Convergence is not Automatic:
Lessons from Ireland for Central and Eastern Europe

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August 2000

Abstract
For over 70 years Irish income per head remained at around 60 percent of the level prevailing in the country's dominant trading partner, the UK. Ireland began to converge rapidly over the last 15 years however, and parity has now been achieved with the UK and the overall EU. This paper analyses the changes in public policy that facilitated the turnaround in economic fortunes.

(The World Economy, November 2000)

Introduction

Real convergence, the process by which poorer economies catch up on richer ones, is by no means automatic. When Ireland acceded in 1973 to what would later become the European Union, its level of income per head (in purchasing power parity terms) stood at around 60 percent of that of Britain, its dominant trading partner.1 This ratio had remained largely unchanged over the previous 60 years. Barro and Sala-i-Martin (1995, chapter 12) indeed show that divergence rather than convergence is the norm across the entire world economy. The general consensus is that the orientation of public policy is a crucial determinant of the likelihood of convergence.2

Reversing the lacklustre performance of the previous three-quarters of a century, Ireland experienced spectacular economic success in the period since the late 1980s. Income per head, measured as GNP per capita at purchasing-power-parity prices, rose from less than 65 percent of the UK level in 1990 to rough equality with the UK (and the EU average) today.3 Job creation over the same period exceeded the rate achieved even by the US, traditionally the world's "job creation dynamo". Unemployment fell from a high of 17 percent in 1987, roughly double the EU average, to less than 6 percent today; the government debt-to-GDP ratio fell from 114 down to 60 percent over the same period, and government net borrowing, which stood at 8% of GDP in 1987, is now actually negative.

The first part of this paper compares aspects of Ireland's current successful phase of economic development with the earlier unsuccessful period, and asks whether, and to what extent, the transformation was due to a reorientation of Irish public policy along lines generally agreed by growth theorists to be conducive to improved performance. If this were the case, it would suggest that Ireland's recent success may simply represent a delayed catching-up process. The lessons to be learnt from Ireland's earlier poor performance, i.e. on how not to proceed, are as important however as those to be learnt from the more recent successful period.

The second part of the paper focuses on factors that determined the precise timing of the turnaround in economic fortunes, and the third section considers some features which were specific to the Irish development path; these concern the contribution of EU Structural Funds and the role of foreign direct investment (FDI) in the Irish economy.

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1 This represented almost 60 percent of the EU15 average. For the candidate countries of Central and Eastern Europe, current levels run from 24 percent for Bulgaria to 71 percent for Slovenia, with the average at a little over 40 percent; IMF (1999).
2 An illustration of this is provided in Barry, Bradley, Kejak and Vavra (2000) who simulate alternative labour-market and industrial strategies in calibrated macromodels of three CEE economies, viz. the Czech Republic, Slovenia and Romania.
3 GNP is used here as it excludes the profits earned by foreign firms producing in Ireland. Irish GDP per head is higher still.
1. Successful and Unsuccessful Growth Phases
Between 1950 and 1973, during what economic historians refer to as its "Golden Age", Western Europe converged on US living standards; Crafts and Toniolo (1996). Within Western Europe as well, poorer countries grew more rapidly than richer ones. Figure 1 illustrates the growth performance of the current EU member states (other than Luxembourg), showing the relatively slow growth of those which were richest in 1950 (the UK and Sweden) alongside the progress of the countries which started out poorest (Greece, Portugal and Spain). The outlier in the figure is Ireland, fifth from the left. It is the only country which started out with a below-average income level yet moved away from the mean rather than towards it. Irish performance between 1950 and 1988 receives a failing grade!

Figure 1: Progress towards EU mean GDP per head (at PPP), 1950-88, relative to position in 1950 (EU14=100)

Source: Maddison for 1950 GDP per head; Eurostat for recent data.
Note: From left to right the countries are: Greece, Portugal, Spain, Italy, Ireland, Austria, Finland, Germany, France, Belgium, Netherlands, Denmark, Sweden and the UK.

Figure 2 extends the data period forward to cover the whole period 1950 to 1997. Ireland (still of course fifth from the left) now lies exactly on the convergence line. This suggests that the country's recent strong growth might simply be thought of as "delayed catch-up".

Figure 2: Progress towards EU mean GDP per head, 1950-97, relative to position in 1950 (EU14=100)
In support of this view, one can note that recent Irish total factor productivity (TFP) growth reflects the "Golden Age" levels achieved by Western Europe and Japan; Barry and Crafts (1999). Table 1 decomposes output growth into components representing the contributions of increased capital and labour inputs (the latter adjusted for education) and the TFP growth residual.

Table 1: The contribution of capital, labour and TFP growth to output growth in Western Europe and Japan, 1950-73 and 1973-92

<table>
<thead>
<tr>
<th></th>
<th>Capital</th>
<th>Labour</th>
<th>TFP</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950-73</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>1.6</td>
<td>0.3</td>
<td>3.1</td>
<td>5.0</td>
</tr>
<tr>
<td>Japan</td>
<td>3.1</td>
<td>2.5</td>
<td>3.6</td>
<td>9.2</td>
</tr>
<tr>
<td>UK</td>
<td>1.6</td>
<td>0.2</td>
<td>1.2</td>
<td>3.0</td>
</tr>
<tr>
<td>West Germany</td>
<td>2.2</td>
<td>0.5</td>
<td>3.3</td>
<td>6.0</td>
</tr>
<tr>
<td>1973-92</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>1.3</td>
<td>0.4</td>
<td>0.6</td>
<td>2.3</td>
</tr>
<tr>
<td>Japan</td>
<td>2.0</td>
<td>0.8</td>
<td>1.0</td>
<td>3.8</td>
</tr>
<tr>
<td>UK</td>
<td>0.9</td>
<td>0.0</td>
<td>0.7</td>
<td>1.6</td>
</tr>
<tr>
<td>West Germany</td>
<td>0.9</td>
<td>-0.1</td>
<td>1.5</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Source: Maddison (1996)

It shows that the end of the Golden Age was mainly reflected in a drop in TFP growth. The Irish data depicted in Table 2 shows that the country has been experiencing Golden-Age style rates of TFP growth in recent times.\(^4\)

Table 2. The contribution of capital, labour and total factor productivity growth to recent Irish GNP growth.

<table>
<thead>
<tr>
<th></th>
<th>Capital</th>
<th>Labour</th>
<th>TFP</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1986-96</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td>0.8</td>
<td>1.8</td>
<td>2.7</td>
<td>5.3</td>
</tr>
</tbody>
</table>

Source: Durkan et al. (1999)

\(^4\) East Asian TFP growth, by contrast, was low even during its period of rapid convergence; Crafts (1999). The Irish data show a surprisingly low contribution from capital accumulation (on which more later) and a strong contribution from increased labour inputs, the latter stemming from the high unemployment and low participation rates prevailing at the beginning of the period and from the elastic labour supply of the emigrant community abroad.
Even if Ireland's recent strong performance reflects nothing more that delayed catch-up however (an issue to which we return later), the question remains as to why Irish catch-up was so delayed. Indeed the lessons to be learnt from Ireland's earlier poor performance are as interesting as those to be learnt from the more recent successful period.

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Irish underperformance between 1950 and 1988 has been ascribed to a mixture of poor policy choices and inefficient institutions. The economy missed out on the post-War European boom by delaying the opening-up to trade and foreign investment until the early 1960s, a decade later than most of the rest of Europe. Economic historians Ó Gráda and O’Rourke (1996) identify sectoral misallocation of investment and an excessive scope for rent-seeking behaviour as contributory factors, factors associated with inward-orientation and excessive interventionism in the early part of the period, while the macroeconomic instability of the 1980s also took its toll. All of these problems, they suggest, were exacerbated by the British-style industrial relations system that prevailed; writers such as Calmfors and Driffill (1989) have argued that countries are better off either with well-organised central bargaining systems or else with only weak unions, while Ireland and the UK would traditionally have been located in between, with decentralised collective bargaining systems.

In explaining the differences between the slow and high-growth periods, we look in turn at some of the factors recognised as important in empirical growth studies. These include the degree of openness and level of education, the balance between agriculture and other production sectors, and the role of the state.

**openness**

One of the main factors behind Ireland's poor performance in the earlier phase was the fact that it retained its protectionist barriers for about a decade longer than was the case in the European core. As Table 3 suggests, this was not necessarily reflected in a low export-to-output ratio, but rather in a preponderance of low value-added agricultural exports. Thus at the end of the protectionist period, in 1960, 30 percent of Irish exports were of live animals, and only 19 percent were of manufactured goods. After only 10 years of openness, manufactured exports exceeded all agricultural exports in value, and the export of live animals gradually came to represent an insignificant share of total exports.

Again as seen in Table 3, Ireland today has a very high degree of export orientation. Much of the economy's exports emanate from the foreign-owned sector of Irish manufacturing. Its export-output ratio is around 90 percent, compared to less than 40 percent for indigenous manufacturing. Furthermore, while over 40 percent of indigenous-sector exports go to the UK, only around 20 percent of the exports of the foreign-owned segment flow in that direction; Barry and Bradley (1997).
This illustrates two important points about the economic effects for Ireland of EU membership. Firstly, without EU membership it would have been well-nigh impossible for the economy to attract such a high level of FDI. Secondly, EU membership, both directly (by offering new markets) and indirectly (by allowing the economy to pursue the FDI strategy), enabled a reorientation away from the relatively slow-growth UK market towards the more rapidly growing markets of Continental Europe; Barry, Bradley and O’Malley (1999).

Table 3: Export orientation, 1960 and 1997: various economies

<table>
<thead>
<tr>
<th></th>
<th>Export/GDP ratio, 1997</th>
<th>Export/GDP ratio 1960</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ireland</td>
<td>75</td>
<td>30</td>
</tr>
<tr>
<td>Portugal</td>
<td>34</td>
<td>16</td>
</tr>
<tr>
<td>Greece</td>
<td>16</td>
<td>7</td>
</tr>
<tr>
<td>Belgium</td>
<td>78</td>
<td>38</td>
</tr>
<tr>
<td>Denmark</td>
<td>34</td>
<td>32</td>
</tr>
</tbody>
</table>

agricultural orientation

One of the factors behind Ireland's unsuccessful earlier performance, according to Ó Gráda and O'Rourke (1996), was its relative dependence on agriculture. In 1970, on the eve of EU accession, 26 percent of the labour force were still engaged in agriculture, almost double the EU average.\(^5\) In growth regressions a large agricultural or extraction sector is found to reduce substantially the expected growth rate of GDP per head, arguably because there are fewer external economies or less scope for learning-by-doing in these sectors.

The difficulty is in choosing the correct set of policies to aid the transition from agriculture. While import substitution did lead to some expansion in the share of industry at the expense of agriculture, outward-orientation, by proving a more successful stimulus to industry, hastened this structural change.\(^6\)

The EU's Common Agricultural Policy (CAP), on the other hand, slowed it down. Although the share of agricultural employment in Ireland has declined from 26 percent in 1970 to around 10 percent today, there would undoubtedly be even fewer remaining in the sector in the absence of agricultural support. If it is indeed true that a high share of agriculture in GDP slows down growth, this adds to the other well-known adverse effects of the CAP.\(^7\)

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\(^5\) Of the CEE countries, only Poland and Romania are at equivalent levels today: World Bank (2000).

\(^6\) More importantly, protectionism did not stimulate the development of a strong manufacturing sector, while openness (ultimately) did; Barry (1996).

\(^7\) The farming community frequently points to the figure of 4 percent of GNP per annum that the CAP is estimated to transfer to Ireland. Matthews (2000) points out however that this figure measures the cost to the EU of making the transfer rather than the value of the transfer received by the Irish economy (since much of the benefit of export subsidies for example accrues to consumers outside the EU). Furthermore he
In general-equilibrium terms of course it is clear that agricultural support inhibits the development of other sectors of the economy. It is interesting therefore that Matthews (2000) finds that average farm incomes in Ireland now exceed non-farm incomes, and that "the biggest single factor in the relative improvement in average farm incomes has been the availability of off-farm employment, not least in rural areas. This has helped to alleviate the problem of underemployment by facilitating part-time farming, .... (and), by providing an alternative income source, it has (also) put a floor under farm incomes”.

An implication of this discussion is that decision makers in countries such as Poland and Romania, in formulating strategy, will need to consider carefully the relative merits of adjustment assistance vis-à-vis other forms of agricultural support.

**Education**

A major expansion of the educational system was undertaken in all the countries of Western Europe, with the exception of Ireland, in the immediate post-War period. In Ireland it took the best part of 20 years before this neglect was reversed. Thus educational spending and attainment in Ireland in the early unsuccessful phase were below those prevailing in other European countries.

Some illustrative data are provided in Table 4. The data show that the gap in educational attainment between Ireland and the OECD is lower for younger age groups than it is for older groups, illustrating Ireland's catch-up in this regard over time.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>At least upper secondary</th>
<th>At least university</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ireland</td>
<td>OECD mean</td>
</tr>
<tr>
<td>25-34</td>
<td>66</td>
<td>72</td>
</tr>
<tr>
<td>35-44</td>
<td>54</td>
<td>65</td>
</tr>
<tr>
<td>45-54</td>
<td>38</td>
<td>55</td>
</tr>
<tr>
<td>55-64</td>
<td>30</td>
<td>42</td>
</tr>
</tbody>
</table>

Source: OECD (1999)

Median educational attainment in Ireland now actually surpasses that in the UK for younger age groups; Denny et al. (1999).

**The role of the state**

Another difference between the successful and unsuccessful periods of Irish economic development relates to the role of the state in economic affairs. The public share in gross calculates that almost half of the 4 percent is accounted for by transfers from taxpayers and consumers in Ireland.
fixed capital formation ranged between 30 and 40 percent from the 1950s to the 1980s and fell to around 15 percent in the 1990s.\(^8\)

The problem in the earlier period was not that excessive infrastructural development was taking place but rather that the state was active in a range of sectors in which state intervention is difficult to justify; Walsh (1996), Ó Gráda and O'Rourke (1996). A substantial proportion of public investment expenditure, for example, was allocated to inefficient public concerns such as the national air, rail and sea carriers.

It is only over the course of the 1980s and 1990s that governments began to distinguish between the interests of the economy and those of the state-sector monopolies. Two examples of the important benefits that followed will suffice.

In the mid-1980s the government sanctioned the breaking of the state airline's monopoly on air access routes into Ireland. Airfares between Ireland and Britain fell almost overnight by up to 50 percent, and sea fares in their wake fell by almost as much; Barrett (1997). These sharp reductions in access costs provided a major stimulus to tourism. Since the mid- to late-1980s Ireland’s share of world tourism has risen, going against both the current European trend and the Irish trend of the previous 20 years, and the employment contribution of tourism in consequence has doubled since that time.

Another example emerges from the telecommunications sector. The industrial development agencies had long regarded the poor state of the telephone system as an obstacle to their efforts to attract foreign companies to Ireland. Their complaints were regarded with hostility by the government department with responsibility for the phone system, as improper interference in the affairs of another element of the bureaucracy. In 1979 a new state agency, separate from the department, was set up to run the system on a commercial basis. Massive expenditure was undertaken (with EU aid) to build a digital-based network, and the new company adopted an aggressive pricing strategy for international telecommunications services. This led to the location in Ireland of a multitude of international call centres (in sectors such as computer hard- and software, travel-related activities and finance). Burnham (1998) cites the case of two major international airlines which have established their marketing and reservation centres in Ireland despite the fact that neither airline actually flies into the country. Another telecommunications-dependent growth area is remote document processing, for medical insurance companies and financial institutions for example.

**Industrial Relations**

We noted earlier that Irish problems were exacerbated by an industrial relations system inherited from Britain that fell mid-way between the "corporatist model" of a well-organised central bargaining system and the "US model" in which labour unions have very little power. Either extreme appears capable of producing better employment outcomes than systems inhabiting the middle ground; Calmfors and Driffill (1989).

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\(^8\) While investment was low in Ireland over the rapid growth period it may nevertheless have been quite efficient because of the decline in the state’s share and the fact that an abnormally high proportion, around 20 percent, was accounted for by FDI.
While the UK under Mrs. Thatcher moved towards the US model, Ireland went in the opposite direction, adopting the social-partnership approach. Tri-partite agreements between government, unions and employers have been negotiated every three years or so since 1987. Both countries have performed much better with respect to unemployment since these changes were made.

The Irish agreements purchased wage moderation via the promise of income-tax cuts and ensured that social welfare payments remained immune from public expenditure reductions. They are also argued to have promoted a shared understanding of how the economy works, and to have brought industrial peace; Figure 3.

Figure 3: Days lost through industrial disputes in Ireland

2. The Timing of the Turnaround
Ireland in the late 1980s was hit by a series of more or less concurrent beneficial shocks. We have mentioned already the impact of airline deregulation on tourism numbers. The lead-up to the Single European Market of "1992" stimulated FDI inflows. The stemming of the fiscal crisis though public expenditure cut-backs allowed room for tax reductions, which bolstered wage moderation. The doubling of the EU Structural Funds in 1989 meant that the economy could continue to converge in terms of public infrastructure even in the face of public-expenditure reductions. And this was all underwritten by the newly-

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9 See Hardiman (2000) for an account of this aspect of the Irish system.
10 See Barry and Crafts (1999) for a detailed comparison of the performance of both countries in the wake of their respective changes in economic governance.
constructed social partnership system that linked unions, employers and government. These factors will be discussed in turn.

**The Single Market and FDI Inflows**

Figure 4 illustrates how the development of the Single European Market not only raised substantially the level of investments by US companies in the EU (measured against the left-hand scale) but also coincided with a huge increase in Ireland’s share of these inflows. (The Irish and UK shares are set at 100 for 1983 and measured against the right-hand scale). The increase in Ireland’s share we ascribe to a type of “bandwagon” or “cascade” effect. In the words of Barry, Bradley and O’Malley (1999):

"It is possible that multinational companies, when searching for a new overseas location, focus particularly on areas which their rivals have already explored and found to be satisfactory. Hence the possibility that the development process exhibits self-sustaining characteristics once a critical mass of firms has been achieved. In the Irish case, surveys of executives of newly arriving companies in the computer, instrument engineering, pharmaceutical and chemical sectors indicate that their location decision has been strongly influenced by the fact that other key market players are already located in Ireland”.

**Figure 4: EU Investments by US companies (in constant dollar terms), and Irish and UK shares of these investments**

Furthermore, arguably connected with the improved competitiveness of the economy detailed below, there was a simultaneous strong expansion in backward linkages with the rest of the economy, reflected in a 50% increase in real Irish-economy-expenditures per employee of both indigenous and foreign manufacturing firms.
Fiscal Policy, Industrial Relations and Competitiveness
Successive Irish governments struggled throughout the 1980s to overcome the debt crisis which had resulted from inappropriate pro-cyclical fiscal expansion at the end of the previous decade. The attempt to close the deficit via high taxation proved unsuccessful, due to the fact that it was by necessity pro-cyclical (in a contractionary direction), while workers responded to the tax hikes by raising wage demands.

A new approach was tried in the late 1980s, when government expenditure was reined in as an alternative to increasing taxes still further. Rather than going into recession, as Keynesian macroeconomics might have been taken to predict, the economy expanded. This was one of the episodes that lead to the “expansionary fiscal contraction” hypothesis of Giavazzi and Pagano (1990). An alternative explanation is put forward by Barry and Devereux (1995), who point out that this fiscal contraction was counter-cyclical, and was supported by the development of the social partnership approach which promoted competitiveness improvements via the promise of future tax cuts.11

An indication of the competitiveness improvement achieved in the wake of these events is given in Figure 5.

Figure 5: Hourly labour costs, Ireland relative to the UK

This improvement in competitiveness had ramifications throughout the economy. It increased the economy's attractiveness as a location for multinational investment, contributed to the expansion of cost-sensitive employment in services, and supported the rebound of indigenous (Irish-owned) industry.

11 Alesina and Ardagna (1998) also find wage moderation to be the *sine qua non* for fiscal contractions to have expansionary effects.
The latter sector had, from the mid-1960s to the mid-1980s, lost market share at home and failed to gain market share abroad. From the mid-to-late 1980s however, both trends were reversed, with the result that employment in both indigenous and foreign-owned manufacturing in Ireland has increased since then, against the general OECD and EU trends.

In part the rebound of indigenous industry would have been the result of creative destruction. The poor state of the economy over most of the 1980s would have left the most resilient and most export-oriented firms over-represented in the remaining pool; Walsh and Whelan (2000). These firms would then have been well positioned to gain from the improvements in competitiveness and in transportation infrastructure, the latter associated with the EU Structural Funds expenditures documented below.

3. Features Specific to the Irish Path to Development
There are two features of the recent Irish success story that distinguish it from other rapid-growth episodes across the world economy. One is the contribution made by the EU Structural Funds programmes; the other is the extent of the country’s reliance on Foreign Direct Investment (FDI). Each merits some discussion.

The contribution of the Structural Funds\textsuperscript{12}
The level of EU structural funding was increased substantially from 1988. This is illustrated in Figure 6 below, where the bar measures the funding level in millions of Irish pounds and the line shows funding as a percentage of GNP. Thus, while funding levels remained largely constant over the course of the 1990s, funding as a proportion of GNP fell because of the strong growth in national income over the period.
In the 1994-99 programme, about 10 percent of the funds went to income support, 25 percent to the private sector in the form of investment aid, 30 percent to human resources, and 35 percent to physical infrastructure. The bulk of the latter in turn went on road construction, which was designed to offset the significant adverse effects that high transport costs have on the competitiveness of Irish business.\textsuperscript{13}

The spending programmes will impact of course on both the demand and supply sides of the economy. Income and labour-demand will rise in the short term as spending proceeds. The rationale behind the programmes however lies in the externalities assumed to be associated with the longer-run supply side effects that arise as the programmes of road construction, education and training etc. are completed.

These effects have been simulated with the aid of macroeconometric models of the Irish economy. The general conclusion of these studies is that the Structural Funds contributed about half of one percentage point per annum to the GDP growth rate of the 1990s. While this appears quite small relative to the scale of the boom (i.e. average real growth of 8 percent compared to 2 percent in the EU15), it nevertheless represents quite a respectable internal rate of return, on the order of 6 to 7 percent per annum, on the funds invested ; OECD (1999, footnote 32).

There have been other more elusive benefits as well however. The programmes allowed the reinstatement within a couple of years of infrastructural projects which had been postponed as part of the drive to restore order to the public finances in 1987. These

\textsuperscript{12} This material is drawn from Barry, Bradley and Hannan (1999).
\textsuperscript{13} Data from 1979/80 indicate that the quality of core infrastructure in the EU periphery lagged significantly behind that in the centre at that time.
infrastructural deficiencies would have made it more difficult to attract the levels of FDI achieved since then. The programmes also encouraged the introduction of effective long-term planning of public investment, insulating projects from short-term budgetary pressures. In the need to satisfy the donor countries, the programmes also led to the introduction of evaluation procedures which helped change the way public spending is administered; Fitz Gerald (1998).

The Role of FDI in Irish Development
As will be clear from our earlier discussion, foreign direct investment has played a crucial role in the turnaround in Ireland's economic fortunes. Almost 50 percent of Irish manufacturing employment is in foreign-owned industry, which is closer to the levels reached in Singapore and Malaysia than in other European economies, where the Spanish figure stands at around 30 percent, the UK and the Netherlands at around 20 percent, and Italy, France and Portugal at slightly less.¹⁴

Though its overall direct role in employment growth is relatively small (accounting for well under 10 percent of new jobs over the boom period) its importance in income growth stems not just from this but from the strong productivity growth it generates; Figure 7.¹⁵

Figure 7: Irish labour-productivity growth relative to the EU average

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¹⁵ The fact that, even adjusting for the GDP/GNP gap, Irish manufacturing-sector productivity has overtaken that of the UK suggests that there may be more to Ireland’s current transformation than simply delayed catch up; Barry (1999). This productivity gap is likely to reflect differences in industrial structure across the two economies rather than differences within individual industries of course.
Amongst the reasons for Irish success in attracting FDI are the fact that it is English-speaking, enjoys first-mover advantages (in that as one of the first countries to actively seek out FDI, Ireland's industrial development agencies are hugely experienced in the area), and probably primarily, offers a very low and stable rate of corporate-profits tax.\footnote{This currently stands at around one-third of the average EU level.}

Comparing the characteristics of indigenous and foreign-owned industry in Ireland, Barry and Bradley (1997) found the latter to be much more export-oriented, to pay higher wages, employ a higher proportion of skilled labour, and to be more R&D-intensive than Irish-owned plants. The average duration of a job in the foreign-owned sector is also longer than for indigenous industry, and the backward employment linkages per manufacturing-sector job are higher.

Of course profit outflows are very substantial, amounting to around 13 percent of GDP. Even with the very low rate of corporation tax however, the scale of activity generated is such that tax revenues from foreign corporations amount to around 10 percent of the total income-tax take in the economy. From this perspective, the growth of the multinational sector over the course of the 1990s can be seen to have facilitated the tax cuts which, via the partnership agreements, bolstered the economy's competitiveness still further.

**Concluding Comments**

It is clear from Ireland's experience, and from that of the overall world economy of course, that convergence in income per head is not something that can be expected to occur automatically. Necessary conditions for convergence would appear to include, at the minimum, reasonable educational standards, an environment supportive of export activity, a well-functioning labour market and general macroeconomic stability.\footnote{Data on how the transition economies fare in terms of these indicators is given in Fischer, Sahay and Végh (1998).}

Thus Greece, with a very low export ratio and a poor record of macroeconomic stability, has performed worst of the four "EU Cohesion countries" (Greece, Spain, Portugal and Ireland) in terms of convergence since EU entry. As for the importance of labour-market flexibility, Barry, Bradley, Kejak and Vavra (2000) show, via a calibrated macromodel of the Czech economy, that a continuation of the disequilibrating wage behaviour that has characterised that economy in recent times could inhibit its convergence quite dramatically.

Even getting the broad policy issues right may not in itself be sufficient to promote rapid convergence if microeconomic and industrial policies are inappropriate. In an era of globalisation most countries' industrial policies will be directed both towards attracting foreign direct investment and facilitating the development of indigenous industry. At the level of micro-detail these are two quite separate tasks, with the latter appearing, for peripheral economies at least, to be considerably more difficult. Barry, Bradley and O'Malley (1999) consider the synergies and differences between the tasks, while Barry, Bradley, Kejak and Vavra (2000), recognising that indigenous and foreign-owned
industry must ultimately compete for scarce resources, explore some characteristics of the strategies as alternative paths to development.
References


