

The Decline of Irish Industry in the Nineteenth Century

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Précis: This article first outlines a number of the explanations which have been suggested for the long-term decline of most of Irish industry in the nineteenth century. By contrasting the nature of industrial decline in most of the island with the specific pattern of successful industrialisation in the north-east, it is argued that the main causes of decline lay in the strong tendencies to industrial centralisation in Britain and Ireland. It is concluded that this experience shows that market forces cannot be relied on to generate industrialisation in a relatively late-developing economy competing with more advanced industrial countries.

I INTRODUCTION

Until the early nineteenth century Ireland had a fairly substantial industrial sector by the standards of most countries at that time, with the major exception of Great Britain, the pioneer of the Industrial Revolution. Cullen (1972, p. 120) points out, for example, that in the 1841 census one-fifth of the working population was reported to be occupied in textile manufacturing alone.¹ And according to the 1821 census, one-third of the

¹ Probably many of these people, being domestic spinners, would in reality have had little work by 1841 due to the mechanisation of spinning. But the fact that they reported their principal occupations as they did at least indicates considerable textile activity at some earlier stage.

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Irish counties, including 6 of the 23 outside Ulster, had a greater number of people engaged in manufacture, trade or handicraft than in agriculture.

In the course of the nineteenth century, however, industrial activity decreased in most of Ireland. As industry declined, offering diminishing prospects of employment to the masses being squeezed out of agriculture, emigration rose to proportions unparalleled in any other country. The labour force of the 26 counties of the present Republic of Ireland dropped from 3 million in 1841 to just 1.3 million in the new Irish Free State in the 1920s; by then little more than 100,000 workers were employed in industry. But one important exception to the general experience of industrial decline was the region around Belfast where growth continued in a manner similar to that of large industrial centres in Britain. After the middle of the nineteenth century, Belfast became the largest centre of linen manufacture in the world and by the 1900s her shipyards were building up to about a quarter of the total United Kingdom tonnage.

Although the study of Irish industrial history is probably still less well developed than that of other aspects of the country's economic history, the literature dealing with the subject, which is referred to below, nevertheless contains many differing views on the causes of the nineteenth century decline. Some of these views would seem familiar, at least in their general form, to anyone familiar with the literature on present day industrial backwardness in less developed countries, or on regional imbalance within advanced industrial countries. For example, Lee (1968 and 1973) stresses the importance of the lack of a strong entrepreneurial spirit, as do "modernisation" theorists writing on present day less developed countries. Others mentioned below stress the importance of centralising tendencies following the Industrial Revolution and the consequent effects on the peripheral areas and nations, such as most of Ireland. Again such views find parallels in the literature on modern less developed countries and regions; the arguments of Myrdal, Perroux or many modern Marxists, for instance, are well known (Holland, 1976, Ch. 2 usefully summarises such arguments).

This article first outlines the main explanations of Ireland's industrial decline contained in a selection of the literature dealing with the subject. And, secondly, it attempts to support the argument that the main causes of decline lay in the strong tendencies to industrial centralisation, or agglomeration, within the United Kingdom of Great Britain and Ireland as a whole, which resulted from the increasing mechanisation of manufacturing. By looking at the early structure of Irish industry, and its decline in most of the island contrasted with the specific pattern of development in the north-east, we can show how this tendency worked against most of Irish industry and generally in favour of industries in Britain.

II SOME INTERPRETATIONS OF THE EXPERIENCE OF IRISH INDUSTRY

II.1. The Traditional Nationalist View

The development of the traditional nationalist interpretation of Irish economic history is outlined in Cullen (1968b) and is perhaps best exemplified by the works of George O'Brien (1918 and 1921). This interpretation is characterised by an emphasis on Britain's role in impeding the Irish economy. In the seventeenth and most of the eighteenth centuries, industry is said to have been minimal as a result of English legislation. For example, a law of 1699 forbade the export of woollens overseas while prohibitive duties prevented their entry to Britain. It is argued that English tariffs on manufactured goods were often prohibitive, while Irish tariffs were lower and often allowed a preferential rate for English products. The Navigation Acts after 1663 are also said to have favoured British producers and traders, causing great difficulties for the Irish economy.

However, the degree of autonomy achieved by "Grattan's Parliament" in 1782-1800 is said to have greatly reduced the harmful British influence, particularly through using more protective tariffs, and to have been the main cause of an unprecedented economic expansion at that time. Then the introduction of the Act of Union which came into effect in 1801 was held responsible for the nineteenth century industrial decline. Some writers, such as O'Brien (1918, Ch. 34), linked this argument particularly with the effects of free trade with Britain's larger more advanced and specialised industries; based on this view, politicians like Arthur Griffith therefore advocated a programme of protection for Irish industry. Chart (1920, Ch. VI), who differs from the traditional nationalist view in doubting the wisdom of protectionism, also noted that small, less advanced producers in many sectors in Ireland, as well as in Britain, were eliminated by "great specialised factories centralized in one district", generally in Britain.

The traditional nationalist view treats the north-east as a rather insignificant exception to the general picture. O'Brien (1918, Ch. 19) very briefly explains the development of its largest industry, linen, mainly by the arrival there of skilled Huguenot immigrants after the Edict of Nantes in 1685. He also mentions that the Ulster Custom – which was not actually a legal right, but an understanding which gave tenants security of tenure, a reasonable rent and the right to sell the goodwill of their holding – enabled Protestant tenant farmers in Ulster to accumulate capital without fear of rack-renting and, therefore, encouraged them to be more enterprising.

The traditional nationalist interpretation was widely accepted in Ireland, except in the North, until the 1960s. But early critics of this view included Green (1949, p. 176) who described O'Brien's work as "strongly protec-

tionist and southern in tone" and highly unsatisfactory in its neglect of "the problem of reconciling this with the industrial development in the north". In a similar vein, Adams (1932), in his bibliographical notes, had described O'Brien's work as "a piece of protectionist propaganda".

II.2. Recent Revisions of the Traditional Nationalist View

Since the 1960s the traditional nationalist view has been challenged by a number of interpretations which argue that the Union was not the main cause of nineteenth century decline. Those that deal with the earlier period also argue that the eighteenth century was a time of general economic expansion and that "Grattan's Parliament" was not the main cause of industrial growth in 1782-1800 (which was not in sharp contrast to the alleged prevalent depression before that time). But no consensus has emerged on the real causes of industrial decline.

Lee (1973, Ch. 1) says that the decline of rural industries became inevitable when transport improvements exposed them to competition from large-scale producers. So "the problem was not why local firms collapsed but why more of them were not destroyed by Irish instead of English manufacturers". He argues that Ireland's main problem was "the wasteful use of capital by savers, investors, businessmen, in other words, that Ireland's human capital failed to make the best use of the country's resources" (Lee, 1968). This argument, that competent entrepreneurs could have developed Irish industry successfully, is backed up by reference to the success of shipbuilding in Belfast due to brilliant entrepreneurship in a situation which, he suggests, was not particularly favourable. He also refers to the reluctance of Irish capitalists to invest in banks and railways until the participation of British investors had been secured, to the tendency of Irish businessmen to withdraw from successful businesses and to retire to a more sedate life, and to the tendency of the middle class, in general, to choose a profession or country life rather than industry. But he does concede that this sensitivity of the middle class to social considerations was not peculiar to Ireland. "The real problem was that a country relying heavily on its human resources, to compensate for its lack of natural resources, could not afford to indulge this tendency to the same extent as more generously endowed economies" (Lee, 1973, Ch. 1). This concession suggests that he cannot reasonably refer to the unexceptional social preference of the middle class as a major cause of the exceptional failure of Irish industry, but his other points do need to be considered.

Concerning the development of the north-east, Lee argues that it was little better endowed with entrepreneurial talent than the rest of Ireland, that there is consequently little truth in the Protestant ethic argument, and that Belfast's progress was largely due to new immigrant businesspeople who

showed what could be achieved in the Irish economy.

The argument concerning poor entrepreneurship had appeared in some contemporary studies such as Kane (1844), and some recent writers have also used it as part of their explanation of the decline, but without stressing it as heavily as Lee. Lyons (1971, p. 43), for instance, mentions many contributory factors such as the land tenure system, political violence, scarcity of natural resources, transport costs to large markets and competition from Britain, but concludes "in the last resort it was unwillingness to take certain minimal risks that lay at the heart of the problem". And O'Tuathaigh (1972, Ch. 4) first argues that Ireland's difficulties were one aspect of a process in which industry became centralised near the main sources of coal and iron, none of which existed in Ireland. But he later adds that part of the problem was that Irish investors were too averse to risk, having more of an eye for security and status. He attributes this caution to the political tensions of Irish society — a view which seems at odds with the experience of Belfast where sectarian riots accounted for more deaths than all the nationalist risings of the nineteenth century.

Cullen (1968b), however, explains the decline mainly in terms of the importance of increasingly large-scale production and the fact that industrial transformation occurred first in Britain. Thus Ireland's "proximity to the leader of the Industrial Revolution and the dramatic reductions in transport costs in the nineteenth century in conjunction left its small-scale and domestic industries vulnerable in a more fiercely competitive age". In a later work, Cullen (1972, Ch. 6) argues that business initiative was not in fact critically lacking, as shown by the efficient reorganisation of the wholesale and retail trade. He also extends his earlier argument from one concerning the advantages enjoyed by large firms to include more specifically the benefits of centralisation in large manufacturing centres, mentioning mainly the advantages gained in the organisation of foreign trade which meant that Belfast, and Dublin to some extent, had exceptional facilities in specialist services such as financing and insuring the export consignments which were essential to attain the scale of operation required for survival. Cullen argues that the decline could not be blamed on the Union since he considers that any benefits of tariff protection would not have been sufficient to counter the effects of the transformation set in motion by the Industrial Revolution (Cullen, 1972, p. 107 and 1968b).

Crotty (1979) argues that "the most important single consequence for Ireland of the growth of factory capitalism in Britain has been its effect on Irish cattle prices". Growing incomes in Britain changed the pattern of demand and raised the price of beef relative to other agricultural products, making low gross output cattle production increasingly profitable compared with other higher gross output, more labour-intensive patterns

of agriculture. The result, says Crotty, was massive emigration among agricultural workers and a net decline in demand from the agricultural sector, leading to increased unit costs for industry so that much of industry was forced out of business by cheapening imports from Britain. With a different pattern of agriculture, demand could have been greater, industrial unit costs consequently lower, and industrial survival and growth rates more satisfactory.

II.3. Marxist Views

Apart from a section in Marx's *Capital*, most of Marx and Engels' considerable volume of writing on Ireland (collected in Marx and Engels, 1971) consists of letters, journalistic articles and political speeches. Marx was, of course, well aware of the tendency of nineteenth century industry both to throw up increasingly large firms which progressively eliminated smaller ones, and to agglomerate specialised activities in particular locations – not primarily determined by raw material deposits, but more by the location of specialised skills and related industries. He also considered (in Ch. XXV of *Capital*, Vol. 1) that Ireland must be viewed as a region of the UK economy, which would presumably be affected by such tendencies in the UK as a whole: "Ireland is at present (the 1860s) only an agricultural district of England . . . to which it yields corn, wool, cattle, industrial and military recruits". His view of such general tendencies in industry, and presumably of their effects on Ireland, would explain why he wrote to Engels in a letter dated 1867, "What the Irish need is:

- 1) Self-government and independence from England.
- 2) An agrarian revolution. . .
- 3) *Protective tariffs against England.*" (his emphasis).

The same letter explains further "between 1783 and 1801 every branch of Irish industry flourished. The Union which overthrew the protective tariffs established by the Irish Parliament, destroyed all industrial life in Ireland . . . Once the Irish are independent, necessity will turn them into protectionists, as it did Canada, Australia, etc."

Marx largely ignored the distinctive development in Ulster which was already well advanced by the 1860s. Consequently, because he saw no economic basis for the division between Ulster Protestants and the rest of Ireland, he regarded that issue as superficial and destined to fade away. James Connolly's view of the Ulster problem was similar, as was Lenin's (1974), and the combined influence of these partly explains the nationalist position adopted by the mainstream of Irish Marxists – at least until the breakdown since the late 1960s of the virtual unanimity in this regard.

Connolly (1973) argued that "Grattan's Parliament" did not cause the industrial growth of the late eighteenth century, which was due to the

adoption of mechanical power as a result of the Industrial Revolution. The subsequent decline of industry was not due to the Union, he says, but rather to the disadvantage faced by Ireland as a result of the absence of cheap native coal. The weakening of Irish capitalism for this reason, followed by the refusal of the weak capitalist class to risk joining with the people to establish an independent democratic state, made inevitable the imposition of the Union and free trade. But he does say that "an Ireland controlled by popular suffrage would undoubtedly have sought to save Irish industry while it was yet time by a a stringent system of protection, which would have imposed upon imported goods a tax heavy enough to neutralise the advantages accruing to the foreigner from his coal supply, and such a system might have averted that decline which, as we have already stated, was otherwise inevitable". Thus, in stating that industrial decline was not caused by the Union, he did not mean that the imposition of free trade with Britain was unimportant. What he meant was that the mere abolition of a body of upper class Parliamentarians, who had never been of much benefit to the people or to industry, was of little significance compared with the basic cause of industrial decline, which was the absence of coal and the refusal of Irish capitalists to join the people's independence struggle to secure the power to protect the economy against this natural disadvantage.

Sinn Fein the Workers' Party (1977), however, argues that Irish and British industry competed on equal terms under the Union. Although they use different terminology to Lee's, their argument is essentially the same as his (which was referred to above), stressing the effects of bad entrepreneurship in Ireland, and in fact making frequent reference to Lee's work. The British and Irish Communist Organisation (1972) also focus particularly on the deficiencies of the capitalist class in Gaelic Catholic Ireland, in contrast to the strength of that which they argue emerged among Ulster Protestants. But they attempt a deeper explanation of this difference, tracing it back to the origins of Ulster Protestants in early capitalist Britain, a more advanced society than the pre-capitalist Gaelic Catholic clans of Ireland at the time of the Plantations. The B&ICO goes on to argue that the successful development of advanced capitalist industry in Protestant Ulster, which was hatched out of local society but bound up with British markets, gave the northern Protestants a strong interest in the Union with Britain. Thus it ensured that they never merged with the Catholic Irish nation which sought to leave the Union with plans for economic segregation from Britain in the form of wide-ranging tariff barriers.

Some of the interpretations referred to above, such as those of Lee or the B&ICO, concentrate — in different ways — on the importance of certain internal factors in a society as the main requirements for capitalist industrialisation and tend, therefore, to attribute the failure of industrialisation

mainly to internal inadequacies. In contrast, the rest of this article (like some of the other interpretations referred to) stresses the importance of the constraints imposed by the existence of strong competitors elsewhere, which mean that one cannot assume that the attainment of certain necessary local economic and social conditions is *sufficient* for broadly based industrialisation. In most of the major nineteenth century industries, survival and successful development in a competitive environment required that relatively large-scale, specialised and centralised production should be achieved in the quite early stages of mechanisation, and in some cases proximity to major markets was also important. In general, unprotected industries could not and did not develop smoothly from relatively small beginnings after the start of mechanisation elsewhere into successful large-scale producers. Rather, only the few most favoured centres of an industry, which made the earliest start in mechanisation on the largest scale, could develop successfully, disposing of lesser competitors as they did so. This process generally favoured British industries over Irish ones, with whom they were in competition in the market of one single state.

It should be said, too, that the process of development of many important sectors in any one town or area was apparently quite specifically linked to, and depended heavily on the success of its leading sectors — or its earliest major mechanised industries. In Ireland, the various textile industries had the best potential for acting as leading sectors in this way (they were also very important in Great Britain). It is therefore important to outline the manner of their ultimate failure in most of Ireland, and the success of linen in the north-east. An outline of the subsequent development of a wider range of industries in the Belfast area, which can be traced back to the success of linen, will then serve to illustrate both the process which caused industrialisation to be so centralised and the long-term consequences of the failure of textiles elsewhere in Ireland.

III IRISH INDUSTRY BEFORE THE UNION

When the Act of Union was passed in 1800 most of Irish industry did not seem particularly unhealthy. Linen was the most important industry with large exports going mainly to Britain, and the cotton and woollen industries were both still in a strong position in the home market. While these textile industries were the most important, there were also other industries such as grain-milling, brewing, distilling, sugar-refining and the manufacture of luxury consumer items.

The growth of linen exports, which first became significant in the 1680s, had been spectacular during the eighteenth century, from 520,000 yards in 1705 to over 40 million yards in the 1790s (see Gill, 1964). Linen manu-

facture was an ancient craft in Ireland as evidenced by records of yarn exports as early as 1542 (Gill, 1964, Ch. 2). But the type of finished cloth made then, in various locations, was not in demand outside the country and when significant cloth exports began, the weaving and finishing of cloth for export was mainly concentrated in the north-east. Since the manufacture of linen was relatively labour-intensive, while wages in England were higher than in Scotland and Ireland, and since England's mercantilist policies discouraged continental European competitors in the growing English market while English textile manufacturers concentrated mainly on woollens and later cotton, there was clearly an excellent opportunity for linen manufacture in Scotland and Ireland. But within Ireland, one may ask, why did the north-east become the main location of weaving and finishing, particularly for the rapidly expanding export trade? Most writers on the subject agree that the seventeenth century immigration of Huguenots and British settlers to the north-east had much to do with it. For many of them had the particular skills required for the manufacture of broadcloths and finer linens for English and continental markets. With a supply of Irish yarn they were well placed to produce such cloth to supplement the incomes from their small farms.

However, some would argue that this is not a sufficient explanation; "if there had been no stronger cause at work", says Gill (1964, p. 22), ". . .the industry would almost certainly have spread in course of time beyond Ulster". Gill explains the concentration in the north-east by the Ulster Custom which gave tenant farmers security from rack-renting, whereas elsewhere tenants had little incentive to better themselves. Gill, and the B&ICO (1972), argue that, because of the land system, the linen industry outside Ulster — such as it was — had to be unsoundly based in "artificial" large inefficient enterprises and consequently it never really prospered and was mostly ruined in the slump of the 1770s.²

Cullen (1972, Ch. 3) disputes this, saying that the land system in much of the south did not create such extreme insecurity. He agrees that the depression of the 1770s ruined many of the large southern enterprises, but says that the industry there nevertheless survived and expanded as a rural domestic industry, as in Ulster. In fact Crawford (1968) mentions that the Linen Board had begun to encourage the more viable decentralised form of production in the south by subsidising public markets in the 1760s. Cullen's argument is supported by Gill's own statistics which do not tally with his statements on the collapse of the southern industry. Thus Gill's figures

2 The argument is that before the advent of mechanised production after the late eighteenth century, the technology in use gave little advantage to large enterprises over dispersed cottage industries (in textiles, at least, which is the main sector concerned), whereas large enterprises had problems of control over wage labourers who could combine together for better wages and conditions.

(pp. 161 and 271) put sales of cloth outside Ulster at 8 million yards in 1770, 9 million in 1784 and 14.3 million per year in 1816-21; this represents a fairly consistent proportion of total Irish sales, being 19 per cent in 1770 and 1784 and 16 per cent in 1816-21. Thus, while further research may be necessary here, the available evidence suggests that linen weaving, which was already important in much of the northern half of the country by 1770, appears to have grown outside Ulster at much the same rate as in Ulster itself after that date; spinning certainly spread even more rapidly outside Ulster, especially in Connaught. Both developments suggest that the class formation and land tenure system outside Ulster did not necessarily preclude the development of a large rural textile industry. Nevertheless, due to its original strength in the north-east, the weaving and finishing of linen remained relatively concentrated there.

Although linen was the major eighteenth century industry, the mechanised technology of the Industrial Revolution first appeared in Ireland on a wide scale towards the end of the 1770s in the cotton industry, which also led the way in Great Britain. As Cullen and Smout (1977) show, the Irish cotton industry was probably larger and at least comparable in size in 1781-86 to that of Scotland, which was to develop in the Glasgow area a cotton industry second only to that of Lancashire. Dickson (1977) provides a considerable volume of evidence to show that the industry was not predominantly an Ulster phenomenon, but that it was quite widely dispersed with Dublin being a larger regional centre than Belfast or Cork. In the 1780s and 1790s, however, the Irish industry grew much more slowly than that of Scotland and was probably only about one-quarter of the size of the Scottish industry at the turn of the century. It appears that the Irish showed a stronger tendency to keep to the still less mechanised linen industry, especially fine linen, in which they had a strong established competitive position. Also the mainly coarser cottons produced in Ireland were not so readily sold beyond the home market, which had the added benefit of protective tariffs in the 1790s.

By the 1790s, according to Dickson, Belfast was becoming the main location of cotton spinning (the most highly mechanised stage of its production) with 54.5 per cent of Irish capacity in 1800. The reason for this, he argues, was the presence in the adjacent Lagan valley of a large workforce of skilled weavers of finer linens who could work with cotton yarn produced by spinning mills. The fact that cotton weaving could displace linen to the extent that linen weaving almost completely disappeared in the Belfast area in the 1800s (Monaghan, 1942 and Green, 1949, p. 99), without reducing Irish linen output, is a further indication that linen weaving could spread effectively into outlying districts of Ulster and beyond. This tendency of the spinning mills to concentrate in the Belfast area shows, too, that even

at this early stage there were signs of a centralising tendency, in a location which could be heavily influenced by the existing location of related skilled labour.

Although the woollen industry had been excluded from export markets by the Act of 1699 (which is in itself an indication of the contemporary British industry's evaluation of its potential), it had continued to grow during much of the eighteenth century due to its dominance of the home market. But the situation began to change with the transformation of the British industry. Imports of some cloths rose during the 1780s, while the relatively small exports of worsted, made possible after the repeal of the 1699 Act in 1779, declined quickly after 1785. However, the emergence of some factory type firms in Ireland eventually halted the decline for a time; imports levelled off between 1799 and 1825 despite rising demand (Cullen, 1972, p. 105).

In some of the non-textile industries such as brewing, glass, grain-milling and sugar, many Irish firms, especially those in the ports, met increasingly stiff competition from larger English firms around the 1770s. But the Irish firms had mostly been successful in reorganising on a larger scale similar to the English pattern during the 1770s and 1780s and thus maintained their position (Cullen, 1972, Ch. 4).

The available evidence undermines the traditional nationalist view that British legislation prevented industrial growth in Ireland in the seventeenth and eighteenth centuries. Britain's mercantilist regulations actually benefited Irish linen which became an important industry throughout about half the island. And although these regulations limited the woollen industry largely to Irish markets, this did not prevent its expansion. It seems, too, that the traditional nationalist view overestimated the importance of "Grattan's Parliament" as a cause of industrial growth at the end of the eighteenth century. The growth of that period was not, in fact, a remarkable break with past experience, nor was it mainly due to the Parliament. The tariff protection and other encouragements given to the cotton industry were no doubt of some assistance, but in view of that industry's survival until the contraction which began in the 1820s, with only a 10 per cent tariff after 1816, the protection afforded to it by the Irish Parliament may not have been essential at that time.

IV NINETEENTH CENTURY DECLINE

The Act of Union removed some trade barriers between Great Britain and Ireland immediately, but some tariffs such as those on woollen and cotton goods were reduced gradually and removed finally in the early 1820s. For 25 years after the Union there was little indication of the scale

of the decline to come, but in the depression of 1825-26 industry experienced major difficulties which had lasting effects in the cotton and woollen sectors, as competition from the larger more advanced British industries urgently seeking new markets quickened considerably and prices fell. Many Irish woollen manufacturers closed down permanently, and imports more than doubled between 1825 and 1835. By 1838, the Irish woollen industry supplied only about 14 per cent of its home market (Cullen, 1972, Ch. 5). This decline of the Irish industry, as Cullen points out, was comparable to the decline of smaller British centres such as Norwich and the south-west, in the face of the growing dominance of Yorkshire.

The 1820s were also traumatic for the cotton industry in Leinster and Munster, although one particularly large vertically-integrated firm at Portlaw continued to expand until the 1860s before finally collapsing in 1874 (Dickson, 1977). In Ulster increasing specialisation in the weaving and embroidery of muslin (by hand) continued to provide much employment, but a growing proportion of the yarn was imported from the much larger Glasgow industry and the number of cotton spinning mills in the Belfast area declined from 22 in 1824 to 10 in 1840. The contraction and decline of cotton in Ireland, Dickson concludes, may be regarded as "only one aspect of the general concentration of the industry on Lancashire and Glasgow, in the second generation of industrialisation". The absence of coal in Ireland and the greater external economies enjoyed at an earlier stage by these larger British centres of the industry, he suggests, would explain much of their increasing competitive advantages over the Irish industry. The importance of coal may be doubted, as we will suggest later, but the train of events in Ireland and Britain in the textile industries was certainly consistent with the idea that increasing advantages accrued from external economies in ever larger centres of the industry, which progressively eliminated smaller competitors.

In the mid-1820s a successful process for powered spinning of fine linen yarn was developed for the first time and many of the Belfast cotton mills, under severe competitive pressure, changed over to linen (Coe, 1969, Ch. 5). Because the linen industry had large established markets, a large population of skilled weavers in the area, and existing mills and factory hands available at the time when the new technology was first developed, Belfast was in an excellent position to become one of the early major centres of mechanised fine linen spinning. Actually, machinery was developed by 1790 for spinning *coarse* yarn from flax, but this had been little used in Ireland, probably due mainly to lower wages than in Britain; a few British centres had, therefore, captured the coarse linen trade but Irish fine linen was unaffected.

The decline of the woollen industry and the centralisation of linen spinning in Belfast had severe consequences for the rural poor – the landless labourers, the cottiers and the smaller tenant farmers, for spinning had provided an important supplement to their household incomes, especially those in Ulster and Connaught. In the north and west of Ireland, as in other areas of Europe with a widespread domestic textile industry before the Industrial Revolution, the incidence of this work was associated with a high population density and a relatively landless peasantry, so that it had become an important condition for the survival of these societies. In Ireland, since the decline of domestic spinning coincided with the early stages of a long-term rise in the price of beef relative to more labour-intensive agricultural products, which began to limit the demand for labour in agriculture, it became increasingly difficult for the still growing numbers in the poorer classes to earn a living (see Crotty, 1966, modified by Lee, 1969). Consequently emigration was already growing in the 1820s and 1830s, although it was only during and after the Great Famine of 1845-48 that emigration actually led to population decline. The severity of the famine was due less to an absolute shortage of food than to unemployment and lack of access to sufficient land among the labourers, cottiers and smaller tenant farmers, many of whom came to have little income and to depend heavily on small-scale cultivation of the unreliable potato crop for subsistence.

The industrial crisis in the first half of the century was confined to textiles. Cullen (1972, pp. 123-125) shows that other industries such as milling, brewing, iron-founding, shipbuilding, rope-making, paper and glass-making expanded at this time. The growing importance of large-scale production and centralisation was also evident in these sectors since the number of firms declined as the larger producers, generally situated in or near the towns, gained larger markets with the help of improvement in road and canal transport. But outside textiles this process had not yet developed to the point where an Irish regional market was inadequate for competitive production.

A new industrial crisis emerged in the 1870s, the immediate cause of which was the onset of the "Great Depression" in Britain in 1874 leading to tougher competition for markets, as well as the decline of agricultural demand due to bad harvests and falling grain prices caused by cheap North American grain (Cullen, 1972, Ch. 6). But the crisis had deeper roots, since in many industries considerable progress had been made in methods of large-scale production in Britain and elsewhere, while transport costs to Irish markets had been reduced. Although Irish firms also had the benefit of this cheap transport, of course, it would be reasonable to suggest that the relatively small, declining and dispersed nature of local markets (as a result of a declining agricultural population after the 1840s and the earlier failure of textile-based industrialisation) gave them little incentive to introduce

new methods of large-scale production. But British or European firms, with larger, growing markets close by, had that incentive and could then go on to capture export markets such as Ireland's. Irish industries which declined from (or just before) this time included iron-founding, paper, boot-making, rope-making, tanning, milling and chandling (Cullen, 1972, Ch. 6).

The example of one major success in southern Irish industry – Guinness's brewery – underlines the argument above. It was not very surprising that a single Irish brewery was able to gain such a large share of first the Dublin and then the Irish market as Guinness did, for brewing was an industry in which the benefits of large-scale production became important quite early. Guinness's dominance of the Irish market combined with limits on the growth of individual British breweries – caused by their practice of buying up public houses and thus cornering limited markets – made Guinness a product which could remain competitive and develop large export sales.³

By the time of independence there had been no significant industrial recovery although some light industrial products such as tobacco and boots were being produced in large factory-type firms for the first time. However, the insignificance of industry in the new Irish Free State is summed up by the figure mentioned earlier of an industrial labour force of just over 100,000.

In Britain the major industrial areas throughout the nineteenth century were the original large textile centres such as Manchester and Glasgow; apart from Belfast there was no such centre in Ireland for reasons already mentioned. There were also some important industrial centres built in areas of rich natural resources and again none of these developed in Ireland for obvious reasons. (The textile and mining centres in Britain often virtually coincided.) Another possible leading sector which might have stimulated some further industrialisation in Ireland was agricultural machinery (as in Denmark), but this possibility, too, was closed off by the pattern of agriculture, which was relatively small in scale and increasingly dominated by grazing.

Towards the end of the nineteenth century and later, a new type of industrial area arose in Britain with the mechanisation of consumer metal goods production and the development of new consumer durable products such as sewing machines, bicycles, motor cars and later electrical goods. The location of these industries was determined in part by a tradition of metal goods manufacture before mechanisation, but an increasingly important factor was proximity to the major market in the southern part of England. In these industries, economies of scale and specialisation became increasingly important as technology developed, so that firms with favoured

3 I am grateful to Raymond Crotty for showing me some of his unpublished work on this matter.

locations in the south eventually wiped out the early small-scale industries operating elsewhere. In Belfast, for instance, bicycle and motor car production died out in the 1920s (Coe, 1969, Ch. 7). As Hobsbawm (1976, p.219) puts it, "in a broad belt stretching between the Birmingham and London regions, industry grew: the new motor manufacture was virtually confined to this zone. The new consumer goods factories multiplied along the Great West Road out of London, while emigrants from Wales and the north moved to Coventry and Slough. Industrially, Britain was turning into two nations". The decline in the dynamism of industry which became evident in Belfast soon after the First World War was thus part of a general trend throughout the older industrial areas of the UK. In the rest of Ireland, the potential for the development of these new industries was even less than in the old industrial areas, due to the small local market and the poor development of engineering skills in the absence of earlier industrialisation.

To sustain the argument that industrial decline in most of Ireland was mainly connected with the advantages of relatively early development of large-scale and centralised production and proximity to major markets, we must refer to some other conceivable causes of industrial failure which may be dismissed. As Lee (1968) shows, capital shortage was not a problem since it was available in sums quite adequate for industry. Also, the argument that the price of coal in Ireland was an important disadvantage was challenged by Kane in 1844 and has been effectively refuted by Mokyr (1980). Both acknowledge that coal prices were several times higher in Ireland than in the mining areas of Britain, but they then show that coal was such a minor part of total production costs that the price difference was unimportant and easily offset by cheaper labour. Figures quoted by Mokyr (1980) suggest that expenditure on coal in Irish manufacturing firms rarely exceeded 3 or 4 per cent of production costs.⁴ Cheap labour, too, was clearly available in abundance, while poor basic education could not have been a problem since Ireland was a relatively literate society by 1841. The possibility that a lack of competent entrepreneurship may have been a major cause of industrial underdevelopment can be more conveniently considered later after examining the industrialisation of the north-east.

To what extent was the Union responsible for industrial decline, as the traditional nationalist interpretation argues? While the old Irish Parliament may not have made an essential contribution to the welfare of industry, and although the Union involved no legal disadvantages for Irish industry,

4 The frequent location of British industrial centres at the mining areas was probably due more to the early development there of engineering skills in the production of mining machinery, including steam engines, than to the advantages of proximity to coal and iron sources; such an explanation is suggested by the rather similar pattern of engineering development which arose in Belfast, starting with textile machinery and steam engines, in the absence of local coal and iron.

the introduction of free trade with Britain and the inability of Ireland to impose new tariffs as the need gradually grew greater in the nineteenth century was significant. In fact, all the other countries which industrialised successfully, after Britain, in the nineteenth century used some degree of protection for a time against their more advanced competitors, especially against Britain itself. Some writers have argued that protection would probably have done no good in the long run, suggesting that it would even have caused greater inefficiencies. But it does seem clear that, given effective protection, the woollen and cotton industries in particular could have grown and carried on much longer. In an age of simple and newly developing technology in which engineering industries arose to meet local needs (unlike in the twentieth century, as with Ireland's post-1930s protectionist phase), the dynamic benefits for machinery and related industries could have been of considerable value for several generations at least, even if the textile industries eventually proved inefficient. The argument that protection could have done little good seems to give little consideration to the nature of the early pattern of development from textiles (or other leading sectors) to a wider range of related industries. Recognition of this pattern is important for an understanding of the highly centralised nature of industrialisation and the consequent difficulties for industrial development in most of Ireland. We now consider an example of this pattern of development in the Belfast area.

V THE NORTH-EAST

Industrialisation continued in the north-east with linen replacing cotton as the main mechanised industry after the 1820s. Belfast's population rose from under 20,000 in 1791 to 75,000 in 1841 and close to 400,000 by the 1900s. Industrialisation also affected some smaller towns within about 30 miles of Belfast.

The production of fine linen from flax, in all its stages, was relatively labour-intensive and this helped the northern Irish industry, which could pay lower wages than the British industry (apart from wages of skilled men), to gain markets rapidly from the British linen industry, which was in any case relatively small compared with other textiles. As the Irish industry grew, linen spinning began to decline before 1860 in England and by 1890 it had almost ceased there and was no longer a major industry in Scotland. But although Belfast linen prospered by capturing markets from others, the long-term prospects were not good. World demand for linen began to decline before the end of the century, although Irish output continued to grow for several decades more.

Belfast's textile industries gave rise to many important branches of engineering, including steam engine construction. Until the late nineteenth century, the weight of this machinery combined with poor transport conditions encouraged its production near to where it would be used. Another advantage of such a location was the fact that for maximum efficiency steam engines had to be designed for the particular circumstances in which they would work. In the first half of the nineteenth century "any large engineering firm would have been prepared to undertake the construction of all types of machinery, including steam engines, if they could secure designs or machinery to copy, for specialisation did not become general until the second half of the nineteenth century" (Coe, 1969, p. 39). Thus it was possible for non-specialised firms in quite a number of places in Ireland to produce them when the demand arose locally. Consequently, as late as 1838 two-thirds of the steam engines used in Irish industry were made and located outside Belfast. But because the number of new installations had been increasing fastest in Belfast since the early 1830s as the linen industry grew and became mechanised, Belfast overtook Dublin as the main producer of engines in that decade. Belfast's dominance was already well established when specialisation became important later. (See Coe, 1969, Ch. 4 concerning this discussion of steam engines.)

Steam engine manufacture involved the construction of high pressure boilers which were different to those used at atmospheric pressure in such processes as distilling (Coe, 1969, Ch. 6). They were replaced more frequently than engines and had other uses too, so boilermaking became a big industry requiring many skilled men.

The growth of boilermaking in Belfast was crucial for the development of shipbuilding. For, as Coe (1969, Ch. 6) points out, Belfast was at no disadvantage to places such as Cork through having lagged behind in wooden shipbuilding since "the building of iron ships was not a further extension of wooden shipbuilding, but a different craft, a development of boilermaking. Thus the first iron vessel launched in Belfast was constructed, not in one of the existing shipbuilding yards, but in the engineering and boilermaking firm of Victor Coates & Co." That was in 1838 when Belfast had just become the main producer of steam engines and boilers in Ireland. But iron shipbuilding remained a relatively small industry throughout the UK for some time, and when it began to expand decisively Belfast was the one place in Ireland that offered the necessary conditions — i.e., skills and related engineering industries as well as a favourable physical setting — for a major iron shipbuilding industry.

The origins of the firm of Harland & Wolff support the view that Belfast was particularly suited for this industry because of the fact that local demand had already led to the production of boilers from heavy iron plates.

In 1851, the Belfast ironworks was opened, pledged to make iron plates for local industries from the meagre Irish supplies of coal and ore. It was soon forced out of business by competing imports and the owner William Hickson hit on the idea of turning his surplus stocks into iron ships (Goldstrom, 1968). Hickson had the right idea but he knew little about shipbuilding and the venture was saved only by the manager he recruited from England, Edward Harland. Harland soon bought out the firm, took Wolff as a partner, and they built up the company that became the second largest shipbuilder in the UK by the 1900s.

Another important industry in the north-east was the production of machinery for preparing and spinning flax, and later for other similar hard fibres such as hemp, jute and sisal. Again there are good reasons why this industry developed there since a close association between machine makers and users benefited both parties. Coe (1969, Ch. 5) quotes a commentator in 1874 who said the Belfast machine-making establishments were "surrounded by spinning mills and were visited almost daily by the spinners, who thus were able to see the progress being made in the execution of their orders, and to point out their exact requirements and the defects of previous machines". Machinery for preparing and spinning flax was also produced in British linen centres, but as they became eclipsed by the Belfast linen industry, the Belfast machine-makers grew more competitive and captured export markets from them. Coe also points out that because cotton machinery did not lend itself to preparing and spinning hard fibres such as flax, Belfast machine-makers were not in competition with the larger more advanced industry producing such machinery for cotton. Thus the Belfast industry could become the largest and most advanced in the world in its own field.

Other industries arose later in the north-east, not in response to local demand, but rather due to the availability of skills, marketing organisation and other advantages of a large manufacturing centre which developed earlier due to local demand, but could be turned to specialised manufacture of new products for other markets. One outstanding example of this was Davidson & Co., the first producer of tea-drying equipment in the 1880s and supplier of 70 per cent of the world market for it in the 1930s (Coe, 1969, Ch. 8). Through their pioneering development of fans for this equipment, Davidson's came to be major producers of ventilating and heating equipment for ships, factories, mines etc.; they even supplied most of the ventilating fans for the ships which made up the German First World War battle fleet. Probably similar factors – the existence of supporting engineering industries, skilled labour and (as Cullen, 1972, p. 161 suggests) advantages in the organisation of export trade – made Belfast a large centre of production and export of food, drink and tobacco.

To support the argument that significant industrial development was

generally only possible, in a competitive environment, where particular industries were established relatively early and on a relatively large scale, it is useful to consider briefly some sectors which did *not* develop or succeed for long, even in Belfast. Thus, despite the existence of a cotton industry until the 1820s and later, the manufacture of cotton spinning machinery never became important due to competition from larger more advanced specialists in Britain. Furthermore, because the power looms which were eventually developed for weaving linen were somewhat modified versions of those used for cotton, Belfast machine-makers were never major suppliers of power looms to the linen industry – again, (as Coe 1969, p. 69) argues, due to competition from British specialists in cotton looms.

The experience of Irish iron-founding is significant too. When general iron-founding, which was widespread throughout the island, suffered from increasingly British competition in the later part of the nineteenth century, the industry in the north-east declined in much the same way, with the significant exception of firms specialising in parts for machinery being made locally (Coe, 1969, Ch. 3). Part of this general decline was the drop in production of agricultural implements and machinery which was hastened by the relatively small size of Irish farms and the decrease in tillage. Again, firms in this industry in the north-east fared no better, and in some cases worse, than those in the south. Similar remarks about the failure of particular engineering industries in the north-east, due to the absence of a sufficiently large local market and the existence of specialised producers elsewhere, apply to locomotives and most machine tools, as well as the new generation of consumer durables (Coe, 1969, Chs. 7-9).

To conclude these remarks on the north-east, it may be said that, whatever the shortcomings of the B&ICO's explanation, one could accept their point that the north-east became a closely integrated and developed part of the UK industrial economy, depending heavily on trade with Britain and the empire. In contrast, it emerged that the competitive advantage of the rest of Ireland – faced, under free trade, with the dominance of the large, earlier established industrial centres of Britain – lay mainly in agriculture, and indeed a type of agriculture which required diminishing inputs of labour. Whatever one's views about the merits of free trade in terms of purely economic efficiency, and despite the benefits of free trade for certain classes, it was scarcely surprising that much of the southern national independence movement regarded the resulting heavy emigration, population decline and social disruption as politically unacceptable. Many in this movement thus became committed to economic, as well as political separation from the UK, in the form of the establishment of protective trade barriers and the encouragement of tillage. (This policy was not, in fact, fully implemented until the 1930s, 10 years after the establishment of the Free

State.) This situation, and the fact that the southern national independence movement defined Irish identity in a way that in effect excluded the non-Catholic and non-Gaelic community of the north-east, is a more appropriate starting point for an understanding of Partition than a conception of all Ireland as naturally one economy and society which came to be artificially divided.

We can now return to consider the argument that poor entrepreneurship was the main cause of industrial underdevelopment in most of Ireland. Lee (1973, p. 15) instanced the story, referred to above, of Hickson and Harland at the time of the foundation of Harland & Wolff as an example in support of this view, arguing that where Hickson failed the immigrant entrepreneur, Harland, showed what could be achieved. But this overlooks the point that, although Harland was the more talented of the two, both he and Hickson evidently agreed that the situation offered an excellent opportunity to build iron ships; and, as was argued above, conditions in Belfast were indeed exceptionally good for such a venture. Lee also points out that many other industries were developed in Belfast by entrepreneurs who included many new British immigrants, with local businessmen becoming more prominent only later. But these examples, like the case of Harland, do not prove the point that competent Irish businessmen could have fostered more widespread industrialisation. Rather they show that exceptional opportunities for profitable industrial development existed in the north-east to attract such people who might reasonably have been expected to perform a similar function, if possible, in the south. The reason why many early industrial entrepreneurs in Belfast were immigrants was probably because they had greater engineering experience at an earlier date due to the earlier and more extensive development of such industries in Britain arising from the earlier mechanisation of cotton (and perhaps mining).

Lee (1968) also suggested that Irish capitalists showed examples of poor enterprise in not investing in railways or banks until after British capital bore the initial risks. But concerning railways, it must be recognised that the period referred to was notable for the "railway mania" rampant among British capitalists. Hobsbawm (1976) says that a great deal of British capital "was sunk into railways, and much of it was sunk without trace, because by the 1830s there were vast accumulations of capital burning holes in their owner's pockets. . ." In these circumstances, the relative slowness of Irish investment in railways does not necessarily indicate excessive caution. Furthermore, Hobsbawm could say of Europe as a whole "inevitably we find the first railways — and often the bulk of railways — built by British contractors, with British locomotives, rails, technical staff and capital". Ireland simply fitted into the general pattern. As regards the banks, it seems likely that the reluctance of Irish investors to take advantage immediately of the

abolition of the Bank of Ireland's monopoly of joint-stock banking in 1821 was related to the discouraging events of the Irish banking crisis of the previous year, in which a number of private banks failed.

That business enterprise was not generally absent when opportunities existed was suggested by the efficient reorganisation and growth of most non-textile industries, along lines similar to Britain's after the 1770s and in the first half of the nineteenth century, as well as by the satisfactory development of distribution and transport. But whatever the quality of local business enterprise, the fact that British capital and entrepreneurs did get involved in the Irish economy in some sectors, such as railways and banks, and in the north-east in particular – but not on a more general scale – suggests that untapped profitable opportunities for wider industrialisation were not particularly evident to them either.

VI CONCLUSION

In nineteenth century Ireland many of the local conditions often regarded as major requirements for industrialisation – such as supplies of capital, cheap labour, a basic education system and competent entrepreneurs – were not particularly unfavourable. Rather the industrial decline was mainly connected with the advantages of large-scale and centralised production from the early stages of mechanisation, as well as proximity to large markets. These factors generally worked against Irish industry, except in the north-east, and in favour of competitors elsewhere. The experience of Irish industry under the Union may be regarded as an example of the fact that, even given quite favourable local conditions, free market forces can by no means be relied on to generate industrial development, or even to sustain existing employment, in a relatively late-developing economy in close competition with more advanced industrial countries. Much of the literature on issues of industrialisation in late-developing countries (which would include Ireland) in modern times would argue that a similar conclusion still applies.

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