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# EU Enlargement and the Irish Economy

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This analysis of the economic consequences for Ireland of accession to the EU of 10 Central Eastern European (CEE) countries in 2003 produces generally positive results. Most Irish export sectors stand to gain, although our Textiles, Clothing and Footwear sector will come under considerable pressure. Ireland has so far withstood CEE competition for inward foreign direct investment, though this competition could intensify over time. At the same time, Ireland's expected contribution to the net cost of enlargement is easily manageable – although this would certainly change were costs to be redistributed between the EU-15 in line with current income levels.

## INTRODUCTION

The agreement reached in Copenhagen in December 2002 will allow a further 10 countries to join the EU in May 2004: namely, Poland, the Czech Republic, Hungary, Slovakia, Slovenia, Estonia, Lithuania, Latvia, Cyprus and Malta. Bulgaria and Romania are likely to be ready to join in 2007. This will represent the most dramatic expansion yet undertaken by the EU. The addition of these 12 new member states will double the number of EU farmers and will increase the population and land mass of the Union by about one-third. On the other hand, GDP measured in current prices will increase by only 5%.

Because of the much larger size of the EU-15, the economic effects of enlargement will be much more profound for the accession states. Amongst incumbents, the strongest effects are likely to be felt by those bordering Central and Eastern Europe. That said, the economic impact on incumbents of earlier enlargements pale in comparison to the likely consequences of the accession of this new group, because of the large income differences that prevail and because of the size of the Central and Eastern European (CEE) agricultural sector.

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Average GDP per head in the CEE countries – in purchasing-power terms – stands at around 40% of the EU-15 average. These large income differences will lead to changes in trade patterns as well as affecting the distribution of the EU regional funds from which Ireland has derived such benefits in the past. At the same time, the size of the CEE agricultural sector will intensify pressures for changes in how the Common Agricultural Policy operates.

This article analyses the consequences for Ireland of this phase of EU enlargement. Four particular topics are discussed: the consequences for trade, the increased competition for inward Foreign Direct Investment (FDI), the likely pattern and effects of immigration from CEE countries and the implication for Ireland's budgetary position with respect to the rest of the EU.

## TRADE EFFECTS OF ENLARGEMENT

Increased trade yields benefits along two fronts. Export market expansion leads to increased employment and profit opportunities in the country's export sectors. It also provides new investment opportunities abroad, which is becoming an increasingly important phenomenon for Irish businesses. Trade liberalisation allows consumers access not only to cheaper imports but to a greater variety of imports as well. Firms are also consumers of course – of raw materials and intermediate products – and as such they gain in the same way that other consumers do.

However, cheaper imports give rise to adjustment costs as workers and firms in import-competing sectors are displaced. It takes time for resources to shift to newly-expanding export sectors. The extent and cost of this displacement depends not only on the degree of sectoral disruption but also on the overall flexibility of the economy. The more flexible the economy, the easier will be the adjustment. This will be discussed further below.

The first practical issue that arises concerns the likely trade and sectoral effects of enlargement. These effects will depend not just on the extent of Ireland's trade with the

new member states, but also on the possible displacement of Irish exports to the rest of the EU by imports from the new member states.

Trade with the accession countries developed rapidly over the course of the 1990s. Because of the small size of the Cypriot and Maltese economies, this article concentrates on Ireland's position vis-à-vis the CEE-10. Ireland today exports over 40 times as much to these states as it did in 1990, and imports over 100 times as much - although the value of imports is only a little over half that of exports. Even with this very strong growth, the ratio of trade to GDP remains low. The country trades over 40 times as much with the rest of the EU as it does with the CEE-10, yet EU GDP is only 20 times larger. This suggests that Irish-CEE trade can be expected to double in the coming years. In fact, as CEE growth is anticipated to be higher than that of the more mature EU incumbents, even this predicted doubling of trade is likely to underestimate future developments. Therefore, there will be huge opportunities for Irish exporting firms to exploit over the coming years.

The country's main trading partners in the region are Hungary, Poland and the Czech Republic. Trade with each of the other states is very small by comparison. Ireland runs trade surpluses with the vast majority of the accession states, with Hungary emerging as an important exception. The country runs a large trade deficit with Hungary, driven almost completely by Irish imports of Office and Data Processing parts and equipment, which is of course one of our leading export sectors. This surprising feature of the data will be explored further below.

### *SECTORAL IMPACT*

While exports and imports on aggregate are predicted to rise, is it possible to discern which sectors will account for the bulk of these changes? On the basis of analyses of aggregate EU and CEE conditions, most studies predict that the sectors that will be affected most strongly are Transport Equipment (NACE 34+35), Machinery and Equipment (NACE 29), Food Beverages and Tobacco (NACE 15+16) and Textiles, Clothing and Leather (NACE 17-19). These predictions are based on an analysis of the consequences of (i) CEE accession to the Single Market and (ii) trade liberalisation in agriculture and food products.

The Single Market effect will expand competition on each firm's home market while enhancing firms' competitiveness on foreign markets. This will typically be to the benefit of firms whose competitiveness is reflected in a strong current export intensity. Thus, CEE firms in the Textiles, Clothing and Footwear sector are predicted to do well, generally to the detriment of firms in the Southern EU Member States. The major EU-15 sector predicted to gain market share in the CEE states at the expense of local industry is Machinery and Equipment. Demand for these capital goods will be further expanded by any investment boom that arises in the CEE states as a consequence of enlargement.

Studies disagree on the implications for the Motor Vehicles and Transport sector. Firms in this sector are unlikely to migrate from the EU-15 core countries where they carry out most of their R&D, but the more labour-intensive processes carried out in the EU periphery may well be threatened. There is already evidence of car manufacturers shifting operations from Spain to Central Europe.[1]

Trade liberalisation in agriculture and food products is predicted to benefit the food processing sector in Central and Eastern Europe. A reduction in the high CEE external tariff on agricultural imports will increase the competitiveness of CEE food processing, while the removal of EU tariffs on CEE imports will allow these firms to expand their exports into current EU markets.

Thus, the aggregate predictions are that the greatest disruption in incumbent EU countries will arise in the Food, Drink and Tobacco and Textiles, Clothing and Footwear sectors, while the EU 15 sector likely to expand most on the strength of increased exports to CEE countries is Machinery and Equipment.

## COUNTRY IMPACT

How will the individual EU incumbent states fare according to this analysis? The effects will depend on the importance of these individual sectors in each incumbent country. The greatest disruption will be felt in EU-15 states with large Food and Textiles sectors, while the strongest expansion will be experienced in states with a substantial Machinery and Equipment sector.

[1] "Carmakers up sticks for eastern Europe"; Financial Times, October 10, 2002

Table 1 measures the relative sizes of each of these sectors in each EU country. In the case of Irish textiles, for example, relative size is calculated as the ratio of Irish textiles-sector employment to total manufacturing employment here, relative to the share of EU-15 textiles-sector employment to total EU manufacturing employment. A value above unity would indicate that this sector is relatively important in Ireland, while a value below unity would indicate the opposite.

**TABLE 1: RELATIVE IMPORTANCE OF PARTICULAR SECTORS IN EACH EU-15 COUNTRY**

| | Transport Equipment (Nace 34+35) | Machinery and Equipment (Nace 29) | Food Beverages and Tobacco (Nace 15+16) | Textiles, Clothing and Leather (Nace 17-19) |
|---|---|---|---|---|
| **Belg+Lux** | 0.79 | 0.62 | 1.30 | 0.93 |
| **Denmark** | 0.50 | 1.54 | 1.63 | 0.41 |
| **Germany** | 1.24 | 1.35 | 0.72 | 0.42 |
| **Greece** | 0.70 | 0.38 | 1.90 | 2.31 |
| **Spain** | 0.81 | 0.60 | 1.43 | 1.29 |
| **France** | 1.20 | 0.75 | 0.99 | 0.89 |
| **Ireland** | 0.30 | 0.55 | 1.79 | 0.98 |
| **Italy** | 0.94 | 1.21 | 0.69 | 1.78 |
| **Austria** | 0.50 | 1.09 | 0.98 | 0.85 |
| **Portugal** | 0.40 | 0.38 | 1.05 | 3.60 |
| **Finland** | 0.44 | 1.25 | 1.00 | 0.48 |
| **Sweden** | 1.30 | 1.30 | 0.83 | 0.15 |
| **United Kingdom** | 1.02 | 0.83 | 1.19 | 1.05 |
| **Netherlands** | 0.58 | 0.98 | 1.48 | 0.41 |
| **Total EU15** | 1.00 | 1.00 | 1.00 | 1.00 |

Source: Own calculations from DAISIE database.

This analysis suggests that Germany will fare best as it has a strong presence in the EU sectors likely to perform best and a low presence in those sectors which are likely to fare worst. The Cohesion countries, on the other hand - Greece, Spain, Portugal and Ireland - will suffer the greatest adjustment costs according to this analysis, because they have generally quite high employment levels in the most threatened

sectors and only a weak presence in the sectors likely to experience the strongest export expansion.

However, Barry and Hannan (2003) have shown that it is important to distinguish between foreign and indigenous industry in this type of analysis. If Ireland has a strong presence in a particular industry because of its success in attracting foreign industry to this sector in the past, this will serve as an inaccurate predictor of future developments if the country fails to retain this FDI. Replacing the numbers for total employment in Ireland with those for indigenous industry alone generates the results reported in Table 2. These adjustments show that indigenous industry has a stronger presence than foreign industry in the EU sectors predicted to do badly, while displaying an even weaker presence in the heavy capital goods sector that analyses predict to do best within the EU-15.

**TABLE 2: RELATIVE IMPORTANCE OF PARTICULAR SECTORS IN IRELAND: INDIGENOUS AND TOTAL (INDIGENOUS AND FOREIGN) COMPARED**

| | Transport Equipment (Nace 34+35) | Machinery and Equipment (Nace 29) | Food Beverages and Tobacco (Nace 15+16) | Textiles, Clothing and Leather (Nace 17-19) |
|---|---|---|---|---|
| **Ireland (all industry)** | 0.30 | 0.55 | 1.79 | 0.98 |
| **Ireland (indigenous)** | 0.41 | 0.53 | 2.48 | 1.03 |

Source: Own calculations from Daisie database and Irish Census of Industrial Production.

Food processing requires more careful analysis however. Wherever it is located, this sector tends to rely heavily on local agricultural inputs. The vast bulk of Irish agricultural output is of beef and dairy products. This is very different from the CEE case, where output is primarily of cereals and to a lesser extent of pork and poultry. Irish food processing will not therefore be in direct competition with CEE food processing. While the Irish sector will suffer alongside other EU incumbents in having export subsidies withdrawn, the growth of the CEE food-processing sector will not damage the Irish sector nearly as much as it will other EU states such as Germany and Austria, whose agricultural output is more similar to that of the CEE states. In fact, if accession yields the expected growth benefits to the countries of Central and Eastern Europe, Irish food processing appears well positioned to gain.

## IMPACT ON OUTWARD FDI AND OUTSOURCING

The conventional predictions that EU-15 Food Processing and Textiles, Clothing and Footwear will suffer also ignores the possibility of strategic responses on the part of firms in these sectors. Outward FDI and outsourcing represent two such responses.

The major sectors accounting for overseas acquisitions by indigenous Irish firms are (i) Financial Services, (ii) Construction and Property, (iii) Food and Agribusiness and (iv) Print, Paper and Publishing.[2] Irish firms have clearly developed valuable proprietary assets in management skills, experience and reputation in these sectors and are well positioned to develop these assets further. As the expanding markets of Central and Eastern Europe come more into focus, they are likely to attract increasing attention as a location for outward FDI from Ireland. Indeed, the evidence indicates that they have already begun to do so.

Outsourcing entails splitting up the production process and importing intermediates that had formerly been sourced domestically. This has been found to be particularly important in less skill-intensive sectors including Textiles and Wood and Furniture. Outsourcing has proved to be an important source of total factor productivity growth in these sectors; it has raised the wage bill and employment share of skilled workers in companies located in the countries engaged in outsourcing. Once again this process involves labour-market disruption; and labour-market flexibility in the outsourcing countries is crucial if unemployment is to be avoided.

Ireland's own experience of earlier bouts of trade liberalisation illustrates this. For example, many inefficient import-competing industries went to the wall as cheaper Asian textiles and clothing imports flooded into Europe. While Ireland's export sectors expanded – both indigenous and foreign – and created new employment opportunities, the fact that many of the displaced workers were relatively low skilled made them unsuited to employment in the expanding sectors. Labour-market flexibility, which entails an ability to re-skill and a willingness to adapt management styles and work practices to new economic environments, is crucial to minimising such adjustment costs. More so than in the past Ireland seems better prepared to respond flexibly today to such challenges – because management is more experienced and workers more highly skilled and therefore more capable of moving between sectors.

[2] Barry, Gorg and McDowell (2003).

## IMPLICATIONS FOR INWARD FDI

Enlargement will considerably enhance the attractiveness of the CEE countries as a location for export-oriented foreign direct investment; as such, it will allow them to compete more strongly for such investments. This will arise even though there is already almost complete free trade in manufactured goods between the EU and the CEEC.

Foreign investors are unlikely to see free trade as equivalent to EU membership for a number of reasons. First is the fact that efforts to remove any remaining non-tariff barriers are likely to be pursued more vigorously in the case of intra-EU trade. Secondly, accession will increase the confidence of foreign investors in CEE countries by allowing for the possibility of appeal beyond national courts to those of the EU in the event of legal disputes arising. Thirdly, EU membership serves as some guarantee of transparency in the legal and business environment because of the acquis communautaire and the culture of checking the probity of Structural Funds expenditures. Fourthly, entry to the Single Market will fully remove customs frontiers and trade barriers associated with differing technical standards.

Will Ireland compete directly with the CEE countries for foreign investment? This is certainly a possibility. A number of them have followed Ireland's lead in offering low rates of corporation tax; and the more advanced ones do not differ substantially from Ireland in terms of the skill levels of the population. At the same time, labour costs in CEE countries are very much lower. Furthermore, the productivity level of the workforce is arguably endogenous, reflecting success or failure at attracting FDI, rather than an exogenous factor that determines the likelihood of success or failure in this regard. Upon accession, several at least of the CEE countries will be less peripheral than Ireland in terms of the cost and speed of access to the high-income markets of Western Europe. A subset of CEE countries are likely to enjoy equally stable macro policy environments via adherence to the Maastricht criteria and will offer equivalent regulatory and public administration systems. This opens up the possibility that they might compete directly with Ireland for the type of FDI that Ireland has been successful in attracting thus far.[3]

[3] Barry and Hannan (2001)

As against this, previous episodes of trade liberalisation in Europe have increased the pool of FDI both from within Europe and from outside. The goods produced by multinational firms also tend to display high income elasticities of demand, so that the expected growth in the CEE-10 consequent on enlargement should generate further flows of FDI into and within the newly- expanded EU.

Is there any evidence as yet of a diversion of FDI away from Ireland to the CEE countries? Some indications can be gleaned from an analysis of Ireland's trade linkages with CEE countries in the sub-sectors of Irish manufacturing that are predominantly foreign-owned. The largely foreign-owned sectors in terms of trade (SITC) classifications are: Pharmaceuticals (SITC 54), Office and Data Processing Equipment (SITC 75), Telecommunications Equipment (SITC 76), Electrical Machinery, Apparatus and Appliances (SITC 77) and Professional and Optical Instruments (SITC 87/8).

Table 3 shows Ireland's trading position with the leading CEE countries in these products. Ireland has a substantial trade surplus against each of the CEE countries in Pharmaceuticals and Professional and Optical Instruments. The position with respect to Office and Data Processing is notably different. Ireland runs a strong trade surplus in ODP products with each of the economies other than Hungary, with which it has a large deficit. A similar though less dramatic situation prevails in Telecommunications. In Electrical Machinery and Equipment Ireland ran a deficit against Poland in 1999 and against the Czech Republic in 2000.

**TABLE 3: IRELAND'S TRADE WITH SELECTED CEE COUNTRIES IN IRELAND'S FOREIGN-DOMINATED SECTORS, 2000**

| euro 000 | Hungary | | Czech Rep | | Poland | |
|---|---|---|---|---|---|---|
| | Irish Exports | Irish Imports | Irish Exports | Irish Imports | Irish Exports | Irish Imports |
| **Total trade** | 224,356 | 299,658 | 346,546 | 109,862 | 361,020 | 102,625 |
| **54 (Md / pharm)** | 5,145 | 1,310 | 12,414 | 118 | 18,973 | 14 |
| **75 (ODP)** | 49,485 | 240,031 | 100,623 | 5,802 | 130,058 | 1,982 |
| **76 (Telecomm)** | 3,229 | 19,952 | 119,621 | 13,768 | 25,090 | 7,455 |
| **77 (Elec)** | 38,985 | 15,022 | 6,678 | 8,006 | 9,965 | 8,525 |
| **87 / 8 (Prof / opt)** | 512 | 389 | 2,499 | 118 | 1,847 | 177 |

Source: CSO Trade Statistics

The remainder of this section of the article will concentrate primarily on Irish-Hungarian trade links in Office and Data Processing Equipment. This is Ireland's main export sector, while Hungary has the most advanced foreign-owned and export-oriented ODP sector in Central and Eastern Europe.

Ireland has retained an overall trade surplus with the rest of the world in ODP products in recent decades. Hungary by contrast has moved from deficit to surplus in ODP products over this period. The issue to be considered is whether Hungary's growing strength is threatening Ireland's position in the ODP sector. Further analysis of this requires examination of much more highly disaggregated trade data, breaking the 2-digit (SITC 75) ODP sector down into its 5-digit components.

The vast bulk of Irish ODP imports from Hungary are in 5-digit sub-sectors in which Ireland has always tended to run trade deficits with the rest of the world, while the vast bulk of Ireland's exports to Hungary and the other CEE countries are in a different 5-digit sector, which is Ireland's major export sub-sector in this industry. This suggests that Ireland and Hungary produce complementary rather than substitute ODP products. Rather than displacing Ireland, Hungary has instead displaced other – primarily Asian – countries in entering the value-added chain of which Ireland's foreign-owned sector comprises one part.

A similar situation is found to prevail in the cases of Telecommunications and Electrical Machinery. These results indicate that fears of direct competition between Ireland and the CEE countries within sub-categories of FDI may be overstated. However, it needs to be borne in mind that analysis of the current trade situation will not necessarily serve as an accurate predictor of the post-enlargement environment if the pattern of FDI flows changes.

## MIGRATION ISSUES

Enlargement brings with it the possibility of substantial migration flows from CEE countries to the EU-15. Most studies that have been carried out suggest that the inflow of migrants will in fact be quite modest for countries other than Germany and Austria, which are the end locations for over 80% of CEE migrants at present. Consensus estimates suggest that CEE immigrants to Western Europe will comprise only about 1% of the EU-15 population in 15 to 20 years time.

On the basis of the numbers already in Ireland, this estimate would appear to be on the low side. There were over 15,500 CEE citizens on work permits in Ireland in 2001 and 17,000 in 2002. In addition, there had been a cumulative 11,500 applications from CEE citizens for refugee status between 1998 and 2002.[4] Therefore, by the early 2000s, CEE immigrants already comprised around 0.7% of the Irish population, even though immigration rules were quite restrictive.

The impact of immigration on host-country labour markets and incomes per head will depend primarily on immigrant skill levels relative to the indigenous population. If immigrants are less skilled, the distribution of income becomes less equitable as downward pressure is exerted on the unskilled wage. Unemployment may also rise, as it tends to be concentrated among the less skilled. The net fiscal costs of immigration will also be larger as unskilled immigrants use more government services and pay less tax. All of these effects are reversed of course if immigrants are more highly skilled than the indigenous population. Even if all migrants were to be relatively low skilled, the effects are nevertheless predicted to be quite modest. It has been calculated for example that German GDP per head would fall by only 0.8% even if all predicted CEE immigrants to that country were low skilled.

What of immigrant skill levels? Inflows to the Irish labour force over the 1990s are known to have been relatively highly skilled. Suggested reasons for this include the fact that more highly educated people will have more information about Ireland as a destination and relatively high income inequality levels may attract a higher ratio of skilled workers. The skill mix in turn has been found to have contributed to the slowdown in earnings inequality growth.[5]

It is likely, however, that average skill levels among immigrants from other EU countries are higher than amongst those from Central and Eastern Europe. Furthermore, it may be dangerous to extrapolate from the fact that the Irish emigrants of the 1980s tended to be quite highly skilled. The opposite was the case in the 1950s, arguably because of the very much poorer social welfare situation prevailing in Ireland at that time. These considerations make it quite difficult to guess as to the skill levels of future waves of migrants from CEE countries.

One finding from studies of the consequences of CEE immigration to Germany may be of particular interest, given current cost over-runs in the implementation of Ireland's

[4] By contrast, Boeri et al (2000; part A, page 127), the most widely-cited study on the immigration implications of enlargement, predict the stock of CEE residents in Ireland to rise from a figure of 200 that they quote for 1998 to a total of 900 by 2030!
[5] Barrett et al. (2002).

National Development Plan. The temporary migration possibilities afforded to CEE construction workers in Germany were found to have increased competition substantially within the German construction industry through increased subcontracting to CEE firms.

## BUGETARY ISSUES

Most analyses carried out prior to the Copenhagen Agreement of December 2002 arrived at an estimated net cost of enlargement to the EU budget of around 20 billion euro per annum. The outcome of the Copenhagen agreement proved considerably less generous to the CEE countries. The European Commission held to its opening position on both the Common Agricultural Policy and Structural Funds expenditures. CEE farmers are to receive 25% of the direct payment per head going to EU farmers in 2004, with a gradual increase to 100% by 2013. Structural Funds payments per head will come to 137 euro per capita for CEE countries in 2006, compared to a current average of 231 euro for the existing four Cohesion countries. Additionally, in accordance with the "Own Resources" decision of September 2000, the new member states are to fully contribute to the financing of EU expenditure as of the first day of accession.

In contrast to the earlier estimates of a net cost to the EU-15 of 20 billion euro per annum, agreed expenditures now total only 41 billion euro over three years. With 15 billion euro to be covered by new member states' contributions, the net cost is reduced to 26 billion euro over this period; and this may prove to be an overestimate as the accession countries will face difficulties in drawing down all the funds available to them because of the lead-in time necessary for funded infrastructural projects.

Based on the current sharing of budgetary costs and benefits across EU Member States, Ireland's yearly contribution, for a net cost of around 9 billion euro per annum, would be an easily manageable 90 million euro per annum. However, this figure would escalate dramatically if costs and benefits were to be redistributed within the EU in line with current income levels. It is well known that Germany bears a disproportionate share of the current burden while countries like Ireland and France contribute substantially less than the figure warranted by their current income levels. Over time it has to be envisaged that a more equitable sharing of the burden will be negotiated among EU Member States. De la Fuente and Doménech (2001) calculate that Ireland is currently over-subsidised to the tune of two billion euro per annum. Thus, there may be a very substantial change over time in the flow of funds between Ireland and the rest of the EU.

## CONCLUSIONS

Enlargement will have important economic implications for Ireland. Trade expansion is guaranteed, with most Irish export sectors standing to gain. The Western European sectors threatened by enlargement are generally seen as including Food Processing and Textiles, Clothing and Footwear. However, the analysis here suggests that Irish food processing is likely to gain, as it produces a very different range of products from those in which the CEE countries will specialise.

Trade liberalisation with Central and Eastern Europe will also offer outsourcing possibilities, particularly in labour-intensive sectors such as Textiles and Clothing. Most conventional trade analyses do not take these possibilities into account in assessing gains from further market integration.

There is some possibility that enlargement will divert inward FDI away from Ireland. However, there is no sign that anything of this nature has happened as yet. In fact, this analysis shows that Ireland and Hungary currently trade complementary Office and Data Processing products; and that Hungarian exports to Ireland represent one link in a value chain that generates strong Irish exports to the rest of the world. This will not necessarily serve as an accurate predictor of future developments however, if the pattern of FDI flows changes.

Enlargement will also open up the possibility of labour migration. Most studies estimate that inflows will be quite modest, totalling perhaps 1% of the EU-15 population by the year 2030. The impact on wages and living standards will depend on the skills of the migrants. But if inflows are as modest as the studies suggest, these effects will be fairly negligible.

The Copenhagen Agreement of December 2002 kept the net cost of enlargement within very strict parameters. It is likely to cost Ireland around 90 million euro per annum over the first few years. However, a root and branch review of the distribution of the EU budget would cost the country very much more.

Finally, it is important to point out that the outcome of the narrow economic calculus employed here pales into insignificance when evaluated against the larger implications of enlargement. Eastwards expansion of the EU is primarily about the security and stability of the continent and the reconstruction of Europe's post-Cold War political architecture.

## REFERENCES

Barrett, A., J. Fitz Gerald and B. Nolan (2002), "Earnings Inequality, Returns to Education and Immigration into Ireland", Labour Economics, 9, 665-680.

Barry, F., Gorg, H. and A. McDowell (2003), "Outward FDI and the Investment Development Path of a Late-Industrialising Economy: Evidence from Ireland", Regional Studies (forthcoming).

Barry, F., and A. Hannan (2001), "Will Enlargement Threaten Ireland's FDI Inflows?", Quarterly Economic Commentary; Dublin: ESRI.

Barry, F., and A. Hannan (2003), "FDI and the Predictive Powers of Revealed Comparative Advantage Indicators", unpublished ms, University College Dublin.

Boeri, T., H. Brücker et al. (2000), The Impact of Eastern Enlargement on Employment and Labour Markets in the EU Member States. Final Report to European Commission; http://europa.eu.int/comm/employment_social/empl&esf/enlargement_en.htm

de la Fuente, A., and R. Domenech (2001), "The Redistributive Effects of the EU Budget: An Analysis and Proposal for Reform", Journal of Common Market Studies., 39 (2), 307-30.

# Public Investment and the Irish Economy

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To achieve a European standard of living, Ireland needs to invest considerable resources over many years in developing a European style infrastructure. Pointing to the fact that our infrastructural deficit is not unusual for a country converging rapidly to a world-standard level of income per head, this article argues that finance should not be the major constraint in delivering the current National Development Plan. Finance notwithstanding, the problems with the Plan have had as much to do with the inability of the economy to produce the infrastructure at a reasonable cost. And while provision of new infrastructure is obviously vital, it is also important to adopt measures aimed at getting the best out of the existing infrastructure.

## INTRODUCTION

In the same way that the purchase of a house is a source of major stress for any household, the need to undertake very large infrastructural investment over a short space of time is a source of economic stress for any economy. It is not just a question of how the investment is financed, although that in itself is a difficult task. The actual process of producing and implementing the necessary infrastructure is a major challenge for citizens, the broader business community, the administration and the political system. The administrative system faces a heavy burden in terms of financial planning, physical planning and project management; society at large suffers very substantial disruption as the infrastructure is put in place, as well as having to pay for it; the environment may suffer from the need to undertake the investment very rapidly; the business sector may also face difficulties in greatly expanding their capacity to meet a massive increase in investment demand.

The most extreme example of the pressures and stresses placed on major economies from a massive programme of physical investment was the continental European experience in the decade and a half after the Second World War. The rebuilding of much of the European infrastructure required major financial sacrifices by the countries affected over a prolonged period. It also required the development of a streamlined

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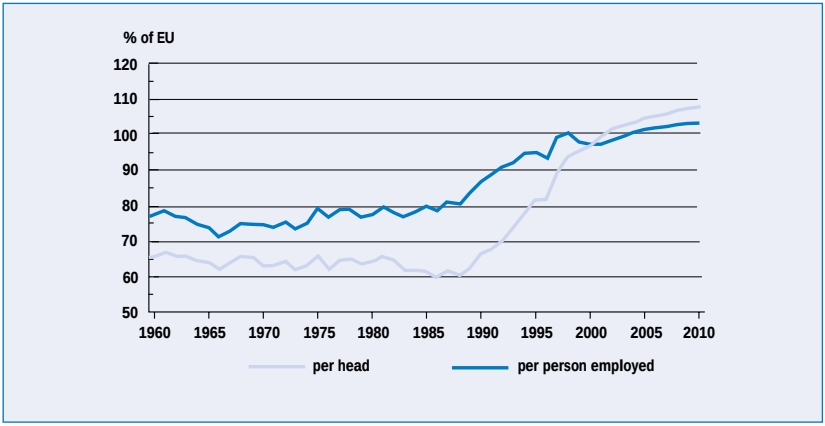
administrative process to see that the essential programme was implemented efficiently. Looking back at some of the infrastructure put in place over that period, it is clear that mistakes were made, partly as a result of the necessary haste. With the benefit of hindsight design standards were probably too low. However, the necessary investment was completed over a relatively short space of time.

The task facing Ireland is much more limited than that faced by the European continent in 1945. It is a problem arising from success, not failure, and that success itself has generated a huge increase in resources. Rather like a child growing out of its clothes, the infrastructural needs have changed as a result of physical growth. Because the success of the last ten years was much greater than expected, the investment needs of the economy were underestimated, leaving a significant infrastructural deficit today.

**FIGURE 1: RELATIVE GNP, IRELAND AS A PERCENTAGE OF EU AVERAGE, IN PURCHASING POWER STANDARD**




Source: Duffy, D., J. Fitz Gerald, J. Hore, and I. Kearney, Medium-Term Review: 2001-7.

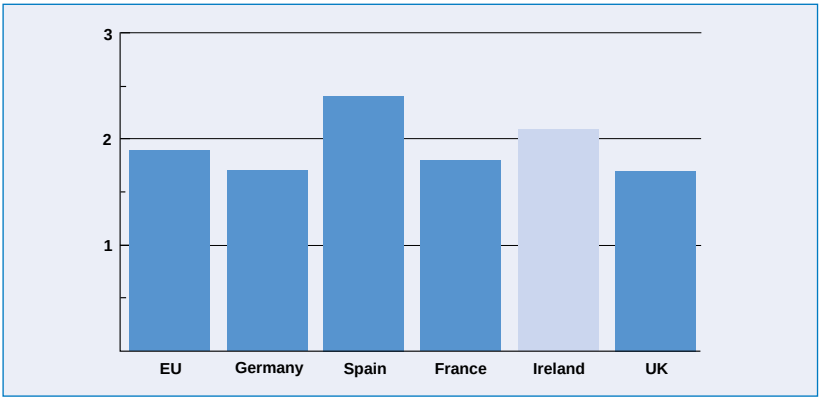
While Ireland's income per head is now above the EU average (see Figure 1)[1], the relatively recent nature of the convergence means that the accumulated wealth of the country, represented by physical infrastructure and accumulated human capital, is significantly inferior to countries which have enjoyed a similar standard of living for many years. With the exception of the other cohesion countries (Portugal, Spain and Greece), the other EU Member States have been investing in physical infrastructure for

[1] For Ireland GNP is a more appropriate measure of standard of living than GDP. For the rest of the EU it does not matter which figure is used.

many years and have built up a much bigger stock than is the case for Ireland. As a result, the standard of living here, broadly defined, is still somewhat below that of our European neighbours. The gaps in endowment occur not only in obvious areas such as transport and sanitary services, but also in housing and in the average human capital endowment of the labour force.

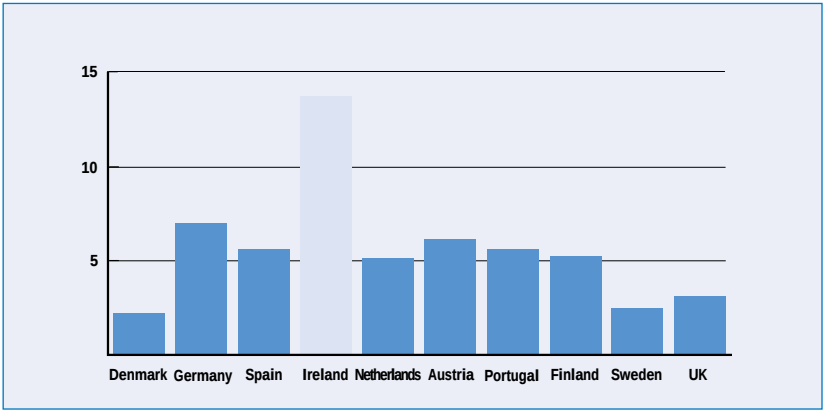
To achieve a European standard of living, Ireland needs to invest considerable resources over many years to develop a European style infrastructure. However, deciding what constitutes a European standard of infrastructure in an Irish context is difficult. Infrastructural needs reflect the unique features of a country's population density, urban hierarchy, climate, as well as the demographic and industrial structure.

**FIGURE 2: AVERAGE NUMBER OF ADULTS PER HOUSEHOLD, 1999**




The most obvious gap in infrastructure is housing. Figure 2 shows the average number of adults per dwelling in Ireland compared to other EU countries. With the exception of Spain, Ireland has the highest ratio, indicating a lower endowment of dwellings. This reflects the unusual demographic structure, with relatively few old people (because they emigrated in the past when they were young) and a large number of young people in their teens and 20s. The result is that the number of dwellings built (and needed) in Ireland is now very large relative to the size of the population - see Figure 3.

**FIGURE 3: NUMBER OF DWELLINGS BUILT PER 1,000 INHABITANTS, 1994, (IRELAND 2001)**




The dramatic step upwards in infrastructural investment in recent years has posed major problems for the building sector. For any business it takes time to increase output capacity. The building industry is no exception and the need to more than double capacity over five years from 1995 to 2000 involved a dramatic increase in prices. The ESRI HERMES macroeconomic model reflects this behaviour, suggesting that every 1% increase in output in the short term adds approximately 0.25% to prices. In the long term the inflationary impact is likely to be somewhat less as the industry has time to adjust. This would suggest that, if properly managed, there should be an easing in prices in the second half of the decade once the level of infrastructural investment reaches a plateau.

The dangers that inflation in the building industry posed for the current National Development Plan (NDP) were signalled in the Ex Ante Evaluation of the NDP, 2000-2006 by the CSF Evaluation Unit in 1999. Unfortunately, these fears have been realised in practise, posing major problems for all involved in the NDP. The remedial measures suggested in the ESRI report on National Investment Priorities in 1999, if implemented, could have significantly reduced this inflationary problem. However, as discussed below, these supplementary measures were not implemented.

## INTERNATIONAL PATTERNS

Investment in infrastructure is not a continuous process but tends to be "lumpy". For example, once an economy reaches a certain stage of development it needs a good roads system. Major investment may then take place in building motorways. Until the system is nearly completed its full benefits are not available to the economy or society. However, once completed, the capacity may be adequate for many years to come. The result is that at certain stages in economic development infrastructure may be a constraint on growth, but once the constraint is dealt with, further investment does little to expand productive capacity. This makes measuring the macroeconomic effects of infrastructural investment quite difficult.

The pattern in Europe has been that public investment in infrastructure occurs during rapid convergence. For example, in the EU public investment had a very large share of GDP in the immediate post-war years as the then EU converged towards US living standards. This was needed to replace the infrastructure lost as a result of the war and also to turn the EU into a truly modern economy. Ireland did not share in this drive to invest, partly due to inappropriate domestic policies and partly because it was at an earlier stage of economic development.

**FIGURE 4: INVESTMENT AS A SHARE OF GDP, 1960s AND 1990s**

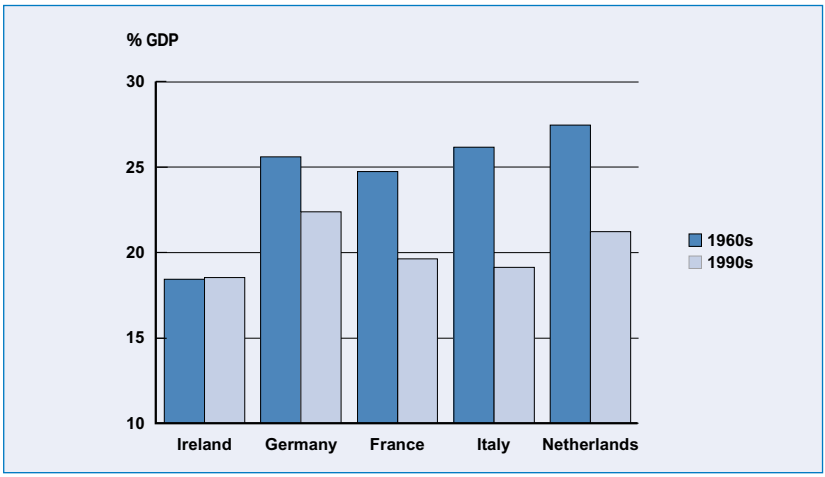
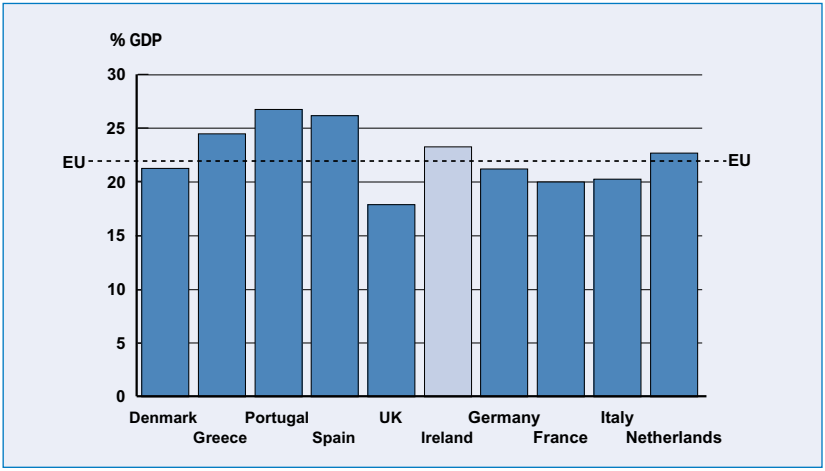



Figure 4 shows investment as a share of GDP for Ireland and four of the original members of the EU. In the 1960s investment in Germany, France, Italy and the Netherlands averaged around 25% of GDP whereas in Ireland it was under 20%.

However, once the major elements of infrastructure were put in place, the need to invest was reduced in the original six EU (EEC) members. By the 1990s investment had fallen to around 20% of GDP in France, Italy and the Netherlands, remaining at around 22% in Germany due to the large infrastructural deficit inherited in the former East Germany. In Ireland in the 1990s investment as a share of GNP was 22% (19% of GDP).

However, with the rapid growth of the economy in the second half of the 1990s the infrastructural deficit was recognised. The National Development Plan for the period 2000 to 2006 provided for a dramatic increase in public investment. This was mirrored in the private sector in the huge expansion in the resources devoted to investment in housing. As shown in Figure 5, in 2001 investment in Ireland was over 23% of GDP and 27.6% of GNP. The other three cohesion countries - Greece, Portugal and Spain - all were investing around 25% of GDP in that year, as they also strove to make good their infrastructural deficiencies. Thus, the infrastructural deficit in Ireland is not unusual for a country converging rapidly to a world-standard level of income per head. It also mirrors the experience of the earliest EU members in the 1950s and the 1960s.

**FIGURE 5: INVESTMENT AS A SHARE OF GDP, 2001**




Source: OECD Economic Outlook Database. For Ireland CSO: National Income and Expenditure, 2001.

Unlike periods of increased investment in Ireland in the past, such as in the 1970s, the current high level of investment activity is funded from domestic sources. In the 1970s the balance of payments showed a very large deficit as Ireland borrowed abroad to

fund the investment, whereas today the balance of payments is fairly close to balance. What this means is that the above average allocation of resources to meeting the country's investment needs is coming from current income and that, as a result, current consumption is being held down. Thus while Ireland has an income per head above the EU average (Figure 1), it does not enjoy a level of consumption per head similar to our EU neighbours.

This lower level of consumption mirrors the fact that Ireland's infrastructure is inferior to the EU average - while enjoying an above average income Ireland still has a less than average endowment of wealth in the form of infrastructure. It is only when the current crash programme of investment in infrastructure is complete, probably in the second half of the next decade, that an above average income will feed through into above average consumption. Only then will Ireland be likely to feel "rich" relative to its neighbours. Of course a decision to ease back on the priority given to investment and allow domestic consumption - public and private - to pre-empt a higher share of national resources would allow a temporary feeling of enhanced well-being at the expense of future living standards. However, future quality of life, even if not captured directly in measures such as GNP, would suffer from such a decision.

There are lessons from this experience for the transition countries about to join the EU. Their consumption standard may be even below their standard of living conventionally measured in terms of output. This is because, like the current cohesion countries, they too have a major infrastructural deficit. While future EU transfers will help in the transition process, Ireland's experience indicates that such transfers will only play a limited role in financing the necessary investment.

It is not just in Ireland that a rapid growth in infrastructural investment has led to major problems with inflation in the building sector. In any economy ramping up building investment very rapidly tends to come at a price. For example, periods of rapid growth in investment in building and construction in Germany have in the past been associated with surges in inflation.[2] This experience elsewhere illustrates the importance of managing the supply side of the building and construction sector to ensure that the effect of increased expenditure on infrastructural investment is not merely to increase costs in the building sector.

[2] Formally, the following equation relates the rate of inflation in building prices in Germany (PIB) to the rate of growth in the deflator for domestic demand (PDD) and the rate of growth in building and construction investment (IBC). In the case of each series three period moving averages are used and the equation has been estimated from 1972 to 2001. The equation was adjusted for autocorrelation with an adjusted R2 of 0.93. The equation shows that periods of rapid growth in investment add to the growth in the investment deflator.

PIB = -0.02+ 0.22*IBC+1.00*PDD
(1.5) (6.1) (7.9)

## INVESTMENT NEEDS

The most obvious area where Ireland has a serious shortage of infrastructure is housing. However, the shortage of housing is very closely related to constraints in sanitary services (including waste disposal) and constraints emanating from the inadequacy of the transport infrastructure - in particular from the very poor quality of urban public transport. While it is possible to identify where the constraints exist, it is a much more complex task to quantify what needs to be done.

Demographic factors play a key role in the pressures in the housing market. When both rising headship rates (the proportion of adults in each age group who are "heads of household" – effectively the number of independent households) and the net migration flow into the country are taken together with the natural increase in the population, this implies that the demand for housing from these sources will require around 35,000 units a year between 2001 and 2011. In the following decade demand should fall back to about 23,000 a year out to 2015. Assuming that the demand for second or replacement dwellings averages around 10,000 a year, this gives a total requirement of around 45,000 dwellings a year over the course of the current decade. With housing output running at over 50,000 a year significant inroads are being made into the backlog of demand. However, it will not be until later in the decade that the demographic pressures are likely to ease, with a consequential easing in house prices.

Table 1 shows a breakdown of the factors underpinning the demand for housing by four main categories: the change due to pure demographic factors (rising numbers of adults); the change due to rising headship (proportion of each age group who are heads of households); the change due to net migration; and second or replacement dwellings.

**TABLE 1: DECOMPOSITION OF HOUSING DEMAND, THOUSANDS, ANNUAL AVERAGES**

| | 1996-2001 | 2001-2006 | 2006-2011 | 2011-2016 |
|---|---|---|---|---|
| **Migration** | 5.9 | 5.2 | 6.1 | 3.7 |
| **Change in Headship** | 12.4 | 11.4 | 11.9 | 4.6 |
| **Population Growth** | 15.4 | 18.0 | 16.9 | 15.0 |
| **Second Dwellings** | 11.0 | 14.3 | 7.1 | 9.0 |

Source: D. Duffy, J. Fitz Gerald, J. Hore and I. Kearney, Medium-Term Review: 2001-2007, ESRI, 2001.

Since 1996 demand for housing has been boosted by a net inflow of returning emigrants and immigrants, attracted by employment opportunities in the Irish economy. In the period between 1996 and 2001 this factor is estimated to have added 5,900 dwellings a year to housing demand. The importance of migration is forecast to continue over the next decade. On the basis of the levels of migration assumed in the last ESRI Medium-Term Review, there will be a need for between 5,200 and 6,100 dwellings a year over the next decade to accommodate these new households. However, the rise in house prices, the scarcity of available housing and high rental levels may work to deter immigration.

While it is possible to assess housing demand on the basis of demographic factors, it is much more difficult to assess the implications of this demand for other infrastructural needs. The ESRI study on National Investment Priorities 1999 used a modelling framework to identify the infrastructural constraints facing the economy. Together with a range of other studies, this framework was used to identify priorities for the current National Development Plan. The publication of the National Spatial Plan provides important additional information that can be used to prioritise future investment.

In the area of transport, in particular for roads, there is a well-established methodology for identifying priorities. While it was used to prioritise investment in roads in the NDP, since the Plan was published further additions have been made to the planned projects. It does not appear that these additions have been properly justified and the additional expenditure that they will require may not be warranted.

In the area of urban public transport it is essential that planning of transport networks goes hand in hand with active physical planning. Transport networks - whether bus, tram or rail - cost a large amount to implement. To get full value out of them will require a major change in physical planning. This should mean that new development clusters around new expensive networks, ensuring an adequate rate of return on the scarce funds invested.

An area of investment that is important, but tends to be overlooked, is social, cultural and recreational infrastructure. In many cases it is provided automatically by the private sector – for example cinemas and pubs. Other important aspects of such infrastructure are investment in educational and health infrastructure, generally the responsibility of the state. However, taken together, the different elements of this type of infrastructure play a vital role in enabling citizens to enjoy a satisfactory lifestyle.
In the past, regional policy was driven by grants and other incentives to encourage firms to locate in particular locations. For the future, in a world where labour is mobile,

regional policy must concern itself with making cities or regions attractive places in which to live. It is only if a city or region can attract and hold labour with a wide range of skills that it is going to be successful. A crucial element of this "attraction" is the quality of life that the infrastructure makes possible for those choosing to live in the relevant location. Today quality of life and, as a result the Irish economy, is being adversely affected by the high cost of dwellings and the poor quality of urban transport.

This changing nature of regional policy means that in the future much more attention must be paid to dealing with infrastructural constraints in a coherent manner. Unless the different elements of infrastructure are fitted together to make possible a high quality of life for residents, the infrastructural constraints will significantly affect the potential for economic growth.

One of the biggest policy failures over the last number of years has been over reliance on investment alone to deal with the infrastructural constraints. The different reports discussed earlier, which were prepared in the run up to the current NDP, all stressed the need to implement a range of supporting measures that would facilitate the implementation of the programme of investment and to ensure that the limited infrastructure available is used efficiently.

The potential for inflation in the building industry to run away with much of the resources available for investment was identified in advance. However, the recommendation that fiscal measures be taken to reduce private sector demand for the output of the building sector was ignored. Instead a further stimulus was applied, with the inevitable consequence that inflationary pressures climbed further. The stance of fiscal policy, with the public sector greatly increasing demand for labour at a time when the labour market was already tight, further aggravated the problem.

In addition, the National Investment Priorities report identified a range of measures that involved pricing access to infrastructure that is in short supply, so as to make optimal use of what is available. Generally, these recommendations have still to be implemented. In the long run urban Ireland faces a choice between the Los Angeles approach or the Lyon approach to transport. The provision of greatly increased urban road space, which will always be congested, is the Los Angeles solution – a hugely expensive option. The alternative is to ration road space by charging for access, while at the same time investing heavily in public transport. The latter solution is also going to be expensive but it is the only one that stands a chance of succeeding.

## FUNDING PUBLIC INVESTMENT

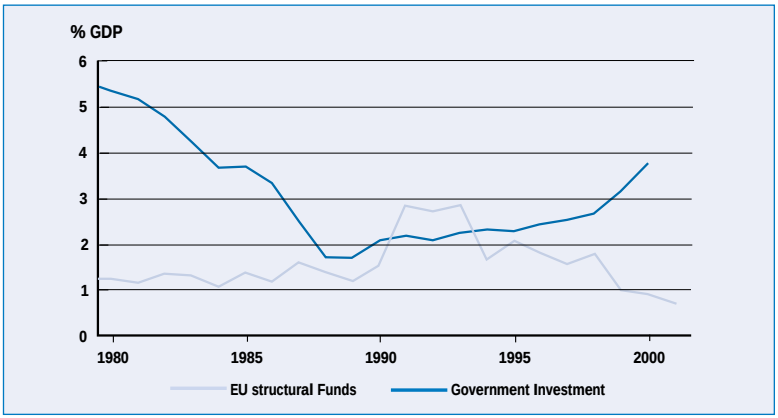
In the 1990s the claim was frequently made that projects should be undertaken if EU money was available. However, these claims ignored the fact that there was an excess of fundable projects so that the opportunity cost of EU funds was identical to that for Irish tax-payers' funds. Now that the EU funding has largely disappeared, this "red herring" is no longer as prevalent. However, the criterion for undertaking an infrastructural project remains the same – will the benefits from the project exceed the likely costs. If projects measure up to rigorous cost-benefit analysis, they should be undertaken.

Infrastructural investment poses special problems. If motorways or public transport systems could be bought in a supermarket, there would be a very good argument for borrowing and buying a full road-set (or public transport set) immediately. However, infrastructure has to be produced on site and, as discussed above, the more you buy the higher will be the rate of inflation in the short term. Thus, the most serious constraint on the deployment of the infrastructure will be the capacity of the economy to deliver it, not the capacity to finance it.

Figure 6 shows government investment as a percentage of GDP since 1980. As can be seen, there was a dramatic fall in government-funded investment over the course of the 1980s. While the EU Structural Funds in the early 1990s produced a turn around, it was not until the late 1990s that investment as a share of GDP began to climb rapidly. Thus, by the standards of the past, the level of public investment up to 2001 was still below that of the late 1970s and early 1980s, though significantly higher than the EU average. However, the current rise in expenditure is also coinciding with a level of investment in housing unparalleled in the history of the state. Thus, the inflationary pressures have probably been greater than ever before.

In planning for the next few years, the objective should be to deliver as much of the required infrastructure as can be produced, without giving rise to inflationary pressures. It is the management of the supply capacity of the economy that will pose the biggest obstacle to rapid implementation. Given that this constraint will pose significant problems for the NDP, it will be very important to prioritise investment so that the most serious constraints are addressed rapidly.

FIGURE 6: PUBLIC INVESTMENT AND EU STRUCTURAL FUNDS, AS % OF GDP




While it may figure prominently in the public discussion, the issue of the financing of the necessary investment is secondary to the problem of efficient and cost-effective delivery. If more attention had been paid to the delivery problems in the first three years of the NDP, expenditure would have been lower, partly because the economy could not deliver all that was demanded. However, the necessary supporting measures, if implemented, would have reduced the rate of inflation and would also have added directly to exchequer resources.

Looking over the period of the rest of the current NDP, finance should not be the major constraint. If a project is worth doing, and if it can be delivered efficiently without adding to inflationary pressures, it should be financed; if the rate of return on a project (allowing for risk) is greater than the cost of borrowing, it could be funded by borrowing. The choice of whether it should be financed by borrowing or by taxation is one that concerns the possible transfer of burdens between the generations.

By funding major investment in infrastructure out of taxation, the state over the last decade has been building up physical assets without offsetting financial liabilities. When the infrastructural programme is largely completed, some time in the next decade, the state will then have a large asset that will continue to provide services for future generations. In addition, most of the 4% of GDP that is currently spent by the government on investment will then be available for other purposes. For example, it could be switched from physical investment to investment in financial assets to fund future pension liabilities. When viewed in this light, the investment in assets in the form

of infrastructure is much larger than the current direct investment in financial assets as part of the state pension fund.

There is an argument that the current generation may end up footing a disproportionate burden. It is paying for the pensions of a previous generation (albeit smaller than the current generation) on a pay-as-you-go basis. It is paying for the infrastructure that will serve future generations. It is paying an additional cost through the disruption that the investment in infrastructure entails. Finally, it is investing in a pension fund to part fund its own pensions. The sums have not yet been done to allocate the burdens involved over different generations. However, when they are, it may suggest that some of the burden of infrastructural investment today should be shifted to the next generation by limited borrowing.

If it turns out that the ability to borrow is constrained by the Stability and Growth Pact (SGP), it would be better to raise taxation to pay for the investment rather than to leave a valuable project undone. However, this raises the question as to whether the SGP is itself appropriate for all members of the euro zone. The issue of its appropriateness will be posed in a more acute form with enlargement, as many of the accession countries have very serious infrastructural deficits.

## BALANCING PUBLIC AND PRIVATE

The final funding issue to be considered is the appropriate balance between public and private provision of infrastructure. If infrastructure can be provided through a competitive market, there will be no need for state involvement. This is clearly the case for housing (other than social housing), cinemas, pubs etc. However, it is not the case for transport networks where economies of scale and scope mean that there will be a monopoly provider. For example, it is not efficient to have competition between motorway networks. Where the state, on behalf of the consumer, ultimately carries the risk involved in a project, the cost of capital will be minimised if the state funds the investment directly. In highly capital intensive projects, such as roads, this is clearly the case.

However, while the state is good at providing the finance, it is not good at providing other goods and services. Thus direct construction by the state of infrastructure will be much less efficient than the purchase of construction services from the private sector through a competitive tendering process. In planning the provision of necessary infrastructure, the objective is to provide the necessary infrastructural services to the

consumer (taxpayer) at minimum cost over a suitable time horizon. These services should be provided to the required quality standard, where the quality standard can be clearly stated in the tender documents.

There is a cost in contracting out provision of goods and services. This cost drives the substantial vertical integration normal in business throughout the world. For example, a bank integrates into one business its branch banking, corporate finance, risk management, merchant banking, human resource management etc. rather than the alternative of having a small core of people buying in all of these services through legal agreements with a wide range of separate companies. So too, the choice as to when to contract out the provision of goods and services to the private sector through Public Private Partnerships (PPPs) or whether to undertake it directly will depend on the relative costs of the two approaches.

In the case of road construction it should be straightforward to define the contract for services to be provided in constructing a road. However, it is much less clear that a PPP is appropriate for the long-term management of roads. The reason is that it is very difficult to specify all likely problems over a 20-year time horizon in a contract. If it is attempted, the risks and uncertainties that it will pose for the private sector entering into such a contract could make such an approach hugely expensive.

With major physical infrastructure, where future demand is uncertain, there may be a high cost to a long-term contract unless it is very flexible. However, there may be a high price for flexibility. Whether it is desirable to use a PPP depends on what the expected savings are from using it and locking in to a contract, compared to possible future costs of alternative forms of provision.

There is a case for PPPs in the provision of individual elements of infrastructure where it is likely to deliver the infrastructure at lower cost to the exchequer (and the taxpayer). However, there is no case for using PPPs to fund such infrastructure as such funding must be significantly more expensive than if it is undertaken by the state directly. Even if the SGP were to place a constraint on borrowing, it would still be much better for the taxpayer to pay for the infrastructure by higher taxes rather than by an inefficient PPP contract.

The role of PPPs remains the provision of goods and services to the state where this can be done at lower cost than direct provision. There is a wide range of areas, in particular in the sphere of local government where the potential efficiency gains from PPPs have not been exploited.

## CONCLUSIONS

Even with the current slowdown in economic growth, the Irish economy faces a series of important constraints due to its inadequate infrastructural endowment. The problems with the National Development Plan over the last few years have had less to do with shortage of finance than with the inability of the economy to produce the infrastructure at a reasonable cost. Over the rest of the planning period to 2006 it will be very important to manage demand so that further inflationary pressures are avoided. This will entail the adoption of a range of supplementary measures aimed at reducing demand pressure and increasing the supply potential of the industry. While provision of new infrastructure is obviously vital, it is also important to adopt measures aimed at getting the best out of existing infrastructure. Some of these measures will involve charging for access to that infrastructure.

While the public finances are much less well endowed than they were three years ago when the NDP was formulated, finance ought not to pose a constraint on necessary investment. The pace of investment, if properly managed, will be more seriously constrained by the need to avoid inflation. Even if the Stability and Growth Pact restricts borrowing, it will always be better to raise taxes (or cut current expenditure) to pay for good projects rather than leave them undone. Public Private Partnerships have a role to play in the delivery of the necessary investment in an efficient and cost-effective manner. However, for infrastructural investment necessarily undertaken by the state, PPPs are generally not an appropriate mechanism to use for funding.

## REFERENCES

CSF Evaluation Unit, 1999, Ex Ante Evaluation of the NDP, 2000-200, Dublin: The Stationery Office.

CSO, 2002, National Income and Expenditure, 2001, Dublin: The Stationery Office.

Duffy, D., J. Fitz Gerald, J. Hore, and I. Kearney, 2001, Medium-Term Review: 2001-2007, Dublin: The Economic and Social Research Institute.

Fitz Gerald, J., I. Kearney, E. Morgenroth, and D. Smyth, 1999, National investment Priorities for the Period 2000-2006, Dublin: The Economic and Social Research Institute, Policy Research Series No. 33.

OECD, 2002, Economic Outlook Database, Paris: OECD.

# THE CHANGING DYNAMICS OF IRISH INFLATION

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The dynamics of Irish inflation have changed since the advent of EMU. While still important, the level of the nominal exchange rate has become less influential than in the pre-EMU period. Irish inflation has diverged sharply from the euro area average, reflecting a number of different factors. For an economy like Ireland which has experienced a sharp increase in inflation due to inappropriate policy conditions and a period of economic catch-up, higher inflation is inevitable but needs to be addressed going forward. Government should not assume the role of inflation generator. At a macro-level, the limited economic policy autonomy needs to be used sensibly. However, at a micro level, policy makers should focus on increased competition and deregulation in areas of the economy which are sheltered from competition and are highly regulated.

## INTRODUCTION

Since the historic introduction of euro notes and coins at the beginning of 2002, there has been considerable controversy about its impact on inflation in the euro area. A survey by the European Commission at the end of 2002 showed that 80% of consumers in the euro area blamed the introduction of the physical notes and coins for higher inflation, while consumers have taken to the streets to protest in Greece and Italy about price increases resulting from the new currency. There is also a strong perception in Ireland that the euro introduction has resulted in considerably higher inflation and there is a widely-held view that Government and the various consumer watchdog agencies failed to prevent retailers and other vendors of goods and services from using the opportunity afforded by the introduction of the new currency to mark up prices. This perception has been fuelled by the price transparency that the euro's introduction has facilitated, with Ireland now looking very expensive in a European context.

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Irish inflation has increased consistently since the introduction of euro notes and coins, but the reality is that since the final quarter of 1999 inflation has been accelerating at a significant pace. Thus, to blame the upward trend in prices on the introduction of the physical currency exclusively does not provide a full explanation of the root cause of Ireland's current inflation problem. Since EMU commenced at the beginning of 1999 Irish inflation has diverged considerably and consistently from its EMU and non-EMU trading partners. However, within the overall spectrum, there has been a developing trend; namely, price pressures in the internationally-traded side of the economy have remained quite subdued, while pressures in the non-traded side of the economy have intensified considerably.

Clearly, the advent of a single currency and a single monetary policy for a very small and very open economy has changed the forces that drive Irish inflation. Ireland is now a small regional economy in a larger economic grouping and this has changed many of the forces that previously shaped the economy. This is particularly relevant to the evolution and control of the dynamics of inflation. In recognition of this changed world, there are clear implications for domestic policy makers, but so far they have effectively disregarded these.

## THEORIES OF INFLATION

Inflation is a process of continuously rising prices or of a continuously falling value of money.[1] The literature on the types and causes of inflation is very large and does not warrant detailed attention here. However, the following brief analysis attempts to categorise the various general theories of inflation generation under a limited number of headings. It will be obvious from the brief analysis undertaken that many of the theories and models are heavily inter-related and the differences can often become blurred. Furthermore, all of the theories outlined are inconclusive in terms of their applicability across a range of different types of economies, but they still form a useful basis for any discussion of the subject.

### *PURCHASING POWER PARITY (PPP)*

PPP or the Law of One Price effectively argues that the prices of similar goods, expressed in a common currency, should be the same in all countries;[2] or in other words that there cannot be a sustained divergence between the prices of goods in one country and other countries with which it trades, when the prices are expressed

[1] See Laidler and Parkin, 1975
[2] See Leddin and Walsh, 1998

in a common currency.[3] This in effect means that the rate of inflation in Ireland will be driven by the nominal exchange rate between Ireland and the countries with which it trades and the level of inflation in those countries. Thus, if inflation in Ireland is running at a higher level than that in its trading partner countries, the nominal exchange rate should fall or depreciate to offset the price differential. In other words, the real exchange rate should remain constant.

### *THE MARK-UP MODEL*

This model looks at the impact of factors such as productivity growth, real wages and all other input costs. It is based on the premise that, if growth in real wages and other input costs rises by more than productivity growth, these increases will be passed on by the vendors of goods and services in order to maintain profit margins. This model can be broadly encapsulated within the cost-push theory of inflation determination.

### *MONETARY MODELS*

Milton Friedman once said that 'substantial inflation is always and everywhere a monetary phenomenon'.[4] This theory of inflation argues that it is caused by factors such as monetary (money supply) growth, interest rates and credit expansion. The basis of this theory is that excess money supply can create excess demand and this will lead to demand-pull inflation as economic agents compete to purchase goods and services that are in limited supply.

### *THE GROWTH MODEL*

This theory focuses on the impact of the business cycle. Put simply, it means that if an economy is growing in excess of its potential growth rate, as determined by the productive capacity of the economy, excess demand will pull up the price of goods and services. This theory ties in very closely with traditional Phillips Curve analysis. This analysis postulates a simple relationship between inflation and unemployment, the latter being seen as a good proxy for economic growth. The relationship is inverse in nature, meaning that once unemployment falls below a certain level, wage/inflationary pressures would be expected to rise. This level of unemployment is called the NAIRU or the non-accelerating inflation rate of unemployment. The NAIRU is defined as the level of unemployment that is consistent with stable prices, and once it falls below that level, inflation would be expected to rise. The NAIRU does not have to be constant over time and can in fact change due to factors such as technological developments or changes in trade union density and power.[5]

[3] See Walsh, 1999
[4] See Friedman, 1992
[5] See Power, 2001

### *THE SCANDINAVIAN MODEL*

The Scandinavian Model was developed in 1977.[6] This model focuses on a small open economy situation, but it distinguishes between traded and non-traded goods in the economy. The domestic price of internationally-traded goods is assumed to be determined by the level of prices in the trading partner country and the nominal exchange rate of the two currencies involved. The situation for non-traded goods is different. The price of non-traded goods is deemed to be determined by mark-up behaviour on wages adjusted for productivity growth. One of the basic conclusions is that domestic inflation can differ from foreign inflation if productivity differentials between the traded and non-traded sectors are larger in the domestic economy than in the overseas trading partner countries.[7] This model goes on to suggest that the price for non-tradable goods can be pushed up due to the equalisation of wages in the non-traded sector up towards wage levels in the traded sector. Kenny and McGettigan conclude that 'differential rates of productivity growth between the traded and non-traded sectors can give rise to persistent deviations in the Irish rate of inflation from the world rate of inflation'.

## THE CONTEXT FOR IRELAND

A considerable body of research also exists on the factors that determine inflation in Ireland, but most of the research focuses on the period before we joined EMU in 1999. Consequently it covers a number of different monetary regimes and this complicates the analysis. Ireland had a one-for-one relationship with the currency of its major trading partner, the UK, for 150 years up to 1979. Thereafter it was part of the Exchange Rate Mechanism (ERM) of the European Monetary System (EMS) between 1979 and the end of 1998. However, within this period of ERM membership there was a number of distinctly different phases. Between March 1979 and October 1990 it was a member of a system that did not contain sterling. Sterling joined in 1990 but was forced to exit during the currency crisis in 1992. From 1993 until the end of 1998 the Irish pound was part of an ERM system that had wider 15% bands of fluctuation around a central rate for all member currencies with the exception of the Dutch guilder and the German mark.

Not surprisingly, a review of the literature on the determinants of Irish inflation prior to EMU membership is quite inconclusive and does not arrive at any single causal

[6] See Aukrust, 1977
[7] See Kenny & McGettigan, 1996

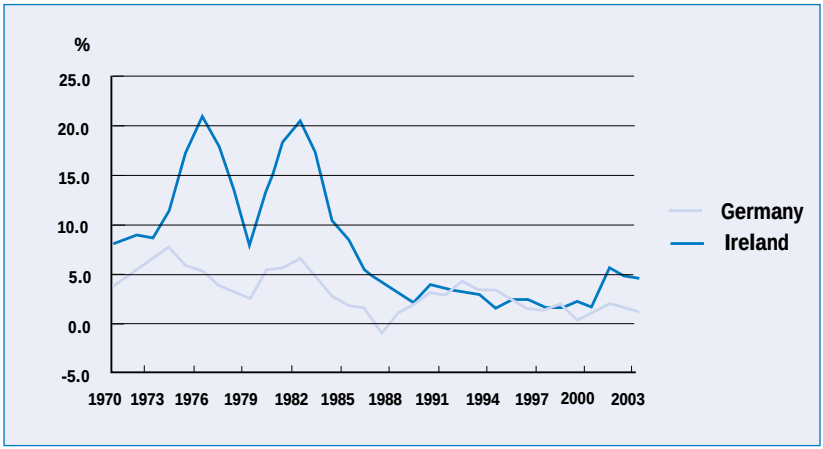
factor. Nevertheless in a very comprehensive review of the literature, Kenny & McGettigan (1996) summarise the main findings. They conclude that in the pre-EMS period the pervasive finding is that, although short-term deviations occurred, in the longer-term UK inflation was the most important determinant of Irish inflation. This is not terribly surprising given that Ireland maintained a fixed exchange rate relationship with the currency of its largest trading partner. This finding was instrumental in the decision of the Irish government in 1979 to join the ERM without sterling. The heavy dependence on a UK economy that was particularly badly managed in the 1970s and had high interest rates and inflation and a very unstable currency prompted the Irish move. This was a brave decision and one not without considerable risks.

It was hoped that, by locking into a semi-fixed currency arrangement with a low interest rate and inflation country like Germany with a history of currency stability, Ireland would experience similar developments.[8] This did not turn out to be the case for a number of reasons. It was always going to be difficult to cope with the fact that sterling remained outside the system. Contrary to expectations at the time, the UK currency strengthened appreciably in the early 1980s due to the discovery of North Sea oil, thereby pulling the Irish pound towards the top of its permissible band of fluctuation within the ERM. These problems were further compounded by the failure of the Irish authorities to pursue wage and fiscal policies consistent with membership of a semi-fixed exchange rate regime. As a consequence, two unilateral downward adjustments of the Irish pound proved necessary in 1983 and 1986.

Due to a combination of bad luck and poor economic management, Irish inflation and interest rates remained much higher than those in Germany for almost the first decade of ERM membership. However, after 1987 the economic management of the economy moved onto a much more sensible footing. Fiscal management improved, wage stability was delivered through social partnership and general market forces, and the currency became much more stable within the ERM. Consequently, Irish inflation and interest rates fell steadily from the late 1980s and Ireland established itself as one of the low inflation economies in the OECD during the 1990s. As Figure 1 demonstrates, in the period between 1970 and 1989 Irish inflation remained significantly above that in Germany. It then converged up until 1999, but since EMU commenced the gap has widened again, with Irish inflation moving considerably higher.

[8] See Power, 1999

FIGURE 1: IRISH V GERMAN INFLATION

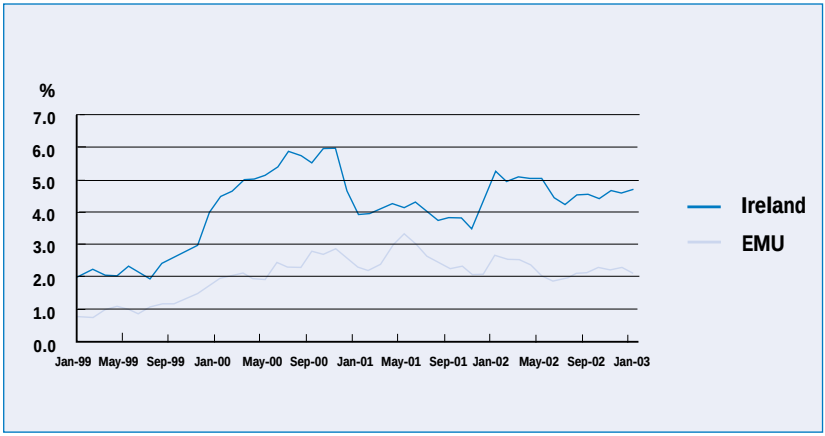



Ireland's inflation performance during the EMS period was therefore mixed, starting badly and finishing positively. Kenny and McGettigan's study (1996) concluded that PPP provided a valid framework for the evolution of Irish inflation during that period. In other words, the nominal exchange rate of the Irish pound and inflation in the country's trading partners played a key role in determining Irish inflation. However, they also found that the 'mark up' model was influential; that is, real wage growth in excess of productivity, in the absence of an accommodating change in the exchange rate, had a long-term effect on inflation. They suggest a hybrid model encompassing elements of PPP and mark-up.

## THE EXPERIENCE IN EMU

Between 1993 and the beginning of 1999 Ireland effectively operated in an exchange rate regime that could be described as a 'managed float'. It operated within 15% bands of fluctuation against its ERM partners and in theory had no control parameters against sterling, the dollar, the yen and all other currencies. In practice of course, the Irish authorities had to straddle two currency blocs; as well as the ERM currencies they also had to keep a watchful eye on sterling to ensure that the Irish pound maintained a competitive level against it. However, when Ireland joined EMU and locked its currency into 11 others, it effectively eliminated its exchange rate exposure to a significant bloc of its trading partners.

**FIGURE 2: HICP COMPARISON**




Note: The Harmonised Index of Consumer Prices (HICP) is the standardised measure of inflation across the EU. It excludes approximately 9% of the Irish CPI expenditure weightings. Mortgage interest, building materials, union subscriptions, motor car tax, motor car insurance (non-service), dwelling insurance (non-service) and motor cycle tax are included in the Irish CPI but excluded from the HICP. (Source CSO)

Figure 2 shows the path of inflation (HICP) in Ireland relative to the other EMU countries since the beginning of 1999. Irish inflation climbed steadily, peaking at 6% in November 2000, compared to a euro area peak of 3.4% in May 2001. The Irish rate has subsequently moderated but still remains much higher than in the other euro zone countries.

Table 1 shows the summary of annual inflation rates in Ireland compared to the euro area in all of the main commodity categories as at December 2002. It shows that, in all categories except one, Irish inflation is running significantly ahead of the euro zone average. Government policies have played a key rule in explaining some of the inflation differentials in December. For example, in Budget 2003 the Minister for Finance calculated that the increases in indirect taxes would add 0.85% to the CPI in a full year.

TABLE 1: PERCENTAGE YEAR-ON-YEAR INFLATION, DECEMBER 2002

| CATEGORY | IRELAND | EMU-12 |
|---|---|---|
| Food & Non-Alcoholic Beverages | 2.8% | 1.5% |
| Alcohol & Tobacco | 10.0% | 4.3% |
| Clothing & Footwear | 1.7% | -5.5% |
| Housing, Water, Gas, Electricity, Gas & Other Fuels | 3.7% | 1.8% |
| Furnishings, Household Equipment, & Maintenance | 0.2% | 1.5% |
| Health | 7.7% | 3.0% |
| Transport | 4.3% | 3.5% |
| Communications | 0.7% | -1.0% |
| Recreation & Culture | 4.1% | 0.9% |
| Education | 11.6% | 4.0% |
| Hotels, Cafes & Restaurants | 7.1% | 4.6% |
| Misc. Goods & Services | 6.8% | 2.9% |
| HICP | 4.6% | 2.3% |

Source: CSO

Within the overall inflation performance over the period from the beginning of 1999 to January 2003 some interesting trends have emerged (see Table 2). In the internationally-traded side of the economy where there is intense competition - such as household equipment, clothing and footwear and food - inflationary pressures have been subdued. The arrival of a number of UK and German retail outlets have had a very beneficial impact on price determination in these areas. Likewise, in other areas where there has been increased competition and deregulation - as in taxi services, telephone and communications, bus transport, air transport and financial services - inflationary pressures have been relatively subdued.

Developments such as the deregulation of taxi plates, the growth of Ryanair, the arrival of new telecommunications operators such as Esat, and the entry of Bank of Scotland into the mortgage market have all had a beneficial impact on price at least. On the other hand, in the more sheltered non-traded sectors of the economy - such as education, health, miscellaneous goods and services - increased administrative charges and indirect tax changes have made a major contribution to inflationary pressures. In other areas such as financial services, the existence of effective price controls has kept the inflation rate down, but the decision in Budget 2003 to increase the stamp duties on cheques, ATM cards and credit cards, and the introduction of

stamp duty on Laser cards, added significantly to this category. These changes increased the inflation rate in financial services by 22.9% during the month of December alone, to give an annual rate of increase of 23.5%. These latter measures should have been avoided, not least because they are at total variance with the stated aim of creating a cashless society. However, desperate situations often result in desperate responses.

In summary, it is clear that a more active approach from the Competition Authority across a broad range of areas would have a beneficial impact on the price burden faced by the consumer. Naturally, the various vested interests will resist such interventions - witness the pharmacies - but the Authority should be given sufficient powers and back-up to proceed with what promises to be an aggressive agenda.

**TABLE 2: CUMULATIVE INFLATION, JAN.1999 – JAN.2003**

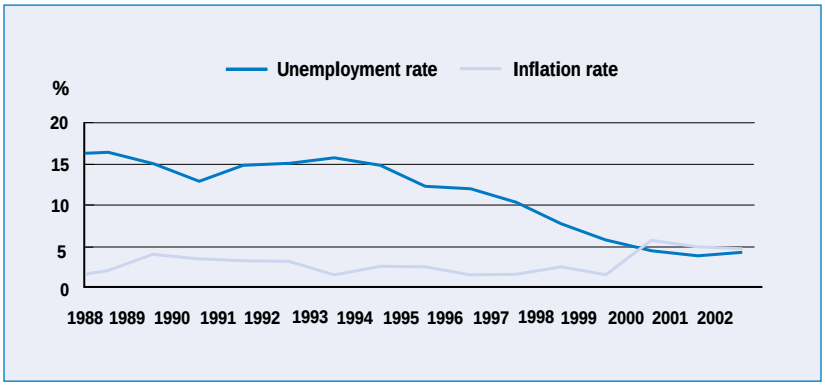
| CATEGORY | CUMULATIVE INFLATION |
|---|---|
| Food | 16.3% |
| Clothing & Footwear | -19.8% |
| Household Appliances | -5.4% |
| Health | 37.6% |
| Doctors' Fees | 45.7% |
| Outpatient Services | 40.1% |
| Bus Fares | 19.1% |
| Taxi Fares | 18.8% |
| Communications | -11.7% |
| Postal Charges | 8.8% |
| Telephone & Communications | -13.1% |
| Primary Education | 44.9% |
| Misc. Goods & Services | 37.4% |
| Second-Level Education | 46.7% |
| Third-Level Education | 49.1% |
| Overall Insurance | 48.6% |
| Dwelling Insurance | 39.3% |
| Health Insurance | 46.3% |
| Transport Insurance | 52.4% |
| Financial Services | 26.5% |
| Childcare | 63.6% |
| Air Transport | 24.9% |

Source: CSO

In explaining the evolution of Irish inflation since EMU commenced it is clear that considerable research needs to be conducted to determine the factors that have become influential. Intuitively, a hybrid model encompassing all of the models outlined earlier looks appropriate, but Government initiatives in the shape of administrative price changes and indirect tax increases have also played a significant role.

First and foremost, Irish economic activity was exceptionally strong in the latter part of the 1990s. Between 1995 and 2001 real GDP growth averaged 8.1% and GNP growth averaged 7.4% per annum. In 2000 for example, GDP expanded by 10% and GNP by 10.7%. This exceptional economic growth created very strong demand pressures in the economy and by 2001 severe capacity constraints were very apparent and overheating tendencies became established. These overheating tendencies were reflected in labour shortages and consequent upward pressure on wages, spiralling house prices, a serious lack of capacity in the construction sector and strong borrowing and spending by the consumer. The unemployment rate fell to a low of 3.6% of the labour force in the first quarter of 2001 and wage pressures started to intensify. Once Irish unemployment fell below its NAIRU[9] and the labour market tightened, wage pressures started to intensify and the wage growth built into the social partnership agreement, the PPF, became redundant (see Figure 3).

**FIGURE 3: INFLATION AND UNEMPLOYMENT**




[9] Non-accelerating inflation rate of unemployment (NAIRU)

The strong growth in the economy was reasonably well balanced between external and domestic demand factors. The export performance was boosted by strong external demand, a competitive currency and a strong expansion of the manufacturing base. Domestic demand was driven by an expansionary fiscal policy encompassing strong growth in Government spending and significant tax cuts, strong growth in employment and real wages and historically low interest rates. The policy environment was such that an economy that was already growing strongly was given further impetus and actual growth started to exceed potential growth and inflation started to accelerate as a consequence of the inappropriate policy environment.

The real question is if the Irish authorities should be surprised and indeed worried by the divergence in Irish inflation? The reality is that substantial inflation differentials can arise even within long-standing monetary unions, such as the US.[10] The ECB study points out that the scope for inflation differentials in the euro area is likely to be greater than in the case of the regional economies of the US. This is because the euro area is less integrated, productivity and living standards are more divergent across the euro countries and fiscal policy remains predominantly a national responsibility.

The sharp divergence of Irish inflation can also be explained, at least partly, by the Balassa-Samuelson effect. This theory argues that differences in the level of economic development or living standards across countries can lead to significant differences in non-traded prices. It postulates that high living standards are largely a reflection of high levels of productivity in the traded goods sector of the economy, normally resulting in higher wages for those workers. The scope for productivity growth in the non-traded sector is much more limited, but wages will nevertheless be bid up in this sector, thereby leading to higher relative prices for non-traded goods. In Ireland in the second half of the 1990s there was a rapid catching-up process in terms of productivity and living standards, leading to costs in the non-traded sector rising more rapidly than in other countries and leading to overall higher relative inflation. Once the catching-up process is complete, real convergence should be achieved, but at a potentially high cost to the economy in terms of lost competitiveness, higher unemployment and lower growth.

[10] See ECB, 1999

A major issue is whether Government should stand idly by and allow this process run its natural course, with a consequent rise in unemployment, loss of tax revenue and increased demands on Government spending and of course a significant loss of potential output for the economy. In an environment where the loss of competitiveness due to the deterioration in the cost base is proceeding alongside a sharp real appreciation in the euro exchange rate, it would be very damaging and reckless to do so.

## THE WAY FORWARD

The dynamics of Irish inflation have changed since the advent of EMU. While still important, the level of the nominal exchange rate has become less influential than in the pre-EMU period. Since EMU began, Irish inflation has diverged sharply from the euro zone average, reflecting a number of different factors. These include economic growth in excess of potential growth, rapid monetary expansion, a fall in unemployment below its natural rate and a consequent sharp increase in real wages, the weakness of the euro and a Balassa-Samuelson effect - which is encapsulated in part by the Scandinavian model of inflation determination. Much more work needs to be done on the factors that now drive Irish inflation and the relative importance of those factors; because if correct anti-inflation policies are to be pursued, the causal factors will have to be identified.

For Irish policy makers the implications are clear. The current divergence of Irish inflation from other euro area countries is likely to prove a transitory process. Convergence will eventually be achieved through a loss of competitiveness and ultimately higher unemployment and lost output. Using higher relative inflation as an adjustment mechanism is not without its risks, because there is always the danger of an excessive real appreciation of the currency and serious and permanent damage to competitiveness. This danger is very real at the moment as the euro is appreciating in nominal terms against the basket of currencies with which Ireland trades, while inflation and wages are simultaneously rising strongly. A real appreciation of the euro could prove difficult to contain and is not the ideal type of adjustment process.

Policy makers should not stand idly by and allow the adjustment process to proceed unhindered. In an EMU environment where interest rates and the exchange rate are outside Ireland's control, the limited policy levers available should be used effectively.

Fiscal policy should have been used to address the overheating tendencies in the economy between 1999 and 2002, but instead fiscal management was pro-cyclical and through a combination of generous tax cuts and spending increases, the overheating pressures were accentuated. Going forward, fiscal management needs to take greater account of the gap between actual and potential growth in the economy. The problem with fiscal adjustment is that the fiscal policy response very often comes when it is too late. Witness the 2003 budget, which saw a tightening of fiscal policy at a time when the economy has already lost considerable momentum.

The role of Government in feeding inflationary pressures directly through higher service charges, higher administrative costs and higher indirect taxes should not be under estimated. At one level, such initiatives can be effective in achieving certain aims, such as reducing health expenditure through increased taxes on tobacco, petrol and other carbon pollutants. Furthermore, these measures can be used as useful revenue generators, particularly if applied to products with low price elasticity of demand. However, due to Government policies over the past five years which have seen a significant narrowing of the tax base and an abject failure to control public spending, the Government now finds itself in a situation where revenue has to be raised to stabilise the public finances in dramatically changed economic circumstances. While not wholly desirable, using indirect taxes is more acceptable than increasing direct taxes on labour or capital. Granted, indirect tax increases feed directly into inflation, but the effect is generally of a once-off nature provided it does not feed permanently into wage and inflationary expectations. Increasing direct taxes would ultimately do more damage to economic activity.

The wage-setting model also needs to be appropriate. It is to be expected that higher inflation and higher wages should be a key part of the adjustment process for an economy moving from an overheated state to a more sustainable growth path. However, it is debatable if a new wage deal to succeed the PPF would be helpful for the private sector at this juncture. Market forces should allow private sector wages to find their equilibrium level. This is particularly true when serious concessions have been granted to public sector workers in return for trade union participation in a new partnership arrangement. The likely decision to pay benchmarking in full will also fuel inflation going forward. The growth of 22,700 in public sector employment in 2002 belies the fact that the public sector has difficulty recruiting and retaining workers and further undermines the rationale for the whole benchmarking process that is going to prove such a burden for the private sector of the economy over the coming years. Central Government and already hard-pressed local authorities will be forced to increase charges and taxes to pay for an initiative that has very little scientific basis or justification.

The successor to the PPF, if agreed, is set to include an anti-inflationary strategy, including where necessary the introduction of 'temporary' price controls. Price controls should be avoided in all circumstances as they create distortions. Once they are removed, a catching-up process is almost always inevitable. This is exactly what happened the most recent price controls on alcohol. The creation of such distortions should be avoided.

For an economy such as Ireland that has experienced a sharp increase in inflation due to inappropriate policy conditions and a period of economic catch-up, higher inflation is inevitable. However, at a micro level, policy makers should focus on increased competition and deregulation in the sheltered and highly-regulated areas of the economy. In this regard, the policy agenda of the Competition Authority should be given the fullest support by Government. This agenda should include areas such as electricity provision, airport management, public transport, the pharmacy industry and the liquor licensing system. In some of these areas there may well be a case for a monopoly, but the evidence to date suggests otherwise. For any Government serious about creating a competitive economy, liberalisation and deregulation have got to be promoted. The airline, telecommunications and banking industries are just some examples of how effective such policies can be and the consumer has been the major winner. In an environment where the authorities have been deprived of the main macroeconomic methods for inflation control, micro-policies will become increasingly important.

## REFERENCES

Aukrust, D. (1977), Inflation in the Open Economy: A Norwegian Model in Worldwide Inflation, Brookings Institution: Washington D.C.

Blanchard, O. (2000), Country Adjustment Within Euroland: Lessons After Two Years.

ECB Monthly Bulletin, October 1999

Friedman, M. (1992), Money Mischief: Episodes in Monetary History

Kenny, G. and McGettigan, D., "Inflation in Ireland: Theory and Evidence", Central Bank of Ireland Annual Report, 1996

Laidler, D. and Parkin,M. (1975), "Inflation: a survey", Economic Journal 85, December 741 – 809

Leddin, A & Walsh, B (1998), The Macro-Economy of Ireland (4th Edition), Gill & Macmillan, Dublin

Power, J. (2001), "The Bursting of the Technology Bubble and its Aftermath", Irish Banking Review, Autumn.

Power, J. (1999), "Obituary for the Irish Pound", Irish Banking Review, Summer.

Walsh, B. (1999), The Inflation Issue, National Competitiveness Council Discussion Paper No 2, August

# A Review of Irish Airports Policy

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This article looks at recent trends in Irish air transport and in particular the role and experiences of airports. It is argued that Irish airports other than Dublin operate in very competitive circumstances because of their relative proximity to each other. Dublin Airport is a natural spatial monopoly. Issues relating to the Public Service Obligation routes at the regional airports, airport charges regulations in Ireland and in the EU and the issue of ownership and private sector involvement in terminal service provision are examined. The article suggests that maximisation of accessibility to and from Ireland must be the metre against which public policy decisions are evaluated; particularly as EU transport policy over the next 10 years will seek to increase the role of rail at the expense of air transport.

## RECENT TRENDS IN IRISH AIR TRANSPORT

Ireland has experienced rapid growth in air passenger transportation in the last five years (approximately 55% between 1996 and 2001) and forecasts by various agencies would predict continued strong growth over the next 10-15 years. Dublin Airport handled 14.33 million passengers in 2001, an increase of 57% since 1996. Strong North American and European traffic growth in 1998-2000 was the main driving factor. The 2001 traffic volume represented a 4% increase on the 2000 figure, despite the negative impacts of the September 11th terrorist attacks in the US and the downturn in the tourism and travel sector that was accelerated by these events. Only three of the top 30 airports globally recorded growth in 2001 - Tokyo, Bangkok and Madrid - and Dublin Airport was the only major European airport to experience growth in the 4th quarter of 2001.[1]

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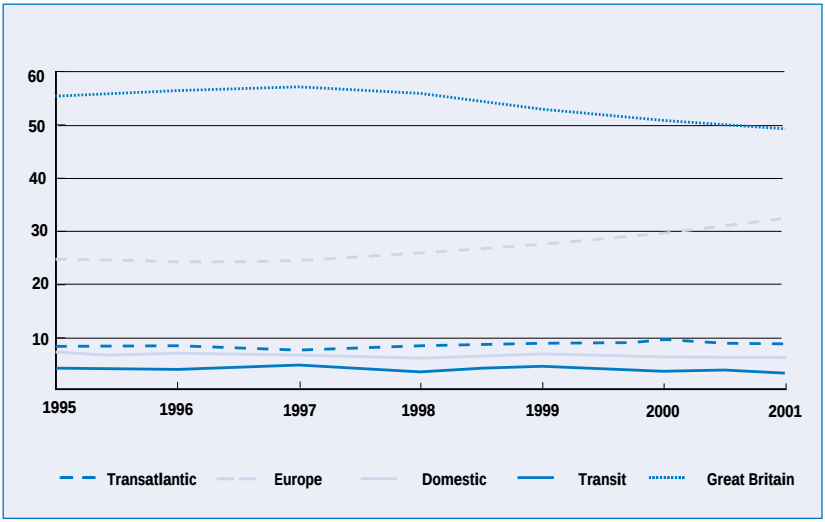
[1] AEA, 2002

Cork Airport has recorded similar growth levels to Dublin in the last five years (58%), with a 6% increase in passenger traffic in 2001. Domestic traffic accounted for almost one-fifth of the total (17.5%), the UK accounted for 55% with European traffic rising most dramatically to account for 27% of the total Cork passenger traffic in 2001.

Shannon Airport had no growth in 2001; traffic in the 1996-2000 period was up 41%. European traffic shares was the key sector driving these increases, as domestic, UK and North American traffic shares all declined. Shannon Airport depends heavily on transatlantic traffic (28% in 2001) and transit traffic (20% in 2001, down from 25% in 1999). The transit traffic is made up of stopover passengers connecting to/from Dublin and other transit passengers on long-haul flights to North & Central America from Europe, the Middle East and recently Pakistan. Traffic shares by region for the three Aer Rianta airports collectively are illustrated in Figure 1.

**FIGURE 1: PASSENGER TRAFFIC BREAKDOWN BY REGION AT AER RIANTA AIRPORTS, 1995-2001**

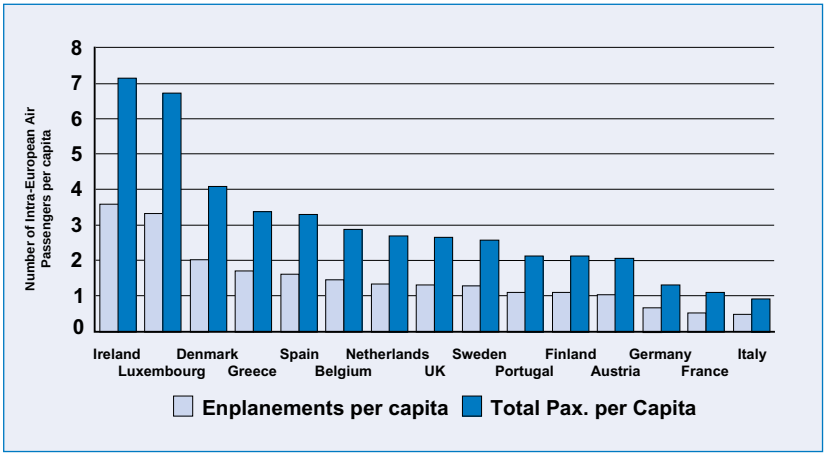



Ireland's island status, geography, population density and dispersed settlement pattern have given rise to a heavy dependence on road and air transport. Ireland was ranked number one in the EU in 1999 in terms of per capita, intra-European enplanements (revenue passengers boarding aircraft) and total air passengers per capita, as Figure 2 illustrates. This reflects high levels of demand, driven by increased business interactions, increased disposable incomes, growth in tourism along with the availability

of low-fare air services to and from an increasing number of European and North American locations.

The Irish Republic is served by a network of three larger publicly-owned airports and by six privately owned 'regional airports', with Knock and Kerry County Airports having jet aircraft capabilities. In Northern Ireland four airports make up the province's network. Figure 3 shows the location of the Republic's airports and also gives the hinterland as defined by a one-hour road journey to each airport in 1993.[2] For the three Aer Rianta airports, the 90-minute driving distances are also given, as this is a realistic approximation of the hinterland for international airports with jet services.[3]

**FIGURE 2: INTRA-EUROPEAN ENPLANEMENTS AND TOTAL PASSENGERS PER CAPITA, 1999**

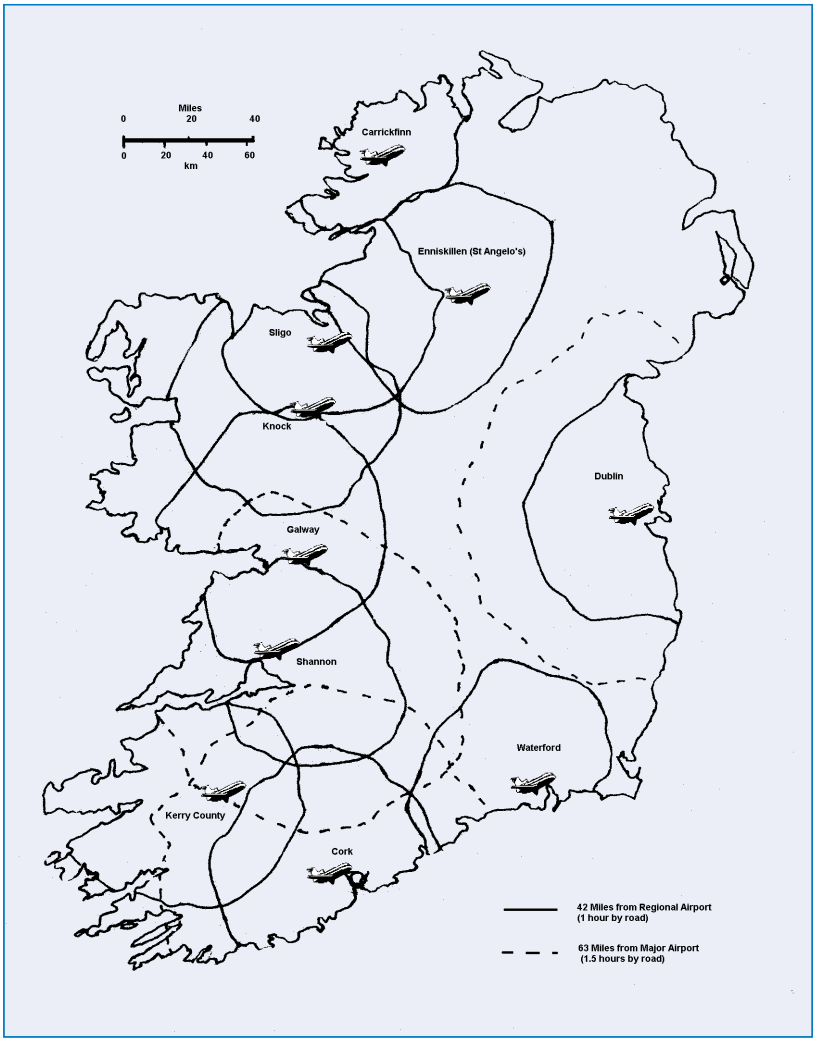



Source: Authors calculations; Eurostat Transport Statistics
Note: Enplanements are the number of revenue passengers boarding aircraft

The map shows the natural spatial monopoly enjoyed by Dublin Airport and the highly competitive nature of the hinterlands elsewhere in the country. The population density in the Dublin hinterland area is significantly higher than elsewhere in the country. The hinterlands for several of the airports are restricted because of their coastal locations. The map clearly illustrates the difficulties that the regional airports have had in generating traffic, with strong competition evident from other regional airports and between Cork and Shannon airports for traffic.

[2] The extensions of the M50 motorway and several other significant road construction projects have most likely extended the extent of the hinterlands for the airports, most especially for Dublin Airport in the off-peak period. High levels of delay and traffic congestion in the Dublin, Cork and Galway city environs will have increased peak-period travel times. The hinterlands in Figure 3 represented an average one-hour journey distance (42 miles) on national primary, secondary and regional roads in 1993.
[3] See Reynolds-Feighan (1993) for a detailed description.

**FIGURE 3: TRAVEL DISTANCE BY ROAD TO IRISH REGIONAL AIRPORTS AND THE THREE MAJOR INTERNATIONAL AIRPORTS, 1993**




Source: A.J. Reynolds-Feighan, Assessment of Performance and Prospects for the Irish Regional Airports, Irish Department of Transport, Energy and Communications, July 1993.
Note: Enniskillen Airport and hinterland was included in the 1993 study because it had received EU funds to develop its facilities.

## PUBLIC SERVICE OBLIGATION AIR ROUTES

The increased volume of low-fares air services available at Dublin, Shannon and Cork Airports have increased the attraction of these locations, with price-sensitive passengers choosing to drive to the main airports rather than availing of air services from the regional airports. The hinterlands of airports vary depending on the availability of alternatives. The Irish Government put in place the first Public Service Obligation (PSO) air routes permitted under the 1992 'Third Package' of air transport liberalization measures.[4] These PSOs were permitted only on domestic routes until April 1997. However, with full cabotage[5] Member States were free to impose PSOs and offer subsidies, if necessary, on intra-European routes, once carriers were selected through a competitive tendering process. The new Irish PSOs, revised in 2002, still focus on domestic routes between the regional airports (Galway, Sligo, Kerry, Carrickfinn, Knock) and Dublin. The Dublin-Derry route is the only exception.

The National Spatial Strategy (NSS) was published in October 2002[6] and set out long-term, spatial planning goals for Ireland in the period up to 2020. The NSS named four new 'gateways' (Dundalk, Sligo, Letterkenny/Derry and Athlone/Tullamore/Mullingar) in addition to the five existing gateways of Dublin, Cork, Limerick/Shannon, Galway and Waterford. Infrastructure and services are to be focused on these gateways in order that they may act as key gateway centres at national level.

In addition, nine 'hubs', which will play a regional- or county-level role in driving economic development, were also identified. Of these, the Castlebar-Ballina and the Tralee-Killarney 'linked hubs' are located close to an existing regional airport, which will facilitate domestic and international air access.

Research on social air service provision through schemes such as the European PSO route designations would suggest that communities receiving such services fall into two main categories. Some communities need subsidised air services to help establish year-round, scheduled services, so that local businesses and the tourism sector can develop products relying on such services. These smaller communities are particularly vulnerable to cyclical downturns in the air transport sector and the PSOs act as a 'safety net' to guarantee services. Other smaller communities will not at any stage be capable of supporting commercially viable air services without government support.[7] In such cases, the PSO routes provide vital air services connecting remote or isolated regions to the main national or international transportation networks.

[4] Reynolds-Feighan, 1995a & 1995b
[5] Cabotage involves access to domestic markets by non-national carriers. For example, with cabotage an Irish carrier could offer air services from Toulouse to Paris.
[6] Government of Ireland, 2002
[7] Reynolds-Feighan, 1999a

It may be argued that, in the case of Ireland, Sligo, Kerry, Galway, Knock and Waterford fall into the former category, while Carrickfinn would fit into the latter. In attempting to assist the 'gateway' centres and hubs in the first category, the implications of extending tenders to include intra-European PSOs needs to be carefully examined. The approach in the US is for the carriers tendering for services to select the connecting airport from a subset of larger airports identified by the US Department of Transportation. In this way small communities are integrated into regional or intercontinental carrier networks via the carrier's hub. By contrast, the Irish PSOs are very tightly specified by the government and limited to domestic routings, except for the Dublin-Derry route. However, schedule revisions at Dublin have limited the extent to which connections from the regional PSO routes may be facilitated.

There has been some discussion recently of the need to revise the Irish PSO air route programme, particularly in light of the collapse of Euroceltic airways as well as the very high levels of per-passenger subsidy payments being made on some routes. A more flexible tendering procedure, in which the carriers have greater scope to offer alternate services, may help to reduce costs and rationalise the services being provided - for example, some carriers may be interested in offer cross-channel direct services, rather than 'hubbing' through Dublin. Research on the demand profiles of passengers and their origins and destinations needs to be undertaken in order to facilitate such a re-examination of this programme. Social air service provision should be aimed at fulfilling air transport requirements of regional or remote communities by relying to the maximum extent possible on market forces - via a competitive bidding process, open to all European carriers in a fair and equal manner - and minimising the costs to the exchequer. Furthermore, mechanisms to encourage the designated carrier to expand the traffic base have to be explored, as have tender specifications to facilitate higher participation rates by potential service providers. The US 'Essential Air Service' Programme has evolved over the last 25 years to deals with such scenarios.[8]

## IRISH AIRPORT CHARGES

The Commission for Aviation Regulation was established on a statutory basis in 2001 with the principal functions of regulating airport charges and aviation terminal charges. The Commission has imposed a price-cap economic regulation regime for airport charges, in common with the three London BAA airports, Manchester and Hamburg. This form of regulation forces the operator to set charges within a certain limit specified in the RPI-X (or CPI-X) formula, where X represents some productivity factor. The Commission applied a 'single-till' approach, essentially taking into account non-

[8] See Reynolds-Feighan, 1995a, 1995b & 1999a.

aeronautical revenues of the airport in the setting of maximum airport charges. Furthermore, in order to reduce the ability of Aer Rianta to use Dublin Airport revenues to cross-subsidise its other airports, an aggregate price cap for Aer Rianta was set in addition to a separate price cap for Dublin.

The argument against the single-till approach is that the aeronautical charges may bear little relation to the costs of providing the services. In the UK, London Heathrow Airport's charges were below those of Stansted, despite the excess demand for slots at the former and the excess capacity of the latter. The UK Civil Aviation Authority has recommended that the single-till system be replaced by a dual-till system, so that airport charges will be related strictly to aeronautical costs.[9] The role of airport charges in allocating traffic in the broader European context will be discussed in the next section.

## EUROPEAN TRANSPORT POLICY

In September 2001 the European Commission adopted the White Paper on Transport, "European Transport Policy for 2010: Time to Decide".[10] The new objectives set out for transport are summarised in the introduction by Loyola de Palacio as "restoring the balance between modes of transport and developing intermodality, combating congestion and putting safety and quality of services at the heart of our efforts while maintaining the right to mobility".

The main thrust of this White Paper is to shift modal share in favour of rail by (i) promoting the rail mode along with sea/inland waterways, (ii) increasing the costs of road transport and (iii) increasing the costs of air transport. A package of 60 policy measures is set out to achieve these objectives through regulations, harmonisation directives, user charges, taxes and investment strategies. Table 1 below briefly summarises some of the main measures for road, rail and air transport.

The White Paper proposes measures to encourage the emergence of freight integrators and to promote interoperability between rail and sea/waterway transport - such as the standardisation of containers and swap bodies. In dealing with the congestion problem, the Commission proposes the development of dedicated multimodal freight corridors along with expansion of the high-speed, passenger rail network.

[9] Cranfield University Air Transport Group, 2002
[10] European Commission, 2001

**TABLE 1: EU WHITE PAPER POLICY INITIATIVES PROMOTING INCREASE IN RAIL TRAFFIC SHARE**

| Mode | Measures | Impacts |
|---|---|---|
| **Road-freight** | • Harmonising transport contract minima<br>• Work-time regulations in road haulage sector<br>• Road safety regulations<br>• Imposition of road user charges | Raise the price of road transport and effect substitution in favour of rail |
| **Rail** | • Develop an internal European rail market with regulated competition<br>• Rail safety regulations<br>• Construction of dedicated rail freight network with community support<br>• Develop rail network in 'enlarged Europe' | Improve organisational and operational aspects in rail sector, increasing its attractiveness as substitute for surface and air transport |
| **Air** | • Creation of 'single European sky' – reduce fragmentation of ATC<br>• Harmonise and upgrade ATC equipment<br>• Define new airport charges regulatory regime<br>• Define environmental regulations/ rules<br>• Imposition of fuel taxes (at least on intra-European services)<br>• Promote intermodality with rail | Increase operational costs in air transport and effect substitution of rail services for short haul air services; promote consolidation in European air transport industry; promote spatial concentration of air traffic |

The Commission also plans to propose a change in funding rules for the TransEuropean Networks (TENs), increasing to 20% the maximum contribution from the Community for cross-border projects crossing natural barriers and projects at the borders of candidate countries. In addition, it is proposed that in the next two years a framework will be established for channeling revenues from charges on competing routes towards building new infrastructure, especially rail.

The European Court of Justice ruling in 2002 found eight Member States' 'Open Skies' air service agreements with the US to be illegal, and has paved the way for the European Commission to negotiate a common agreement with the US on behalf of all Member States within the next two to four years. The Commission is keen to establish a Free Trade Zone for air transport in the transatlantic market. The White Paper proposes a clear role for the Commission in negotiating a common external air

transport policy and in facilitating increased spatial and industry concentration levels in the European airline industry.

The European Commission attempted to introduce an airport charges directive in 1997, but this directive failed after several significant revisions.[11] The White Paper places the issue back on the agenda along with the related issue of slot allocation procedures. The slot issue arises from a desire to allocate available capacity efficiently. As Forsyth argues (1997), the problem with a price-cap regulation is that it may set prices too low to allow efficient rationing of the capacity, particularly when there is excess demand. If price-caps are set high enough to ration demand efficiently, then the airport may earn very high profits. Forsyth then argues that, in addition to the price-cap regulation, an efficient slot allocation system must be imposed. However, the allocation of the rents from slots is a major problem, particularly at congested facilities like London's Heathrow Airport, where the slots are valued at hundreds of millions of pounds.[12] There needs to be sufficient trading of slots so that they go to the user that will make the best use of them. This is why the UK's Civil Aviation Authority now argues for a dual-till approach in setting airport charges since such an approach will better reflect the costs and the scarcity value of slots; and, in addition, it will provide better incentives to the airport owner to invest in additional capacity where this is feasible.

## IMPLICATIONS FOR IRELAND

Clearly the priorities for European transport policy do not suit the Irish situation because of the following.

- Ireland's island status gives rise to a heavy reliance on air transport.
- The low density of population and dispersed settlement pattern makes air and road the most effective and flexible alternatives for the movement of passengers and freight. Urban transit is a possible exception.
- There has been a high level of expenditure – and further planned - on constructing and maintaining sufficient road and air transport infrastructure facilities, since these best suit our needs. The EU research agenda in transport supports the policy goals of the White Paper. The implementation of such policies on an EU-wide basis in areas such as Ireland will impose considerable extra costs because (i) the dependency on the 'unfavourable modes' and (ii) the fact that in the regions individuals travel greater distances in conducting their daily activities, compared to urban dwellers.

[11] Reynolds-Feighan and Feighan, 1997
[12] Forsyth, 1997; Ashworth and Forsyth, 1984

The air transport policy agenda in Europe will have significant implications for Ireland, particularly given the relatively heavy reliance on this mode of transport. Research on US airline deregulation impacts has demonstrated the increased industry (or market) concentration among a small number of very large carriers and increased spatial concentration of traffic across a small subset of nodes in the airports network.[13] The entry of significant numbers of low-cost carriers and of non-US carriers to the international markets operating to/from US airports - facilitated by the many 'Open Skies' agreements negotiated since 1992 - reduced industry concentration during the mid-1990s. However, increases were observed overall during the decade with further consolidation in the industry.

The development of high-speed rail networks and rail terminals at large European airports will free up slots, as increased substitution of rail for short-haul air services takes place. The large European airports will service to an increasing extent, the long-haul external (i.e. extra-EU) routes. Changes in carrier ownership requirements and the negotiation of common EU external aviation Air Service Agreements will encourage both the increased concentration of traffic at the large airports and increased industry concentration, as consolidation among EU carriers takes place. Some direct, long-haul air links from Ireland to the US may be vulnerable under this scenario - particularly services at Shannon - although there is also the potential to increase transatlantic air services through Irish airports.

It is vital that a long-term Irish air transport policy be developed that meets regional development needs and national development priorities. The long-term provision of airport and port capacity needs to be addressed at regional and national levels. The regulatory and ownership structures for these facilities must be examined, so that bottlenecks and constraints do not restrict opportunities for enhanced accessibility or help make the case for reduced accessibility to and from Ireland. The impact of institutional structures on the transportation sector is an evolving research area in Europe and in the US and this research effort has significant strategic implications for Ireland.[14]

If new mechanisms are introduced for airport charges in parallel with efficient allocation mechanisms for distributing scarce capacity, it may be expected to result in accelerated use of the main European 'superhubs' for long-haul, wide-bodied jet services and a need to reallocate other traffic elsewhere. Short-haul feeder services will increasingly be provided by rail, freeing-up valuable slots for long-haul services. A system view and approach to the funding of airport infrastructure was argued in Reynolds-Feighan and

[13] Reynolds-Feighan, 2002
[14] See STELLA (Sustainable Transport in Europe and Links and Liaisons with America) Consortium – a joint ESF/NAS (US) Thematic Network on Common Issues in Transatlantic Transport Research (www.stellaproject.org).

Feighan (1997), whereby revenue raised at congested airports would be used to develop facilities at alternative sites for the benefit of the users. A flexible framework for airports in Ireland is necessary in order to facilitate regions and their airports taking advantage of opportunities in the changing European environment.

## AIRPORT OWNERSHIP, CHARGES AND INVESTMENT STRATEGIES

The evolving economic and policy environment for Irish airports presents new opportunities as well as many new constraints. Ireland has the highest per capita air passenger volume in the EU along with the second lowest rail modal share. European transport policy over the next 10 years will seek to increase rail's traffic share and reduce the growth of air transport. The concentration of long-haul traffic at the large European airports and consolidation within the airline industry could have adverse effects on Ireland's regional and national development priorities. Irish aviation policy needs to be set out with the goal of facilitating the optimum development of air transport for the benefit of the regions and of the national economy. Access to and from Ireland via the ports and airports will be constrained within five years because of capacity constraints.[15] Long-term planning of infrastructural needs must be prioritised, so that lean and flexible airport enterprises can compete to enhance accessibility between Ireland and other regions.

The establishment of separate boards for the three state airports by the Minister for Transport is a welcome step in facilitating a more entrepreneurial approach within the regions, so that investment decisions and traffic generation strategies may be evaluated from the vantage point of the region itself. As was shown earlier, all airports except Dublin in the Republic face significant competition because of overlapping and constrained hinterlands. Increasing the autonomy of the three state-owned airports should improve their responses to local demands and opportunities.

The issue of ownership, competition and regulation are interrelated. The World Bank in 1995 undertook an extensive study of the emerging role of the private sector in airport infrastructure provision, maintenance and management.[16] On the basis of a relatively small number of instances of private sector involvement in airport ownership, the evidence available to the study indicates that both the quality of service and the investment commitments have significantly improved when the private sector has had significant involvement in management and ownership. The study concludes that airside charges have neither increased nor decreased substantially under private

[15] Atkins McCarthy, 2000; Goodbody Economic Consultants, 2000a & b
[16] Juan,1995

ownership, but pricing mechanisms have become more complex. In addition, there has been intense development of non-aeronautical, commercial revenues.

The recent Irish government decision to investigate the potential for a second terminal that would be independently owned and operated at Dublin is an initiative aimed at introducing competition in terminal service provision at the airport. There are a variety of ways in which such a terminal might operate such as Build-Operate-Transfer, Lease-Develop-Operate, Build-Transfer-Operate or Perpetual Franchise. The international literature on such ventures is still quite sparse and it seems that local factors and circumstances can play an important role in the success or failure of such ventures. More research in this area is required.

It is clear that in proceeding with one of these approaches, the contractual arrangements for the operation and interaction of the different components within the airport need to be established upfront. In the case of Dublin airport for example, rules governing access to runway, taxiway and other airside facilities must be set out clearly. The potential conflict of interest if Aer Rianta were to continue to operate both the airside infrastructure and the existing terminals, car parks, hotels etc must be evaluated carefully so that the separation of these functions or the regulation of procedures will be established.[17] This places a heavy burden on government to design a regulatory and/or contractual framework in which effective competition in terminal services may be realised. There is a significant potential benefit if this venture operates successfully.

Long-run planning of transport needs and policy goals will improve the efficiency of regional economies by reducing the substantial costs associated with a piecemeal approach. The key objective of air transport policy must be the provision of safe, reliable and inexpensive air services to maximise the potential economic benefit to Ireland and to facilitate access to international transport and distribution networks for all regions. Where current structures and institutional arrangements hinder the achievement of these aims, more flexible structures should be established once these have been analysed and evaluated.

[17] Reynolds-Feighan, 1999b. In the rail sector the provision of infrastructure and rail services have been separated in order to induce competition where it is economically desirable and feasible to do so (i.e. in rail services). While it is not desirable to duplicate airport infrastructure in the Dublin region, the separation of infrastructure and terminal services provision may be.

## CONCLUSIONS

Irish air transport faces significant change in the next five years given the changing European policy environment and the changes within Ireland in the structure of airport management and operation. The Government must seek to set out a clear air transport policy that will allow the regional and national economies to take advantage of opportunities arising from these changes. The Government must also argue at European level that the White Paper changes cannot be a 'one size fits all' policy and that the Irish circumstances dictate a different emphasis on transport choices by virtue of our demographic and geographic characteristics.

## REFERENCES

AEA (various years), Yearbook, Association of European Airlines, Brussels.

Ashworth, N. & Forsyth, P. (1984), Civil Aviation Policy and the Privatisation of British Airways, Institute for Fiscal Studies, Report Series 12, London.

Atkins McCarthy (2000), Transport Corridors in Europe, study commissioned for the National Spatial Strategy, November 2000.

Cranfield University Air Transport Group (2002), Study on Competition between Airports and the Application of State Aid Rules, Final Report, Volume 1, submitted to the European Commission Directorate-General Energy and Transport Directorate F - Air Transport, September 2002.

European Commission European Transport Policy for 2010: Time to Decide, DG TREN, Brussels, 2001.

Eurostat (2002), Transport in Figures, Eurostat Statistical Office, Luxembourg.

Forsyth, P. (1997), "Price regulation of airports: Principles with Australian Applications", Transportation Research E: Logistics and Transport Review, 33(4), pp.297-309.

Goodbody Economic Consultants (2000a), Transport Demand, study commissioned for the National Spatial Strategy, November 2000.

Goodbody Economic Consultants (2000b), Sustainable Travel Demand, study commissioned for the National Spatial Strategy, November 2000.

Government of Ireland (2000), National Development Plan, Government of Ireland, Stationery Office, Dublin, 2000.

Government of Ireland (2002), National Spatial Strategy, Government of Ireland, Stationery Office, Dublin, 2002.

Juan, E.J. (1995), "Airport Infrastructure: The emerging role of the private sector", CFS Discussion Paper Series, Number 115, The World Bank, Washington D.C.

Reynolds-Feighan, A. J. (1993), Assessment of Performance and Prospects for the Irish Regional Airports, Irish Department of Transport, Energy and Communications, July 1993.

Reynolds-Feighan, A.J. (1995a), "European and American Approaches to Air Transport Liberalisation: Some Implications for Small Communities", Transportation Research A, 29A(6), pp.467-483.

Reynolds-Feighan, A.J. (1995b), "European Air Transport Public Service Obligations: A Periodic Review", Fiscal Studies, 16(1) pp.58-74, February.

Reynolds-Feighan, A.J. & K.J. Feighan (1997), " Airport Services and Airport Charging Systems: A Critical Review of the EU Common Framework", Transportation Research E: Logistics and Transport Review, 33(4), pp. 311-320.

Reynolds-Feighan, A.J. (1999a), " Subsidisation Policies in the Provision of Air Services to Small Communities: European and US Approaches", Proceedings of the First Forum on Air Transport Provision in Europe's Remote Regions, Cranfield University UK, 1999.

Reynolds-Feighan, A. J. (1999b), "Regulation and Operation of Europe's Air Transport Sector", Irish Banking Review, pp12-24, Winter 1999.

Reynolds-Feighan, A.J. (2002), "US Air Traffic Concentration in an Era of Airline Alliances and Open Skies Policies", Paper presented at the 6th ATRS World Conference Program, July 2002, Boeing Training Center, Seattle, Washington, USA

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