). The process should also cover tax expenditures, and the announcement in the 2006 Budget to review tax expenditures on an ongoing basis is welcome. A specialised evaluation team could be put in place to assist those departments that do not have enough in-house expertise.

Box 8.1. Questions to evaluate value for money

1. Does the programme still serve a clearly defined public purpose that matters?
2. Is this an appropriate role for government?
3. Would we establish the programme today if it did not already exist?
4. Is it desirable to maintain it at its current level?
5. Can it be delivered more effectively or efficiently? Have there been changes (in the service environment, infrastructure, technology, etc.) since the programme's inception that would now permit an alternative means of achieving its objective with greater economy, efficiency, or effectiveness?

Source: Canadian Office of the Auditor General; Finance Canada.

Some upcoming changes to the programme should help. A member of each department's management committee will now be responsible for making sure the reviews are actually done; benchmarking and performance pay reviews will reflect progress on expenditure reviews; and all reviews will be sent to the appropriate parliamentary committee.

Part of the problem may be that the budget constraint is not tight enough. International experience has shown that it is difficult to get a serious rethink of public spending unless agencies are under sufficient financial pressure. Current budget practice is that the starting point for discussions with agencies is the level of funding required to maintain existing service levels. Departments would be under more pressure to raise efficiency if their baseline included an assumption about productivity improvements. Those agencies which are unable to find cost savings would have to bid for additional funds and thereby compete with new spending proposals.

Reform the budgeting process

Ultimately, the government deficit is constrained by the Stability and Growth Pact. But international experience shows that a top-down budgeting process can also help restrain expenditure. While Ireland's budget process has some top-down aspects, they need to be given more prominence relative to the bottom-up negotiations. Early in the budget process, the Department of Finance prepares projections for each department of the cost of providing the current level of services over the next three years. The projections are treated as the starting point for negotiations. In subsequent months, departments will respond to the forecasts and bid for extra funding for new policy proposals. There would be less expenditure creep if the government published a firm commitment to an overall level of spending early in the budget process. Experience in places such as Sweden and Australia has shown that a top-down approach can encourage a tighter focus on prioritisation and give more control over the total budget.

It would also be useful to move further towards a medium-term fiscal framework. Significant steps have been taken for capital expenditure with the five-year rolling envelope for capital spending that is already in place and the ten-year envelope for transport expenditure that has been agreed in principle. A medium-term (three to five year) focus for current spending could help reduce the risks of repeating the pro-cyclical nature of spending that occurred earlier this decade.

Improve financial information

Financial information is slowly improving as part of the rollout of the Management Information Framework (MIF). However, it is still below international best practice in several respects: the Exchequer accounts are still on a cash rather than accruals basis; departments are not charged for the cost of capital, so they face no incentive to economise by, for example, moving to rented office space; there is no balance sheet; and there is no published information on the net debt of the general government.

Remove tax breaks unless they can be shown to be clearly worthwhile

Ireland has a rich assortment of tax breaks that were originally designed to kick-start investment in certain regions and sectors but which are now used in some instances for tax planning purposes. Recent examples include tax incentives to build car parks, hotels, holiday cottages, private hospitals, nursing homes, sports injury clinics and childcare facilities. Various types of income have been either exempt from tax or have enjoyed a beneficial rate. Since 1969, artists pay no income tax on their artistic royalties. These tax breaks tend to be highly regressive as they mainly benefit high-income earners. For example, the most recent available information, for 2001, shows that 50 of the top 400 earners in Ireland paid less than 10% in tax, including 29 who paid no income tax at all. The benefits of mortgage interest relief, which is one of the most widely used allowances and cost around € 235 million in 2005 (about € 470 per beneficiary), are heavily skewed towards the top of the income distribution (Callen *et al.*, 2005). The government has recently improved the quality of estimates of how much revenue is being lost through these tax reliefs. Several statutory and administrative changes should enhance reporting by taxpayers and provide data to underpin the costing of reliefs not currently measured.

Following a review in 2005 of tax expenditures, the 2006 Budget phases out by mid-2008 several property-related tax reliefs: the urban, town and rural renewal schemes, the

special reliefs for hotels, holiday cottages, student accommodation, multi-storey car parks, third-level educational buildings, sports injury clinics, park and ride facilities and the general rental refurbishment scheme. Others, such as those for building nursing homes, childcare facilities and private hospitals will remain. The favourable treatment of stallion and greyhound stud fees, which the European Commission regards as illegal state aid, will end in 2008. A new regime appropriate to the industry will be discussed with the Commission. Also, the overall amount of tax reliefs that can be claimed by any individual will be capped. At the same time the government announced small additional tax reliefs for the farming community and a favourable tax treatment of bio-fuels. While the phasing out of the property-related tax incentives is welcome, the effectiveness of the new and remaining ones should be monitored and the government's commitment is welcome in this regard. The publication of an annual estimate of the cost of each tax break, as is done in several other OECD countries, is also a step forward.

The benefits of the decentralisation process remain unclear

In the 2004 Budget, the government announced its intention to shift the headquarters of approximately half of its government departments and 10 000 staff out of Dublin in order to boost the regions. The original plan was to have most people moved by the end of 2007 but it is widely acknowledged that this timescale was unrealistic due to the scale and complexity of the programme. It is now hoped to move 2 500 people by 2007 and an additional 1 500 people in 2008. While close to 10 000 public and civil servants have volunteered to move, the range of skills and the preferred destinations obviously do not perfectly match the 10 000 "vacancies". It will be rare that everyone in a department will want to move, in which case the industrial relations issues and the costs of disruption as a large number of people shuffle jobs in the civil service will be difficult to handle. The property aspects will also be expensive, at least initially, because it will usually involve the construction of new buildings rather than buying or leasing existing space,¹⁰ and construction prices are high because of the property boom. With the savings from the sale of valuable Dublin properties, the government estimates that the property aspects of the move will break even in twenty years time and will show savings thereafter. Aside from the real estate aspects, the government has not published any estimates of the potential costs of its decentralisation programme, so it is difficult to judge whether the benefits will be large enough to make it all worthwhile.

Summing up

Public management practices need to improve to deal with modern demands on the public sector such as large, complex infrastructure projects and the significant public demand for enhanced welfare services which, if poorly designed, could be expensive and have significant negative impacts on the labour market. Some suggested policy reforms are summarised in Box 8.2.

Box 8.2. Summary of recommendations

- Fiscal policy should leave enough room for manoeuvre to cope with negative shocks. In practice, that means budget balance or even a small surplus.
- The next public sector pay benchmarking exercise should be more comprehensive and transparent. It should take a total remuneration approach (taking account of public sector pensions and job security) and should publish clear evidence to justify any increases that are out of line with those in the private sector. It should build on the benchmarking body's previous efforts to tie pay rises to improvements in work practices.
- A medium-term fiscal framework should be implemented for all spending items. A full top-down budgeting process should be implemented by announcing the broad fiscal limits (in particular, total expenditure) early in the budget process.
- The modernisation process in the public sector should be accelerated. This involves the following:
 - ❖ Continue to shift towards results-focused public management.
 - ❖ Modernise hiring and promotion practices with an emphasis on creating a more dynamic and efficient public sector. Department managers should be given full autonomy over their staff.
 - ❖ Implement a thorough expenditure review process and ensure it feeds into budget decisions. Build a requirement for productivity improvements into departmental budget baselines.
 - ❖ Remove the remaining sector-specific tax breaks unless they can be shown to be clearly worthwhile.
 - ❖ Improve financial information by moving to accrual accounting, charging departments for capital and publishing a balance sheet.

Notes

1. This includes a one-off expenditure of $\frac{3}{4}$ per cent of GNP as the government rebates many years of charges unduly levied on nursing home residents.
2. In the discussion that follows, the figures refer to initiatives developed over the whole budget process and not just those announced on budget day (most of the expenditure increases tend to be built into the Preliminary Estimates, which are published a week or two before the formal budget. The budget concentrates mainly on tax changes and increases in social welfare benefit rates.
3. Most revenue categories were higher than forecast, partly due to one-off and special factors but also because nominal GNP grew faster than expected.
4. Ireland has a combination of unemployment insurance and social assistance but, because the maximum rate is low and the non-insured are entitled to a benefit that pays the same amount, the system is approximately equivalent to having a universal, flat-rate benefit. Most employees pay 4% of their wages to the pay-related social insurance system (PRSI), plus another 2% healthcare levy which goes to the Department of Health. This entitles them to an unemployment benefit (amongst other benefits, such as a medical card and mortgage assistance) worth a maximum of € 148.80 per week for a person with no dependents. A person who is ineligible for the unemployment benefit (because their contribution history is too short, for example) may be eligible for unemployment assistance, which is paid at the same rate except that it is means tested.
5. This is a non-refundable earned income tax credit worth € 1 270 per annum in 2005, or approximately 4.3% of the average wage.
6. The Public Service Benchmarking Body was set up in 2000 as part of the Programme for Prosperity and Fairness (i.e. the collective bargaining round at the time). It has representatives from unions, industry and the Department of Finance.

7. For most new staff, the standard retirement age will be 65 although an early retirement pension can be taken from 50 or 55. The adjustment to the benefit rate is expected to be actuarially fair.
8. See the “Second Sectoral Progress Report” on the Civil Service written by the Secretary General for Public Service Management and Development, June 2004.
9. A fairly negative report by the Comptroller and Auditor General in 2001 led to changes in the expenditure review process, including a decision to publish all reviews. The second phase of reviews was evaluated by the Expenditure Review Central Steering Committee, which published its report in October 2004. See also NESc (2002).
10. Indeed, this is enshrined in the government’s property acquisition strategy, which says “that new accommodation should add to the built environment in the host towns”.

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Glossary

APW	Average production worker
CPI	Consumer price index
DPP	Director of Public Prosecutions
EC	European Commission
ESB	Electricity Supply Board
ESRI	Economic and Social Research Institute
EU	European Union
EU15	European Union, first 15 member states
FDI	Foreign direct investment
G7	Group of 7 countries (Canada, France, Germany, Italy, Japan, the United Kingdom and the United States)
GDP	Gross domestic product
GNI	Gross national income
GNP	Gross national product
HICP	Harmonised index of consumer prices
ICA	Irish competition authority
ICT	Information and communication technology
IPO	Initial public offering
IRCHSS	Irish research council for humanities and social sciences
IRCSET	Irish research council for science, engineering and technology
km	Kilometre
MIF	Management information framework
MW	Megawatt
NAO	National Audit Office
NDP	National Development Plan
PFI	Private finance initiative
PhD	Doctor of philosophy
PISA	Programme on International Student Assessment
PPP	Public-private partnership
PRSA	Personal retirement savings accounts
PRTL	Programme for research in third level institutions
R&D	Research & development
SFI	Science Foundation Ireland
SSIA	Special savings and investment account
SUR	Seemingly unrelated regressions
UK	United Kingdom
US	United States

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