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1. Introduction

Economists and historians have given Ireland's economic performance since the country gained independence in 1922 low marks. An influential general historical study concluded:

"It is difficult to avoid the impression that Irish economic performance has been the least impressive in Western Europe, perhaps in all Europe, in the twentieth century." (Lee, 1989, p. 521)

A study of the country's economic development concurs:

"... Over the 70 years from 1913 to 1985, Ireland's growth rate of total real product ... was below that of every other European country, apart from the UK." (Kennedy, Giblin and McHugh, 1988, p. 121).

However these pessimistic views of the Irish record are strongly influenced by the dismal performance prior to 1960. Economists are divided in their assessment of the performance of the Irish economy after 1960. Walsh (1993), for example, finds that Ireland's real growth rate over the period 1960-83 was in line with that of other OECD countries. In contrast, Ó Gríosa and O'Rourke (1994) conclude:

"... Even the 1960s, usually considered a 'golden age' for Irish economic growth, emerge in a rather unfavourable light."

It is certainly true that the improved performance of the Irish economy in the 1960s and 1970s was not dramatic enough to close the gap in living standards with the richer European countries. By the mid-1980s the level of real income per person in Ireland was little over 60 per cent of the European average - much the same as it had been in 1960. Since the mid-1980s, however, and especially in the 1990s, Ireland's rate of economic growth has been markedly above the European and OECD averages. The country's recent economic performance has attracted much international attention. Articles in, for example, The Wall Street Journal (5/12/1996) and Newsweek (23/12/1996) publicised the idea of an "Emerald Tiger" and compared Ireland's growth with that of the successful economies of East Asia. As a result of

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3 This paper draws on Walsh (1996) and Leddin and Walsh (1995). We are grateful to Robert Barro for comments on the version presented at the CEA conference.

4 Following revolution against British rule, the country was partitioned and two-thirds granted independence as the Irish Free State in 1922. A Republic was declared in 1947.
its recent rapid growth the country may soon lose its "peripheral" or "Objective One" status in the EU which entitles it to large allocations of structural development funds from Brussels.

In this paper we review the Irish economy's recent economic record and explore the explanations that have been offered for its improved performance since the mid-1980s. The organisation of the paper is as follows. In the next section we provide some details of the Irish economy's performance since 1979. We contrast the poor record of the first half of this period with the increasingly successful later years. This is followed by a discussion of the factors that caused the stabilisation of the economy in the late 1980s and the higher growth rate that is now being achieved. We conclude by speculating about the country's future prospects.

2. The Performance of the Irish economy since 1979

Following the improvement in Ireland's economic performance during the 1960s, the country suffered a severe setback in the wake of the oil crisis and global recession of the 1970s. As a consequence of misguided attempts to stimulate the economy through expansionary fiscal policies, the situation by the end of the 1970s and early 1980s was grave. Growth had ceased, unemployment and inflation were rising, and the fiscal deficit was at an unsustainable level.

The contrast between the years before and after 1986 is clear from Figures 1 to 10. In the first half of the period the economy managed to grow at an average annual rate of only 1.6 per cent - little different from the EU average. The growth of output per worker in Ireland was erratic and just matched the EU average. Unemployment rose from 7.8 to almost 17 per cent of the labour force - again much in line with the deteriorating situation in the EU, but the numbers at work in Ireland fell at a time when employment in Europe was growing. Further evidence of the poor performance of the Irish labour market was provided by the resumption of large-scale net emigration. Despite having joined the Exchange Rate Mechanism (ERM) of the European Monetary System (EMS) in 1979, the Irish pound continued to depreciate relative to the stronger currencies of Europe - notably the DM - and Irish inflation and interest rates remained well above the EU average. Attempts to restore order to the public finances were unsuccessful. The general government deficit was still over 10 per cent of GDP in 1986 and, most worrying, the overall debt/GDP and the external debt/GDP ratios continued to rise steeply. The deficit on the current account of the balance of payments, although falling, was at an unsustainable level. The need for radical adjustment was obvious, but no consensus existed - among economists much less politicians - on the nature of the appropriate policies.

5 The external debt/GDP ratio reached 63 per cent in 1988, but an important mitigating feature of the Irish situation was that the ratio of external debt service to exports never exceeded ten per cent of GDP.
It is remarkable that by the end of the 1980s most of the unfavourable trends in the Irish economy had been reversed and it was coming to be regarded, sceptically at first but then with growing conviction, as a model of successful macroeconomic stabilisation. Moreover, not only had the immediate threat to the country's solvency been removed, but also Ireland seemed to have moved to a higher growth trajectory. Since 1986 the growth rates of output and output per worker have been above the EU average - dramatically so in the case of total output. The Irish unemployment rate has declined while it has continued to rise in Europe, our inflation rate and the public sector deficit have fallen below the European average, the debt/GDP ratio is falling steadily, and the current account of the balance of payments has moved into surplus.

The three years 1994-96 have been remarkable by any standards. The growth rate of real GDP has averaged over 7 per cent a year, the unemployment rate has fallen below the rising European average, the numbers in employment have grown at an annual average rate of 3.7 per cent and the rate of inflation has remained subdued. Ireland is likely to meet most of the Maastricht convergence criteria and the country's policy makers are confident that it will qualify for inclusion in the EMU in 1999.

Before interpreting the transformation of the Irish economy, we discuss three aspects of these achievements in more detail.

**Growth of output and convergence.** At the start of the 1980s Ireland's standard of living was about 60 per cent of the European Community average - much the same as when the country joined the EEC in 1973. The absence of evidence of convergence was especially disappointing in view of the slow growth recorded in Europe over this period. However, Figure 11 shows that as a result of accelerated growth since the mid-1980s Irish living standards have now risen to over 94 per cent of the EU average. Whereas in 1980 Ireland lagged behind Spain and Greece, by 1996 it had overtaken these countries.

A note of caution must be sounded about comparisons based on Gross Domestic Product. GDP includes the value of production by foreign-owned firms, including profits that are eventually remitted abroad and overstates the living standards in countries, such as Ireland, where foreign firms account for a significant proportion of the growth of domestic production. This issue has been debated in Ireland and it has been shown that while Gross National Product provides a better measure of the trend in the country's living standards, the GDP figures do not seriously overstate the rate of growth of national income (Keating, 1995).

**The labour market.** As in Spain, and Andalucia in particular, the related problems of unemployment and emigration have always been burning issues in Ireland. A history of depopulation due to high emigration has given job creation special prominence among the declared goals of Irish economy policy. The decline of the population halted in the 1960s, and during the 1970s the population grew at an exceptional rate. However, the lack-lustre performance of the economy during the 1980s resulted in renewed large-scale emigration, which reached almost one and a half per cent of the population in 1989.

The current boom has had a dramatic effect on the Irish labour market. Emigration has been replaced by a net inflow of population since 1990. Whereas in Europe there has been a sharp...
fall in the numbers at work in the 1990s, in Ireland employment is now growing at an
exceptional rate (almost 4 per cent a year since 1994). While employment on subsidised
schemes has played a part, the growth of private sector non-agricultural employment has been
very rapid since the end of the 1980s.

The active population is now growing very rapidly. This reflects the high birth rate that
prevailed in the past, a rising participation rate among women, and a return flow of emigrants.
Partly as a consequence of a very elastic supply of labour, the unemployment rate has been
slower to fall than might have been expected in the view of the rapid growth of the numbers at
work. But it has fallen, from 16.3 per cent in 1988 to 11.9 per cent in April 1996 and it is
likely that the 1997 Labour Force Survey will record a further sharp drop.7 However, a legacy of
the high unemployment of the 1980s is the persistence of long-term unemployment, which
now comprises 59.8 per cent of the total compared with 36.5 per cent in 1991. This will make
further reductions in the unemployment rate increasingly difficult to achieve.

The current account. The most dramatic index of Ireland’s economic recovery has been the
transformation of the current account of the balance of payments from an unsustainable deficit
in the early 1980s to a surplus in the 1990s. National income accounting reminds us that
savings (S) minus investment (I) equals net exports (NX)

\[ S - I = NX = \text{- Capital Inflow} \]

If NX is negative (that is, there is a deficit on the current account of the balance of payments)
then S-I is negative. The counterpart of this is a capital inflow - foreign borrowing finances the
deficit. In this sense the country is living beyond its means, as was the case in Ireland during
the first half of the 1980s. The country borrowed heavily from abroad and the external
debt/GDP ratio rose sharply. By the early 1990s, however, the current account deficit had
moved into surplus and external borrowing was replaced by public sector debt repayment and
large-scale investment abroad by private companies.

The transition from current account deficit to surplus, and from foreign borrowing to net
external investment, was made possible by a sharp fall in the investment ratio and a less
pronounced rise in the saving ratio. The level of investment declined from over 30 per cent of
GDP in the early 1980s to a more normal 15 per cent in the 1990s and there was a
simultaneous rise in the national saving ratio. The main reason for the rise in domestic saving

was the sharp reduction in the public sector’s borrowing requirement. By the end of the 1980s
domestic saving exceeded domestic investment and there was a corresponding current account
surplus. The growth of exports outstripped that of GDP and the export share rose sharply.
These structural changes were fundamental to the growing strength of the economy.

3. How the stabilisation was achieved.

The main factors that have been invoked to account for the stabilisation of the Irish economy
in the 1980s are:

* The use of “shock therapy” to restore order to the public finances in the late 1980s.

* Favourable exchange rate developments, and

* A successful corporatist approach to the wage determination process.

We discuss some aspects of these policies before discussing the longer-term influences on
the Irish growth rate.

The fiscal correction. Since the late 1950s Irish governments attempted many exercises in
"indicative planning". Loose macroeconomic plans or programmes were prepared setting out
targets for output, employment growth and unemployment reduction and relying on a variety of
incentives for their attainment. They met with little success. The target output growth rates
usually bore little relation to the actual outcome. It gradually became clear to policy makers that
they lacked instruments capable of guiding the growth path of a small open economy. In the
late 1970s and early 1980s the combination of expansionary fiscal policies and slow growth led
to a crisis in the public finances. Early attempts to reduce the fiscal deficit relied on higher
taxation rather than cuts in expenditure. This approach met with little success. The economy
seemed to shrink under a burden of taxation, which was excessive by reference to the
neighbouring British economy. The Laffer curve effects of this were high emigration, tax
evasion (including large-scale cross-border smuggling from Northern Ireland) and slow
growth.

Although some progress towards correcting the fiscal imbalance was made in the first half of
the 1980s, the decisive turning point came in 1987 when a new minority government switched
the emphasis from tax increases to expenditure reductions. The level of public spending in

7 In Ireland, as in Spain there has been a good deal of discussion of the unemployment statistics. The Labour
Force Survey reveals a significantly lower level of unemployment than that shown by the claimant count.
current prices was sharply reduced and constant price spending fell by 11 per cent between 1987 and 1989, while transfer payments fell by 3.6 per cent in real terms. This contraction in public spending was associated with an increase in the growth rate, rather than the recession that Keynesian theory would have predicted. This has been cited in support of the view that there are trigger points in fiscal policy such that:

"...if a cut in government spending induces expectations that future spending and therefore taxes will be significantly lower, it may induce an expansion in current private spending." [Bertola and Drazen, 1993, p.12]

In the same vein, others take it as an example of the Barro-Ricardian equivalence effect or of an "expansionary fiscal contraction" (Giavazzi and Pagano, 1990; McAleese, 1990). The underlying argument is that the improvement in public finances restored private sector confidence and led to a fall in the private sector saving ratio and a resurgence of private consumption and investment spending which more than offset the deflationary effect of the fiscal correction (Walsh, 1996). As the growth of external debt was halved confidence in the currency increased and Irish interest rates fell towards German levels.

However this by now standard interpretation neglects some important aspects of the adjustment. The fiscal correction was a more gradual process than the "shock therapy" view would lead us to believe (Honohan, 1992). By 1985 the primary budget deficit (that is, excluding interest on the national debt) was in surplus and the public finances were on a sustainable trajectory. The current account deficit had almost disappeared by 1986. Moreover, the reduction in the fiscal deficit was fairly evenly balanced between tax increases and expenditure cuts, and export expenditure was pared back much more drastically than current spending. Between 1985 and 1988 public sector investment fell by 47 per cent in terms, and the real value of public sector grants to enterprises fell by 28 per cent. Secondly, simultaneous with the recovery of private consumption and investment spending there was a marked improvement in the external economic environment and an export boom that played a crucial role in the economic recovery. Exchange rate developments prior to the budget of 1987 had already resulted in falling interest rates and a competitive boost to exports.

Exchange rate policy. From 1826 to 1922 Ireland was in a monetary and political union with Britain and after independence in 1922 maintained the fixed exchange rate with sterling. This 153-year-old fixed exchange rate ended in 1979 when Ireland joined the ERM and Britain did not.

The sterling link implied that throughout the post-war period Irish inflation differed little from British, which was one of the highest in Europe. Also as a consequence of the link with sterling the Irish pound depreciated steadily against the deutsche mark (DM). Ireland's decision to join the ERM was based on a desire to achieve low inflation by switching to a hard currency peg, which would impose a discipline on domestic wages and prices and ensure rapid disinflation.

Contrary to expectations, the Irish inflation rate failed to converge to the lower German rate after 1979. Ireland tended to "go through the middle" in the frequent realignments that occurred during the early years of the ERM, which led to continued depreciation relative to the DM. At the same time a sharp depreciation of the Irish pound relative to sterling averted the overvaluation that would have occurred had the link with sterling been maintained. In this manner the discipline that was implied by the decision to join the ERM was avoided. Not until the period 1984-86 was a real appreciation of the effective exchange rate evident.

A major change in the exchange rate environment occurred over the period 1986-92. During these years the ERM provided the "zone of monetary stability" it was originally designed to create. Foreign exchange markets increasingly accepted that the participating countries were committed to stable exchange rates. Interest rate differentials narrowed. The benefits of this to Ireland were clear when Britain, outside the ERM, experienced an inflationary boom and rising interest rates in the late 1980s. Ireland's membership of the ERM insulated the economy from these developments and a negative Irish-British interest rate differential emerged for the first time in history.

There was, however, an inherent dilemma in Ireland's exchange rate policy. Participation in the ERM pegs the currency to a group of continental currencies that does not include our most important trading partner, Britain. Only about one third of our trade is with the core European economies - a lower proportion than in any other EU country. A loss of competitiveness due to an appreciation of the Irish pound relative to sterling has adverse implications for several sectors of the Irish economy (clothing, textiles, food processing and tourism, among others). The foreign exchange markets are keenly aware of this and consequently sterling weakness relative to the DM has led to repeated speculative attacks on the Irish pound, notably in 1983, 1986, and 1992. During these attacks short-term interest rates rose sharply and Irish firms and households experienced severe liquidity problems. In each instance the Irish authorities eventually devalued the Irish pound to restore competitiveness vis-à-vis Britain.
The currency crisis of 1992 was the most dramatic illustration of this problem. Sterling withdrew from the ERM in September (it had joined only 18 months previously) and depreciated by 15 per cent. This led to a surge in Irish interest rates as the markets anticipated that the Irish pound would eventually have to be devalued. Official attempts to break market expectations of devaluation persisted for five months. The Central Bank raised overnight interest rates to 100 per cent and spent a total of nearly £8 billion supporting the Irish pound, but bowed to the pressure to devalue at the end of January 1993. The 10 per cent devaluation of the Irish pound was the largest unilateral devaluation of a currency in the ERM. Following the devaluation Irish interest rates quickly fell towards German levels and no risk premium has been evident subsequently.

We noted that a key feature of Ireland's stabilisation was the increasing share of output devoted to exports. Non-traditional ("high-tech") exports to continental Europe accounted for much of this expansion. A combination of factors may be invoked to explain this. We discuss the role of foreign direct investment (FDI) below. From a short-term perspective the role of the real exchange rate was important. The 1986 devaluation provided a competitive advantage. Figure 12 shows the Irish pound real effective exchange rate excluding sterling. It is clear that the competitive gains from the devaluations of 1986 and 1993 were not short-lived.

The real exchange rate did not quickly revert to its pre-devaluation level, as would be predicted by monetarists who believe that changes in the nominal exchange rate are quickly offset by changes in national price levels and hence largely irrelevant to the performance of the real economy. Recent studies estimate that it takes prices and wages three and four years respectively to adjust to a devaluation under Irish conditions (Kenny and McGintigan, 1996; Baker, FitzGerald and Honohan, 1996). Crucially, it would take longer for nominal costs and prices to fall sufficiently to offset the effects of a nominal appreciation. Most of the output and productive capacity lost during the adjustment to an overvalued exchange rate would not be regained subsequently - hence the importance of avoiding real exchange rate appreciations. By and large the Irish authorities succeeded in this over the course of the 1980s. Whether this was by accident or design is not clear.

Corporatism and the wage bargaining process. The third explanation that has been offered of Ireland's stabilisation is the centralised approach to wage bargaining adopted in the second half of the 1980s. Calmfors and Driffl (1988) draw attention to the influence of the wage-bargaining process on the inflation-unemployment trade-off. They suggest that countries with a moderate degree of centralisation, or corporatism, may achieve the worst outcomes, while highly centralised or decentralised approaches may yield better results. Ireland is assigned a relatively low index of corporatism in comparative studies (Layard, Nickell and Jackman, 1991, p. 418). There were several National Wage Agreements in the 1970s, but none over the period 1981-87. It is often claimed that the resumption of national pay bargaining in the late 1980s played a key role in the economy's improvement.

Between 1981-87 there were no national wage agreements. Wages were set by a process of decentralised wage bargaining. The high and rising rate of unemployment resulted in a moderation of the rate of growth of real wages. The real take-home pay of those in employment fell by about 20 per cent between 1979 and 1983, and recovered only slowly thereafter. In order to consolidate the moderation in wage costs that had occurred during the recession a "Programme for National Recovery" was negotiated between trade unions, employer organisations, and the government for the period 1988-90. This was followed by a "Programme for Economic and Social Progress" (1991-93), a "Programme for Competitiveness and Work" (1994-95) and "Programme 2000: Employment, Competitiveness and Inclusion" (1997-2000). An important feature of the agreements was that in return for low nominal wage demands the government held out the promise of reductions in the rate of income taxation and improvements in social benefits (as well as a wide variety of other...
measures). Additional pay increases (up to a specified maximum) could also be negotiated at local level.

The return to corporatist wage bargaining has been given credit for securing moderate wage demands and low inflation. Between 1988 and 1995 the central wage agreements would have increased (nominal pre-tax) wages by 25 per cent. This would have resulted in a more 0.5 per cent in real wages. However, actual real wage rates increased by almost 9 per cent (reflecting the additional effect of local pay negotiations) and reductions in income taxation caused real after-tax wages to increase by almost 20 per cent. Thus much of the increase in workers' disposable income was due to tax reductions rather than pay increases. Rates of income tax were gradually reduced over the term of these agreements. In 1988 the standard rate of income tax was 35 per cent and the higher rate 58 per cent; in 1997 these rates are 26 per cent and 48 per cent, and the thresholds at which they are applied have been raised in real terms. The rates of social insurance tax on lower paid workers have also fallen slightly. At the same time the real value of social welfare benefits have increased.

Economists differ on the contribution of centralised bargaining to the disinflationary process. Moderate nominal wage agreements help to ensure low wage inflation, and thus to keep price inflation, but in a small open economy the main determinant of price inflation in the long run is the rate of inflation in the country's trading partners and the nominal exchange rate. Since 1988 Ireland's nominal trade-weighted exchange rate index has been relatively stable and the rate of Irish price inflation has been very similar to the average of its main trading partners. This is very much what would be predicted by the standard model of inflation in a small, open economy. However, it has been shown that over this period "the contribution of domestic inflationary impulses, relative to foreign ones, have been largely subdued" (Kenny and McGeehan, 1996, p. 89). Whether this would have been the case in the absence of any special institutional wage bargaining process is difficult to assess. It may be the case that the high unemployment of the 1980s, rather than the wage bargaining process, was crucial. Other countries, such as the United States and the United Kingdom, have combined falling unemployment with low price and wage inflation in a decentralised wage bargaining framework. None the less, centralised wage bargaining may have reduced the costs of achieving this favourable outcome in an Irish context. We return to this issue below.

4. Raising the growth rate.

Output per worker in Ireland has grown at an annual average rate of about 3.5 per cent since the mid-1980s, which is impressive by European standards but does not bear comparison with the 6 to 7 per cent growth rates that have been recorded in East Asia for many years. A key feature of the recent Irish experience has been that the numbers at work have been increasing much more rapidly than the total population. Between 1986 and 1996 the numbers in employment grew by 22 per cent, while the population grew by only 2.2 per cent. The rise in the participation rate has made a major contribution to the rise in living standards and hence to Ireland's marked catching up with the European average, but it does not reflect a permanent increase in the economy's long run growth potential. Economists stress that the key long-run determinant of improvements in living standards is total factor productivity (TFP), that is the growth of output adjusted for the growth of both labour and capital inputs. Estimates of the growth of the capital stock are notoriously uncertain, and there is further uncertainty as to how capital and labour should be weighted in order to arrive at an estimate of TFP, but the best available estimates suggest that the growth in TFP rose from near-zero in the early 1980s to 4 per cent in the 1990s (Kenny, 1996). The long-run behaviour in output per person employed (Figure 13) shows no break in the 1980s, but the gap between Ireland and the EU widened in the 1990s due to the downturn in labour productivity in the EU. While the Irish record is impressive by European standards it is not in the same league as that of the booming East Asian economies (Sarel, 1996).

![Graph of Growth Rates](image)

Modern growth theory provides a framework that helps us organise our thoughts about the determinants of a country's longer run growth rate. According to this literature, it is essential that a suitable institutional and legal framework is in place and sensible economic policies are adopted to ensure economic growth. Given these preconditions, there is abundant evidence that
relatively poor countries grow relatively rapidly and tend to catch up with richer countries. The
tendency towards convergence has been demonstrated in numerous studies (Sala-i-Martin,
1996). It is of interest to examine Ireland's performance in this theoretical framework.

Institutional background. Although all Irish governments since 1979 have been either
coalition or minority governments, and five political parties have participated in government
over this period, there has in fact been a high degree of continuity and consistency in the main
parameters of economic management. No party is pledged to radical attacks on property rights
or large-scale nationalisation. There is broad support for outward-looking policies since the
1960s, including the desirability of attracting foreign-owned firms to Ireland. All parties have
been strongly committed to "Europe", that is, to Ireland's membership of the EU. This
commitment has extended to supporting Ireland's participation in the ERM even in Britain's
absence, the adoption of the Single European Act and the Maastricht Treaty. Despite the
scepticism of many Irish academic economists there is no political dissent on Ireland's
aspiration to adopt the single European currency at its launch in 1999.

Economic controversy tends to focus on issues such as the desirable level of social welfare
payments and the role of redistributive tax measures. The privatisation of state-owned assets is
also controversial. Only a few state companies have as yet been sold to the private sector and
there is little overt discussion of selling off the remaining public enterprises, which are mainly
in telecommunications, public utilities and transport. There has also been a reluctance to tackle
private sector monopolistic privileges ranging from licensing premises for the sale of alcoholic
beverages and urban taxis to various legal and educational restrictive regulations. The slow
pace of structural reforms in these areas in Ireland is broadly in line with the similar delays in
many continental countries.

Growth promoting policies. The modern growth literature has identified a relatively narrow
range of policies that can be shown to promote faster economic growth in the long run. Among
these the following could help explain Ireland's recent accelerated growth:

* Absence of major price distortions, exchange rate misalignments, and financial repression.
* A rising saving ratio and changed structure of investment.
* A rising level of investment in human capital.
* Falling levels of government consumption spending and taxation.

Let us review Ireland's record under these headings.

Functioning of the price system. In recent years the biggest potential misalignment of
relative prices and threat of financial instability has undoubtedly come from exchange rate
crises, notably in 1992-93. We have discussed in an earlier section how these have been
resolved and pragmatic policies averted lasting damage.

Investment. Ireland's investment ratio was over 30 per cent at the end of the 1970s-
exceptionally high by international standards. It fell sharply in the middle of the decade as the
level of public sector investment was reduced. At present it is in the region of 15 per cent of
GDP, which is average for an OECD country. It is paradoxical that the recent acceleration of
growth followed a period when the investment ratio was declining. This puzzle may be
explained by the changed structure of investment. Since of mid-1980s the share of private
investment, and FDI in particular, in total investment has been much larger. The dramatic fall
in the incremental capital/output ratio reflects the much higher productivity of this investment
relative to the public sector investment that predominated in the earlier years.

Human capital. Irish investment in human capital has been high over the years. In fact
Ireland had one of the highest levels of participation in second level education of the OECD
countries. According to the measure used in one recent study of the determinants of economic
growth, Ireland had the highest rate of investment in human capital of any OECD country over
the period 1960-85 (Mankiw, Romer and Weil, 1992). However, the Irish level of
participation in third level education has been below the OECD average until recently and this
may explain some of Ireland's relatively slow growth in the 1960s and 1970s. The pay-off to
higher levels of investment in education since the 1960s could be part of the explanation for the
acceleration in Irish economic growth in the 1990s.

Public finances. We have noted that the fiscal correction of the late 1980s resulted in a
reversal of the upward trend in the levels of government spending and taxation. As a
consequence the ratio of government current spending to GDP declined in Ireland when it rose
in the rest of Europe. In 1986 this ratio was 47.3 per cent in Ireland compared with 45 per cent
in the EU, by 1996 the Irish ratio had declined to 37 per cent, while the EU ratio had risen to
47 per cent. A similar picture emerges for the burden of taxation, which declined from 41 to
37 per cent of GDP in Ireland between the mid-1980s and the present, while it rose from 45 to
46 per cent in the EU.11 Combined with the reduction in marginal tax rates referred to above,

11 These figures, like most in this paper, are derived from the Commission of the EU, European Economy.
these trends show a marked improvement in the structure of the economy over the past ten years.

5. Other possible factors contributing to growth.

There are a number of factors which have not been included in the previous list but which call for discussion. These factors include:

EU assistance. Popular accounts of Ireland's rapid growth have laid considerable emphasis on the importance of assistance from the EU. It is true that the inflow of grants and subsidies from the EU to Ireland has been exceptionally important, although it peaked relative to GNP in the early 1980s (Figure 14). The international evidence, however, suggests that foreign aid tends to boost consumption rather than investment, and that its long-term contribution to growth is negligible. Using data for almost 100 countries over the period 1979-90 Boone (1994a) concluded

"... That the marginal propensity to consume (public and private) aid is insignificantly different from one, and the marginal propensity to invest is insignificantly different from zero" (p. 4)

![Graph of EU assistance](image)

The same author argues that "aid does not increase investment and growth, nor benefit the poor as measured by improvements in development indicators, but it does increase the size of the government" (Boone, 1994b). It is, however, interesting to note that he finds among a few small countries12 that have received an exceptionally large volume of aid (generally more than 15 per cent of GDP) "there is a high correlation between aid and investment". Where aid is at such a high level it is no longer fungible and is more likely to produce the desired net effect on investment and growth. It is possible that EU assistance to Ireland falls into this latter category.

12 His sample does not include Ireland.

of effective, growth-promoting assistance. However, it is salutary to bear in mind that as a general rule the international evidence does not support the view that foreign assistance is growth promoting.

Labour force growth. The rate of growth of the labour force is not included in the above list of factors that help explain rapid growth. This is another area where there is a conflict between many Irish commentators and the international evidence, partly due to the tendency for the former to concentrate on the growth of total output rather than output per worker, which is the variable of interest in the growth literature. As mentioned above, the rapid growth of employment in Ireland reflects a highly elastic supply of labour. This has undoubtedly moderated wage inflation. An abundant supply of labour may also encourage an inflow of FDI, although in view of the very high levels of youth unemployment throughout continental Europe a shortage of labour is hardly an important reason for locating in Ireland. More plausible is the view that Ireland's elastic labour supply and its basically "Anglo-Saxon" labour market institutions have created a more flexible work force than is to be found elsewhere in Europe.

But the key question is whether rapid growth of the labour force can be invoked as an explanation of faster growth of output per worker. In classical economic theory the rate of growth of the labour force is regarded as a negative influence on the rate of growth of output per person (or per worker). This is the familiar capital shallowing effect, evidence of which is found in empirical studies (Mankiw, Romer and Weil, 1992). It is therefore paradoxical to regard Ireland's rapidly growing labour force as an explanation of rapid growth in output per worker. The resolution of this puzzle may lie in the very large gap between the human capital of the labour market entrants and that of older workers and retirees. The exceptional rate of influx of young, well-educated workers to the labour force is having a dramatic effect on the average level of human capital employed. This effect, which has not been studied in the international literature, could hold the key to reconciling the exceptional rate of growth Ireland's labour force with its impressive rate of growth of output per worker.

Wage bargaining. We have not included the wage bargaining process among the factors that promoted faster economic growth in Ireland, although we discussed its contribution to the mid-1980s stabilisation. It could be argued that corporatism makes a contribution to faster growth by improving the industrial relations climate and economising the resources employers have to devote to collective bargaining. There is little international evidence to support or refute this claim. While instances where economic growth has been lowered by industrial strife could be cited, it is difficult to gauge how likely this would have been in the absence of centralised pay agreements in Ireland, given the level of unemployment that has prevailed since the 1980s.
Against any real benefits of centralised pay agreements should be set their tendency to compress wage differentials and increase labour market rigidities.

**Industrial policy.** A key issue in the evaluation of Ireland's growth record is the contribution of industrial policy and the high level of foreign direct investment (FDI). As a counterpart to the dismantling of tariffs in the 1960s a generous set of industrial incentives was put in place and administered by the Industrial Development Authority (IDA) to attract export-oriented manufacturing firms to Ireland. This included fixed asset grants, accelerated capital allowances, and a zero rate of export profits tax (subsequently replaced by a ten per cent rate of tax on manufacturing profits). This package was regularly criticised by Irish economists, who viewed it as wasteful and perversely encouraging capital intensity in a labour surplus economy. Numerous reviews were undertaken, the most recent of which recommended greater emphasis on creating a favourable cost and production environment for firms while reducing the reliance on tax breaks and grants (Industrial Policy Review Group, 1992). In response to such criticisms, fixed asset grants have been scaled back and some tax breaks eliminated. The principal remaining incentive is now the ten per cent rate of corporate profit tax applied to manufacturing industry and some traded financial services. The Irish incentives are deemed compatible with EU competition policy at least until the year 2010 under the "regional aid" rubric - the whole country is still classified as a peripheral region. While the Irish level of subsidy to industry is high by European standards, it is lower (relative to value added) than that offered by Greece and Spain (Commission of the EU, 1992).

It is significant that the Irish incentives do not involve the State either in direct participation in industry or in explicitly picking winning sectors or firms, although undoubtedly certain sectors and firms are targeted. Moreover, while the incentives apply equally to Irish-owned and multinational corporations (MNCs), they are generally of far greater value to the latter due to the scope offered for locating high profit affiliates in Ireland to avail of the low manufacturing tax rate. The growth of reinvested MNCs profits in the 1990s is evidence that the export boom is becoming self-sustaining.

It is not easy to account for the increased effectiveness of Irish industrial policy at a time when the level of incentives has been reduced and competition for FDI has intensified from other regions. It could be argued that the promotion of Ireland as a location for FDI is now better focused on sectors such as electronics, information technology, pharmaceuticals, and financial and other traded services. Ireland now appears to have developed a comparative advantage in these sectors. There is also a greater concentration in regions where a critical mass of activity has developed. As discussed above, the elastic supply of labour may also have been attractive to FDI. However, these factors did not change dramatically in the 1980s and hence it is difficult to attribute the improved performance of our industrial policy to them. On the other hand, the timing of the increased inflow of FDI is consistent with the view that the stabilisation of the key macroeconomic indicators played an important role in increasing the attractiveness of Ireland as a location for FDI.

The influx of high quality FDI is associated with exceptionally high levels of output per employee and a very high level of export orientation (Figure 15). Rising productivity, combined with wage moderation and a stable nominal exchange rate, has resulted in a 40 per cent decline in the Ireland's relative unit labour costs in a common currency (RULC) since the mid-1980s (Figure 15). This trend played a major role in the export boom of the recent past. The importance of FDI to the Irish economy is illustrated by the fact that their sales amounted to 30 per cent of GDP and 37 per cent of exports in 1996. Irish economy expenditure by these firms amounted to 33.7 per cent of total sales indicating considerable spin-off effects for the domestic economy. The recent Irish experience is an important example of the favourable impact of MNCs on an underdeveloped region.

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13 Dublin's International Financial Services Centre tax regime will have to be renewed by 2005.

14 The conditions under which multinationals benefit a region are explored in Rodríguez-Clare (1996).
6. Conclusions

Economics is known as the dismal science and for much of our history Irish economists had every justification to have been gloomy. The exceptionally good performance of the economy since the late 1980s has taken many of our colleagues by surprise and there is still some lingering scepticism as to how genuine the boom is and how long it will last. There are a number of grounds for concern about the way in which the economy has developed. The most important of these is the heavy dependence on FDI. We have noted that the rise in productivity and the export boom have both been heavily dependent on the inflow of foreign-owned enterprises to Ireland. Grants and tax incentives, as well more fundamental strengths of the Irish economy, have attracted these to the country. Some commentators believe that our national income accounts convey a misleading picture of the strength of the economy due to the effects of transfer pricing, which exaggerates the value of exports and gross domestic product. We saw that this fear has been overstated and the official national income data are now generally accepted to convey an accurate picture of the growth of the economy. There is also a widespread anxiety that foreign-owned firms are more footloose than Irish-owned firms and will reduce their workforce more rapidly during a recession. While this belief has yet to be tested by a major downturn in the microelectronics industry, for example, there is available little evidence to support it. More genuine, however, is the concern that after the present tax concessions have been re-negotiated with the EU we shall find it increasingly difficult to attract new projects to Ireland.

Growth in excess of five per cent a year has not been maintained by any of the OECD countries for any length of time since the 1960s. While the rapidly growing labour force makes it possible for Ireland to achieve much higher growth rates than most other EU countries, output per person employed has also grown more rapidly here than elsewhere in Europe. Among the factors that we believe contributed to this exceptional performance is the successful stabilisation of the key macroeconomic variables in the late 1980s. The shock therapy of cutting public expenditure played a key role in this. Reduced expenditure and borrowing increased private sector confidence and created a virtuous circle of faster growth and a declining tax burden. The reversal of unwarranted real exchange rate appreciations in 1986 and 1993 in our view also made an important contribution to the Irish recovery. Good fortune played a part, too, principally in the form of favourable external developments over the period 1986-92. Finally, the moderate trend in costs and prices was reinforced by successive national wage agreements.

Several factors have helped boost the longer run growth of output per person. First, we should bear in mind that, given suitable preconditions, countries starting from a low level of output per person tend to grow more rapidly than richer countries. The process of catching up that has been witnessed in Ireland in recent years is in keeping with this convergence tendency. Secondly, modern growth theory predicts that Ireland's increased rate of investment in human capital would in due course lead to faster growth. High rates of investment in physical capital are also associated with faster growth. However, the faster growth that was recorded in the late 1980s seems anomalous in view of the fact that the Irish investment ratio fell sharply during the 1980s. The key to this puzzle may lie in the dramatic change in the composition of investment over the period, with a much larger proportion of the total accounted for by private investment (and FDI in particular) in the later period. A rapidly growing labour force lowers the growth rate in the classical model. It may have had a net positive effect on output per worker in Ireland because the influx of young, well-educated workers resulted in a dramatic upgrading of the average level of human capital employed. The combination of a marked improvement in the quality of physical investment and a rising level of human capital resulted in a dramatic rise in productivity. An additional factor that may be invoked to explain Ireland's improved performance relative to the economies of Europe is the declining in the shares of government spending and taxation in GDP at a time when they were rising in the EU.

The international literature is sceptical about the net contribution of high levels of foreign assistance to a country's long-run growth rate. The evidence suggests that foreign aid generally leads to higher levels of consumption rather than investment, expands the role of the state in the economy, and has little lasting impact on growth. The scale of EU assistance to Ireland and the manner in which it has been implemented may have allowed us to escape these negative consequences and to reap the expected benefits of the aid inflow. Further comparative research is needed to establish the truth on this point.

7. Future prospects.

Looking to the future, our analysis suggests that the key precondition for maintaining a high growth rate is that sensible macroeconomic policies are kept in place. Curbing the ratio of taxation and government spending to GDP helps. Maintaining a high level of investment in human capital is important, both in itself and because it encourages a high level of FDI. On the other hand, we have raised doubts about the contribution of EU assistance to Ireland's accelerated growth. If these doubts are warranted, then the declining relative importance of this aid can be viewed with equanimity.
Ireland's rapid labour force growth is a positive factor not only because it allows a higher rate of growth of total output, but also because it may raise the growth rate of output per worker. The demographic momentum will remain strong as the children of the baby boom of the 1970s enter the labour force and the depleted cohorts of the 1950s reach retirement age but will begin to slow by the end of the decade. Shortages are most likely to emerge at the lower end of the labour market - in relatively poorly paid entry-level jobs. The continued growth of the number of labour market entrants with third level qualifications will moderate wage pressures at this end of the employment spectrum. This is favourable for the growth of employment in high-productivity multinationals.

We have stressed the contribution of pragmatic exchange rate policy to the recovery of the Irish economy in the 1980s. The possibility of Ireland participating in EMU after 1999 is a source of uncertainty on this front. If the Irish pound become seriously overvalued as a result of sterling weakness relative to the euro, the real economy would take time to adjust and the growth rate would fall during the adjustment period. This risk has to be balanced against the perceived political and economic gains from joining EMU.

A second major uncertainty facing the Irish economy in the medium term is ensuring that the phasing out of the tax incentives that attract FDI does not result in a fall in the level or quality of investment. Between now and when the tax regime is changed other factors that promote growth - especially the favourable macroeconomic environment and high levels of human capital - will help to compensate for the dismantling of fiscal incentives.

Finally, we should bear in mind that some of the factors contributing to Ireland’s current boom cannot persist. The most important of these is the rising labour force participation rate, which has permitted us to achieve a much more rapid growth in output per head of population than in output per worker. This has been due to the age structure of the population and rising women’s labour force participation rates. These factors will continue to be important for some time, but not indefinitely. 15 We should also bear in mind that countries starting from a relatively low income level tend to experience rapid growth as they catch up with the richer countries. A central theme of modern growth theory is that rapid growth contains within it the seeds of its own demise. As we approach the standard of living of the richest countries of the world, the rate of growth of output per worker will be constrained to the rate of technological progress. Over the medium term, as the catching-up process continues, the prospect is for our exceptional growth rate to continue, subject to normal cyclical variations.

15 The Irish employment/population ratio is now 33 per cent, compared with the EU average of 39 per cent.
Economic Journal, 106 (July), 1019-1036.

Classical Approach to Convergence


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