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<td>Authors(s)</td>
<td>O'Rourke, Kevin H.; Ó Gráda, Cormac</td>
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<tr>
<td>Publication date</td>
<td>2000</td>
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<td>Publisher</td>
<td>Gill &amp; Macmillan</td>
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<tr>
<td>Item record/more information</td>
<td><a href="http://hdl.handle.net/10197/467">http://hdl.handle.net/10197/467</a></td>
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CHAPTER 7

Economic Growth: Performance and Explanations

Cormac Ó Gráda and Kevin O’Rourke

1 INTRODUCTION

Why are some countries rich and other countries poor? This is the single most important question in economics. When aid agencies ask us to reflect on third world poverty, the question is often posed as: why are they poor? But a historical perspective makes it clear that poverty has been the lot of the vast majority of mankind over the vast majority of the course of history. In fact, the real puzzle is: why are we in the West so rich? In 1400, Western European GDP per capita stood at $430 (in 1985 prices), while China’s amounted to $500. By 1950, Western European output per capita had grown to $4,902, while the figure for China had actually declined slightly, to $454; the figures for Western Europe and China in 1989 were $14,413 and $2,361 respectively.

Why did the West grow so rapidly over the last 500 years, while much of the rest of the world stagnated? And why have several countries, especially in East Asia, grown so fast over the last half-century? If we can understand these growth experiences, and identify the forces which made them possible, we will be a lot closer to understanding what it is that poor countries today must do if they are to escape from poverty. More modestly, we will be better able to judge Ireland’s growth performance since World War II, and think about ways in which that performance may be improved. The first necessary step in making intellectual headway on these questions is to explore briefly the theory of economic growth.

2 THE SOURCES OF ECONOMIC GROWTH

Aggregate Production Functions

In order to understand how economies grow over time, it is useful to
simplify greatly at the start. Imagine the simplest type of economy: one which produces only one good. Imagine that this good is produced using only three factors of production: labour (L), physical capital (K) and human capital (H). Output can be related to inputs via an aggregate production function:

\[ Q = Af(L, K, H) \]

where \( Q \) is aggregate output, and \( A \) is a constant. Equation (1) simply relates a country's output, or Gross Domestic Product (GDP), to its endowments of labour, capital, and human capital.

If \( A \) increases, the same inputs yield a greater level of output. Economic theorists thus tend to think of \( A \) as being an index of technology, and of increases in \( A \) as representing technological progress. In fact, while technological progress will indeed increase \( A \), there are other reasons in practice why \( A \) may increase or decline. Anything which reduces distortions and improves resource allocation will increase \( A \): increases in competition, for example, or a move to free trade, or the elimination of distortionary taxes and subsidies. Cutting back a bloated public sector may spur economic growth by reducing taxation and the public debt. In general, beneficial microeconomic policies increase \( A \) and harmful microeconomic policies reduce \( A \). A can also be influenced by factors that might seem non-economic. Economic historians have stressed that institutional change — the development of markets, the rule of law, and private property, for example — can have a profound impact on the overall productivity of societies, as can the level of political stability (see Chapter 1).

Imagine for the sake of simplicity that the production function in (1) embodies constant returns to scale. This implies that if you multiply all inputs by a constant, \( \lambda \), output is also increased by a factor \( \lambda \). We have:

\[ \lambda Q = Af(\lambda L, \lambda K, \lambda H) \]

where \( \lambda \) is any positive number. In particular, \( \lambda \) could be equal to \( 1/L \).
Equation (2) now implies:

\[ Q/L = Af(1, K/L, H/L) \]

This equation says that output per capita is a function of the capital/labour ratio, and the human capital/labour ratio, only. The equation can thus be simplified:

\[ Q/L = AF(K/L, H/L) \]

where \( F(K/L, H/L) = f(1, K/L, H/L) \).
Equation (4) is the single most important equation in growth theory. It says that output per capita can only be increased through three means: an increase in the amount of physical capital per worker; an increase in the amount of human capital per worker; and an increase in $A$. In the long run, economic growth takes place through the accumulation of physical capital, through the accumulation of human capital, and through improvements in resource allocation and technology, perhaps associated with institutional progress. This in turn implies that the sources of economic growth are to be found in: (i) the level of savings and investment, which determines the rate at which capital is accumulated; (ii) education and training, which determine the rate at which human capital is accumulated; (iii) invention (the discovery of new technology) and innovation (the implementation of new technology); (iv) microeconomic policies which improve resource allocation; (v) political and institutional developments. These five sources of growth will now be examined in greater detail.

**Capital Accumulation: The Solow Model**

The simplest possible growth model, due to another American Nobel laureate in economics, Robert Solow, focuses on capital accumulation. To keep the discussion clear, the model ignores the role of human capital, and assumes that output is produced with capital and labour only. To keep things really simple, let the labour supply be fixed, and equal to one. Equation (4) then simplifies to:

\[
Q/L = Q = AF(K) = A_f(1, K)
\]

In this simple model, GDP per capita depends only on technology and the capital/labour ratio (or capital stock, since $L = 1$). Increasing the capital stock increases output, and hence output per capita. However, the law of diminishing returns implies that as you combine more and more capital with a given amount (i.e. one unit) of labour, the marginal contribution of successive units of capital diminishes: the marginal product of capital declines as accumulation takes place.

The relationship between output and the capital stock is shown in Figure 7.1, which graphs the relationship given in equation (5). The curve OA is positively sloped, but gets flatter as we move to the right; this reflects the diminishing returns to capital mentioned above.

Assume that in any given period, a constant proportion $\delta$ (5 per cent, say) of the capital stock disappears as a result of wear and tear, or depreciation. OB shows the relationship between the total amount of depreciation, $\delta K$, in a year, and the capital stock, $K$, in that year. The relationship is clearly linear, as shown.

Further assume that in any year, a constant fraction, $s$, of GDP is saved and invested. This implies that gross investment can be given by $sQ =$
sAF(K); OC graphs this relationship. Net investment, i.e. gross investment minus depreciation, is however a more interesting concept than gross investment, since it is net investment which determines the rate at which a country’s capital stock increases. In the diagram, net investment is simply the vertical distance between OC and OB. To the left of K*, net investment is positive, while to the right of K*, net investment is negative.

These three curves together tell a simple but important story: growth based on capital accumulation alone eventually fizzles out. Say an economy starts out poor, with a low initial capital stock. It is clear from the diagram that gross investment exceeds depreciation, and net investment is positive; the capital stock will thus increase, and the economy will move to the right along the production function OA. Output expands, and the economy grows. However, while successive units of capital involve a constant cost (in that they depreciate at a fixed rate, δ) they yield a diminishing return (in that the marginal product of capital is declining). As the capital stock increases, output, and hence savings and investment, grows at a slower and slower pace. Eventually, the marginal return no longer covers the marginal cost; if the capital stock were to expand beyond K*, where OB intersects OC, depreciation would exceed gross investment, and the capital stock would actually decline. K* is thus the long-run equilibrium level of the capital stock; Q* is the corresponding long-run level of output.

Figure 7.1

The Solow Growth Model
The Solow model implies that increasing the share of GDP which is saved and invested increases the long-run level of income. When \( s \) is increased, OC shifts up, which implies a new long-run equilibrium (where it intersects OB) to the right of \( Q^* \). However, an increase in \( s \) does not increase the long-run growth rate of the economy; which in this simple model is zero (unless \( A \) is increasing over time).

The simple Solow model thus suggests that while capital accumulation may enable countries to grow in the short run, on its own it is not a source of infinite growth. If growth were based on accumulation alone, countries could not achieve GDP levels higher than \( Q^* \); growth would come to an end eventually. The logic implies that long-run economic growth must therefore be due to increases in \( A \) (i.e. to improvements in technology or resource allocation).\(^3\)

The Solow model also implies that, other things being equal, poor countries should grow more rapidly than rich countries. There are two key determinants of economic growth in the Solow model, apart from increases in \( A \). First, there is net investment per capita, which determines the rate at which the capital stock increases. This is higher the further to the left you are in Figure 7.1. Second, there is the additional output which extra capital gives rise to: this is also higher in poor countries, where the marginal product of capital is higher. For both of these reasons, growth should be higher in capital-scarce poor countries than in capital-abundant rich countries (for a given rate of saving). Moreover, poorer countries may be able to import new technology already developed in rich countries. By catching up technologically, poor countries thus experience a more rapid growth in \( A \) than do rich countries. For all these reasons, the Solow model predicts that followers should catch up with leaders in the long run. In the limit, if \( A \) and \( s \) were the same in all countries, they would all end up with an output per capita equal to \( Q^* \); poor countries would eventually catch up completely with rich countries. More generally, poor countries will grow faster than rich countries, conditional on the savings rate. The Solow model thus implies that over time, the dispersion of income levels should decline: convergence should be a feature of the international economy.

The basic Solow model would have to be considerably modified in order to be applicable to a small open economy (SOE) like Ireland. The crucial variable in the model as presented above is the capital stock; more generally, it is the capital/labour ratio. In a closed economy, the capital stock depends on domestic savings, which equal gross domestic investment. The higher are savings, the higher is investment. This identity does not hold in Ireland; foreigners may invest their savings in the Irish economy (i.e. the economy may experience capital inflows); or Irish savers may buy foreign assets, rather than invest domestically (i.e. the economy may experience capital outflows). International capital flows are thus crucial in Ireland. If Irish investment opportunities are good by international standards, there will be
capital inflows; otherwise, there will be capital outflows. The profitability of investment opportunities in an open economy such as Ireland is thus the single most important determinant of investment there. In turn, key determinants of Irish profitability include the price and quality of our workforce and infrastructure, and our legal and tax systems.

Furthermore, the capital/labour ratio depends not only on the capital stock, but on the size of the labour force, and in Ireland the latter is influenced by international migration. Emigration, by reducing L, can increase K/L, and thus increase output per capita in precisely the same way as capital investments. Indeed, emigration since the Famine has probably increased Irish living standards significantly, compared to what they would have been in its absence (see Chapter 1).

The standard Solow model treats labour and capital symmetrically, which is why a reduction in labour supply can have the same impact on K/L, and thus on output per capita, as an increase in the capital stock. This suggests an interesting question to pose of the Irish experience from the 1850s to the 1950s. As a poor country, our wages were relatively low. This might have attracted large capital inflows; instead, large numbers emigrated. If the Solow model is to be believed, the net impact on average living standards was the same; but why is it that labour flowed out of the country, when capital might have flowed in?

**Human Capital and Education**

Education and training increase the endowment of human capital per worker. They thus make workers more productive, and increase living standards. Equation (4) treats human capital and physical capital as essentially similar: thus, investment in education increases GDP per capita in the same way as investment in manufacturing, say. If that is the end of the story, then the Solow model can be used to investigate the impact of human capital accumulation on growth. In particular, the basic conclusion of the previous analysis carries over: growth based on the accumulation of human capital alone ultimately fizzles out, due to diminishing returns.

In fact, it has been found that the Solow model does a lot better in explaining the real world when human capital is included in the model (as in equation (4)), than when it is omitted (as in equation (5)). For example, the Solow model tends to explain international income differences as being due to different capital/labour ratios, which are in turn due to different savings and investment rates. Physical capital investment rates do not differ sufficiently between countries to explain the huge income differences which exist today; but the level of education varies enormously across the world. Investment rates in all capital (both physical and human) vary enough internationally to explain much of the huge gulf between rich and poor nations.

Similarly, we saw earlier that the Solow model predicts convergence: for a given savings rate, poor countries should grow faster than rich countries.
This crude prediction is not verified for the world as a whole. However, an important reason for this is that poor countries, which do indeed have low physical capital/labour ratios (which is good for growth) also tend to have uneducated populations (which is bad for growth). The net result is that poverty and growth are not well-corrrelated. However, empirical economists have found that, for a given level of human capital per worker, poor countries tend to grow more rapidly than rich countries, as the theory predicts. The data do show conditional convergence, i.e. there is convergence once differences in education have been statistically controlled for.

This finding suggests that education and training are immensely important for poor countries. If a poor country has an educated, relatively skilled labour force, then it has a good chance of outpacing rich countries. In the absence of such human capital advantages, however, it will be left further behind.

One reason why education may be important in explaining a poor country’s ability to catch up with the rest of the world was stated in a famous article by an economic historian, Richard Easterlin:

> Explanation of the limited spread of modern economic growth turns into a question of identifying the factors that have constrained the dissemination of a new type of technology – that of modern technology... If one’s concern is to explain why some nations were rapid learners and others slow, it seems only reasonable to ask what sort of differences there were in the educational systems that prepared their populations for acquiring new knowledges.⁵

Could it be that better-educated countries are better able to absorb new technology? It has been argued, for example, that in the late nineteenth century, well-educated Scandinavia adopted new farming techniques, including cooperation, which greatly improved living standards, while largely illiterate Iberia stagnated. The thesis is certainly plausible, although difficult to test.

A key issue for an SOE such as Ireland is obviously the extent to which human capital is internationally mobile. In particular, if it is predominantly unskilled workers who emigrate, then emigration will increase the average human capital of those staying behind. On the other hand, if it is the most skilled who emigrate (the ‘brain drain’ scenario), then emigration leaves behind a population that is less educated and skilled than before. The question of whether emigration is selective in terms of education is thus of great interest to policymakers.

**Technological Change and the Importance of Institutions**
The Solow model suggests that long-run economic growth is ultimately based on technological and institutional progress. Economic historians have
spent a lot of time examining the sources of economic growth, and have typically found that increases in $A$ in equation (4) above explain a large proportion of the total growth observed in different countries at different times. It would seem, therefore, that understanding why some societies are able to innovate, and others are not, is crucial for understanding long-run growth.

Unfortunately, understanding technological change is a lot less easy than understanding the level of investment, say, in an economy. Presumably invention is positively related to research and development (R&D) expenditures. Such expenditures, in turn, will vary according to their expected profitability, which depends among other things on: the level of competition firms are facing; government taxes and incentives; the supply of well-trained scientists and technicians; and the educational system and university infrastructure. Moreover, since R&D expenditures are a form of investment, they are influenced by factors affecting all forms of investment: for example, the tax code, interest rates, and the level of uncertainty about the future.

Unfortunately, some of these factors have theoretically ambiguous effects on R&D. For example, increasing the level of competition in a market might increase R&D (because firms need to innovate in order to survive); or it might reduce R&D (because there are fewer profits available to fund it, or because any profits the R&D might give rise to would be instantly competed away). Casual inspection of the evidence suggests that in countries where firms face a lot of domestic competition (Japan, for example), there is more invention, and certainly more innovation, than in countries with cosseted ‘national champions’ (France before 1992, say); but these issues have still not been fully sorted out by economists.

From the perspective of an SOE like Ireland, many if not most of the inventions that are relevant to us will probably take place elsewhere; it is whether or not we adopt these inventions that is crucial. There are many possible reasons why some SOEs are better at adapting foreign technology than others. First, we have already seen that education may aid the diffusion of new technology, and that there is empirical evidence that education does indeed help countries grow faster. Second, in a small open economy a highly-educated labour force may entice multinational corporations. Since multinationals can play an important role in the international diffusion of technology, increasing an SOE’s attractiveness as a location for direct foreign investment may therefore increase domestic innovation. Third, increased participation in the world economy through trade increases innovation, by exposing firms to new ideas, products, and competition.

Fourth, and perhaps most importantly, when seeking to explain the level of innovation, as distinct from invention, it is important to recognise that innovation is not only an economic issue: it is also an inherently political one. This is because, while innovation makes society as a whole better off, it
can create losers as well as winners. For example, automating a telephone exchange may improve crucial telecommunications links for everyone; but it will also involve laying off workers. Such considerations suggest that political and institutional factors may be very important in determining long-run economic performance: some countries may have political institutions which are more protective of the status quo, and less conducive to growth, than others. (For a more detailed discussion of these issues, see Chapter 12).

A key issue which arises when considering different countries' economic institutions is the extent to which they promote or hinder rent-seeking behaviour. Such behaviour involves firms lobbying government for preferential treatment: special subsidies, for example, or protection from domestic or international competition. Rent-seeking can lower a country's growth for several reasons. First, it can directly hinder innovation (in the case where potential losers lobby successfully to get the innovation blocked). Second, rent-seeking involves a waste of resources. Such behaviour can benefit an individual firm, but only by making others worse off: it does not benefit society as a whole. The resources devoted to such lobbying would thus be better employed, from society's point of view, in alternative activities. In a country like Ireland, where entrepreneurship may have been a scarce resource at various points in time, the diversion of that resource to 'grant-entrepreneurship' could be particularly harmful.

In Section 3 we will explore ways in which Irish institutions may have acted as barriers to growth over the past fifty years.

'New Growth Theory'
The traditional growth analysis examined above has several strong implications. First, while accumulation of human or physical capital will generate growth while an economy adjusts to its long-run equilibrium, long-run equilibrium growth will ultimately depend on increases in \( \Delta A \), due for example to technological progress. Second, increased investment in physical capital, or indeed human capital (i.e. education) will increase a country's income level, but not its long-run growth rate.

Both of these implications follow from the assumption that there are diminishing returns to capital, which give rise to the shape of OA in Figure 7.1. Recent theory has suggested that there may in fact be constant or even increasing returns to investments in physical and/or human capital.  For example, new technology is embodied in specific investments: thus, increases in the capital stock might be associated with increases in \( \Delta A \) in the aggregate production function. If one firm's investment in new technology boosts other firms' productivity through some 'spillover' effect, the beneficial consequences of investment will be even greater. Countries with higher capital stocks would in such cases be much more productive than poor countries; so much more productive, in fact, that marginal returns to capital would be higher than in countries with low capital stocks.
The implications of this can be seen by envisaging the slope of OA increasing with the level of K, rather than declining. The slope of OC is thus also increasing. This has four key implications. First, net investment (per capita) increases continuously, as capital is accumulated; and the extra capital this gives rise to is increasingly productive. Growth based on accumulation alone can thus go on for ever, rather than fizzling out, as before. Second, increasing the savings rate, s, which shifts OC upwards, increases the level of net investment for any initial K/L, and thus boosts the long-run growth rate. Growth rates, as well as income levels, should thus be positively related to savings and investment rates. Third, a once-off increase in A, due for example to beneficial microeconomic policies, will also boost a country’s long-run growth rate; in the Solow model, there would have been a once-off static gain as OA shifted upwards, followed by a ‘medium-run growth bonus’, as the economy adjusted to a new long-run equilibrium, but no change in the long-run growth rate itself. Fourth, in this scenario convergence is no longer inevitable: rich countries with high capital stocks may well grow more rapidly than poor, capital-scarce, countries.

**International Integration and Growth in Poor Countries**

Simple economic logic suggests that economic integration with the outside world should be good for poor countries. Poor countries have low wages; integration should lead to capital inflows (and possibly labour outflows), both of which increase the capital/labour ratio and living standards (as argued earlier). Furthermore, low-wage economies should be good at producing labour-intensive products cheaply. As trade expands, they should be able to specialise in labour-intensive production, which leads to an increase in the demand for unskilled labour, and hence to an increase in unskilled wages. Finally, as already mentioned, poor countries tend to be technologically backward. Increasing international integration should speed up technological progress in poor countries, both directly (as a result of multinationals introducing new technologies) and indirectly (as exposing domestic firms to international competition makes them more innovative).

In the context of simple growth models, economic integration with the rest of the world should improve resource allocation. This corresponds to an increase in A in the aggregate production function. This will either lead to a once-off increase in income (in the context of the Solow model) or an increase in long-run growth rates (in the context of the very simple new growth model sketched out above). Moreover, if integration increases the rate of innovation, as a result of direct foreign investment, competition, or information flows, A will increase at a faster rate than under autarky. This will clearly increase long-run growth rates.

These simple arguments predict that EU membership should have boosted growth in poor European countries like Ireland. However, a more
recent stream of literature (partly deriving from the new growth theory) predicts precisely the opposite, and it is to these arguments that we now turn.

**Economic Geography and Peripherality**

Ireland is a geographically peripheral country. Despite the enormous economic success of equally peripheral economies, Japan and Iceland for example, it has often been argued that Ireland's location has served as a barrier to growth. In recent years, mainstream economic theory has begun to examine how economic activity is distributed across different locations; this 'new economic geography' suggests that international economic integration can harm as well as help peripheral economies.8

External economies of scale are a key concept in economic geography. Standard economies of scale imply that when a firm expands, its own average costs fall; external economies imply that one firm's expansion improves all firms' productivity, in a given region and industry. Thus, an industry is said to experience external economies of scale if all firms in the industry can produce more efficiently when the industry as a whole expands.

If an industry experiences external economies of scale, there are several theoretical implications. In particular, when two economies start trading with each other, it is possible that the industry will end up being entirely located in one or other of the two countries; the industry which was bigger initially will have cost advantages over the smaller industry, enabling it to grow further at the expense of its rival, thus increasing its cost advantage further, and so on. The argument is thus made that EU integration might deprive small peripheral economies like Ireland of industries enjoying significant external scale economies.

A more sophisticated argument which has been developed recently emphasises transport costs, which are obviously a key factor for peripheral economies.9 Transport costs help to segment markets: they give firms an incentive to locate close to larger markets. This incentive works against small peripheral economies. On the other hand, poorer economies have lower wage costs, which gives firms an incentive to locate there.

If transport costs are zero, firms will find it optimal to locate in the low-wage periphery, and export to large core markets: a lot of economic activity will be located in the periphery. If transport costs are so high, on the other hand, that transporting goods between markets is unaffordable, then core markets will be served by core industries, and peripheral markets will be served from the periphery: some activity, at least, will be located in the periphery. Finally, intermediate levels of transport costs may be sufficiently low that small peripheral markets can be serviced by the core; but high enough that it would not be profitable to export huge quantities of goods from the low-wage periphery to large core markets. The analysis suggests that, starting from a situation where international goods markets are very disintegrated, increasing market integration may first lead to peripheral
production declining; but that beyond a certain point, further integration will lead to peripheral production expanding again. If the Irish market was very isolated from the world market in 1958, or 1973, then trade liberalisation could have hurt Irish industry, rather than helped it.

In the context of simple growth theory, this economic geography argument is suggesting that economic integration with the outside world may reduce A in the aggregate production function, rather than increase it: it all depends on the specific circumstances. In turn, if moving towards free trade reduces A, then that will lead to a once-off fall in income (in the context of the Solow model), or a permanent fall in growth rates (in the context of the very simple new growth model presented earlier).

Finally, there are various theoretical arguments that have been made suggesting that poor economies will become less technologically dynamic as a result of international economic integration. These arguments suggest that economic integration will directly reduce growth rates, by reducing the rate at which A increases. First, it is claimed that they will not be able to compete with core countries in R&D-intensive activities; thus integration may lead to such activities, and all the beneficial spillovers associated with them, being located in the core. Second, as mentioned in the previous section, economic integration may increase unskilled wages in poor countries; this will lower the gap between skilled and unskilled wages, which may reduce the incentive peripheral workers have to acquire further education or skills. Third, it may be that trade forces peripheral countries to specialise in goods with few prospects for technological progress, while core countries specialise in more technologically progressive goods – for example, during the early Industrial Revolution Ireland specialised in linen, which turned out to be difficult to mechanise, while Britain specialised in easily-mechanised cotton.

Theory is thus agnostic on whether economic integration with the outside world boosts or reduces peripheral growth rates. This is to be expected: theoretical results always depend on the assumptions built into the models in question. Theory alone cannot therefore be a guide to policy: economists must examine the empirical evidence before reaching policy conclusions. Sections 2 and 3 will therefore ask which theories are more relevant empirically in understanding recent Irish history.

Some Key Empirical Findings
There has been a lot of empirical work recently which has explored differences in economic growth rates across countries. Some of the findings support traditional growth theory, while others support the new growth theory. In particular:

(i) Long-run growth rates seem to be positively related to investment in physical and human capital. Old growth theory predicts that investment (as measured by the savings rate in the Solow model) and growth are correlated only as the economy converges to the long-run equilibrium; new growth
theory suggests that higher investment implies higher growth even in the long run.

(ii) As mentioned earlier, poor countries grow more rapidly than rich countries, provided they have an adequate human capital endowment: this is compatible with traditional theory.

(iii) Outward-oriented countries (in South-East Asia, for example) have grown more rapidly than inward-oriented countries (such as those of Latin America).

In Section 3 we will examine Ireland’s growth performance since 1950, establishing how well it has done. In Section 4, we will see to what extent Ireland’s growth performance can be explained by the various theories outlined above.

3 IRISH PERFORMANCE SINCE 1950

Introduction
The Irish economy that emerged out of the semi-autarky of the Emergency (1939-45) had escaped the ravages of war, but it had been badly bruised by the shortage of raw materials such as fertilisers and oil and of capital goods. A half-decade or so of recovery, spurred on by the European Recovery Programme (or Marshall Plan), was followed by a decade of stagnation (see Chapter 1). In the late 1950s the economy remained highly protectionist, and largely dependent on an inefficient farming sector for exports and employment. A switch to more outward-looking policies in the 1960s (reduced protection, and tax reliefs and grants aimed at attracting foreign industry) seemed to work, and the pervasive gloom about Irish economic prospects gave way to growth and optimism. For the first time since the Famine there was a period of sustained population and employment growth, accompanied by significant structural change. Agriculture, which accounted for nearly one job in two in the 1940s, accounted for only one in four in 1971. The good times did not last, however, and the ‘gloom and doom’ of the late 1970s and early 1980s matched that of the bleak 1950s. Since the late 1980s the economy has been growing steadily again.

There is a widespread perception, not least in Ireland, that independent Ireland ‘blew it’. Two recently published and influential books have made the point forcefully.10 Using Cullen’s tentative estimate of Irish national income per capita in 1911 they have argued that while Ireland was a respectably wealthy country on the eve of World War I, its subsequent growth experience was disastrous, with the result that it slipped dramatically down the European income league.

Kennedy et al make their point largely with reference to growth rates in the UK. Over the period 1926-85, GNP grew at the same rate, 2.1 per cent per annum, in both countries, while per capita product grew at 1.8 per cent
per annum in Ireland, and 1.7 per cent per annum in the UK. They then point out that this performance is unsatisfactory, for two reasons. First, per capita incomes in Ireland were lower than in the UK over this period, so Ireland should have been catching up rather than merely keeping pace with the UK (see later). Second, British growth rates were low by European standards, and so keeping pace with Britain ensured long-run decline with respect to the Continent.17

Lee is even more pessimistic. 'Ireland recorded the slowest growth of per capita income between 1910 and 1970 of any European country except the United Kingdom... Ireland slid from being a reasonably representative Western European economy, in terms of income per head, at the time of Independence, to a position far below the Western European average in 1970'. Moreover, since the modest rise in Irish living standards occurred at the expense of considerable population loss, 'a wide gap opened between developments at the individual and the national levels... No other European country, east or west, north or south, for which remotely reliable evidence exists, has recorded so slow a rate of growth of national income in the twentieth century'. Lee's views, though, as pointed out in Chapter 1, may be considered somewhat overpessimistic.

There are several difficulties which arise when comparing the growth performances of different countries. Do you use GDP or GNP statistics, for example? An output measure such as GDP per worker is relevant when comparing productivity across countries; an income measure such as Gross National Product (GNP) per capita would be more relevant for living standards. Gross National Disposable Income (GNDI), which includes foreign transfers, is the measure most directly linked to living standards, but is not particularly relevant when assessing a country's economic performance. The three measures are related to each other as follows:

\[
\text{GNDI} = \text{GNP} + \text{Net transfer payments from abroad (NTP)}
\]

\[
= \text{GDP} + \text{Net factor payments from abroad (NFI)} + \text{NTP}
\]

The most readily available data are GDP per capita statistics, and we use those here; but as we shall see, the differences matter a lot for Ireland. (See Table 1.6 for some data on this.)

A second issue arises when trying to convert national GDP figures, which are measured in national currencies, into a common denominator. The most obvious solution, using nominal exchange rates to convert GDP data, can be seriously misleading. 100 Swiss francs, for example, can buy a lot less in Switzerland than the equivalent amount of drachmas could buy in Greece. Thus, converting GDP data using market exchange rates will make rich countries look richer than they are, and poor countries look poorer than they actually are.
Economists have thus developed a method for comparing GDP statistics, known as purchasing-power-parity (PPP)-adjustment, which corrects for differences in national price levels, as well as for nominal exchange rates. In this section we compare Ireland’s performance to that of other European economies over the period 1950-94, using the most recent PPP-adjusted GDP statistics produced by the OECD.

**Comparing Raw Growth Rates**

Table 7.1 gives average growth rates in GDP per capita for Ireland, the UK, and the rest of Europe. The entire period is split into four phases, which economic historians often distinguish from each other: the 1950s (when Europe was still recovering from the economic dislocation associated with the war); the ‘Golden Age’ of 1960-73, when European growth reached unprecedented levels; 1973-88, when Europe had to cope with the oil crises of the 1970s, and the unemployment of the 1980s; and the recent past (1988-94). Over the period as a whole, Ireland grew at about the same rate as the rest of Europe (2.9 per cent per annum), but significantly faster than the UK (2.0 per cent per annum). Focusing on the UK comparison thus makes Ireland look successful; but in a broader context, our performance has been unimpressive. (See also Table 1.4 for interesting longer-term data on this issue.)

**Table 7.1**

<table>
<thead>
<tr>
<th>Period</th>
<th>Ireland</th>
<th>UK</th>
<th>Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950-60</td>
<td>2.2</td>
<td>2.3</td>
<td>3.7</td>
</tr>
<tr>
<td>1960-73</td>
<td>3.7</td>
<td>2.6</td>
<td>4.2</td>
</tr>
<tr>
<td>1973-88</td>
<td>2.1</td>
<td>1.9</td>
<td>1.9</td>
</tr>
<tr>
<td>1988-94</td>
<td>4.7</td>
<td>0.4</td>
<td>1.0</td>
</tr>
<tr>
<td>1950-94</td>
<td>2.9</td>
<td>2.0</td>
<td>2.9</td>
</tr>
</tbody>
</table>

*Source: Derived from OECD National Accounts (unpublished worksheets kindly supplied by Angus Maddison).*

Given that we are a relatively poor nation, we should have been growing more rapidly than Europe as a whole. There are several reasons for this. First, there is the logic of the Solow model: the marginal product of capital should be higher in poorer countries, and therefore lead to more investment. Second, there is the simple logic of international trade models, separate from any growth theory: poorer countries should experience capital inflows and labour outflows, which boost the capital/labour ratio; they should see their wage rates increasing, as a result of commodity trade; and they should be able to ‘catch up’, by importing best-practice technology from abroad. Third, and most importantly, we will see that the empirical evidence clearly shows that convergence has been a feature of the post-war European experience:
despite the gloomier predictions of the new growth theory, and economic geography theory, poorer European countries grew more rapidly than rich countries. In 1950, Italy, Spain, Greece and Portugal, all peripheral economies, were poorer than Ireland. Italy only marginally so. Between 1950 and 1994, Italy’s average growth rate was 3.6 per cent per annum; and Greece, Portugal and Spain all achieved growth rates of 3.8 per cent per annum. The fact that Ireland did not grow as rapidly as other peripheral European economies, or more rapidly than the European average, represents a significant economic failure.

In the 1950s, Ireland’s relative performance was disastrous; poorer than that of the UK as well as the European average. Things improved significantly in the Golden Age, when Ireland easily outperformed the UK; but even then, Ireland was not doing as well as the rest of Europe. In relative terms, then, the 1960s were not such a success story for Ireland as some accounts might suggest. Growth everywhere fell after 1973, but Ireland’s growth rate exceeded (slightly) that of both the UK and the rest of Europe. Finally, Ireland’s growth since 1988 has been spectacularly high, as measured by official per capita GDP statistics.

Comparing Growth Rates in the Light of Convergence
With the exception of the last six years, Ireland’s growth has been unexceptional. Moreover, Table 7.1, by focusing on average growth rates, conceals important information which makes Ireland’s relative performance look worse. In 1950 Irish GDP per capita was 49 per cent lower than in the UK, and 25 per cent lower than in Western Europe. As mentioned earlier, convergence has in fact been a feature of the OECD as a whole: Ireland should therefore have grown more rapidly than Western Europe as a whole. That it did not, until the post-1988 period, makes Ireland an important outlier.

This outlier status appears most clearly when one examines the relationship between GDP per capita growth rates and initial GDP per capita levels. Several things emerge at once from this analysis.

First, initially poor countries have on average grown more rapidly than initially rich countries: the post-war period has seen a convergence in living standards across Europe (see Table 1.4). Second, Ireland is a clear outlier over the period 1950-88, having a much lower growth rate than its initial income would suggest. Third, and importantly, the figures make it clear how fragile judgements on a country’s relative performance can be. Data indicate that over the period 1950-88 Ireland was an under-achiever. However, strong growth over just six years was enough to make Ireland’s performance between 1950 and 1994 look a lot more respectable, if not entirely satisfactory.

There has, moreover, been enormous controversy about the quality of official GDP statistics in recent years, with the claim being made that they
are artificially inflated. There have been important revisions made to the national accounts in recent years, and such revisions could be made again in the future, leading to yet another assessment of our relative historical performance.

It is worth taking some time to examine the claim that Ireland's growth in the last few years has been overstated by official statisticians. The argument has to do with the stated profits of multinational companies. Such profits enter into Ireland's GDP (although, if repatriated, not its GNP), and there are suspicions that multinationals artificially boost these profits through 'transfer pricing'. In some cases recorded profits have been quite dramatic; an extreme case is provided by the screening equipment company, Powerscreen, which in the year ending 1990-91 reported pre-tax profits of £5.8 million on a turnover of £6 million. In recent years flows of repatriated profits have been huge, absorbing about one-quarter of the output of the entire manufacturing sector in the early 1990s (see also Chapter 9).

The evidence for 'transfer pricing' can, by definition, be only circumstantial, but it is convincing enough. First, the enormous drop in the share of wages and salaries in net output of the industrial sector as a whole – from 50-60 per cent in the 1950s and 1960s to 40-45 per cent in the 1970s and less than thirty per cent today – can hardly be explained by technological change or composition effects. Comparing the shares of wages and salaries in a few selected industries in Ireland and in the UK is also illuminating. It is hard to believe that the labour intensity of production in Ireland is really as much lower than in Britain as implied there. However, the figures become understandable if it is the case that output (Q) is artificially inflated, thus reducing labour's share of output (W/Q) for a given wage bill (W).

In addition, the ratio of GNP to GDP in Ireland has declined over the last twenty years, from almost 100 per cent in the early 1970s to 88 per cent in 1994. The repatriation of profits promises a further widening in the gap between GDP and GNP in 1995. This is partly due to increasing flows of repatriated profits, partly due to the consequences of the enormous borrowing of the late 1970s and early 1980s. Irish performance would thus look a lot worse if GNP were the focus.

Fourth, one result of Ireland's relatively slow growth was that between 1950 and 1973, it was overtaken by Italy, Spain, Portugal and Greece in terms of GDP per capita. It was still behind these other peripheral economies in 1988, although our recent growth spurt means that our official GDP per capita was higher than all but Italy's in 1994.

To summarise: Ireland's performance was relatively poor between 1950 and 1988, although official statistics show a spectacular performance since 1988. Irish GNP growth has been lower than Irish GDP growth; Ireland's GDP performance was particularly disappointing in the 1950s, and to a
certain extent the 1960s; Ireland’s GNP performance was poor between 1973 and 1988. What can explain the poor performance experienced over most of this period? What can explain the turnaround which official statistics suggest has taken place since 1988? It is to these questions that the chapter now turns.

4 ANALYSING IRISH PERFORMANCE

Investment: Quantity and Quality
As seen above, traditional growth theory places much emphasis on investment, even though steady state growth is not affected by it; while the new growth literature attributes both level and growth effects to investment. The empirical literature has tended to find a significant positive relationship between investment shares and growth. Moreover, investment is itself an endogenous variable related to, among other things, initial income levels. Traditional growth models suggest that in poorer countries returns to capital, and hence investment shares, should be higher than in rich countries. The American economist Robert Barro found this to be so, once initial levels of human capital had been controlled for.

Theory and international experience thus suggest that Ireland should have had very high investment shares during our period; if it did not, this might help explain its failure to grow faster than the rest of Europe. Irish policy makers were traditionally concerned about a lack of investment in the Irish economy. The 1958 White Paper (1958, p.35) highlighted ‘the insufficiency of our current savings as a basis for national capital formation on the scale which would be necessary to enable us even to follow at some distance the rising standards in the rest of Europe’. (Of course, an SOE can import capital, leading to investment rates greater than savings rates; but capital was not as mobile internationally in the 1950s as it has subsequently become.) Were these official fears justified?

Table 7.2

<table>
<thead>
<tr>
<th>Period</th>
<th>Gross Investment (Per Cent of GDP), 1960-90</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ireland</td>
</tr>
<tr>
<td>1960-69</td>
<td>19.5</td>
</tr>
<tr>
<td>1970-79</td>
<td>25.0</td>
</tr>
<tr>
<td>1980-90</td>
<td>21.6</td>
</tr>
</tbody>
</table>

Source: European Economy, December 1991, Table 20.

Table 7.2, using EU data, gives investment shares for Ireland, the UK and the 12 present EU members since 1960. Irish investment rates were consistently above UK levels, but only exceeded average EU levels after 1970. Moreover, these data understate the extent to which Ireland was
underinvesting prior to 1970. Ireland was a poor country: theory and cross-
country evidence suggest that, for that reason, it should have been investing
more than other EU members, who were on average richer. Table 7.3
therefore attempts to capture Ireland's investment performance in the light of
its relative backwardness. It compares the Irish investment level in a
particular year, not with average EU investment in that year, but with a
'European norm' corresponding to Ireland's GDP per capita in that year. For
example, Ireland's investment in 1950 is compared with investment in other
European countries with GDP per capita levels equal to that of Ireland in
1950: Greece (in 1964), Italy (in 1950), Portugal (in 1968), and Spain (in
1956). The table suggests that Ireland was substantially underinvesting
during much of the period, including (interestingly) 1988, the eve of its
apparent growth spurt.

Table 7.3
Gross Investment (Per Cent of GDP), 1950-88,
Relative to European Norm

<table>
<thead>
<tr>
<th>Year</th>
<th>Ireland</th>
<th>European norm (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>17.3</td>
<td>22.3 (4)</td>
</tr>
<tr>
<td>1960</td>
<td>16.4</td>
<td>22.0 (7)</td>
</tr>
<tr>
<td>1970</td>
<td>22.7</td>
<td>22.3 (15)</td>
</tr>
<tr>
<td>1980</td>
<td>28.2</td>
<td>24.0 (14)</td>
</tr>
<tr>
<td>1988</td>
<td>16.2</td>
<td>24.0 (14)</td>
</tr>
</tbody>
</table>

Source: OECD, National Accounts 1950-1979, Volume 1, Paris 1981, and OECD,

Number of countries defining the European norm (n) in parentheses.

Furthermore, it may be that the quality of Irish investment was poor and
its composition wrong. Table 7.4 summarises trends in the share of gross
investment by use. The share of agricultural machinery in total investment
has dropped steadily since the 1950s, while that of 'other machinery' has
risen steadily, from one-fifth of the total in the 1950s to over one-third today.
But the consistently high proportion spent on transport equipment is the most
noteworthy feature of Table 7.4. Was this 'unproductive' investment, or was
communications a relatively important industry in Ireland for geographical
or other reasons? The output of the Irish transport and communications
sector - about six per cent of GDP, proportionately no greater in Ireland than
in other European countries in the period under review - casts doubt on the
last explanation. A more plausible explanation for the high share of transport
may be the loss-making capital grants to concerns such as the national air,
rail, and sea carriers. Dividing the output of the transport sector by the sum
invested in it in a selection of European economies indicates that the return
on investment in transport equipment was lower in Ireland than in any of the
other European economies examined.
Table 7.4
Investment by Use (Per Cent), 1953-90

<table>
<thead>
<tr>
<th>Period</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1953-59</td>
<td>17.1</td>
<td>5.6</td>
<td>37.0</td>
<td>14.1</td>
<td>5.5</td>
<td>20.6</td>
</tr>
<tr>
<td>1960-69</td>
<td>15.9</td>
<td>4.3</td>
<td>33.5</td>
<td>14.4</td>
<td>4.8</td>
<td>27.1</td>
</tr>
<tr>
<td>1970-79</td>
<td>22.9</td>
<td>2.1</td>
<td>26.8</td>
<td>12.4</td>
<td>4.5</td>
<td>31.3</td>
</tr>
<tr>
<td>1980-90</td>
<td>22.4</td>
<td>3.7</td>
<td>24.2</td>
<td>14.0</td>
<td>2.5</td>
<td>33.2</td>
</tr>
</tbody>
</table>


A = dwellings; B = roads; C = other buildings; D = transport equipment; E = agricultural machinery; F = other machinery.

It is also sometimes alleged that too much Irish capital formation has been in the form of public sector investment. The argument is that the public sector feels less pressure to allocate funds to the most profitable uses. Defining public capital formation as public capital expenditure minus redemption of securities and payments to the rest of the world (usually a small item), the public share in total gross fixed capital formation in Ireland has indeed been high, usually ranging between thirty and forty per cent between the 1950s and the 1980s, and falling below twenty per cent only in 1990 and 1991. Eurostat provides a comparative perspective: it suggests that the public share in gross fixed capital formation was not particularly high in Ireland in 1970, but that by the mid-1980s it was highest in the EU.

In summary, Ireland’s investment rate was consistently lower than investment rates in other countries at a similar stage of development. Moreover, such investment as did take place was not necessarily allocated appropriately. These facts can clearly help explain Ireland’s relatively slow growth. In the Solow model, low investment implies slow growth during the transition to long-run equilibrium; in new growth models, low investment implies growth rates that are permanently lower than they would otherwise be.

**Education and Training**

Surprisingly, Ireland does quite well in international comparisons of educational expenditure and output. Irish expenditure on education has been both high and rising (from 3.1 per cent of GNP in 1962 to 6.4 per cent in 1989). This is reflected in Ireland’s relatively high rate of school attendance in a recent study by Mankiw, Roemer, and Weil, where Ireland ranks seventh out of 121 countries.15

Decline in the quality of education is unlikely: analyses of the contribution of education (measured by years of schooling) to earnings in 1972 and 1987 imply no decline in the interim, and the marginal returns to higher education are at least as high in Ireland as in other countries offering
comparable data. Nor is the frequently alleged bias against technical and science-oriented subjects in the Irish educational system supported by the facts. It seems difficult, then, to argue that Ireland's poor performance before 1988 was due to a lack of investment in education.

**Emigration**

Ireland has been an outlier as regards emigration over the last 150 years. While emigration is clearly a response to poor economic performance, it can increase the living standards of those remaining, by increasing capital/labour ratios. None the less, there are those who argue that emigration is partly to blame for Ireland's poor performance. Since most emigrants leave at an age when they switch from being net consumers to net producers, sending countries like Ireland bear the 'life cycle' burden of producing workers who spend their productive years elsewhere. Sending countries may also suffer from a 'brain drain', when emigration reduces the national human capital/labour ratio. If emigrants are better educated than the population at large, emigration will reduce the growth of income per capita in the sending country. On the other hand, emigration of unskilled workers should improve the lot of those unskilled workers remaining behind.

Irish emigration, like all emigration, is selective as far as age is concerned. The migrants tend to be young and single, maximising the gain from moving. However, the proportion of teenagers is less today than it was in the 1950s. Women have been as likely to leave as men. For reasons still not quite understood, they have tended to leave at a younger age than the men; in 1987-93, 60.6 per cent were in the 15-24 age bracket compared to a figure of 52.7 per cent for men. The destinations have changed over time. The UK has been the dominant destination since the 1920s, but its share slipped in the 1980s: in 1987-93, only three in five went to the UK, and over one in four to the US.

Trends in net emigration rates by province have converged in recent decades. The convergence reflects the gradual convergence in living standards between rich and poor provinces. Until recently, higher emigration rates from Connaught and Ulster reflected their greater poverty; the emigration in turn narrowed the gap in living standards between poor and rich provinces.

The notion that Ireland has lost its best and brightest through emigration is a long-standing one. The sociologist Richard Lynn likened the impact of the outflow to 'what would occur if the best specimens of a herd of cattle were continually exported and the herd replenished by breeding from the inferior stock that remained'. Yet between the 1930s and 1970s at least, emigration 'improved' Ireland's occupational distribution, by targeting disproportionate numbers of domestic servants and young men from small farming and farm labouring backgrounds. If the 'brain drain' argument applies at all, it applies only to the period after 1980.
For the 1980s and 1990s, the evidence as to the skill composition of emigrants is mixed, although the educational standards of emigrants have clearly been higher in recent decades. True, the evidence of a four-thousand sample survey of young people emigrating during the 1980s carried out by the Irish Episcopal Commission on Emigrants in 1991-92 suggests that one-third of them had left without finishing secondary schooling, just over half had second-level qualifications, and less than one-tenth had higher-level qualifications. On the other hand, surveys carried out by the Higher Education Authority in the 1980s show a substantial share of university graduates leaving. The proportion was quite variable, peaking at 26.1 per cent in 1988 and declining thereafter to 14-15 per cent in 1992 and 1993. Further analysis of graduates of five different Irish universities showed that 40-50 per cent of those who had graduated in 1983, 1984, or 1986 had been abroad or were still abroad at the beginning of 1990.

Others propose a more Boserupian theory of the long-run damage inflicted by emigration, arguing that it removed ‘pressures to reform a conservative and conformist social structure, the institutions of which were ill-adapted to innovation’.

However plausible, this hypothesis is extremely difficult to test.

Trade Policy
We saw in Section 2 that microeconomic policies which change the value of A in the aggregate production function can have effects on the level of GDP (in the context of the Solow model) or on the long-run growth of GDP (in the context of new growth theory). Moreover, such policies can more directly influence long-run growth, by increasing or reducing the innovativeness of the economy. More open economies tend to be more technologically progressive than closed economies: trade policy can thus be an important determinant of long-run growth.

The policy of protection brought in by de Valera in the early 1930s (see Chapter 1) was not unique, and may have been a sensible response to the circumstances of the time. Ireland was however slow to jump on the GATT bandwagon, only significantly liberalising towards the mid-1960s with the Anglo-Irish Free Trade Agreement (AIFTA). It thus seems reasonable to enquire whether Ireland’s failure to ride the post-war boom was due to its mistaken adherence to trade policies that had outlived their usefulness.

How did protection affect the Irish economy? It certainly made it a lot more inward-looking. The resulting industrial structure – a large number of widely dispersed small firms and a low degree of horizontal integration – reflected both the power of local pressure groups and the small size of the local market. The following passage on the 1930s will give a flavour of the distortions involved:
J.H. Woodington was refused permission to build a tannery adjacent to his Drogheda shoe plant or in an adjoining town. He was informed that the minister preferred a town that did not have an industry and was dispatched to Mountmellick following local representations, despite the lack of a suitable site. When he turned his attentions to Portlaoise because of an offer of local capital, officials proposed Tralee, 'where all the capital necessary would be available'.

Few other sizeable towns in Ireland are as far from Drogheda as Tralee!

Such a structure was unlikely to support the innovation necessary for sustained economic growth. It was also bound to deprive Irish industry of precisely the sorts of external economies of scale (skilled local labour forces, for example) that have been used to justify industrial protection. Why then did Ireland take so long to liberalise?

Although the protectionist policies pursued by successive administrations since the early 1930s always had their critics, evidence of the damage caused was elusive before the 1950s. The tariffs imposed in the early 1930s initially produced a sharp rise in industrial employment. Admittedly, it did not take capital long to absorb the sheltered home market, and industrial employment had already peaked before 1939. However, the message that import substitution could not have produced sustained economic growth was blurred by the enforced autarky of 1939-45, and the post-war recovery produced the illusion that protectionism was doing no harm. 1946 to 1951 was the first five-year period since the Famine to experience population growth. Industrial employment rose considerably, industrial profits rose, and the rate of economic growth was respectable by European standards. It was only when the rest of Europe left the Irish economy standing in the 1950s that the bankruptcy of the old policies became clear to policymakers.

Policymakers and most opinion-makers in the early 1950s took protection for granted. The Commission on Emigration (1956) defended tariffs by noting that without them 'it would be difficult to conceive of industry on any wide scale maintaining itself or developing further' and insisted that future commitments to international agreements should not compromise 'our freedom to develop our industries as we think fit'. To those economists who continued to support free trade, in the mid-1950s it was still 'an unlikely Utopia'. Even Whitaker's landmark Economic Development (1958), the government report which paved the way for the new economic policies of the 1960s, was circumspect about the issue. Noting that 'the coming of free trade in Europe in one form or another must be faced in due course' (p.190), its main emphasis was on the need to allow in foreign capital rather than on abolishing tariffs. Indeed, the new Industrial Development Authority, established to attract direct foreign investment, sanctioned some tariff increases in its early years, and neither the Central Bank nor the Department
of Finance proposed freer trade as a panacea in the early 1950s. Policymakers emphasised instead the need for state mobilisation of investment funds and demand management. It took time for the argument for freer trade to sink in. Still, Céras Tráchála (the state export-promotion agency) was founded in 1952, and export tax reliefs date from 1956.

It seems likely that slow growth during the 1950s was at least in part due to the continuation of protection. Conversely, free trade since 1960 appears to have helped boost Irish growth (see Table 7.1). On the other hand, Ireland continued to underperform relative to Europe. Perhaps this was because free trade did not mean an end to government distortions. For example, as Lee notes, it was surely no accident that the new tax incentives and grants introduced to attract foreign investment in export-oriented industries were geared to complement, rather than substitute for, existing inward-looking Irish-owned industries. To this extent the Irish campaign to attract foreign investment was constrained from the start by the protectionist legacy.

What were the consequences of trade liberalisation for previously protected sectors? Penetration of the domestic market by imports was significant in apparel and clothing, soap and detergents, footwear, carpets, and leather handbags. On accession to the EEC, domestic producers were still holding their own in several sectors (notably vehicle assembly) which would suffer during the 1970s and 1980s. For example, of the network of shoemaking factories opened under protection only Dubarry in Ballinasloe was left in 1994.

**Industrial Policy**

Irish industrial policy changed radically in the early 1960s. The policy of relying on tariffs to protect domestic producers and on the Control of Manufactures Acts to keep Irish industry in Irish hands was abandoned (see Chapter 1). Since then, foreign investment in Irish industry has been the cornerstone of government policy. New companies such as Potez Aerospace (French-owned with a plant in Baldonnel) and Verolme (Dutch-owned, operating a shipyard in Cork) received large grants amid great publicity. The remarkable structural transformation of the economy between the late 1950s and the early 1970s may be largely attributed to their arrival. By 1973 overseas firms accounted for almost one-third of all employment in manufacturing. Even in the less propitious climate of post-1973 the number of foreign-owned firms continued to grow. By 1983 there were almost a thousand of them, with a labour force of 87,600, while employment in Irish-owned concerns continued to drop. In the 1980s the newer (foreign) industrial concerns, concentrated in a few sectors, seemed to perform better than the old (indigenous) companies. If industry is divided into ‘modern’ (pharmaceuticals, engineering, and a category called ‘other foods’) and ‘traditional’ (the rest), it can be shown that the two have differed markedly in terms of performance. During the 1980s ‘modern’ – largely foreign-owned –
industry trebled its output, while 'traditional' industry barely held its own (see Chapter 12).

However, critics have pointed to flaws in government policy attracting foreign capital and in the kind of industry attracted (see Chapter 12). The IDA offered foreign investors the wrong kind of incentive package. Instead of subsidising labour and employment, they subsidised capital. The tax benefits prompted firms to engage in transfer pricing, and virtually ruled out production for the home market. Moreover, the IDA had a penchant for picking products far advanced in their product cycle, where competition from less developed countries would soon prove serious or fatal.

When the government first started attracting multinationals, the results were deemed a great success; output, exports and employment grew. Yet today, despite massive outlays, Irish manufacturing employs fewer people than in the 1960s. The message that manufacturing’s job-creating potential is weak is finally sinking in. Indeed, the IDA has taken to comparing the modest losses in manufacturing employment in Ireland – for which it claims credit – to the huge losses elsewhere in Europe in the 1970s and 1980s (e.g. 38.2 per cent in the U.K., 18 per cent in Norway, 17.4 per cent in Denmark, 16.9 per cent in France). The logic of Ireland’s quest for manufacturing jobs is however unclear. Is this really where Ireland’s comparative advantage lies? If it lies elsewhere, then promoting industry at the expense of other sectors of the economy misallocates resources, reduces the value of A in the aggregate production function, and lowers the level (and possibly the growth rate) of GDP.

Since the 1960s policy has shifted from an anti-export to a pro-export bias. In effect one form of distortion (capital subsidies, tax relief on exports) replaced another (protection). The new regime represented protection by another name. Certainly, many high-profile companies would not have chosen Ireland as a base but for its uniquely generous combination of grants and tax reliefs. The shift to ‘free trade’ in Ireland was matched by a big increase in non-tariff distortions in the form of a huge rise in aids to industry. One indication of its effect is provided by the ratio of IDA grants to net industrial output. They dropped from 4.4 per cent in 1976-83 to 1.9 per cent in 1984-90. However, this represents only a small part of total state aid to the sector. EU calculations put this at 6.4 per cent of GDP in 1986-88 and 4.9 per cent in 1988-90. Tax deductions, due in large part to the imputed value of the special 10 per cent corporation tax applied to manufacturing, account for half of this aid. In the mid-1980s 3 per cent of GNP was being spent on promoting industrial development, equalling about one-eighth of industrial value added. The effect of the above is that investors receiving the maximum cash grant are being protected with the equivalent of a 24 per cent tariff.

Such government distortions could clearly lead to a similar misallocation of capital (and labour) as would outright protection, lowering the level of A in equation (1). Moreover, industrial policy might have more direct effects
on growth, by lowering the growth rate of A. Direct government subsidies might be even more 'capturable' by interest groups than across-the-board protection; rent-seeking might be as much more of a problem; the result might be an allocation of management resources towards 'grantypreneurship', and away from innovation.

*Macroeconomic Policy*

Irish macroeconomic policy has tended to follow, with a lag, the fashions practised elsewhere in Western Europe since 1945. This makes it difficult to blame our poor performance on particularly inappropriate macroeconomic policies. Thus Keynesian deficit spending was introduced in the early 1950s, a little later than elsewhere, and a timorous version of economic planning along French lines in the late 1950s. As in other countries, the reaction to the first oil crisis of the early 1970s was to engage in public borrowing on a large scale. 1979 brought membership of the European Monetary System for Ireland along with most other EU members, implying a break with sterling for the first time since 1826. In recent years, the focus has been more on supply-side measures to relieve Ireland's serious unemployment problem, again in line with developments in Britain, the US, and Europe. In all cases Irish policymakers were applying lessons already learned elsewhere. When, then, did Irish exceptionalism in fiscal policy affect its comparative growth performance? No rigorous analysis can be provided here, but a comparative look suggests that the damage inflicted by public spending on both taxation and the public sector borrowing requirement in the late 1970s was particularly severe in Ireland (see Chapters 5 and 6). The evidence suggests that since the 1970s at least Ireland's public sector has been 'large' by European standards. If macroeconomic policy can be blamed at all for Ireland's poor comparative performance, it is the excessive spending of the late 1970s that emerges as the culprit (see Chapter 6). Otherwise, the important policy failures were predominantly microeconomic in nature.

*Ireland and the New Economic Geography*

The Irish experience fails to support those arguments which suggest that increasing international integration reduces peripheral R&D, education, or innovation. Since 1973 R&D expenditure in Ireland has increased dramatically; the returns to education as measured by skill differentials have remained steady, and the workforce has become more educated; the share of increasing returns to scale industries in total industrial employment has risen; and high-tech employment has expanded. These trends are largely explained by the importance of multinationals in the Irish economy, an institutional feature ignored by simple economic geography models. Comparing Ireland's relative macro-performance before and after 1973, it is certainly clear that EU membership did not hurt Ireland in relative terms. The simple theoretical intuition that increased integration with the world economy is good for small,
poor, countries seems to do better when confronted with the Irish evidence than the more esoteric predictions of recent theory (see Section 2).

**Political Economy and Rent-Seeking**

In Section 2 we saw that rent-seeking behaviour can block innovation and waste scarce resources. The implication is that political institutions can matter for a country's growth performance. To what extent have Irish institutions helped or hindered growth?

The rent-seeking approach associated with Mancur Olson seems to offer a good framework for interpreting Ireland's relatively poor economic performance since 1950. Olson predicts, in the absence of disturbing causes, powerful tendencies for sectional interest groups to become entrenched in an economy. These groups will tend to cause institutional sclerosis and economic stagnation. According to Olson, societies fortunate enough to have been spared military invasion or serious political unrest for a long time, such as the UK, pay a price in that their very stability gives such interest groups ample scope to plan collective actions which restrict competition and retard growth. Only an external shock such as defeat in war or economic and political integration can destroy the influence of such groups.

There is plenty of evidence for rent-seeking in Ireland (see Chapter 10). Many non-traded services in Ireland – telecommunications, electricity, transportation – have traditionally been provided by semi-state companies who have used their monopoly position to force up prices, reducing the competitiveness of the rest of the economy. Private non-traded services – public houses, taxis, and lawyers, for example – similarly enjoy monopoly profits by restricting entry (see Chapter 10). Government expenditure as a percentage of GDP has been higher in Ireland, although not spectacularly so, than in other countries at the same level of development, implying relatively high tax rates. In all of these cases, 'muscle' has clearly been used by powerful lobbies to extract benefits from the rest of the community. These lobbies' clout has also been used to block technological or organisational change in the sectors concerned, with negative implications for innovation and growth.

One institutional feature of Irish life that has often been blamed for some of the rent-seeking that occurs in the country is the multi-seat constituency, which pits party member against party member, and places a premium on 'constituency service'. It also makes for more marginal seats, giving greater weight to regional issues than would be the case under either a 'national list' or a single-seat constituency system. Perhaps more important is the fact that Irish political constituencies are too small. Ireland's Dáil has 166 members serving a population of 3.5 million; the UK's House of Commons has 630 members serving a population of over 50 million.

Institutions and politics can matter in other ways. Did Ireland's pay-bargaining structure retard output and productivity growth? The Olson model
would seem to have a definite bearing here. Olson argues that interest groups such as trade unions and producers' groups inflict most damage when they are big enough to cause widespread disruption but small enough for the social cost of their actions to remain an externality to themselves. In this view, either very weak (as in the US) or all-powerful (as in Sweden) lobbies may be preferable to something in between. Thus it is often argued that corporatism works, both in pay bargaining and strategic policy decision-making, because it takes account of macroeconomic constraints and minimises the risk of inter-union disputes (see Chapter 4). Many analysts consider the cost of reduced wage dispersion worth paying. In Ireland, the experience of the Committee on Industrial Organisation, which united management, unions, and the public service in analysing the shortcomings of protected industries in the early 1960s and in proposing rationalisation schemes seems a good case in point.

The experience with centralised bargaining since 1987, after decades of decentralised or poorly planned centralised bargaining, would also appear to bear out the above. The result has been wage restraint, with the government pre-announcing the wage increases it would accept. Macroeconomic constraints were explicitly recognised by the main players, in classic corporatist fashion; the result was that when demand eventually expanded, the outcome was an increase in employment, rather than wage inflation. This political economy turnaround is a plausible cause of the Irish growth upturn of the late 1980s.

5 CONCLUSION

Observers of the Irish economy, worried about its lowly and laggard status in the growth stakes, have long looked to history and to the achievements of neighbouring economies for inspiration. In the 1840s Young Irelander Thomas Davis pointed to the Prussian system of technical education and the Norwegian system of successions; in the 1900s agrarian reformer Horace Plunkett urged his countrymen to make Ireland 'another Denmark' and economic nationalist Arthur Griffith saw a lesson in the 'resurrection of Hungary'. Though their diagnoses differed radically, Davis, Plunkett, and Griffith believed that the performance of the Irish economy was far from optimal. Most subsequent assessments concur. Our own comparative perspective on the growth record over the last half-century or so confirms the gloomy assessments of earlier studies.

The outcome will hardly come as a surprise for the 1950s, conventionally deemed a 'lost decade' in Irish economic history. Yet even the 1960s, usually considered a 'golden age' for Irish economic growth, emerge in a less favourable light, when assessed in the context of a European pattern of 'convergence'. Economic growth throughout Europe declined in the wake of
the oil crisis of 1973, and the achievements of the previous two decades have not been matched since. Ireland’s problems in the 1970s and 1980s were thus partly a reflection of a general slowdown in economic growth, but they were aggravated by a growing and ultimately crippling public debt. However, this rather gloomy assessment of the record since the 1940s must be tempered with the key caveat that the performance of the Irish economy over the last half-decade or so seems to have been excellent. Real GNP rose by more than six per cent in 1994 and a further rise of over five per cent is predicted for 1995, with associated rises in employment and living standards. But whether this relatively rapid growth is more than a transient phenomenon is something which remains to be seen.

Why, then, has Ireland’s record been poor until very recently? We have seen that low investment rates, low-quality investment decisions, restrictive tariff policies, and rent-seeking all played a role at some time or other over the past half-century or so. For some of the period, too, government spending was on the high side for an economy at Ireland’s stage of development. On the other hand, low rates of investment in human capital do not seem to have been a factor, at least from the 1960s on. Finally, one dimension not addressed in this chapter – and this is a shortcoming that it shares with most of the convergence literature – is the role of geography. Could Ireland’s proximity to Britain, a slow grower in absolute terms (although not an underperformer in the convergence sense) have led to slow Irish growth rates? Adding a spatial dimension to the empirical growth literature may prove a fruitful research programme for the future.

Endnotes
2 In fact, output is also produced with land, and thus land per capita should also belong in the aggregate production function. In previous centuries, Europeans have indeed increased their living standards by increasing the acreage under cultivation; but this sort of growth is hardly of great importance today, which is why we ignore it.
3 Of course, technological progress will typically only come about as a result of investment, of which more later. Moreover, technological progress, by shifting OA (and therefore OC) upwards, will lead the economy to converge to a new equilibrium involving a higher level of the capital stock.
6 For an accessible overview of the literature, see the articles on the subject in the Winter 1994 issue of the Journal of Economic Perspectives.
8 For an accessible survey, with a focus on Ireland, see F. Barry, ‘Peripherality in Economic Geography and Modern Growth Theory, Evidence from Ireland’s adjustment to free trade’ (UCD Centre for Economic Research), Dublin 1994.
11 Kennedy et al., Table 6.1.
12 Lee, op. cit.
13 Here defined as: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, the Netherlands, Norway, Portugal, Sweden, Spain, and Switzerland.
14 Ireland’s profit taxes are lower than elsewhere, so multinationals want their profits to show up as having being generated in Ireland. For an analysis of the effects of transfer pricing on GDP estimates see O. Mangan, ‘The Irish National Accounts: How Do They Measure Up?’, Irish Banking Review, Winter 1994.
15 See Mankiw, Romer and Weil, op. cit.