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An Expenditure Estimate of Irish National Income in 1907*

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Abstract: In order to compare Ireland's GDP per capita to other countries in the early twentieth century, a new expenditure based estimate for 1907 is presented in this article. Since it broadly adopts Feinstein's method for estimating UK GDP, it is more compatible with the UK figures than previous estimates and therefore provides a better benchmark for comparison with other countries. In general expenditure based GDP estimates tend to come out higher than income or output based estimates. If the latter methods are adopted for Ireland and compared to Feinstein's figures for the UK, this will tend to understate Irish performance. This paper attempts to reconcile this problem by adopting a more compatible methodology; it concludes that Ireland's economic performance was better than earlier estimates suggest.

I INTRODUCTION

Historical national accounts for Ireland in the early twentieth century have only recently received attention from economic historians (Kennedy, 1995). No annual series has yet been produced for Ireland comparable to those produced by Feinstein for the UK. However, Ó Gráda (1994) has published a spot estimate of £135 million for the year 1914 largely using output data, while Maddison (1995) has assumed that southern Ireland's per capita GDP level was 54 per cent of the UK in 1920. This

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proportion was assumed to be valid for 1913, which conforms reasonably well with Ó Gráda's estimate.

The performance of the Irish economy relative to other European economies in the first decades of this century is an important issue in Irish economic history, as it provides a benchmark against which subsequent performance can be compared. The above estimates imply that Ireland was well down the European league. In this article, an alternative expenditure based estimate of GDP for 1907 is presented, which suggests that Ireland's income was higher relative to the UK and other European countries than those emerging from previous studies. Since Feinstein's UK data are generally used as the benchmark for comparing Irish national income to other countries, we argue that an estimate which uses Feinstein's expenditure based methodology is likely to produce an estimate more compatible with Feinstein's results than previous attempts.

In the following sections, the method used is first of all outlined and a table provided summarising the composition of Irish expenditure in 1907. The details of the estimate for each category can be found in the Appendix. Related materials are then introduced, which lend support to the plausibility of our higher figure, while also providing some suggestions as to why earlier figures may be too low. Finally, in the concluding section, this new Irish estimate is placed in its international context.

II THE ESTIMATE

The estimate outlined in this paper follows the method and format of Feinstein (1972), taking account of some recent corrections to his capital expenditure component (Mitchell, 1988, pp. 831-833). This approach provided a framework and allowed us to profit from the large amount of work done on the UK national accounts over many decades. For our specific purpose, the most important outcomes of that endeavour appear in Prest's pioneering personal expenditure estimates for the UK (1954) and Feinstein's UK national income and expenditure estimates (1972). As far as possible, data relating specifically to Ireland has been used but when Irish data was not available, we have taken 6 per cent of the UK figure, which is Feinstein's estimate of the Irish share of UK GDP in 1907 (Feinstein, 1972, p. 212). Our data suggests that for most items of consumer expenditure, 6 per cent is a conservative estimate of Ireland's share, making it suitable for those items (like matches and cleaning materials) where data is lacking. In Table 1 we present the final results.

Table 1: *Irish GDP in 1907 at Market Prices*

	Item	*Value Ireland*	*Value UK*	*Per Cent UK*
1	Food	40,897,000	510,000,000	8.0
2	Drink	14,477,000	171,000,000	8.5
3	Tobacco	3,392,000	33,000,000	10.3
4	Housing	9,413,000	201,000,000	4.7
5	Fuel and Light	7,114,000	74,000,000	9.6
6	Clothing	14,112,000	162,000,000	8.7
7	Carriages and Cars	475,000	5,000,000	9.5
8 & 9	Durable Household Goods	5,886,000	68,000,000	8.6
10	Matches and Cleaning Materials	1,200,000	20,000,000	6.0
11	Books and Recreational Goods	2,232,000	31,000,000	7.2
12	Chemists and Other	3,060,000	51,000,000	6.0
13	Public Travel and Communications	3,984,000	76,000,000	5.2
14	Vehicle Running Costs	960,000	16,000,000	6.0
15	Domestic Service	4,527,000	69,000,000	6.6
16	Catering	7,865,000	143,000,000	5.5
17	Other Services	10,478,000	169,000,000	6.2
18	Adjustment	720,000	12,000,000	6.0
19	Total Consumer Expenditure	130,792,000	1,811,000,000	7.2
20	Public Authorities	8,004,000	163,000,000	4.9
21	Gross Domestic Fixed Capital Formation	7,245,000	176,000,000	4.1
22	Value of Physical Increases in Stock	–1,280,000	–16,000,000	8.0
23	Exports less Imports	–1,096,000	18,000,000	
24	**GDP at Market Prices**	**143,665,000**	**2,152,000,000**	**6.7**

Estimates for consumer expenditure in this paper are stronger than those for capital expenditure, reflecting the greater availability of data in the former case. Extensive use has been made of the 1908 estimate of Irish agricultural output and the 1907 estimate of Irish industrial output. These two sources, combined with import and export data for 1907, provide the basis for consumer expenditure estimates, which account for the lion's share of GDP. The year 1907-8 has been chosen for this estimate because of the unique availability of these data sources; decades elapsed before another comparable official data-set became available by which time the 26 counties of southern Ireland were no longer part of the United Kingdom. Revisions

have not been made to these basic sources, even where there seems to be a good case for revising them upwards. Ó Gráda (1988, p. 131), for example, notes "the conservatism of the official estimate of [agricultural] output in 1908", while in a more recent survey he makes the case for adjusting the official estimates of industrial output upwards. (Ó Gráda, 1994, p. 381.)

For detailed notes on the composition of individual categories and items used in this paper, readers should consult Feinstein (1972), Table 24 (p. T. 61), which contains the format of the UK estimates followed here. Feinstein's notes on page T. 64 give a breakdown of each category of consumer expenditure. The capital expenditure component of the UK estimate adopted here is published in Mitchell (1988, pp. 831-3); these include a number of revisions to the capital expenditure estimates. The details of how these revisions were made may be found in Feinstein and Pollard (1988). Much of Feinstein's work on consumer expenditure is based on the earlier work of Prest and Adams (1954), which provides more detail on how individual items were constructed.

Finally, an important and complicated issue in an historical expenditure estimate, the distribution margins (DMs), which adjust from producer to market prices, have been taken from Feinstein (1972, p.15). In his view, the possibility that these DMs inflated expenditure estimates was more likely as one moved backwards to 1870 given that the scope for increasing productivity is less in distribution than in production. These UK DMs, 40 per cent for home-grown food; 35 per cent for home-produced manufactures; 26.5 per cent for imported food and 43.5 per cent for imported manufactures, have been adopted here to cover distribution costs.

A question arises regarding the application of these UK DMs in an Irish context. No research has been undertaken on Irish DMs. Available evidence on railway transport costs suggests that Irish costs were higher than those in the remainder of the UK. While through rates from Britain were competitive, the rates for journeys within Ireland exceeded those in Britain (Conroy, 1928, pp. 176-192). Irish railway wage rates in 1914 were only marginally less than in Britain (Ó Gráda, 1994, p. 238). However, costs were probably higher in Ireland because the lower volume of traffic led to inefficiencies such as low capital utilisation and labour productivity. Additionally, mark-ups might also have been higher because of the lower critical mass and the less competitive structure of Irish retailing. It should be noted that the final estimate is not highly sensitive to some margin of error arising from the existence of higher or lower DMs than those assumed here. The total value of DMs assumed in the estimate is a little over 14 million pounds (which is under 10 per cent of the value of the estimate). If the DMs are 20 per cent too high or 20 per cent too low, less than 3 million pounds would need to be added or deducted from the GDP total which is approximately 2 per cent of GDP.

III THE ESTIMATE IN CONTEXT

In this section, supporting evidence is presented for an Irish GDP figure higher than those previously estimated. The plausibility of the current estimate is considered in relation to Kiernan's expenditure estimate for the Irish Free State in 1926 (Kiernan, 1933). Its consistency is also considered in relation to wage, productivity and standard of living trends for the same period.

3.1 *The Estimate and Other National Income Estimates*

The 1907 estimate contained in this paper, while generally indicating a higher level of national income, is not all that far from earlier estimates of national income for the period, when allowance is made for the fact that expenditure estimates tend to be higher than income or output based estimates. There are also good reasons for an upward adjustment of the figures of Cullen and Ó Gráda.

Cullen (1995, p. 8) has expressed scepticism about his revised GNP figure of £139 million for 1911 which he believes to err on the side of caution. He claims that the figure of £150 million, his original estimate, seems more probable, since the higher figure would bring Irish exports expressed as a percentage of GNP to 43 per cent which is high; in his view, a lower GNP figure would make this percentage unacceptably high. Although Irish trade per capita was high relative to other European countries, including GB (Oldham, 1908, p. 181), we are inclined to agree with Cullen on this point, more especially since his estimate does not allow for volume growth in industry and agriculture between 1907 and 1911.

There are also reasons to believe that Ó Gráda's estimate of £135 million for aggregate output in 1913 could be revised upwards. Since this figure is the latest published estimate for this period, and the one most widely accepted, it is worth looking at how it was arrived at. By using the *1907 Census of Industrial Production*, Ó Gráda was able to estimate output per industrial worker, which he multiplied by an estimate of total industrial employment taken from the *1911 Census of Population*. He thereby arrived at a figure for industrial output of £36-40m, in addition to an estimate of £50m for agriculture. Both of these figures were based on output data (Ó Gráda, 1994, pp. 380-381). Ó Gráda then proceeded as follows:

> The 1911 census (corrected as above) reported 578,397 employed in industry and 780,867 in agriculture. The tertiary sector (i.e., the professional, domestic and commercial categories) employed 423,026, or 31 per cent more. Given an agricultural output of £50 million, and assuming that productivity in the service sector matched that of the

> primary and secondary sectors, would mean adding 31 per cent, i.e., £(36+50)(0.31) to £(40+50)(0.31) — or £26.7 million to £28 million — to the total. That would increase the aggregate estimate to something between £113 million and £118 million. However, both UK and later Irish Free State data suggest that the assumption of equal productivity is a cautious one: in the UK in 1920 output per worker in the tertiary sector was over one-third greater than in the rest of the economy, while in 1926 output per worker in the non-traded sector (i.e., services plus construction and utilities) of the Irish Free State was over one-half greater than that of the agricultural and industrial sectors combined. Increasing the estimate range to one of £118 million to £123 million would seem appropriate. (Ó Gráda, 1994, p. 381).

By allowing for industrial and service sector growth between 1907 and 1914, together with an allowance of £1m for forestry and fishing, Ó Gráda suggests GNP would have been in the range of £130m to £140m. He therefore opts for "a tentative figure of £135m". (Ó Gráda, 1994, p. 382.) Ó Gráda's estimates for industry, forestry and fishing seem generous enough. Within the service sector his estimate may be over cautious if, as he suggests, output per person in services may have been anything between one-third and a half higher than in agriculture and industry combined. This would add £9m to £13.5m, as opposed to the £5m which he allows. This would raise his estimate range to between £122m at the lower end to £131.5m at the higher end, before any allowance is made for the upward adjustments for industrial and service output growth between 1907 and 1914, together with a small addition for forestry and fishing, which would produce a figure more compatible with this one.

A higher figure for GDP per capita in Ireland prior to the Great War needs to be aligned with later estimates in the post-war period, which show a significant decline of GDP per capita relative to the UK for those living in the Irish Free State in 1926. The estimate in this paper shows that GDP per capita in Ireland was almost 67 per cent of the UK level in 1907, compared to a ratio of almost 56 per cent for the Irish Free State in 1926 (Maddison, 1995). This implies that there was a major drop in Ireland's position relative to the UK between 1907 and 1926 if Kiernan's Free State estimate is taken for the latter year of 4.5 per cent of UK GDP. However, a question arises as to reliability of Kiernan's estimate given that it was made decades before national accounting and historical national accounting procedures became more standardised. Prest and Adams (1954, pp. 183-185) calculated that the 26 counties accounted for about 5 per cent of UK national income in 1920, which is somewhat higher. Feinstein (1972, p. 52) also notes that Kiernan's

estimates are very low for a number of categories (including household goods, entertainment, religion and other services for example). This difference in method makes comparison with Kiernan's estimate problematic.

Even allowing for incompatible methods, there is evidence to support some decline in per capita income in the Free State relative to the UK in the immediate aftermath of partition, especially when it is compared with the 32 counties prior to Independence. First, the loss through partition of the more industrialised region of the country (which became Northern Ireland) must be taken into account. In 1911, the manufacturing labour force in all of Ireland accounted for one-fifth of the total occupied labour force. In the North, the figure was 35 per cent, which approached the British level, while in the south it was only 13 per cent (Kennedy, 1995, p. 109). The average per capita income in the Free State in 1926 would have been lower given the higher proportion of the population dependent on agriculture, which accounted for 48 per cent of total employment in 1926, compared to 37 per cent in services and only 15 per cent in industry (Ó Gráda, 1997, p. 170). Second, while the significant downturn in the 1920s followed a pattern evident in the British and Scandinavian economies (Broadberry, 1984), some additional problems exacerbated the intensity of recession in Ireland. The War of Independence resulted in considerable damage to buildings, roads, creameries, bridges and railway lines. The damage in this period was probably much greater than during the Civil War which followed in which damages are estimated to have been up to 50 million pounds, or roughly one-quarter of GNP for a single year (Garvin, 1996, p. 164, UCD Archives Dept; P.80/320Ci). The Protestant population of the 26 counties alone fell by one-third between 1911 and 1926, with a consequent loss of capital; many Protestants who departed came from wealthy middle-class or landed backgrounds. Independence also resulted in the loss of transfers from the British Treasury, while the fiscal retrenchment of the new Free State government further dampened demand. The new government's commitment to agriculture as the driving force behind potential development, was damaged by falling agricultural prices and growing competition from New Zealand and Denmark in the British market. The decline in quality during the boom years of the war had tarnished the reputation of Irish agricultural produce, and hampered attempts to maintain market share subsequently. In addition, the trade deficit increased at this time in the Free State, which would reduce income estimates using the expenditure method. Ó Gráda observes that "the 1920s were years of static or declining real incomes and declining employment opportunities in Ireland. The admittedly partial official statistics reveal few signs of worthwhile progress. Economic growth seems to have been slower in the Irish Free State in the 1920s than in any of the other newly-emergent nations of Europe" (Ó Gráda, 1997, p. 228).

The year 1926 was a particularly bad one for the Irish Free State. Unemployment had risen to 6 per cent of the labour force in that year (Ó Gráda, 1994, p. 437). Cullen (1972, p. 173) notes that "the fall in agricultural prices which seemed to even out in 1925 was sharp in 1926. The volume of exports declined steeply in 1925 and 1926, and imports also fell, although less sharply. There was something of an economic crisis in these years". In 1926, the management of Wills in Dublin, which controlled a substantial share of the Irish cigarette market, blamed the reversal of the progress they had made in preceding years on the severe economic downturn in that year (Alford, 1972, p. 386). Taking all of these circumstances into consideration, some decline in Ireland's GDP per capita relative to the UK does not seem implausible.

3.2 *Comparative Wages, Productivity and Standard of Living*

Williamson (1994, p. 8) suggests that in exploring the historical dimensions of economic convergence, trends in real wages in different countries serve as an alternative to GDP per capita as a basis for comparison. The data-set Williamson uses for making the case for wage convergence between Ireland and Britain is based upon the wage levels of general labourers in the building trade in Dublin and Cork, though he claims it makes little difference if these wages were to be substituted by farm wages (Williamson, 1994, p. 8). He concludes that real wages in Ireland from the 1850s to the eve of the First World War were converging with those in Britain, reaching 71 per cent of the British level in 1870 and rising to 92 per cent in 1905, before falling back to 88 per cent in 1912.

A range of other evidence also suggests that a high degree of wage convergence had taken place by the eve of the Great War. Ó Gráda (1994, p. 238) compares money wages in 1914, first for a range of skilled and semi-skilled work, second, for male labourers and, third, for female labourers. Average wages for Ireland and Great Britain for these three categories were 34.9 versus 37.7 shillings for the first, 16.6 versus 22.6 shillings for the second and 9.4 versus 13.6 shillings for the third. These figures indicate that the more skilled the work, the higher the level of convergence; they also indicate that general convergence was well advanced by the end of the nineteenth century. O'Rourke (cited in Kennedy, 1995, p. 108) demonstrates that real agricultural wages in Ireland rose from 61 per cent of the British level in 1860 to 75 per cent in 1913, while unskilled building wages rose from 58 per cent to 72 per cent (also see Boyer, Hatton, O'Rourke, 1994). Indeed, by the 1920s, wages in a number of skilled occupations were actually higher in Ireland than in GB (O'Rourke, 1994). It is unclear, however, if this was true for labourers in the agricultural sector in the 1920s; Lee (1989, p. 115),

for example, notes a fall in agricultural labourers wages of 10 per cent between 1922 and 1926, and by more than 10 per cent between 1926 and 1931. This is important because unskilled labour formed a larger proportion of the labour force in Ireland than in Great Britain. However, available evidence on wages for the period between 1860 and 1913, which includes data on agricultural labourers and unskilled workers, indicates that there was strong wage convergence between Ireland and Britain, suggesting that GDP per capita was also converging (see O'Rourke, 1994, 1995).

The *UK Census of Production (1907)* suggests that industrial productivity in Ireland was not significantly behind the remainder of the UK in 1907. Net output per head at £78 per annum in Ireland compared to £104 in England and Wales and £98 in Scotland. In agriculture, Ó Gráda (1988, p. 130) found total factor productivity growth between the 1850s and 1920s was a good deal higher than that calculated for Britain over the same period, and higher than that calculated for the United States between 1840 and 1900.

Finally, evidence on working-class living standards derived from Board of Trade data appearing in Webb (1909) suggests that Irish working-class family income and food consumption compared favourably with the other regions of the UK. This is shown in Table 2 below.

Table 2: *Comparative Food Consumption of Irish Working Class Families*

Districts	*Number of Budgets*	*Average Family Income s. d.*	*Average No. Children Living at Home*	*Total Expenditure on Food s. d.*	*Food as Percentage of Total Income*
North of England	439	39 6	3.7	22 9	**57.6**
Midlands	262	36 10 3/4	3.6	21 5 1/4	**58.2**
London	347	36 03 3/4	3.2	22 9 3/4	**63.3**
Rest of England & Wales	318	33 11	3.6	20 4 3/4	**60.1**
Scotland	455	36 6	3.7	23 7 3/4	**64.8**
Ireland	123	38 41 1/4	3.9	24 4	63.4

The available evidence suggests that the situation of those in employment (in terms of wages) compared reasonably well with other regions of the UK. While the larger dependency ratio and the conditions in some of the poorer Congested Districts would have pulled down the average, the growing wealth of the middle classes in the towns and cities and the improved circumstances of many farmers in the decades prior to 1907 would have raised average per capita income. The Irish urban working-class was also small relative to

Britain. The dramatic fall in the rural population, combined with a slight rise in agricultural output during this period, significantly improved productivity and average living standards in rural Ireland.

If Irish wages, productivity and consumption levels in the early twentieth century were closer to UK levels than has previously been supposed, it seems probable that a degree of convergence had also taken place in GDP per capita. These trends offer independent support for our evidence of a higher trend in GDP per capita than earlier estimates have suggested.

IV CONCLUSION

The main implications of a higher GDP figure for 1907 are that Ireland's performance between the Famine and that date was more impressive than earlier authors have suggested. Mokyr's estimate of pre-Famine national income of 80 million pounds implies an average annual income per capita in Ireland of 49 per cent of the UK (inclusive of Ireland) in 1841 (Kennedy, *et al.*, 1988, pp. 12-19; Mokyr, 1985, pp. 1-29). According to our estimate, this rose to almost 67 per cent of the UK by 1907. The estimate situates the performance of the Irish Free State relative to Britain in a somewhat poorer light. Maddison and Ó Gráda imply that Ireland's position relative to Britain changed little between the pre-war period and the mid-1920s; we argue that Ireland's GDP was converging with that of Britain in the decades leading up to the First World War, and diverging from Britain in the decades after the war.

What are the factors which explain Ireland's improved economic performance during the second half of the nineteenth century? On the eve of the Great War, Ireland's relatively high GDP per capita relative to the rest of Europe (see Table 3) was achieved by trade expansion, productivity growth and a diminishing population, rather than by industrialisation, which has traditionally been viewed as the principal route to a high standard of living (Kennedy, 1995, p. 109). This experience was not entirely anomalous. Countries like Australia, New Zealand and the Netherlands achieved a high standard of living through trade rather than industrialisation (see Table 3). If contemporary statistical data on early twentieth century trade can be trusted, Ireland's trade per head of population was more than double that of Norway, Sweden, Germany or France, and it was higher than that of Britain (Oldham, 1908, p. 183). This may go some way to explaining Ireland's relatively high level of GDP per capita in 1907.

Export-led industrialisation, concentrated heavily in the North-East, also contributed to raising average GDP per capita. While industrial development was very modest compared to the rest of the UK, employment patterns in pre-

partition Ireland reveal that the industrial sector was not as underdeveloped as has often been assumed. Johnson notes that "in 1911, 23 per cent of the economically active population was involved either in manufacturing industry or construction. This placed Ireland very much in the middle rank of industrial countries such as the Scandinavian countries, Italy and the Netherlands and ahead of Austria, Spain, Hungary or any of the nations of Eastern Europe." (Johnson, 1989, p. 20).

If Ireland's level of trade was greater than most other European countries, and its industrial development was comparable with medium-ranking European countries, this goes a considerable distance to explaining its relatively high position in the European league (see Table 3). Our estimate suggests that Ireland's GDP per capita in 1907 was almost 67 per cent of that of the UK. Taking the UK as equal to 100, it is then possible to tabulate Maddison's league table for a number of more advanced countries, incorporating our own estimate of Ireland's relative position in place of Maddison's. He assumes, based on the situation in the 1920s, that average per capita income for Ireland stood at 54 per cent of the rest of the UK between the 1820s and the 1920s. This seems unlikely given the evidence presented here for a higher level of GDP and the level of wage convergence discovered by Boyer, Hatton and O'Rourke (1994).

The evidence suggests that Ireland was comfortably positioned within the European league. The UK was well ahead of other European countries at this point, with Switzerland, Belgium, and the Netherlands filling the second rank. Ireland fits comfortably into the middle of the third ranking countries, which include Germany at the top, followed by Austria and Denmark, with Ireland next, ahead of France and Sweden. There is a major gap between these countries and the fourth rank, which includes Italy, Spain, Norway and Finland. This places Ireland higher up the European league than other authors have suggested. For example, Kennedy, (1995, p. 106) concludes that Ireland lay somewhere between the third and fourth ranking countries. Another point of comparison are colonies of the British Empire such as Australia, Canada and New Zealand, which were well ahead of Ireland in terms of GDP, though like Ireland they had a strong trading relationship with Britain, and they were not highly industrialised.

Our own confidence that Ireland had a higher national income in 1907 than has previously been suggested, has been boosted by the figures for Irish consumer expenditure. Reasonably good data was available for much of this component, which accounts for the lion's share of the GDP estimate; this indicates that personal consumption was around 7.2 per cent of the UK (see Table 1). Our GDP estimate for Ireland indicates that Ireland accounted for almost 6.7 per cent of UK GDP at market prices. GDP per capita in Ireland in

1907 was £32.74 per annum compared to £49.20 for the UK. The average per capita standard of living in Ireland was therefore around 67 per cent of that in the UK as a whole (for population and for UK GDP, see Mitchell, 1988, pp. 13; 833). In Table 3 we have assumed that Ireland's position relative to the UK remained unchanged between 1907 and 1913. The work on wage convergence by Boyer, Hatton and O'Rourke (1994) and the research of Geary and Stark (1996) on GDP convergence between the UK regions, suggests that Ireland was gaining ground relative to Britain in this period. O'Rourke's work on monetary data and proxy GDP estimates between 1840 and 1921 also implies that Ireland's GDP per capita continued to converge with Britain between 1907 and 1913 (O'Rourke, 1997, Figure 19). So our assumption that Ireland's GDP per capita relative to Britain remained constant during this period seems reasonable. If anything, it probably understates Ireland's position on the eve of the Great War. Old Age Pensions were introduced in Ireland in 1908, and given that Ireland had an older population than the rest of the UK, this would have also improved Ireland's relative position.

Table 3: *GDP per Head of Population, 1913 (UK=100)*

New Zealand	112
USA	106
Australia	103
UK	100
Switzerland	82
Belgium	80
Canada	77
The Netherlands	76
Germany	71
Austria	70
Denmark	70
Ireland	67
France	64
Sweden	60
Italy	46
Spain	44
Norway	40
Finland	37
Japan	27

Source: With the exception of the Irish estimate (which is our own), these figures come from Maddison, A. (1995), *Monitoring the World Economy 1820-1992* (Development Centre of OECD), pp. 194-199.

Britain was far ahead of the rest of Europe in 1913 and the Irish economy was benefiting to a large degree from the healthy state of its major trading partner. However, this close link with Britain also contributed significantly to Ireland's relative fall in the European league table between the 1920s and the 1950s, when Britain's position declined significantly (Kennedy, 1992, p. 7). This period coincided with the advent of protectionism with the resulting restraint on trade on which Ireland had depended so much in order to achieve its relatively strong position by the eve of the First World War.

APPENDIX I: EXPENDITURE ESTIMATE OF IRISH GDP, 1907

Distributive Margins: Our distribution margins (DM's) are taken directly from Feinstein (1972, p. 15) who allows 40 per cent for home-grown or semi-processed food, 35 per cent for home produced manufactures, 26.5 per cent for food or semi-processed food imports and 43.5 per cent for manufactured imports.

1. FOOD

Bread, Biscuits and Cereals: Bread, biscuits and cakes. The 1907 industrial census returns £3,265,000 for bread, biscuits and cakes. £338,290 is deducted for biscuit exports leaving £2,926,710 for home consumption, which with a distribution margin (DM) of 35 per cent rises to £3,951,058. To this must be added biscuit imports of £86,038 which, with a DM of 43.5 per cent, rises to £123,465. **Total £4,075,000.**

Flour and meal produced in 1907 came to £3,621,000. To establish how much flour and meal went for domestic household use, we need to deduct exports, flour and meal going to bakeries and also offals, since the value of the latter is included in the above figure. Oatmeal offals produced in Ireland were distinguished in the 1907 census being valued at a little over 7 per cent of the value of oatmeal. Assuming flour offals were worth an equivalent proportion of the value of flour and meal, we need to deduct £253,470, yielding a figure of £3,367,530. Exports of £66,725 are deducted, leaving £3,300,805.

Prest (1954, p. 15) notes that 50 per cent to 60 per cent of the flour produced in the UK was used in the bakery trade. However, Ireland would have had a much lower proportion because of the high number of rural households baking their own bread. The 1907 *Census of Production* gives a figure of £2,305,000 for the cost of raw materials for baking bread, biscuits etc. We have assumed that 2 million of this was flour and meal; so we have deducted £1 million from home produced flour and one million from imports. This would allow 33 per cent of the flour on the Irish market annually going to bakeries in Ireland. After this is deducted, the remaining £1,652,728 of imported flour gets a distribution margin of 26.5 per cent, leaving £2,090,701, while the remaining home produced flour, worth £2,300,805, gets a DM of 40 per cent raising its value to £3,221,127. **Total £5,312,000.**

Other Cereals: Oatmeal. The *Census of Agricultural Output,* 1908, contains the following estimates of human consumption: Farmers consume £54,000. The rest of the population consumes £114,000 with a DM of 40 per cent rises to £214,000. Imports

oatmeal = £93,326. Assume £25,000 for human consumption which, with a DM, 26.5 per cent rises to £32,000. **Total £246,000.**

Imports of rice, rice, flour, sago, sago flour, tapioca, corn food and farina = £111,805 with a DM of 26.5 per cent (£29,628) leaves: **Total £141,000.**

Maize: imports = £4,133,876. Indian meal was used in poorer districts during the months when the potato supply ran out or failed (see Appendix to *Fourth Report of the Royal Commission on Congestion in Ireland* (Dublin, 1907) [cd. 3509] Q. 19287). £400,000 is taken for human consumption, which is under 10 per cent of total imports; we have allowed a conservative £4 expenditure on meal per family for 100,000 poorer families. (Coyne, 1902, p. 260-261) for a number of estimates of meal consumption per family. **Total £400,000.**

Meat, Poultry and Eggs: The Department of Agriculture and Technical Instruction leaflet *The Agricultural Output of Ireland* (1908 p. 24) provided consumption estimates of the following products:

Eggs: £841,000 consumed by farmers. Rural community (excluding farmers) and town population consume £560,000 which, with a DM of 40 per cent, gives a total of £784,000. Imports of eggs £41,000,+DM 26.5 per cent = £52,000. **Total £1,677,000.**

Poultry: Farmers consumed £190,000 and rural and town population together (excluding farmers) consumed £173,000, which comes to £242,000 when a DM of 40 per cent is added. Imports = £27,180. Assume £14,000 consumed with a DM 26.5 per cent = £18,000. **Total £450,000.**

Beef: Farmers consumed £1,304,000. Rural and town population consumed £1,802,000 which, with a DM of 40 per cent (£721,000), comes to £2,523,000. Beef imports were £149,000 which, with DM 26.5 per cent rises to £188,000. **Total £4,015,000.**

Bacon and Hams: Output recorded in the 1907 *Census of Industrial Production* was £3,478,000 (excluding lard grease tallow). From this we deduct exports of bacon, ham, and sausages (£3,105,610), which leaves £372,000. With a DM of 35 per cent, this rises to £502,000. Imports of bacon, ham, sausages, pork, pig heads = £2,409,000, with DM 26.5 per cent = £3,047,000. Add-in farmers consumption £188,000 (derived from the *Agricultural Output of Ireland,* 1908). **Total £3,737,000.**

Goats: Farmers consume £7,000. £3,000 for rural population with a DM of 40 per cent = £4,000. **Total £11,000.**

Mutton: Farmers consume £374,000, rural and town population consume £516,000. with DM 40 per cent = £722,000. Mutton imports = £124,000, with DM 26.5 per cent = £157,000. **Total £1,253,000.**

Rabbits and Game: Since Ireland was a more rural society with a larger rabbit and game population relative to the human population, we have assumed Ireland would easily have accounted for 10 per cent of the UK figure given by Prest (p. 17), yielding: **Total £302,000.**

Also add in imports of preserved meat, tongues, coarse meat, provisions and groceries = £210,492 with DM 26.5 per cent = **Total £266,000.**

Fats: Margarine production minus exports = £68,676 + DM 35 per cent = £93,000. Imports = £100,970+DM26.5 per cent = £128,000. Total margarine = £221,000. Assume lard from cattle and other animals is equal to the value of exports so they

cancel each other out. Lard from pigs (*Census of Production* 1907) = £271,000 with DM 35 per cent = £366,000. Lard imports = £251,569 –DM 26.5 per cent = £318,000.

Total £905,000.

Fish: *Census Of Production* (1907) reports £341,000 worth of fished landed with £13,000 added value from fish curing. £400,000 has been allowed for fish landed to allow for catches not recorded officially. A figure of £400,000 has also been assumed for fresh water fish. (Riordan estimates Salmon fisheries alone were worth £300,000 in 1900. Total catch = £800,000. From this we deduct exports (£404,000) leaving £396,000 with DM of 40 per cent = £554,000. Imports = £273,000 with DM 26.5 per cent = £345,000. It has been assumed that Ireland accounted for 5 per cent of the canned fish consumed in the UK (£1.25m Prest, p. 33) leaving an Irish figure of £63,000. **Total £962,000.**

Dairy Products: The *Census of Agricultural Output* in 1908 estimate that butter, milk, cheese and cream for farmers consumption was valued at £3,167,000. For the remainder of the population the figure was £2,457,000. With a DM of 40 per cent the latter figure rises to £3,440,000. Imports of butter = £361,000; cheese = £129,000; condensed milk = £40,000. Total £530,000 +DM 26.5 per cent = £670,000.

Total £7,277,000

Vegetables: From the 1908 *Census of Agricultural Output* it can be deduced that the consumption of parsnips, carrots, other green crops and potatoes collectively were £844,000 for farmers, and for the remainder of the population was £777,800. which with a DM of 40 per cent rises to £1,089,000. Imports of vegetables = £101,000 which, with DM of 26.5 per cent, comes to £128,000. **Total £2,061,000.**

Fruit: £60,900 consumed by farmers, £286,000 by all others which with DM of 40 per cent rises to £400,000. Imports = £687,440 with DM 26.5 per cent rises to £870,000.

Total £1,331,000.

Cocoa: There are no separate estimates of cocoa for Ireland in the 1907 *Census of Industrial Production*. An estimate made some ten years earlier by Committee on Irish Finance (p. 202), suggested Ireland accounted for 9 per cent of the UK figure in this period. We have taken this percentage from Prest's 1907 figure for the UK (£13,790,000). This is probably a conservative estimate, given that the amount of cocoa imported into Ireland in 1907 was the equivalent of almost 13 per cent of cocoa imports into the UK (*Thom's Directory*, 1914). **Total £1,241,000.**

Sugar: According to the same source, Ireland accounted for 9.3 per cent of UK refined sugar consumption (£27,120,000 in 1907, Prest, p. 65). **Total £2,522,000.**

Sugar confectionery: The 1907 *Census of Industrial Production* gives sugar confectionery at £218,000, deduct Exports (£96,760) = £121,240 + DM 35 per cent = £164,000. Imports £339,901 + DM 26.5 per cent = £429,975. **Total £594,000.**

Tea and Coffee: Irish tea consumption, according to the Committee on Irish Finance (p. 202), accounted for 12 per cent of UK consumption in 1905-9. This quantity has been taken from Prest's 1907 figure for UK (£21,100,000) which yields a total for tea of £2,532,000. For Coffee and Chicory: the same source gives 3.4 per cent for the Irish proportion of UK consumption as given by Prest (p. 69) which produces a figure of £79,000. **Total £2,611,000.**

SUB TOTAL £41,389,000

Other Foods: Prest (p. 73) has added 6 per cent to the UK figure to allow for other foods; we have likewise added 6 per cent (i.e. £2,483,000) to the Irish total for food to maintain consistency. **SUB TOTAL £43,872,000**

Aerated Waters etc: Following Feinstein, aerated waters and other non-alcoholic beverages have been added to food. The 1907 *Census of Industrial Production* gives £408,000 for aerated waters; to this has been added £197,795 (8.95 per cent of "non alcoholic beverages brewed" in UK, which is the same proportion of UK figure as aerated waters) and £20,000 for aerated waters made by bottlers. From this total of £626,000, exports (£253,000) are deducted, leaving £373,000, to which is added a DM of 35 per cent = £504,000. Imports £42,000 with DM 43.5 per cent = £60,000.

Total £564,000

SUB TOTAL £44,436,000

Adjustment: In order to make an allowance for the quantity of food used in the catering trade (already counted below), a deduction must be made. The best estimate that could be gained for this is derived from Feinstein (p. 47), who computes the cost of food as a proportion of total catering costs for the UK in 1938 at 45 per cent of the catering estimate (or £3,539,000), which is deducted from the existing total for food.

TOTAL FOR FOOD £40,897,000.

2. DRINK

Beer: The amount of beer consumed in Ireland in standard barrels, as documented in Irish Finance (1912, p. 202) comes to 2,569,000 for Ireland and 33,786,000 for the UK. The same Committee, after a special inquiry by the Board of Customs and Excise, suggested that the true revenue from beer in Ireland should be reduced by 12.28 per cent, based on adjustment by the Committee (p.23). This percentage has been deducted from the standard barrels of beer consumed in Ireland given above which produces a new figure of 2,253,527 barrels. Prest's figure for the UK is 33,754,000 and the Irish proportion of this is 6.68 per cent. Assuming no difference in price between Ireland and the UK, the value of Irish expenditure on beer is therefore: **£7,197,000**.

Spirits: Committee on Irish Finance (1912, p. 208) estimated that the amount of spirits consumed in Ireland was 4,849,190 gallons in 1907-8. To put a value on this consumption, we have taken Prest's price of £1.324 per proof gallon of spirits in the UK (p. 79). This results in a figure for spirit consumption in Ireland of: **£6,420,000**.

Wine: The figure for wine is given at 9 per cent of UK consumption in The Committee on Irish Finance (p. 202). Prest's figure for UK wine consumption is £9.55m, so Irish consumption is: **£860,000.**

Total £14,477,000.

3. TOBACCO

Estimated from the data published by the Committee on Irish Finance in 1913 (p. 203), from which it has been deduced that Ireland accounted for 9.28 per cent of UK tobacco consumption. In a footnote, the committee pointed out that, on the basis of the results of a special inquiry of 1911, Ireland's contribution would have been higher than this. Using this data, Ireland's proportional share of UK consumption would rise to 10.34 per cent. Given that total expenditure on tobacco in the UK was £32.8 million, the Irish share would have been: **Total £3,392,000.**

4. HOUSING

The value of this sector for Great Britain has been estimated through the "Inhabited House Duty Returns", which were not applied to Ireland. In the absence of these, Prest has used the "Schedule A" figures for Ireland and made appropriate upward adjustments to take account of undervaluation, and a different method of enumeration to Great Britain, and arrives at a figure of £4.16 million. He also made an estimate of rates for Ireland which, with some adjustments, came to £2.64 million. In addition, he arrived at a figure of £0.11 million for water charges from "Irish Local Taxation Returns" (Prest, pp. 92-100). We have taken Prest's total of £6.91 million for these categories. A figure for decoration and upkeep needs to be added. Feinstein (p. 180) has made an estimate of actual repairs for the UK of £38.5 million. Given that the Irish housing stock was probably in poorer condition and needed on-going repairs, it is likely that Ireland accounted for at least 6.5 per cent of this (£2.31 million), producing a total figure for housing of: **£9,413,000.**

5. FUEL AND LIGHT

The basis for our estimate of this category is turf production, fuel and other miscellaneous imports, and some items listed in the *Census of Industrial Production* (1907).

5.1 Turf: based on O'Connor and Guiomard (p. 93) who estimate that the value of turf cut in southern Ireland (the 26 counties) was £3.331 million in 1912/13. By taking account of the six remaining Ulster counties and some allowance for distribution, a conservative estimate for the value of turf consumption would be: **£4,000,000**

5.2 Coal: Imports of Coal (£2,837,825), Coke (£25,634), and other fuel (£272,739) came to a total of £3,136,198. It has been assumed that 33 per cent of this was used for household use (£1,034,945). Adding a distribution margin of 43.5 per cent yields a total of: **£1,485,000.**

5.3 Gas: We have taken the value of the gas produced in the 1907 *Census of Industrial Production* and assumed 75 per cent was for household use. We have based this on impressionistic evidence from O'Sullivan (1987, pp. 31, 62, 156, 183). Irish gas companies in urban locations would have serviced mills, factories, commercial premises and public lighting which would not enter this estimate. However most of the gas used would have been for cooking, heating and lighting. **Total: £725,000.**

5.4 Petrol and Paraffin: Imports (£433,704), after exports (in effect, immediate re-exports (£40,266) are deducted, come to £393,438. Assume 75 per cent is for personal consumption (£295,078). Adding a DM of 43.5 per cent leaves a total of: **£423,000.**

5.5 Candles: Imports at (£109,600), 75 per cent assumed for household consumption = £82,200, with a DM of 43.5 per cent comes to £117,957. Half of the soap and candles category in the 1907 *Census of Industrial Production* has been taken (£178,500), with exports (£9,064) deducted, add a DM of 35 per cent which comes to £228,739. Both figures together produce a total for this sector of: **£347,000**

5.6 Electricity: This was largely used for domestic purposes. Manning and McDowell (1984, p. 1) note that, during the first quarter of the century, "apart from lighting and heating, little use had been found for electricity in either industry

or agriculture". We have taken the value in the 1907 *Census of Industrial Production* and assumed 75 per cent was for household use. **Total: £134,000.**

Total £7,114,000.

6. CLOTHING

We have used the 1907 *Census of Industrial Production*, for the various items of clothing making some deductions to allow for double counting.

Linen: The *Census of Industrial Production* does not offer the level of disaggregation that would enable identification of finished goods for consumption. It is therefore necessary to deduct linen which is used for further production to avoid double counting. So, the gross output figure for linen of £14,093,000 is taken and total linen exports of £12,071,846 deducted. This leaves a balance of £2,021,152. Of this, £1,300,000 goes in to further production in the clothing industry (as documented in the *Census of Production*). We assume that, of the balance of £721,152, 50 per cent goes into final consumption and 50 per cent goes into household linen goods (this goes into the section on durable household goods). So, £361,000 is taken as final consumption of linen goods, which is added into the section below.

Clothing: The gross output of Clothing, Handkerchiefs and Millinery, Boots and Shoes in the 1907 *Census of Production* is taken, along with 30 per cent of Woollen and Worsted to give a figure for gross output in the sector of £5,376,000. This substantial deduction from Woollen and Worsteds is to remove the many items in this sector which are merely raw materials for other sectors of the clothing industry and for household goods. Exports of £2,370,217 worth of clothing is deducted leaving a balance of £3,005,783. Adding back in the figure for consumption of linen goods of £360,576 (see above) produces a figure that derives from Irish production of £3,366,359. To allow for double counting in the gross output returns in 1907 (because of the many processes textiles pass through), 25 per cent is deducted, leaving £2,524,769. With a distribution margin of 35 per cent the figure rises to £3,408,438. To this must be added the relevant imports of clothing goods, £7,459,019, which, with a DM of 43.5 per cent, rises to £10,704,000.

Total £14,112,000.

7. CARRIAGES AND CARS

Imports of carriages, cars (jaunting), motor cars, motor cycles together came to £330,858. Following Prest (p. 141, we have deducted 15 per cent for commercial vehicles, leaving a total of £281,229, which, with a DM of 43.5 per cent, amounts to £403,564. A further allowance needs to be made for Irish production, which amounted to £45,000 for carriages, carts and wagons and £8,000 for motor vehicles (in engineering) all of which are listed in the 1907 *Census of Industrial Production*. This figure of £53,000, with a distribution margin of 35 per cent, rises to £71,550. Dependence on private transport was probably high in Ireland. **Total £475,000.**

8 AND 9. DURABLE HOUSEHOLD GOODS

This sector includes furniture, floor coverings, mattresses, household appliances, cycles, hardware, household textiles etc. Using the 1907 *Census of Industrial Production*, it has been estimated that about £900,000 was available for final consumption in this sector. This figure includes the estimate of £360,576 derived from linen textile outputs, mentioned above. In the 1907 *Census of Industrial Production*

furniture accounted for £244,000 and it was estimated that the timber trades contributed at least £100,000 to this sector. The balance was made up of cycles, rugs and blankets, finished brass goods, brushes and carpets. Exports of £421,590 are deducted which leaves £478,410. With a DM of 35 per cent, the total rises to £645,854. However, most household goods would have been imported.

It has been assumed that a large share of drapery imports went into further production in the clothing sector and in other industries. We have assumed that £1,500,000 drapery imports went into household use. All other household goods imports amount to £2,151,707. Adding these figures together produces a figure of £3,651,707 which, with a DM of 43.5 per cent, comes to £5,240,200. **Total £5,886,000.**

10. MATCHES AND CLEANING MATERIALS

The 1907 *Census of Industrial Production* gives insufficient information on these categories for Ireland. Therefore we have assumed that Ireland accounted for the standard 6 per cent which Feinstein allows for the Irish share of UK GDP in 1907. The UK total for this item is £20m leaving Irish share of: **Total £1,200,000.**

11. BOOKS AND RECREATIONAL GOODS

This figure is based on books and reading materials with the assumption that recreational goods follow the same proportion of the UK total. The gross outputs of the Bookbinding, Printing and Publishing sections of the *Census of Industrial Production* were added together, which produced a figure of £1,329,000. From this, exports of books and other printed matter (£17,037) were deducted, leaving a total of 1,311,963. 25 per cent was removed to allow for double counting in the 1907 census, which leaves £983,972. With a DM of 35 per cent, this comes to £1,328,362. Imports of books and other printed matter amounted to £145,334; with a DM of 43.5 per cent this rises to £208,554. These categories add to a total of £1,536,916, which is 7.2 per cent of the UK figure of 21.3m pounds given in Prest. Taking 7.2 per cent as the Irish proportion of the UK total of £31m for all books and recreational goods leaves: **Total £2,232,000.**

12. CHEMISTS AND OTHER

The *Census of Industrial Production* and import data proved insufficiently detailed to provide an independent Irish estimate. Accordingly, we have resorted to taking the 6 per cent Feinstein allows for Ireland in 1907. From a UK figure of £51m, this comes to: **Total £3,060,000.**

13. PUBLIC TRAVEL AND COMMUNICATION

The railway passenger receipts for Ireland for 1907 amount to 2.2m pounds (Mitchell p. 552), or 4.52 per cent of the UK total. Following Prest, who reduced the figure by 17 per cent to allow for business traffic, and increasing this figure by 5 per cent to allow for the proportion of excess baggage carried by private passengers, produces a figure of £1,917,300. The figure for buses and coaches is derived from Prest's Irish proportion of UK bus-drivers (5 per cent) producing a figure for this item of £150,000. The figure for trams is taken from Webb (p. 608). Passenger receipts for trams came to £545,800, from which 7.5 per cent is deducted for commercial purposes, leaving the total for trams at £504,865. For taxis (which are taken to include carriages) and sea-travel a proportion of 5 per cent of the UK total is assumed, in line with the other figures in this section. The total for the UK is £19,200,000 according to

Prest, so the proportionate Irish figure is £950,000.

Turning to communication, Mitchell (p. 564) records the number of letters posted in Ireland as amounting to 5.63 per cent of the UK total; postcards 4.2 per cent; newspapers/packets 5.52 per cent; parcels 6.66 per cent. We have assumed that Ireland accounted for 5.5 per cent of the UK postal services (£6,184,000 Prest, p. 145) which amounts to £340,000.

Telephone and telegraph for Ireland is taken from the *Census of Industrial Production* which amounted to £122,000. The total therefore for communication expenditure is £462,000. **Total £3,984,000.**

14. VEHICLE RUNNING COSTS

Since there was less public transport in Ireland than in the rest of the UK, notably in rural areas, there was a greater dependence on private vehicles, and bicycles. We have cautiously allowed a proportion of 6 per cent of the UK figure of £16m, which leaves an Irish figure of: **Total £960,000.**

15. DOMESTIC SERVICE

This figure is derived from the *Census of Population* and the work of Hearn (1993, pp. 48-52). We have assumed, in line with Hearn, that the average imputed value of income in kind of all classes of domestic servant is £15. From various sources, (Prest, p. 118, and Hearn's detailed wage statistics for domestic servants) an average domestic servant's wage of £15 per annum has been taken, with an average all-round income (including goods in kind) of £30. This compares with Prest's figure of £39 average for UK in 1911. From the *Census of Population* 1911, the total number of domestic servants in Ireland was 150,912, which, multiplied by the wage and imputed income produces a figure of: **£4,527,000.**

16. CATERING

This figure is derived from an estimate of Feinstein (T. 62), who deduced that the population of the 26 counties spent £11,000,000 on catering in 1920 (or £3.54 per person). Taking this level of expenditure for this sector for the entire population of the island in 1920 (4,361,000). The figure rises to £15,438,000, with Ireland's proportion therefore accounting for about 5.82 per cent of the UK. Building in a slight conservative bias, we have reduced this to 5.5 per cent of Feinstein's figure for the UK in 1907 (£143,000,000), leaving an Irish total of: **£7,865,000.**

17. OTHER SERVICES

Most of these figures have been derived as a proportion of the UK figure given by Prest.

Betting: It has been assumed that the Irish figure is 6 per cent of the UK figure of £5.2 million given by Prest (p. 159), which comes to: **£312,000.**

Entertainment: In the 1911 census, Ireland only accounts for 2.99 per cent of the UK total for the category Art, Music, Drama, Exhibitions, Games etc. We have therefore taken 3 per cent of the UK figure of £21 million, which comes to: **£630,000.**

Sports and Travel Goods: In the absence of data in this sphere the Irish proportion is assumed to be 6 per cent of the UK total of £9.2 million or: **£552,000**.

Life Assurance: Ireland accounts for only 2.45 per cent of the UK census figure in the

"insurance" category. Taking this proportion from Prest's figure of £11.2 million for the UK yields a total for Ireland of: **£274,000.**

Medical and Charity: Charities have been included in this section to correspond with the categories of the 1911 census. From the census, those occupied in hospitals and institutions (not poor law) and benevolent societies has been added to midwives, nurses and subordinate medical services, which collectively accounted for 11,306 people or 6.25 per cent of the UK figure of 180,996. To allow for lower wages and the relatively high inputs of the Catholic church in this sphere the Irish figure has been assumed to be 5.5 per cent of Prest's figure of £22.2 million for the UK (p. 148), which includes nurses; midwives; voluntary hospitals; drugs; subordinate medical services and charities, leaving an Irish figure of £1,221,000 for these categories. To provide an estimate for doctors and dentists, the Irish proportion of 7.4 per cent of the physicians and registered practitioners in the UK (1911 Census), has been reduced to 7.2 per cent to allow for slightly lower salaries in Ireland. This produces a figure of £1,418,000 for this category which, when added to the above, leaves a total for expenditure on medical expenses and charity of: **£2,639,000.**

Funeral Services: Ireland has been assumed to account for 6 per cent of Prest's figure of 6.7 million for the UK, which comes to: **£402,000.**

Private Education: Public expenditure on primary and secondary education in Ireland was about 9.3 per cent of UK expenditure, which was also the equivalent proportion of Irish among pupils attending UK primary and secondary schools. Private schooling in Ireland was largely concentrated in the secondary sector, and was limited largely to those from middle classes and above (Coolahan, 1981, pp. 37, 55). Although the Irish middle classes placed a high emphasis on secondary education, we have cautiously assumed that expenditure on private schooling was lower in Ireland than in the rest of the UK. We have therefore assumed that Ireland accounted for 4 per cent of Prest's UK figure of 12 million pounds, leaving a total for Irish private education of: **£480,000.**

Religion: In the 1911 Census, Ireland accounts for 12.62 per cent of the UK in the category "Clergy, Priests, Ministers, etc.". Taking this percentage, which includes only males, from Prest's UK figure for religion (£14.7 million) gives an Irish total of £1,855,140. Given that this excludes females taking vows, who were equal in number to all the males involved in religious vocations, and the higher level of religious observance and involvement in Ireland relative to the rest of the UK, this figure could be raised conservatively (allowing for much lower female income etc.) to: **£2,400,000.**

Laundry etc.: Ireland accounted for 4.83 per cent of the laundry workers/washers etc. in the UK Census. Allowing for lower wages in Ireland we have taken 4.4 per cent of Prest's figure of 10.6 million pounds for the UK, leaving an Irish total of: **£466,000.**

Trade Unions: A figure for this item has been taken from Webb (1909, p. 602), which records that in 1907 the income of Irish unions was £21,320. To allow for expenditure in amalgamated British based unions, and other expenditure not revealed in this return, this figure has been raised to: **£40,000.**

The UK total for Other Services as given by Prest amounts to £133,000,000. So far, in this category, the estimates for the items above suggest an Irish proportion of 6.2 per cent of the UK. Feinstein's UK total for other services is £169,000,000. The remaining £36,000,000 for the UK which we have not yet accounted, covers repairs to furniture; clothing; footwear; watches; bicycles etc.; and hire of domestic equipment;

hair dressing and other miscellaneous services. A lack of data precludes making estimates for these categories, but having established a norm of 6.2 per cent for other services for which data is available, this has been taken as the Irish proportion of the UK total of £169,000,000, leaving a total of: **£10,478,000.**

18. ADJUSTMENT

For this we have adopted 6 per cent of Feinstein's figure of £12m for the UK, leaving an Irish figure of: **Total £720,000.**

19. TOTAL CONSUMER EXPENDITURE = **Total £130,792,000.**

20. PUBLIC AUTHORITIES CURRENT EXPENDITURE ON GOODS AND SERVICES

Feinstein (T. 31) gives a figure of 77 million pounds for central government current expenditure on goods and services in the UK for 1907. In the Government Finance Accounts, the Irish proportion of all UK central government expenditure (which includes all civil government charges, the collection of taxes and the post office) is given at 5.14 per cent. It has been assumed that this was roughly the same as the Irish proportion of the UK central government current expenditure on goods and services, which thereby amounts to £3,958,000. Local authority expenditure in Ireland came to £ ¢698,000 in 1907, which excludes expenditure out of loans, which was just over £900,000 in that year (Mitchell, 1988, pp. 634-638). This raises total Irish local authority expenditure to £7,598,000.

Great Britain total local authority expenditure was £155,770,000. (ibid, pp. 612-631). With a UK figure of £163,368,000, Ireland would have accounted for 4.65 per cent of the UK, and this proportion of Feinstein's UK figure (£87,000,000, T. 33) has accordingly been taken for local authority current expenditure on goods and services. This leaves £4,046,000 for Ireland.

Total £8,004,000.

21. GROSS DOMESTIC FIXED CAPITAL FORMATION

Agriculture: Feinstein and Pollard's (1988 p. 275) assumption that Ireland accounted for 19.75 per cent of the gross stock of farm machinery in the UK has been utilised in this item. Given that Ireland accounted for up to 30 per cent of UK agricultural output and there is "a necessary relationship between output and equipment" (Feinstein and Pollard, p. 277), it is difficult to envisage a situation where Ireland would have accounted for less than 15 per cent of the UK total. Feinstein and Pollard argue that it was in building and improvements to land, rather than equipment, that Irish agriculture was particularly deficient. Much of the unclassified machinery imported (£1,410,365) was probably destined for agriculture, combined with other imports of agricultural machinery and home produced machinery. The amount of farm machinery bought in Ireland seems to have been quite high in these years (Ó Gráda, 1988, pp. 141-3). Much of the capital inputs into Irish agriculture went into increasing livestock, which is not recorded as an increase in capital formation. It is therefore assumed, conservatively, that Ireland was responsible for 15 per cent of UK GDFCF in agriculture (£10.3 million). **Total £1,545,000.**

Mining and Quarrying: The gross output of mines and quarries in Ireland in 1907 was £258,000 and this, as a proportion of the UK gross output of £148,026,000 (*Census of*

Industrial Production, 1907, p. 21) is .174 per cent. This proportion of UK capital formation in the sector (9,500,000 pounds) is: **£16,000.**

Manufacturing: The estimate for this item is based on the Irish proportion of UK gross output in the *Census of Industrial Production* (1907). UK gross output, less mining and quarrying and utility services, is £1,540,289,000 and the Irish component was £63,615,000, which comes to 4.1 per cent. Feinstein and Pollard's (p. 430) estimate for UK industrial capital formation is 37.6 million pounds and the Irish figure is therefore taken as: **£1,542,000.**

Gas, Water and Electricity: This estimate is derived from the 1907 *Census of Industrial Production*. Capital formation in Great Britain at £8,600,000 (Feinstein and Pollard) was around 18 per cent of GB gross output. It has been assumed that capital formation in Ireland was 15 per cent of Ireland's gross output, resulting in a figure of: **£112,000.**

Distribution and Other Services: This is calculated by taking the Irish percentages of UK capital formation in railways (3.52 per cent) and transport and communications (4 per cent) (see below). Biased proportionately for relative size of these components of capital formation, an Irish proportion of UK output of 4.3 per cent is utilised. The UK figure is £13.9 and the Irish figure (at 4.3 per cent) is therefore: **£598,000.**

Railways: Capital formation in the railways was estimated as a proportion of Feinstein's estimate for UK capital formation using the following approach. A comparison of working expenses is used as a proxy for capital formation. The total working expenses of railways in the UK and Ireland (Mitchell, pp. 547; 552) are calculated. These together resulted in a UK total of £76.7 million. Ireland, with a total of £2.7 million, accounted for 3.52 per cent. This ratio was then applied to Feinstein and Pollard's figure (p. 430) for capital formation in the UK, £14 million, producing an Irish total of: **£493,000.**

Other Transport and Communications: This figure has been calculated from the 1911 *Census of Population*. The Irish proportion of the UK total for people employed in transport (excluding rail) is approximately 4 per cent. As a proportion of UK capital formation in this category, given in Feinstein and Pollard (p. 430) at 38.3m, the figure comes to £1,532,000. Note: this figure appears plausible when allowance is made for local authorities expenditure on highways and bridges, which is £1,011,000 (Mitchell, p. 638). It may also be noted from the *Census of Production*, 1907, that £49,000 was spent on tramways, £106,000 on harbours and docks and £27,000 on canals, landing stages etc.: **£1,532,000**

Public and Social Services: To ascertain this figure we have taken Irish expenditure on local authorities in 1907 other than out of loans and capital works as a proportion of UK expenditure (Mitchell, p. 612 for England and Wales, p. 626 for Scotland, and p. 638 for Ireland). Ireland accounted for 4.93 per cent of the UK expenditure. The Irish proportion of UK capital formation in this category, as given by Feinstein and Pollard (£12.9 million) amounts to: **£636,000.**

Dwellings: It is assumed from the Population Census of 1901 and 1911 that around 3,200 houses were built in Ireland in 1907 (1901 at 2,536, and 1911 at 3,608). In 1907, 121,300 houses were built in GB (Mitchell p. 390,) resulting in a UK total of 124,500, with Ireland accounting for 2.57 per cent of the UK. The UK figure for capital

formation in dwellings was 30 million pounds, so Ireland at 2.57 per cent of this figure, accounted for: **£771,000.**

Total £7,245,000.

22. VALUE OF PHYSICAL INCREASE IN STOCKS

It is difficult at this point to estimate the changes of Irish stock because of the absence of research in this area. However, there is data for the agricultural sector which made a greater proportionate contribution in Ireland than in GB. Between 1906-07 and 1907-08, the value of Irish animals and crops fell from £114,229,217 to £113,624,062; so in agriculture alone the value of stock fell by around £605,000 (*Thom's Directory*, 1910, p. 769). If we allow the standard 6 per cent of the UK total for Ireland's share in this item we get a figure of £960,000. This seems low, given what we know about the fall in the value of stock in agriculture, so we have raised the Irish share in this instance to 8 per cent of the figure for the UK. It is unlikely to have been significantly greater than this, as Ireland seems to have been less affected by the economic downturn than the rest of the UK. Even though the Bank of Ireland took precautions to deal with a loss of confidence in 1907, this proved unnecessary; industrial stocks in Ireland remained practically at their original quotations (Hall, pp. 300-301).

Total minus £1,280,000.

23. EXPORTS LESS IMPORTS

Exports = £60,521,245 Minus Imports £61,617,225 = **Total minus £1,096,000.**

24. GDP AT MARKET PRICES = **£143,665,000.**

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