

THE
ECONOMIC & SOCIAL
RESEARCH INSTITUTE

THE FUNCTIONAL DISTRIBUTION OF
INCOME IN IRELAND 1938-70

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AUGUST, 1972

PAPER No. 65

THE ECONOMIC AND SOCIAL RESEARCH INSTITUTE
COUNCIL 1971-72

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THE FUNCTIONAL DISTRIBUTION OF
INCOME IN IRELAND, 1938-70

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ABBREVIATIONS

<i>CIP</i>	Census of Industrial Production
<i>CP</i>	Census of Population
<i>NIE</i>	National Income and Expenditure
<i>ISB</i>	Irish Statistical Bulletin (formerly ITJSB)
<i>ITJSB</i>	Irish Trade Journal and Statistical Bulletin (now ISB)

ACKNOWLEDGEMENTS

While I am solely responsible for the content of this paper, I have benefited greatly in writing it from the ideas, advice and constant encouragement of Dr R. C. Geary. I am also indebted to my ESRI colleagues Dr K. Kennedy (Director), Mr T. J. Baker, Professor M. P. Fogarty, Dr D. McAleese, Mr J. Martin, Mr P. Neary, Mr J. O'Brien, Professor R. O'Connor, Dr M. Ross, Dr B. M. Walsh and Mr B. Whelan, to Mr J. B. Broderick of the Central Statistics Office, to Professor A. Pakenham-Walsh of Trinity College, Dublin and to Mr T. Hoare of the Central Bank of Ireland for their comments on an earlier draft.

The Functional Distribution of Income in Ireland, 1938-70

J. G. HUGHES*

I. INTRODUCTION

The object of this paper is to examine the long term trend in the functional distribution of income in Ireland using national accounts data for the period 1938-70 and also to examine the functional distribution in the industrial sector using Census of Industrial Production data for the period 1926-68.

The distribution of the national income can be examined from a number of different viewpoints. There are four major approaches to the question:

1. *Size distribution*: this approach deals with the distribution of income among individuals and families. By grouping these individuals and families according to selected income categories (e.g., less than £250 p.a., £251-£500 p.a. etc.), the percentage distribution of personal incomes is obtained. Statistics on the personal distribution of income are used for investigating such questions as the degree of income inequality existing in society and the effectiveness of government policies in redistributing income among income classes.

2. *Sectoral distribution*: relates to the distribution of national income by economic sector. In principle there can be a very large number of sectors but because of data limitations sectoral analysis is usually confined to broadly defined sectors of the economy such as agriculture, industry and services. The distribution of income from this point of view is important for such questions as the allocation of resources, the degree of factor mobility and the sources of economic growth.

3. *Geographic distribution*: concerns itself with the distribution of national income among the different economic regions of a country. This approach is clearly of great importance for questions of regional development.

4. *Functional distribution*: examines the distribution of national income between the owners of the factors of production employed in creating that

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income. It is concerned, therefore, with the division of income between returns to labour (wages and salaries) and returns to capital (profit, interest and rent).

Some of the reasons for the importance of the functional distribution are:

(i) The functional distribution of income can be used for understanding the reasons behind changes in the size distribution of income. In countries where statistics on the size distribution of income are lacking, as in Ireland, the behaviour of functional shares may give some indication of changes over time in the size distribution of income.

(ii) The behaviour of functional shares over time may shed light on the effectiveness of trade unions and other organised groups in securing a larger share of the national income for their members.

(iii) Statistics on functional shares can be used to test the validity of many of the theories which have been developed to explain the distributive process under capitalism. Pen [29, p. 168] for example believes that "the practical relevance of the distributive shares emerges above all from discussions on the nature of capitalism".

(iv) Data on functional shares are of great importance for problems connected with economic growth, taxation policy, incomes policy and the re-distributional effects of inflation. Most theories of distribution deal only with the *causes* of distribution and not with its effects. For example, they do not deal with the question of whether there is a connection between distributive shares and economic growth. This question has been examined by Kaldor [13] and Krelle [20] among others. If such a connection exists the establishment of normative criteria for income shares is of great importance for stable economic growth.

(v) There are many countries in which the national accounts are compiled only on an income basis and in which demographic data is either of poor quality or lacking entirely. In these countries functional shares can be used as indicators of the structure of the economy and also as indicators of changes in the economic structure. An example of such a use is Okigbo's [27] paper on *The Distribution of National Income in African Countries*.

The Disputed Question of Constant Relative Shares

The early statistical studies of the distribution of income indicated that the share of labour in the national income tends to be constant. Kalecki [14, p. 28], for example, concluded:

"that in the USA as in Great Britain, the relative share of wages in the national income shows but small variations both in the long run and in the short period".

The "remarkable" stability of the relative shares, as Keynes [17, p. 48] referred to it, became known as "one of the great ratios of economics" (Klein, [18, p. 183]) and numerous theories have been advanced to explain it. In recent years the constancy of relative shares has been challenged by the results of further work in this area which attempts to show that labour's relative share has increased over a long period of years. Feinstein [9, p. 129] in his study of the position in the UK concluded that:

"once provision is made for capital consumption, and if net property income from overseas and rents of dwellings are excluded, the evidence suggests clearly that from immediately before World War I to the present time there has been a secular upward trend in labour's share".

He pointed out [9, p. 120] that Kalecki's conclusion about the stability of relative shares:

"depends completely on the exclusion from the definition of labour of both the large category of administrative, technical and clerical workers and the self-employed".

The work of Feinstein and others has not gone unchallenged. The proponents of constancy of relative shares have attempted to show, in Grant's [12, p. 273] words:

"that the supposed shift in income distribution well may be an illusory one, resulting primarily from procedure and methodology, rather than from real changes in structure".

In a situation such as this where there are conflicting views about the interpretation and use of the statistics on the distribution of income, further statistical studies can help to resolve the question of what it is that needs explanation.

2. DISTRIBUTION OF INCOME UNDER DIFFERENT INCOME CONCEPTS

The National Accounts Major Income Categories

A major problem which arises in functional distribution studies is that the theoretical concepts of income accruing to the factors of production are not matched by the national accounts classifications of income. This has been frequently pointed out, for example, by Feinstein [9] and others. Most difficulty in attempting to reconcile the statistical and theoretical classifications arises in connection with the national accounts category, "income of independent traders". This is a mixed income category which is composed of returns to

labour and returns to capital: the difficulty arises when attempts are made to separate the mixed income into its component parts.

The purpose of this section, therefore, will be to examine the distribution of income using the income categories employed in the national accounts. In Section 5 an attempt will be made to estimate the distribution of income between labour and property.

The income categories used in the national accounts are a mixture of socio-economic and institutional classifications. Three broad categories of domestic income are distinguished as follows:

(i) *Remuneration of Employees*: defined as all wages, salaries, pensions and supplements (e.g., bonuses, directors' fees) whether in cash or in kind arising from employment in economic activity within the State. The earnings are recorded *before* payment of taxes and also include employers' and employees' contributions to social insurance. Pensions for services rendered are regarded as remuneration for past activity and are included whereas employees' payments to contributory pension funds are excluded as well as all transfer payments such as old pensions, unemployment benefit etc. The earnings of Irish diplomatic and consular staffs abroad are included while those of representative of other states in this country are excluded.

(ii) *Income of independent traders*: defined as income in money and kind accruing to individuals in their capacity as sole proprietors, partners and independent professional persons in the agricultural (including forestry and fishing) and non-agricultural sectors of the economy. In valuing farmers income in kind agricultural prices are used and an adjustment is also made to their income for changes in the number of livestock on farms.

(iii) *Income from property*: defined as all trading profits of private and public companies and certain corporate bodies (e.g., the Central Bank) operating within the State, after payment of indirect (but not direct) taxes and after deducting depreciation allowances for income tax purposes. It includes the trading incomes of the Post Office and Post Office Savings Bank after allowance for depreciation; interest arising from the activities of financial concerns (such as banks, etc.) within the State; net rents (actual and imputed) arising from ownership of dwellings and the interest element in the land annuities.

A variation of these three categories is given in the national accounts presentation of domestic product by sector of origin, viz., categories (ii) and (iii) are amalgamated to form "other income" and each sectoral product is divided into only two categories. This dual classification of incomes (i.e., remuneration of employees and other income) will be utilised when the effect of structural changes on the aggregate wage and salary share is examined.

Five Income Concepts

Opinions differ regarding the aggregate income concept which should be used in an analysis of income shares. The two most commonly used income

concepts in the study of income shares are the net national income and the net domestic income. The difference between these two being that the net national income includes net factor payments from abroad* while the net domestic income excludes this income flow. The main income concept adopted in this paper will be the net domestic income concept (hereinafter referred to as domestic income). There are two reasons for this choice, (a) the major focus of interest in distribution studies is on the process of the division of income from economic activity pursued within the State and (b) statistical convenience—allocation of income arising by sector is easier to deal with on this basis. A net is preferred to a gross concept because depreciation is regarded as an allowance for capital replacement and not as a return on capital.

Related to the last point are the questions of whether certain items such as stock appreciation and depreciation should be included in the income concept chosen and what valuation procedures should be used in dealing with depreciation and the amount of farm produce consumed on farms without process of sale. These questions have been adequately discussed by, among others, Kuznets [21] and Goldberg [11] and there is no need to go into them here except to indicate the reasons why they are important and to examine their effects on income shares in Ireland.

The normal accounting method of calculating profits is to incorporate changes in the value of stocks due to price changes as part of profits whereas the national accounting procedure (and the correct procedure in an analysis of income shares) is to regard stock appreciation as a capital gain or loss. Accounting profits, therefore, will be overstated when stock prices increase and understated when stock prices decrease. The Irish national accounts show accounting profits as recorded for income tax purposes (therefore including stock appreciation) separately and also a global adjustment for stock appreciation in the non-agricultural sector. Since 1958, the adjustment for stock appreciation has been allocated between the Industry and Distribution sectors. However, the appropriate division of stock appreciation for the purposes of this paper would be between companies and independent traders in the non-agricultural sector. As there is no information available with which to make such an apportionment the procedure adopted here, in examining the effects of including and excluding stock appreciation in domestic income (see Table 1), has been to use the convention employed by the United Nations [32, Appendix B—page 29] in dealing with Irish data on income shares, viz., assume that two-thirds of the total figure for stock appreciation is due to companies and the remainder to independent traders in the non-agricultural sector. It is well to bear in mind that, as the UN study notes [32, Chapter VIII—page 3]:

*In the Irish national accounts emigrants remittances are also included in net national income whereas the United Nations practice is to exclude them from national income. The United Nations practice with regard to emigrants remittances will be followed in this paper because of the difficulty of allocating them to any of the income categories defined above.

“stock changes are notoriously the weakest part of national income estimates and the element of stock appreciation is, as a rule, even more nebulous”.

The valuation method employed in calculating depreciation allowances can have a considerable effect on the share of income from property. If an original cost basis is used in times of rising prices real depreciation tends to be understated and profits and domestic product correspondingly inflated. Alternatively, depreciation allowances may well be excessive because, as Goldberg [11, p. 197] notes:

“a significant and varying proportion of profits may be impounded in them, depending on the extent to which the taxation incentive to shorten the lives of assets through write-offs is balanced by the tendency to under value capital consumption in relation to rising cost of replacement”.

The general national accounting practice of taking depreciation as the income tax wear and tear allowances of business concerns is followed in the Irish national accounts. Whether this practice is appropriate or not in the Irish case is a question which needs to be investigated. Given the necessity of making an allowance for depreciation when using the net domestic income concept, the national accounts depreciation figures are used without modification in this paper. The effect of depreciation on the distribution of income is shown by using gross domestic income as one of the income variants.

In using the gross domestic income concept the same problem arises with regard to apportionment of depreciation in the non-agricultural sector as arose in connection with stock appreciation. Depreciation has therefore been apportioned on the same basis as stock appreciation (i.e., two-thirds is apportioned to companies and one-third to non-agricultural independent traders). It should be noted that the apportionment of depreciation to non-agricultural independent traders is excessive because it includes depreciation on government buildings and depreciation on dwellings.

Finally the differential between earnings in agriculture and outside agriculture is overstated in the national accounts because farm income in kind is valued at agricultural rather than retail prices. A change in the aggregate labour share of income may then be simply a monetary phenomenon arising out of a movement of workers from low paid agricultural work into high paid industrial work. As already indicated the effect of structural changes on the aggregate wage share will be investigated in another section of the paper. At this stage farm produce consumed on farms is valued at retail prices and the impact of this adjustment on income shares is shown in Table 1.

Various Income Distributions for the Years 1947-70

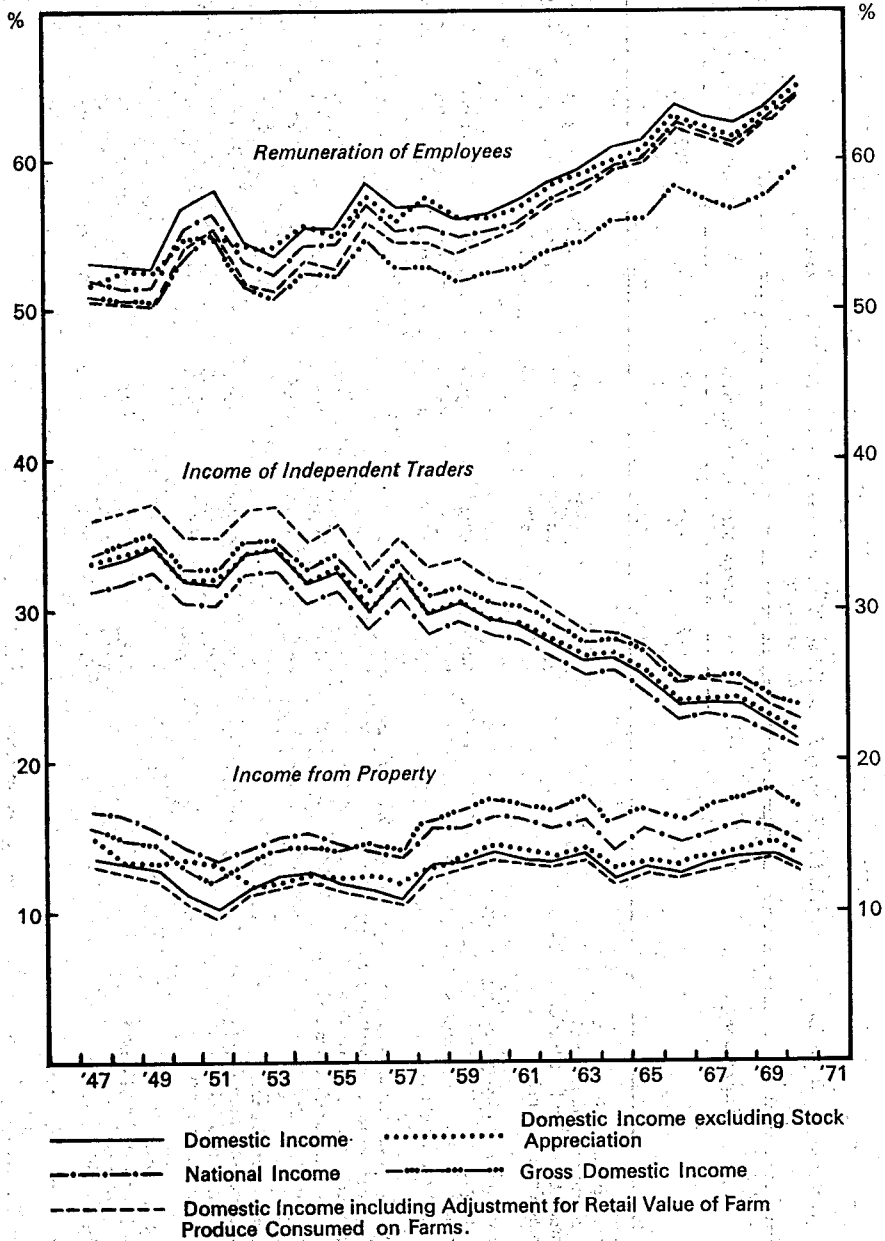
The distribution of income in the years 1947-70 has been calculated for each of the five income variants discussed above; the annual figures for each

TABLE 1: *Distribution of Income and Changes in the Distribution of Income Among Three Income Categories for Selected Periods between 1947 and 1970 using Various Income Concepts*

<i>Income Concept</i>	<i>Average Share for the years:</i>			<i>Percentage Change From:</i>		
	<i>1947</i>	<i>1959</i>	<i>1968</i>	<i>1947-49</i>	<i>1959-61</i>	<i>1947-49</i>
	<i>to</i>	<i>to</i>	<i>to</i>	<i>to</i>	<i>to</i>	<i>to</i>
	<i>1949</i>	<i>1961</i>	<i>1970</i>	<i>1959-61</i>	<i>1968-70</i>	<i>1968-70</i>
<i>1. Domestic Income:</i>						
Remuneration of employees	52.87	56.51	63.91	+ 6.88	+ 13.09	+ 20.88
Income of independent traders	33.71	29.65	22.52	- 12.04	- 24.05	- 33.19
Income from property	13.42	13.84	13.57	+ 3.13	+ 1.95	+ 1.12
<i>2. Domestic Income excluding Stock Appreciation:</i>						
Remuneration of employees	52.38	56.37	63.08	+ 7.62	+ 11.90	+ 20.43
Income of independent traders	33.71	29.66	22.65	- 12.01	- 23.63	- 32.81
Income from property	13.91	13.97	14.27	+ 0.43	+ 2.15	+ 2.59
<i>3. Domestic Income including Adjustment for Retail Value of farm produce consumed on farms without process of sale:</i>						
Remuneration of employees	50.45	54.47	62.78	+ 7.97	+ 15.26	+ 24.44
Income of independent traders	36.75	32.19	23.89	- 12.41	- 25.78	- 34.99
Income from property	12.80	13.34	13.33	+ 4.22	- 0.07	+ 4.14
<i>4. Gross Domestic Income:</i>						
Remuneration of employees	50.54	52.40	57.95	+ 3.68	+ 10.59	+ 14.66
Income of independent traders	34.51	30.72	24.39	- 10.98	- 20.60	- 29.32
Income from property	14.95	16.88	17.66	+ 12.91	+ 4.62	+ 18.13
<i>5. National Income:</i>						
Remuneration of employees	51.55	55.34	62.76	+ 7.35	+ 13.41	+ 21.75
Income of independent traders	32.01	28.53	21.72	- 10.87	- 23.87	- 32.15
Income from property	16.44	16.13	15.52	- 1.89	- 3.78	- 5.59

Basic Sources: see references for Table 2 and Appendix Tables A1-A4.

Chart 1: Percentage Distribution of Income among Three Income Categories, 1947-70. Using Various Income Concepts



Source of Data: Appendix Tables A1-A4 and Table 2.

category's share are given in Table 2 and Appendix Tables A1-A4 and are also shown in graphical form in Chart 1 whereas the average level each of category's share for selected periods and percentage changes in shares between these periods are shown in Table 1. The choice of period (1947-70) is dictated by the existence of consistent series, for all income variants used, only since 1947. Three rather than five year averages are used in Table 1 because of the large stock changes which occurred in 1950 and 1951 due to the Korean War. The middle period, 1959-61, used in Table 1 is chosen in preference to 1956-58 because the latter years were years of severe depression; it has been shown in many functional distribution studies that the labour share usually rises during a depression (see for example, Dunlop [8, Chapter VIII]). Inclusion of the years 1950-51 and 1956-58 in the beginning and middle periods chosen could, therefore, give a false impression of the trend in the income shares over the periods under review.

It is clear from Table 1 and Chart 1 that there have been substantial changes in the distribution of income among the three income categories between the beginning and end of the period under review irrespective of the income concept used. The largest percentage changes occurred in the share of income going to independent traders. The share of this group has declined by approximately one third—the decline ranging from approximately 29 per cent using the gross domestic income concept to approximately 35 per cent under the domestic income concept adjusted for the retail value of agricultural produce consumed on farms without process of sale. A large part of this decline is due, as we shall see later, to the substantial fall in the number of independent traders engaged in agriculture.

The most dramatic change in income shares, from the point of view of those theories of income distribution which attempt to explain the constancy of labour's share, is the substantial rise in the share of income accruing to employees. The increase in this group's share has ranged from approximately 15 per cent under the gross domestic income concept to approximately 24 per cent under the domestic income concept adjusted for the retail value of agricultural produce consumed on farms without process of sale.

While the direction of the change in the income shares of employees and independent traders is the same under all income concepts this is not the case with the change in the share of income from property. The direction of the change for this income category depends on the definition of income used. Using the national income concept there was a decline of roughly 6 per cent in the share of income from property while there was an increase in this category's share under the remaining four income concepts ranging from 1 per cent to 18 per cent under the domestic and gross domestic income concepts. The difference in the range between the smallest and largest percentage change in each category's income share is greatest for the share of income from property. The property share is more sensitive to changes in the income concept because (i) it is the smallest share and (ii) the inclusion or exclusion

of such items as depreciation and stock appreciation affect both the numerator and denominator of property income whereas they affect only the denominator of the remuneration of employees.

The rate of change in income shares has differed considerably in the two sub-periods examined in Table 1. For each of the five income concepts used, the change in the shares of income accruing to employees and independent traders was, in nearly all cases, almost twice as great in the period 1959-61 to 1968-70 as in the period 1947-49 to 1959-61. As the first of these sub-periods covers 13 years while the second only covers 10 years the contrast in the behaviour of the income shares of employees and independent traders between the two sub-periods was even stronger than Table 1 indicates.

There is greater variability in the rate of change in the share of income from property during the two sub-periods than in the rate of change of income shares for the other two categories for the same sub-periods. In the earlier period the property share increased under four of the five income concepts while in the later period it remained stable under one income concept, declined slightly under two income concepts and increased slightly under the remaining two income concepts.

It is evident from Chart 1 that while there are differences in the size of the change in income shares of employees and independent traders between 1947-49 and 1968-70 when different income concepts are used, there is no difference in the trend of these shares whichever income definition is adopted. The same conclusion is valid for the behaviour of the share of income from property with the exception of the national income concept. The decline in the share of property income under the national income concept results from the very sharp decrease in the proportion of national income accounted for by the net inflow of profits etc., from abroad—from 3.7 per cent in 1947-49 to 2.4 per cent in 1968-70.

3. DISTRIBUTION OF DOMESTIC INCOME, 1938-70

It has been indicated in Section 2 that the main income variant which will be used in this paper is net domestic income including the adjustment for stock appreciation. This concept is selected because our interest lies in the distribution of income arising from economic activity within the State and also because of statistical convenience. The detailed distribution of domestic income among the three income categories and their components is given in Table 2, for the period 1938-70, and some of the main series are graphed in Chart 2.*

*It will be noticed from Table 2 that there are two sets of figures for most income categories for the years 1938 and 1944. The reason for this is that in the second White Paper [6] containing the national accounts for 1944-50 certain changes were made in the concepts and methods used in compiling the inaugural set of national accounts for the years 1938-44, [31]. The 1938 figures were officially adjusted in accordance with the revised concepts and methods and the results were incorporated in the second White Paper. Officially adjusted figures for the years 1939-43 were not published. The required ad-

It should be noted that due to lack of information on stock appreciation for the years 1938-46 and on changes in the value of the number of livestock on farms for the years 1939-43 the only consistent series in Table 2 are for the years from 1947 to 1970. The difference which this lack of information makes to the figures prior to 1947 is probably very small and it is reasonably certain that the trend for all series since 1938 is accurate.

REMUNERATION OF EMPLOYEES

This income category consists of the wage and salary income of employees in the agricultural and non-agricultural sectors.

The long term trends in the proportions of domestic income accruing to employees in agriculture and to employees outside agriculture have been in opposite directions. The share going to agricultural employees has halved between 1938 and 1970 whereas the share accruing to non-agricultural employees has increased by over a third during the same period. The decline in the agricultural employees' share of domestic income dates from 1947 when this group's share was at its peak of 5.4 per cent. Since then there has been a fairly steady decline to the 1970 level of 1.9 per cent. During the period 1938-46 the income share of employees in agriculture fluctuated around 4.5 per cent with no pronounced trend in contrast to the very sharp decline in the share of non-agricultural employees and the sharp increase in the share of independent traders in agriculture during most of this period.

There is not as much information available on the behaviour of the shares of trading profits of companies and income of independent traders during the War as for employees and own account workers in agriculture. However, examination of the trend in the combined shares of trading profits of companies and income of non-agricultural independent traders together with the figures for each of these categories share in 1938 and 1946 indicates that the share of trading profits of companies rose by over a third between 1938 and 1946 while the share of independent traders outside agriculture declined by a fifth. The shift in the distribution of income during the period 1938-46 in favour of the agricultural sector and of trading profits of companies is clearly evident from these figures. Employees in agriculture, therefore, improved their income position relative to employees outside agriculture during the

adjustments to the 1939-43 figures have, therefore, been made by the author of this paper and they are shown in Appendix Table A5. Also shown in Appendix Table A5 are the author's adjustments to the 1938 and 1944 figures published in the inaugural set of national accounts together with the officially revised figures for these years. The differences between the two sets of figures for 1938 are small. The differences for 1944 are somewhat larger because the 1944 figures in the inaugural set of national accounts were provisional. The trend of the adjusted figures for the period 1938-44 is reasonable as can be seen from Chart 2 where the trend revealed by the officially revised figures for 1938 and 1944 is compared with the trend in the author's adjusted figures for 1938-44.

It will also be noticed from Table 2 that no figures are given for non-agricultural independent traders income and trading profits during the years 1939-43 nor for the income of the Post Office during the years 1938-46. These omissions are due to the amalgamation of all three items in the accounts for the years 1939-43 and the inclusion of the income of the Post Office with trading profits during the years 1938-46.

TABLE 2: Percentage Distribution of Domestic Income by Major Categories, 1938-70

Year	Remuneration of Employees			Income of Independent Traders			Income From Property					Total	
	Agriculture	Non-Agriculture	Total	Agriculture	Non-Agriculture	Total	(5) + (8)	Trading Profits of companies	Rent of Dwellings	Rent, Land Annuities	Post Office		Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1938	4.1	46.9	51.0	21.1°	—	—	21.4*	—	4.9	1.5	—	—	100.0
1939	4.4	45.8	50.2	23.4°	—	—	20.4*	—	4.6	1.4	—	—	100.0
1940	4.4	43.8	48.2	26.9°	—	—	19.4*	—	4.2	1.2	—	—	100.0
1941	4.3	42.1	46.4	28.0°	—	—	20.6*	—	3.8	1.2	—	—	100.0
1942	4.2	39.3	43.5	31.0°	—	—	20.8*	—	3.5	1.1	—	—	100.0
1943	4.3	37.9	42.2	32.7°	—	—	20.8*	—	3.2	1.0	—	—	100.0
1944	4.4	36.8	41.3	32.8°	—	—	21.4*	—	3.5	0.9	—	—	100.0
1938	4.0	47.7	51.8	20.9	13.9*	34.6	—	7.3*	4.8	1.4	—	13.5	100.0
1944	4.8	39.4	44.2	32.1	11.2*	43.2	—	8.3*	3.4	0.9	—	12.6	100.0
1945	4.7	40.2	44.9	31.1	11.3*	42.4	—	8.7*	3.1	0.9	—	12.7	100.0
1946	4.7	42.7	47.5	27.8	11.1*	38.9	—	9.8*	3.0	0.8	—	13.6	100.0
1947	5.4	47.7	53.1	24.4	8.7	33.1	—	9.8	2.6	1.1	0.3	13.8	100.0
1948	5.3	47.6	52.9	25.0	8.6	33.6	—	9.9	2.4	1.0	0.2	13.5	100.0
1949	4.9	47.7	52.7	25.7	8.6	34.3	—	9.8	2.3	0.9	0.1	13.0	100.0
1950	4.7	51.9	56.6	24.1	7.9	32.0	—	7.8	2.6	0.9	0.2	11.4	100.0
1951	4.3	53.6	57.9	24.8	7.1	31.9	—	6.5	2.6	0.9	0.2	10.2	100.0
1952	4.1	50.2	54.3	26.1	7.8	33.9	—	8.4	2.4	0.8	0.3	11.8	100.0
1953	3.8	49.7	53.5	26.4	7.7	34.1	—	9.2	2.3	0.7	0.3	12.4	100.0
1954	4.2	51.3	55.4	24.0	7.9	31.9	—	9.2	2.5	0.7	0.3	12.7	100.0
1955	3.9	51.2	55.1	25.7	7.1	32.8	—	8.5	2.5	0.7	0.3	12.0	100.0
1956	4.0	54.3	58.3	23.1	7.0	30.1	—	7.9	2.6	0.7	0.4	11.6	100.0
1957	3.8	52.9	56.7	25.4	6.9	32.3	—	7.0	2.9	0.7	0.4	11.0	100.0
1958	3.6	53.3	56.9	22.3	7.7	29.9	—	9.1	3.0	0.6	0.4	13.2	100.0
1959	3.4	52.5	55.9	22.9	7.6	30.5	—	9.6	3.0	0.6	0.4	13.6	100.0
1960	3.3	53.1	56.4	21.9	7.6	29.5	—	10.2	2.9	0.6	0.4	14.1	100.0
1961	3.0	54.1	57.1	21.3	7.8	29.1	—	10.1	2.8	0.5	0.4	13.8	100.0
1962	2.9	55.7	58.6	20.4	7.5	27.9	—	9.9	2.7	0.5	0.4	13.5	100.0
1963	2.7	56.7	59.4	18.9	7.7	26.6	—	10.5	2.6	0.5	0.5	14.0	100.0
1964	2.6	58.2	60.8	19.7	7.2	26.9	—	9.1	2.4	0.4	0.5	12.3	100.0
1965	2.6	58.5	61.2	18.6	7.1	25.7	—	9.8	2.3	0.4	0.6	13.1	100.0
1966	2.6	61.1	63.7	16.8	6.8	23.7	—	9.0	2.5	0.4	0.7	12.6	100.0
1967	2.3	60.5	62.8	16.8	7.0	23.9	—	9.7	2.5	0.3	0.8	13.3	100.0
1968	2.1	60.4	62.5	17.3	6.6	23.8	—	10.2	2.4	0.3	0.8	13.7	100.0
1969	2.0	61.5	63.5	15.7	6.8	22.5	—	10.7	2.3	0.3	0.7	14.0	100.0
1970	1.9	63.5	65.4	15.0	6.5	21.5	—	9.8	2.3	0.3	0.7	13.1	100.0

Basic Sources: [31], Tables 22, 23, and 27; [6], Table 1; [4], Tables A1 and B1 and [3], Table B1.

°No adjustment for changes in the value of number of livestock on farms for these years.

*No adjustment for stock appreciation given for these years.

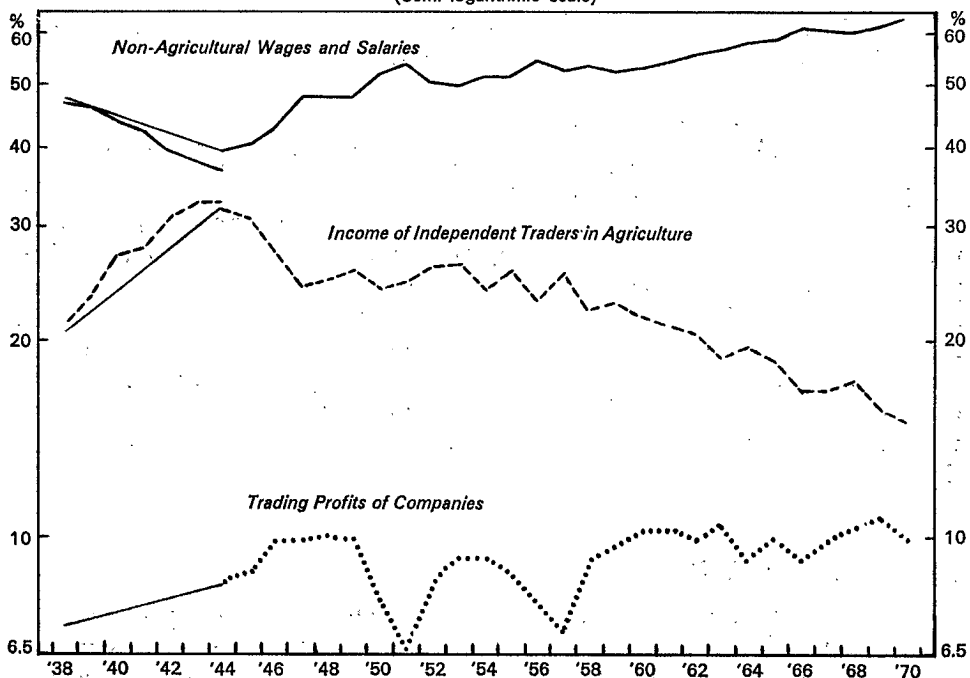
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Note: 1. The broken lines indicate discontinuities in the national accounts statistics on which this table is based.

Note: 2. Due to rounding the totals may not agree exactly.

Chart 2: Percentage Distribution of Domestic Income among Three Major Income Categories, 1938-70

(Semi-logarithmic scale)



Source of Data: Table 2.

war-time period. Further research, taking account of the terms of trade, would be necessary in order to establish the reasons for the dramatic, though temporary, changes in the distribution of income which occurred between 1938 and 1946. What appears to have happened is that the freeze on wages and salaries imposed under the Emergency Powers Orders from 1942 to 1946 together with a rapid rise in consumer and agricultural prices (see Meenan [23, p. 66]) changed the distribution of income in favour of the agricultural sector and also led to an increase in the share of trading profits of companies.

The downward trend in the share of income accruing to non-agricultural employees was reversed in 1945 although the Emergency Powers Orders were not modified by the Industrial Relations Act until September 1946. This Act

“enabled workers who so desired to convert the maximum wages permitted by existing orders into legally enforceable minimum wages”

as Mortished [24, p. 686] has noted. In 1947 there was a large increase in the share of non-agricultural employees income and this upward trend with some exceptions has continued since. The exceptions occurred in the years 1948, 1952, 1953 and every second year thereafter in the 1950s. From 1959 to 1966 there was a steady increase from 52.5 per cent of domestic income to 61.1 per cent. There was a decline in the group's share in 1967 and 1968 a recovery in 1969 and an advance to 63.5 per cent of domestic income in 1970. It is interesting to note that the alternate movements in the share of non-agricultural employees in the 1950s were matched by a similar pattern in the behaviour of the share of income received by independent traders in agriculture—the peaks in one group's share being matched by the troughs in the other group's share.

Geary and Pratschke's Result

Since 1944 the most striking feature of the behaviour of the proportionate share of domestic income going to wage and salary earners has been its upward trend, as is evident from Chart 2. This trend behaviour seems to be in conflict with Geary and Pratschke's finding [10, p. 30] of “quasi-constancy of the proportionate factor shares” in Ireland.

Geary and Pratschke in their analysis of factor shares confined their attention to the non-agricultural sector of the economy for the years 1958–65 and they used a non-agricultural domestic income concept excluding the adjustment for stock appreciation and the rent element in land annuities. Using their definition of income (i.e., non-agricultural domestic income) the distribution of income among three income categories is as shown in Table 3. The percentage changes in the proportionate shares for each category between 1947–49 and 1968–70 are as follows:—

	<i>Percentage Change</i>
Remuneration of employees	+8.81
Income of independent traders	-33.93
Income from property	-8.87

It is clear from these results that there is an upward trend in non-agricultural employees share of non-agricultural domestic income. Fitting a trend equation to the data on the share of non-agricultural employees for the period 1947-70 gives the following result:—

$$E = 69.35 + 0.24t$$

(6.42)

$$R^2 = .65; S^2 = 1.55;$$

where E = non-agricultural employees share of non-agricultural domestic income

and t_i = time, $i = 1, 2, \dots, 24$.

TABLE 3: *Percentage Distribution of Non-Agricultural Domestic Income Among Three Income Categories, 1947-70*

Year	Remuneration of Employees	Independent Traders	Income from Property	Total
1947	66.5	13.4	20.1	100.0
1948	69.2	12.5	18.3	100.0
1949	69.4	12.7	17.9	100.0
1950	69.8	12.4	17.8	100.0
1951	70.9	11.9	17.2	100.0
1952	72.4	11.4	16.2	100.0
1953	72.6	10.9	16.5	100.0
1954	72.3	11.0	16.7	100.0
1955	72.7	10.5	16.8	100.0
1956	73.5	10.2	16.3	100.0
1957	73.6	10.4	16.0	100.0
1958	72.6	10.4	17.0	100.0
1959	71.9	10.3	17.8	100.0
1960	71.3	10.3	18.4	100.0
1961	71.5	10.5	18.0	100.0
1962	72.4	10.1	17.5	100.0
1963	72.2	10.1	17.7	100.0
1964	73.9	9.8	16.4	100.0
1965	74.0	9.3	16.7	100.0
1966	75.1	8.9	16.0	100.0
1967	74.3	9.0	16.7	100.0
1968	73.6	8.7	17.7	100.0
1969	73.8	8.6	17.6	100.0
1970	75.7	8.2	16.1	100.0

Basic Sources: [4], Tables A1 and B 1 and [3], Table B1.

The trend equation indicates that the coefficient of the time variable is very significant, as indicated by the *t*-value in brackets, and that there is an upward trend of roughly one quarter of one per cent per year in the share of non-agricultural employees. The fit of the line is not bad, nearly two-thirds of the variance being explained by the time variable, but could probably be improved, perhaps, by including a quadratic or higher order term.

Geary and Pratschke's finding of quasi-constancy was based on the 1965 national accounts for a short period, 1958-65, during which there appeared to be little movement in the shares. Subsequent revision of the data for 1958-65 in the 1970 national accounts [4] indicates a slight upward trend in the share of employees even for these years.

It may be noticed in comparisons of the trends in non-agricultural employees shares of income shown in Tables 2 and 3 that the trends in the two tables are in opposite directions in certain years—for example between 1951 and 1953 non-agricultural employees share of domestic income, as shown in Table 2, declined while it increased as a share of non-agricultural domestic income, as shown in Table 3. The reason for the divergence in trends in these years is the exclusion of the adjustment for stock appreciation from the non-agricultural domestic income concept as is made clear in Table 4.

TABLE 4: *Comparison of the Trend in Non-Agricultural Employees Share of Non-Agricultural Domestic Income Including and Excluding Adjustment for Stock Appreciation and in Non-Agricultural Employees Share of Domestic Income, 1951-53*

<i>Remuneration of Non-Agricultural Employees as a Percentage of:</i>			
<i>Year</i>	<i>Non-Agricultural Domestic Income Excluding Stock Appreciation</i>	<i>Non-Agricultural Domestic Income Including Stock Appreciation</i>	<i>Domestic Income</i>
1951	70.9	76.5	53.6
1952	72.4	72.8	50.2
1953	72.6	71.8	49.7

Source of data: Tables 2 and 3 and [3], Table B1.

Relationship Between Changes in the Composition of the Total at Work and Employees Share of Domestic Income

Between the censuses of 1936 and 1966 while the total number at work declined by almost 170,000, the number of employees increased by nearly

90,000. Thus the absolute number and percentage of employees have increased substantially during this period as Table 5 shows.

TABLE 5: *Employees as a Proportion of the Total at Work in Census Years 1936-66*

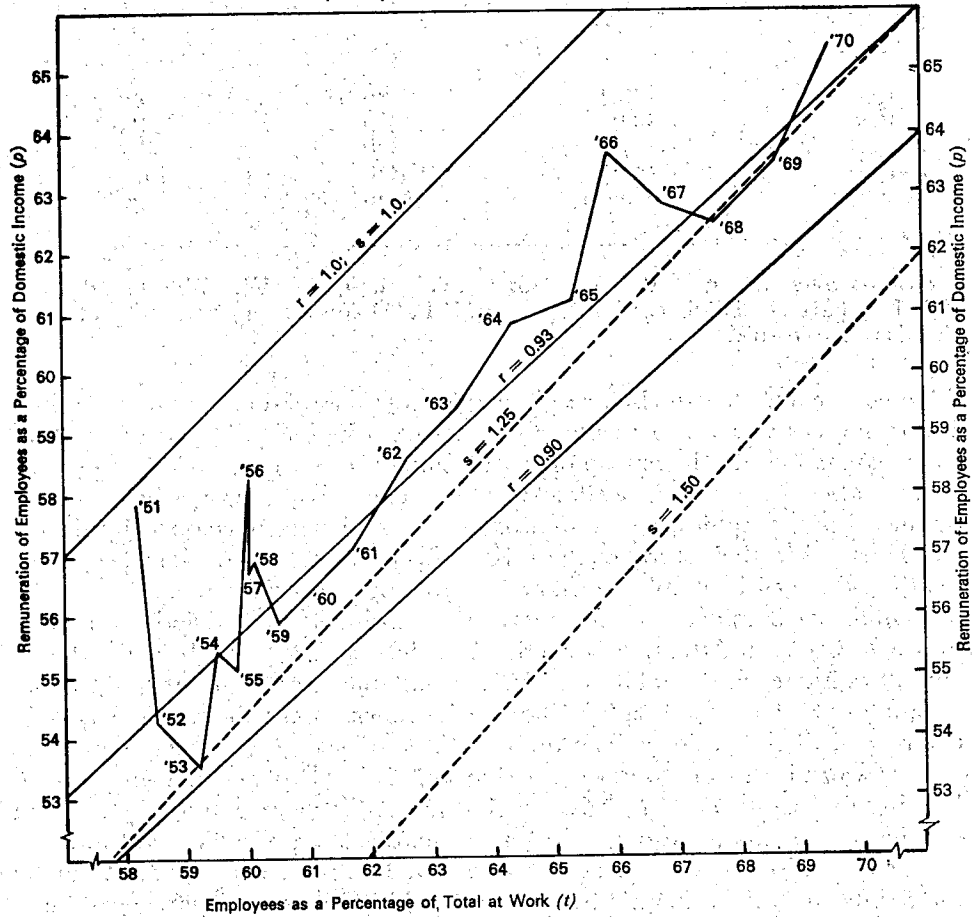
<i>Year</i>	<i>Total at Work</i> 000's	<i>Employees</i> 000's	<i>Employees as % of</i> <i>Total at Work</i>
1936	1,235.4	612.8	49.6
1946	1,227.7	667.8	54.4
1951	1,217.1	708.0	58.2
1961	1,052.5	649.6	61.7
1966	1,066.0	702.0	65.9

Basic Sources: CP, 1936, Vol. VI, Table 5; CP, 1946, Vol. VI, Table 5; CP, 1951, Vol. III, Part II, Table 13; CP, 1961, Vol. IV, Tables 7 and 8A and CP, 1966, Vol. III, Table 10A.

To what extent has the increase in employees share of domestic income been due to increases in the percentage of employees in the total at work and to what extent has the income position of employees relative to other persons at work altered as a result of these changes? These questions can be answered by means of a graphic presentation of the relevant data developed by Brown and Hart [2] in their study of the UK wage share. The Brown-Hart diagram relating changes in employees share of domestic income to changes in the percentage of employees in the total at work during the period 1951-70 is shown in Chart 3. Attention is confined to the years 1951-70 because official annual estimates of the total at work are available only from 1951 onwards.

Employees share of domestic income is shown along the vertical axis in Chart 3—call this ratio, p . The number of employees as a percentage of the total at work is shown along the horizontal axis in Chart 3—call this ratio, t . Plotting the points p and t against each other for each year and joining them up yields a time-path through the chart, the direction of which will indicate the relationship between changes in p and t . If the time-path traced out by the points (p, t) is horizontal over a certain period it means that the share of employees is constant while the percentage of employees in the total at work is changing. If the path is vertical for a period it means that the share of employees changed while the percentage of employees remained constant and if the path follows a constant straight line through the origin it means that the share of employees and their percentage in the total at work changed at the same rate i.e., changes in the share of employees keep pace with changes in the percentage of employees.

Chart 3: Brown-Hart Diagram for Employees, 1951-70
(For explanation see text)



Source of Data: Table 2 and Appendix A6.

The slope of the time-path in the diagram will therefore indicate the relationship between changes in p and t . It will also indicate whether the average income of employees has increased or decreased relative to other incomes. Two criteria are used in judging this (1) if the average income of employees has maintained a constant ratio, r , to the average income of the total at work the time-path will form a straight line through the origin (a radian) and (2) if the average income of other persons at work has remained a constant multiple, s , of the average income of employees the time-path will form a curved line through the origin.* Some constant s -curves and r -lines, for various values of s and r , have been drawn in Chart 3.

The relationships between the average income of employees, the average income of the total at work and the average income of other persons at work are based on the assumption that all of the domestic income other than wages and salaries accrues to other persons at work. This assumption is necessary because the comparisons of the average incomes of the various groups at work are not based on personal income but rather on income arising. Income arising is analogous to earned income while personal income is the income receivable from all sources whether earned or not. The problem with using income arising is how to allocate its property component to employees and others at work—hence the assumption that it is all received by other persons at work. This assumption of course is not strictly correct because some of this income will be retained by companies, some of it will be received by employees and some of it will be received by unoccupied persons. While this assumption will affect the level of the average income of other persons at work it is reasonable to infer that it will not distort the trend in the ratios of the average income of employees to the average income of the total at work and to the average income of other persons at work.

It will be seen from Chart 3 that the predominant characteristic of the time-path is for it to fluctuate around a constant $r = 0.93$ line. There was considerable oscillation in the time-path during the 1950s followed by remarkable stability during the 1960s. The linearity in the time-path in the 1960s is

*The relationships indicated by r and s are implicit in the relationship between p and t and they can be expressed in terms of p and t in the following way:

let W = remuneration of employees, X = domestic income, N = total number of persons at work and E = number of employees at work. Therefore, employees share of domestic income, $p = \frac{W}{X}$ and

the percentage of employees at work, $t = \frac{E}{N}$. Now the ratio of average earnings of employees to

the average income per head of the total at work r , is $\frac{W/E}{X/N}$ which, with some rearranging of the terms

becomes $\frac{W/X}{E/N}$ which is equal to $\frac{p}{t}$ and the ratio of the average earnings of other persons at work to

the average earnings of employees, s , is given by $\frac{X - W}{N - E} \cdot \frac{W}{E}$ and rearrangement of the terms give

$$s = \frac{(1 - W/X)X}{(1 - E/N)N} \div \frac{W/X \cdot X}{E/N \cdot N} = \frac{(1 - p)X}{(1 - t)N} \div \frac{pX}{tN} = \frac{(1 - p)t}{(1 - t)p}$$

striking and its close approximation to the constant $r = 0.93$ line is very noteworthy as it indicates that changes in employees share of domestic income have been accompanied by similar changes in the percentage of employees in the total at work. Between 1959 and 1970 the changes in both series have been almost identical. This result is in agreement with O'Mahony's [28, p. 3] finding for a longer period for the non-agricultural sector that:

"the share of employee income has risen since 1938 largely, if not indeed entirely, because of the increase in the proportion of employees in the labour force. When account is taken of the change in the structure of the labour force there has been little change in the proportion of income accruing to employees over the years".

The peaks which occurred in the time-path in Chart 3 in 1956, 1966 and probably also 1951 are to be expected because these were recession years and employees' share of income in such years tends to be high.*

With regard to the relationship between average earnings of employees, other persons at work and the average income per head of the total at work there has been little change in these relationships during the period under review. The average income of employees has remained fairly steady at about 93 per cent of average income per head of the total at work while the average income of other persons at work has been approximately $1\frac{1}{2}$ times the average income of employees throughout the period 1951-70.

Using the 1938 figures on the composition of the total at work shown in Appendix Table A6 and the 1938 figure on the percentage of domestic income received by employees shown in Table 2, it appears that in 1938 the average income of employees was almost 101 per cent of the average income per head of the total at work. There has therefore been a slight deterioration in the income position of employees relative to the national average per person at work between 1938 and 1970.

INCOME OF INDEPENDENT TRADERS

The greater portion of this group's share of domestic income derives from agricultural activities. The dramatic change in the income share of independent

*Another way of showing the relationship between the percentage of employees in the total at work and employees share of domestic income would be to fit an orthogonal regression line to the data. Here we are not concerned with a cause and effect relationship between p and t but rather with the unbiased relationship given by

$$(p - \bar{p})/s_p = (t - \bar{t})/s_t$$

where s_p and s_t are the standard deviations of each variable. The orthogonal regression line will fall between the two regression lines of p on t and of t on p . Using the data for the period 1959-70 the orthogonal regression works out to

$$p = -6.77 + 1.04t, R^2 = .94$$

During the period 1959-70 therefore, a 1 per cent increase in the percentage of employees in the total at work was associated with a 1.04 per cent increase in employees share of domestic income.

traders in agriculture during the war-time period has already been discussed. By 1947 the share of independent traders in agriculture had dropped back to just a little above its level in the years 1938-39 and it remained at about this level until 1957. Since 1957 the group's income share has declined by over a third. In the non-agricultural sector independent traders share of domestic income has declined by more than a half since 1938—most of the decline occurring by 1950. Between 1950 and 1963 there was very little movement in this group's share of domestic income but since 1964 the group's share has declined in most years.

Relationship Between Changes in the Composition of the Total at Work and Family Farm Workers Share of Domestic Income

The Brown-Hart diagram, already discussed in connection with the remuneration of employees, can be used to bring out the relationship between changes in family farm workers share of domestic income and changes in family farm workers representation in the total at work and also to indicate whether the average income of family farm workers relative to other incomes has increased or decreased. The interpretation of the Brown-Hart diagram for family farm workers (see Chart 4) is based on the same criteria as were used in interpreting the same diagram for remuneration of employees. The income of family farm workers as a percentage of domestic income, p , is shown on the vertical axis and family farm workers as a percentage of the total at work, t , is shown on the horizontal axis. Some constant r -lines and s -curves are drawn on Chart 4. The r -lines indicate what the time-path through the chart will be like if the average income of family farm workers has borne a constant ratio to average income of the total at work while the s -curves indicate what the time-path will be like if the average income of other persons at work has remained a constant multiple, s , of the average income of family farm workers.

There are some points which should be borne in mind when using the Brown-Hart diagram to compare movements in the average income of family farm workers with movements in average incomes of other groups:

(1) As already noted in comparing average income of employees with other incomes the comparisons of average income of family farm workers with average income of other persons at work is based on income arising and not on personal income. It is assumed that the property component of income arising is received by other persons at work. This assumption is not, of course, strictly correct as some property income is undoubtedly received by farmers, by institutions and by unoccupied persons.

(2) Comparison of the average income of family farm workers with the average income of workers in other sectors must, as O'Connor [25, p. 148] notes,

“be taken with a certain amount of caution. Though it shows the trend in *per capita* incomes in both sectors over time, the absolute magnitude of the figures (particularly those in the agricultural sector) may not represent the true situation”.

A problem with regard to the overall level of agricultural incomes arises, for example, because it is not possible to deduct interest on borrowed capital from the income from self employment and other trading income in the agricultural sector. Another problem arises in connection with the valuation of farm produce consumed on farms without process of sale—should agricultural or retail prices be used when comparing the average income of family farm workers with the average income of workers in other sectors? The effect of using retail rather than agricultural prices in the valuation is examined below.

(3) There are difficulties in deciding on the number of persons among whom agricultural income should be divided. O'Connor [25, p. 149] notes that

“the agricultural labour force is defined as the number of people in the State whose main occupation is in agriculture but we do not know with any degree of exactitude how much of the so called agricultural income goes to people in this category”.

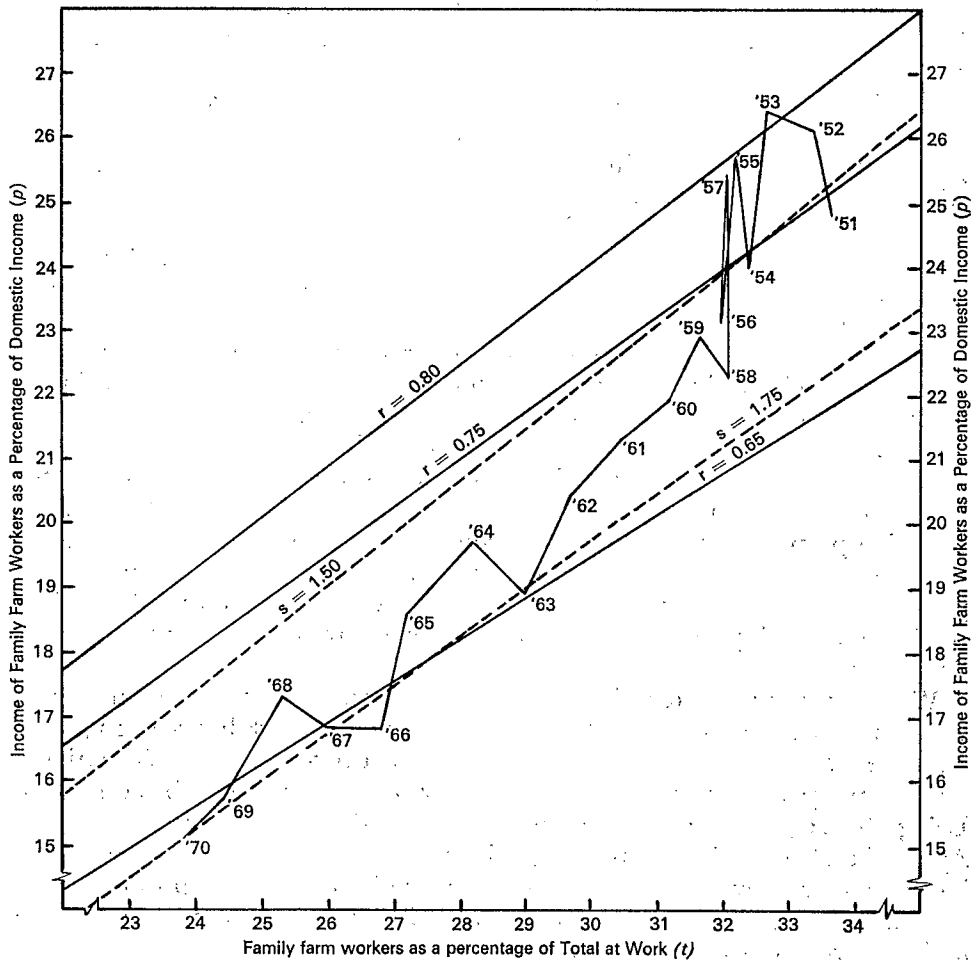
For example, some agricultural income is produced by persons who own land but whose main occupation is outside agriculture (e.g., shopkeepers and teachers).

Despite these limitations on the comparison of average incomes in the agricultural and non-agricultural sectors it is true to say that such comparisons may give a fairly reliable picture of trends over time between the relative income position of persons at work in agriculture and persons at work outside agriculture. The purpose of Chart 4 is to highlight these trends during the period 1951–70.

There was very little change in the percentage of family farm workers in the labour force between 1951 and 1957 while between 1957 and 1970 there was a decline of about 30 per cent. The result of the changes in income share and representation in the labour force is brought out clearly in Chart 4 for this group. Up to 1957 the time-path fluctuated around the $r=0.75$ line in a rather erratic fashion. Since 1958 there has been much greater stability in the movements of the time-path. Between 1958–68 it followed a course similar to that of the constant $r=0.70$ line with significant departures from this course in 1963 and 1966–67. Since 1968 the time-path has changed somewhat from its course in the 1958–68 period and by 1970 it had fallen below the constant $r=0.65$ line.

Thus the average income per head of family farm workers has declined from 75 per cent of the national average for persons at work in the early 1950s to

Chart 4: Brown-Hart Diagram for Family Farm Workers, 1951-70
(For explanation see text)



Source of Data: Table 2 and Appendix Table 6.

around 70 per cent in the late 1950s and early 1960s and to about 65 per cent of the national average in 1970. There has also been a deterioration in the income position of family farm workers relative to other occupied persons— from the positions of the *s*-lines on the Chart it is clear that in the 1950s the average income of other occupied persons was approximately one-and-a-half times as large as the average income of independent traders in agriculture while by 1970 the ratio of the average income of other occupied persons to the average income of independent traders in agriculture had risen to one-and-three-quarters.

It might be argued that in a comparison between the average income of independent traders in agriculture and the average income of other occupied persons that the retail value of agricultural produce consumed on farms without process of sale should be used, rather than the value of this produce at agricultural prices (for the difference which this adjustment makes to the distribution of income compare Table 2 and Appendix Table A2). Taking this adjustment into account it was found that the value of *r* in the 1950s was raised to 0.9 and at the end of the 1960s to 0.7. Thus the trend in the income position of independent traders in agriculture relative to the national average is the same whichever income concept is used, although the deterioration in the independent traders position is greater when the retail value of farm produce consumed on farms without process of sale is used. The reason for the greater deterioration when retail rather than agricultural prices are used is that in the 1960s the value of produce consumed on farms without process of sale was a declining proportion of agricultural income. In 1947 for example the value of produce and fuel consumed on farms without process of sale at retail prices as a percentage of the income of independent traders in agriculture (including retail value of this produce) was 61 per cent while by 1970 the percentage had dropped to around 21 per cent.

While there was a deterioration in the average income of family farm workers relative to the national average per person at work between 1951 and 1970 the income position of family farm workers in 1970 relative to the national average per person at work was considerably better than it had been in 1938. Using the 1938 figures on the composition of the total at work shown in Appendix Table A6, and the 1938 figures on the percentage of domestic income received by family farm workers shown in Table 2, it appears that in 1938 the average income of family farm workers was only 53 per cent of the national average per person at work.

With regard to independent traders in the non-agricultural sector the representation of this group in the labour force has declined from 8.1 per cent in 1951 to 6.8 per cent in 1970 as Appendix Table A6 shows. As the percentage decline between 1951 and 1970 of non-agricultural independent traders in the labour force has been greater than the percentage decline in their share of domestic income over the same period their average income per head relative to the national average has increased—from 88 per cent of the national average

in 1951 to 96 per cent in 1970. Since 1938 however, the income position of non-agricultural independent traders relative to the national average per person at work has declined from 150 per cent of the national average in that year to the 1970 figure of 96 per cent of the national average.

INCOME FROM PROPERTY

There have been considerable changes since 1938 in the importance of the constituents of property income. The proportion of domestic income accounted for by trading profits of companies before tax has increased, by a third, from 7.3 to 9.8 per cent, between 1938 and 1970 while in the same period there has been a decline of 52 per cent in the share of actual and imputed rent of dwellings and of 79 per cent in the share of the rental element in the land annuities. The very large change in the land annuities rent component is due to the fact that the rental element is a constant amount—and therefore a declining proportion of an increasing domestic income. With regard to the rent of dwellings, nearly all of the decline in its share occurred by 1947. This decline and subsequent stability may be spurious, as Kennedy and Dowling [16, p.178] have found, in an analysis of the gross incremental capital-output ratio for dwellings, that:

“the value of the gross product of housing is substantially understated in the Irish national accounts . . .”

The increase of one-third, between 1938 and 1970, in the proportion of income accounted for by trading profits of companies appears to indicate a strong upward trend. However this impression is misleading as most of the changes took place in the war-time period—the increase in the period 1947-49 to 1968-70 being only 6.4 per cent. During the post-war period the share of trading profits of companies has exhibited a modest upward trend although there were significant decreases in the recession years of 1951, 1957 and to some extent also in 1966. The behaviour of trading profits of companies share is therefore rather volatile—though less so when the adjustment for stock appreciation is excluded.

Given that there is an upward trend in the behaviour of the share of trading profits of companies over the whole period 1938-70 it is reasonable to conclude that the significant increase in employees' share of domestic income between 1938 and 1970 has not been made at the expense of trading profits of companies share of domestic income. It will be shown in Section 4 that the increase in employees' share of domestic income has been mainly due to structural changes in the economy.

4. STRUCTURAL CHANGES AND EMPLOYEES' SHARE OF DOMESTIC INCOME

Effect of Government Sector on Wage and Salary Share

The convention adopted in the national accounts with regard to the contribution of the government sector to national income is to measure its product

by the value of wage and salary payments to government employees and the trading income of government enterprises. Therefore an increase in the wage and salary share could arise because of an expansion in the government sector. To what extent, if any, has the increase in the wage and salary share been due to such expansion? In answering this question it is important to keep in mind the coverage of the relevant item in the national accounts i.e., Public administration and defence. Included under this heading are all payments in cash and in kind to central and local government employees (e.g., the army, the gardai etc.). Excluded are payments to post office employees, non-administrative employees in forestry and employees in educational and health services. It should also be noted that none of the semi-state bodies such as CIE and the ESB are included in the value of the output of Public administration and defence. The figures for the government sector as a percentage of domestic income are as follows for selected years since 1947:

<i>Year</i>	<i>Public administration and defence as a percentage of Domestic Income</i>
1947-49	5.8
1959-61	5.9
1968-70	6.4

The increase in this component of domestic income has been slight and would certainly not account for much of the rise in the wage and salary share. This result accords with the finding of the UN report [32, Chapter VIII—page 9] for the years 1938 and 1955 on the effect of the government sector on the wage and salary share in five countries for which it was possible to make the comparison—namely that:

“there is no evidence of a relative expansion of the public services sufficient to account for more than a small part of the increase in the wage fraction”.

Employees' Share of Income by Sectors

Figures are given in the national accounts on the division of the product of four sectors (Agriculture, Industry, Distribution and Other Domestic) between remuneration of employees and other income from 1953 onwards. The share of employees in the income of each sector and in the total income of these sectors is shown in Table 6.

A particularly noteworthy feature of Table 6 is the stability of the wage and salary share in the Industry sector. It will be shown in Section 6 however that the stability exists only for the net income of the sector. If gross income (i.e., including depreciation) is used the wage and salary share in the Industry sector is no longer stable.

It is clear from Table 6 that there are substantial differences in the share of income accruing to employees among the four sectors. It is also clear that the

change in the aggregate employee share of income produced in the four sectors is greater than the change which occurred in the employee share in any of the individual sectors. This, at first sight contradictory result, arises because changes in the aggregate employee share can occur as a result of (i) changes in the weight of a sector's income and (ii) changes in the employees' share of a sector's income. The question therefore is, to what extent has the increase in the aggregate wage share been due to structural shifts in the economy and to what extent has it been due to increases in employees' share in each sector? A complication arises in attempting to answer this question because of the classification of each sector's income into only two components viz., remuneration of employees and other income. The income of independent traders in each sector is included with the other income component. Because of this two-way classification of income, when a three-way classification is required, it may happen that employees' share of each sector's income will change because of the movement of persons from one employment category to the other (e.g., independent traders who become employees will have their incomes re-

TABLE 6: *Remuneration of Employees as a Percentage of Income Arising in Agriculture, Industry, Distribution and Other Domestic and of Total Income Arising in Those Sectors, 1953-70*

Year	Sector				Aggregate Employee Share of Income
	Agriculture	Industry	Distribution	Other Domestic	
1953	12.3	77.0	64.9	63.7	50.8
1954	14.4	76.5	65.1	63.4	52.6
1955	13.0	78.2	65.2	62.5	51.9
1956	14.5	78.3	68.4	63.0	54.5
1957	12.8	78.2	69.7	62.9	52.9
1958	13.6	76.8	70.0	61.5	54.1
1959	12.7	76.0	68.7	61.3	53.1
1960	12.8	75.2	67.8	61.1	53.5
1961	12.1	74.7	68.5	61.6	54.1
1962	12.1	76.0	68.5	62.9	55.5
1963	12.1	76.4	66.8	62.7	56.4
1964	11.4	78.9	67.5	64.4	57.1
1965	12.2	78.0	68.6	64.9	58.0
1966	13.2	79.1	70.6	65.6	60.3
1967	11.7	76.9	72.2	64.9	59.6
1968	10.7	75.5	72.0	64.9	58.9
1969	11.0	76.5	71.1	64.9	60.2
1970	11.3	78.4	72.2	66.9	62.1

Basic Sources: [4], Tables A2 and B2 and [3], Table B2.

Note: The adjustment for stock appreciation is not included in this table as only a global figure is available for the years 1953-57. In order to maintain consistency in the series unadjusted figures have been used throughout.

classified from the other income category to the remuneration of employees category).

The importance of the changing composition of employment in each sector can be gauged from Table 7 where an attempt is made, using census statistics, to show the composition of employment in sectors which correspond to the national accounts sectors.

TABLE 7: *Actual and Percentage Composition of the Total at Work in Certain Industrial Groups in 1951, 1961 and 1966*

<i>Industrial Group and Employment Status</i>	<i>1951</i>		<i>1961</i>		<i>1966</i>	
	<i>Number</i>	<i>Per Cent</i>	<i>Number</i>	<i>Per Cent</i>	<i>Number</i>	<i>Per Cent</i>
<i>Agriculture</i>						
Independent traders	409,672	82.6	320,893	84.7	286,136	85.8
Employees	86,363	17.4	57,839	15.3	47,391	14.2
<i>Manufacturing, mining, construction, electricity, gas and water</i>						
Independent traders	31,585	10.9	19,117	7.4	18,025	6.1
Employees	257,676	89.1	239,718	92.6	275,708	93.9
<i>Commerce, transport</i>						
Independent traders	49,115	25.3	49,361	25.0	45,920	22.1
Employees	145,387	74.7	148,001	75.0	161,464	77.9
<i>Insurance etc., professions personal service, entertainment</i>						
Independent traders	16,585	8.3	13,547	7.7	13,913	7.4
Employees	182,808	91.7	163,483	92.3	174,241	92.6
<i>Public administration and defence</i>						
Employees	40,531	100.0	40,580	100.0	43,189	100.0
<i>Total at Work</i>						
Independent Traders	506,957	41.6	402,918	38.3	363,994	34.2
Employees	712,765	58.4	649,621	61.7	701,993	65.8

Basic Sources: CP, 1951, Vol. III, Part II, Table 13; CP, 1961, Vol. IV, Table 8A and CP, 1966, Vol. III, Table 10A.

- Notes*: 1. The category "Independent Traders" consists of employers, own account workers and assisting relatives.
2. The number of employees and the total at work in 1951 in the above table do not agree with the 1951 figures for the same groups shown in Table 5. The 1951 figures in Table 5 are reclassified figures taken from the 1961 Census. The reclassification of the 1951 figures on industrial status in the 1961 Census was carried out only for the total at work.

It is evident from Tables 6 and 7 that there is an inverse relationship between the percentage of independent traders and employees' share of sectoral income. Therefore, as already noted, a decrease in the percentage of independent traders in a sector may lead to an increase in employees' share of sector income. From Table 7 it would appear that the order of importance of changes in the percentage of independent traders in each sector between 1951 and 1966 was (1) Manufacturing, mining etc., (this sector corresponds with the national accounts "Industry" sector) (2) Commerce, transport (this sector corresponds with the national accounts, "Distribution" sector) (3) Insurance etc., professions (this sector corresponds with the national accounts "Other domestic" sector) (4) Agriculture. From Table 6 it appears that the order of importance of percentage changes in employees' share of income was (1) Distribution (2) Agriculture (3) Other domestic and (4) Industry. No strong relationship emerges between changes in the composition of employment and changes in employees' share. In analysing the effect of structural changes on the aggregate wage share the effect of the changing composition of employment in each sector on the share of employees in that sector can therefore be discounted as of significant importance during the period 1953-70.

Using a statistical technique* developed by Dunlop [8, p. 164] the relative importance of changing weights and changing employee shares can be assessed in terms of the following relationships:

- Let L = total remuneration of employees in the four sectors
 Y = total income produced by the four sectors
 l_i = remuneration of employees in a sector
 y_i = income produced by a sector
 $p_i = l_i/y_i$ employees share in a sector. Call this the "participation rate".
 $w_i = y_i/Y$ income produced in one sector as a percentage of total income produced. This is the weight of the sector in total income.
 $c_i = l_i/Y$ remuneration of employees in one sector as a percentage of total income produced. Call this the "contribution rate".

Now the contribution rate is equal to the product of the participation rate and the weight ($c_i = l_i/Y = l_i/y_i \cdot y_i/Y = p_i \cdot w_i$) and the sum of all contribution rates is equal to employees' share of income [$\Sigma c_i = \Sigma (p_i \cdot w_i) = L/Y$]. Therefore changes in employees' share of total income can be reduced to changes in participation rates in each sector and changes in sector weights. Algebraically, using superscript o to indicate that a term is held constant,

$$\Delta \frac{L}{Y} = \Sigma w_i^o \cdot \Delta p_i + \Sigma p_i^o \cdot \Delta w_i + \Sigma \Delta p_i \cdot \Delta w_i$$

*Commonly known as shift-share analysis.

The first term on the right-hand side indicates the change in employees' share of total income that would arise as a result of actual changes in employees' share in each sector on the assumption that there is no change in the weights; the second term indicates the change in employees' share of total income that would arise from changes in sector weights on the assumption of unchanged participation rates; the third term is a residual arising from the joint change in participation rates and weights. The results of the analysis are shown in Table 8.

TABLE 8: *Decomposition of Cumulative Changes in the Aggregate Employee Share of Income into Changes Due to Changes in Sector Participation Rates and in Sector Weights, 1953-70*

Year	Change in Aggregate Employee Share Due to:			
	Changes in Sector Participation Rates ($\sum w_i \cdot \Delta p_i$)	Change in Sector Weights ($\sum p_i \cdot \Delta w_i$)	Combined Change in Sector Participation Rates and Weights ($\sum \Delta p_i \cdot \Delta w_i$)	Change in Aggregate Employee Share from 1953 to Current Years
1954	0.5312	1.3558	-0.0538	1.8332
1955	0.3945	0.6734	-0.0104	1.0575
1956	1.5664	2.2422	-0.0649	3.7437
1957	1.1787	0.9448	-0.0309	2.0926
1958	0.8096	2.5965	-0.1091	3.2970
1959	0.0235	2.3870	-0.0742	2.3363
1960	-0.3780	3.2184	-0.1118	2.7286
1961	-0.5430	3.8901	-0.0610	3.2861
1962	0.1020	4.6123	0.0151	4.7294
1963	-0.0899	5.6427	0.0038	5.5566
1964	0.8650	5.2382	0.2331	6.3363
1965	1.1538	5.8513	0.1827	7.1878
1966	2.2826	6.9879	0.2294	9.4999
1967	1.2753	7.2946	0.2545	8.8244
1968	0.4858	7.3814	0.2491	8.1163
1969	0.7386	8.3672	0.3214	9.4272
1970	1.9718	8.7467	0.5753	11.2937

The major portion of the change in the aggregate employee share in any year, except 1956 and 1957, can be pinpointed from Table 8 as being due to changes in sector weights. Taking the change in the aggregate employee share between 1953 and 1970 for example, it is shown in Table 8 that nearly 78 per cent of the increase of 11.3 percentage points in the aggregate employee share of income is due to changes in the percentage of total income produced in each sector while 17 per cent of the increase is due to changes in the employee share within sectors. This has happened mainly because of the decline in the weight

of agriculture (a low employee share sector) from one-third of the total in 1953 to less than one-fifth of the total in 1970 and the increase in the weight of industry (a high employee share sector) from nearly 30 per cent of the total in 1953 to approximately 40 per cent in 1970. Exceptions to this pattern of change occurred in 1956 and 1957 when changes in the employee share within sectors strongly influenced the aggregate employee share in these years; these are results which would be expected as a result of the depressed economic conditions prevalent in 1956-57.

5. DISTRIBUTION OF INCOME BETWEEN LABOUR AND CAPITAL

Whole Economy

An important question which it is not possible to answer on the basis of the national accounts division of income is: in what proportions has the national income been divided among the factors of production (i.e., labour and capital) employed in producing it? The problem with the national accounts division of income is that the income of independent traders is a joint income consisting of remuneration for the trader's own labour and returns on capital employed by the trader in carrying on his business. If the distribution of income among the factors of production is to be derived, the income of independent traders must be split into its component parts. Before considering how the division is to be made it is worth noting that other writers in this field have severely criticised attempts to apportion the income of independent traders into its labour and capital components. The main criticism of writers such as Lebergott [22], is that the results of the division of independent traders income are implicit in the assumptions which one makes. There is substance in this view. Nevertheless such a division of independent traders income can be useful in *clarifying* tendencies in the distribution process which are known from an analysis of the threefold division of income which is generally used. See for example Kravis' [19] study of income shares in the United States. Also, such a division is essential for testing the validity of most of the macro-economic distribution theories.

There are a number of ways in which the division of independent traders income can be done:

(i) *The Asset Basis*: Given information on the value and sectoral composition of the capital stock it is assumed that the rate of return on capital employed by independent traders is the same as the rate of return on capital for the corporate sector of the economy. Unfortunately, as such statistics are not available for Ireland, this method cannot be used here.

(ii) *The Labour Basis*: The assumption here is that each independent trader is paid the average annual income of employees in the sector of the economy in which the independent trader carries on business.

(iii) *The Economy-Wide Basis*: Under the first two approaches all of the fluctuations in income are borne by either labour or capital and the remaining factor's income is a residual. The fluctuations in income can be attributed to both factors by employing the economy-wide basis which, in Kravis' words [19, p. 925], attempts:

"to divide the income of non-corporate business for each period in accordance with the current relationship between labour and property income in the entire economy excluding the entrepreneurial sector".

The distribution of income between labour and capital which results from using the labour and economy-wide bases is shown in Table 9.

TABLE 9: *Distribution of Domestic Income Between Labour and Capital Using Labour and Economy-Wide Bases, 1938 and 1944-70*

Year	Labour Basis		Economy-Wide Basis	
	Labour Share	Capital Share	Labour Share	Capital Share
1938	80.7	19.3	79.3	20.7
1944			77.9	22.1
1945			77.9	22.1
1946	74.0	26.0	77.7	22.3
1947			79.4	20.6
1948			79.7	20.3
1949			80.1	19.9
1950			83.2	16.8
1951	85.5	14.5	85.1	14.9
1952	82.0	18.0	82.2	17.8
1953	79.9	20.1	81.1	18.9
1954	84.0	16.0	81.4	18.6
1955	82.3	17.7	82.1	17.9
1956	86.0	14.0	83.4	16.6
1957	83.5	16.5	83.7	16.3
1958	83.6	16.4	81.2	18.8
1959	81.9	18.1	80.5	19.5
1960	81.9	18.1	80.0	20.0
1961	81.3	18.7	80.5	19.5
1962	82.3	17.7	81.3	18.7
1963	82.1	17.9	80.9	19.1
1964	83.1	16.9	83.2	16.8
1965	83.9	16.1	82.3	17.7
1966	86.3	13.7	83.5	16.5
1967	83.8	16.2	82.6	17.4
1968	82.3	17.7	82.1	17.9
1969	82.7	17.3	81.9	18.1
1970	84.4	15.6	83.3	16.7

Basic Sources: [6], Table 1; [3], Table B1 and [4], Tables A1 and B1.

—Figures not available.

Note: The employment figures used in deriving the labour basis distribution are shown in Appendix Table A6.

The main conclusion to be drawn from the division of domestic income into returns to labour and returns to capital is that there was a slight upward trend in the share of labour, between 1938 and 1970, regardless of which of the two bases used in the division of independent traders income is chosen. As already pointed out comparisons based on changes between single years can be misleading. However, the same result holds true when the average shares, under the economy-wide basis, for the three years 1947-49 and 1968-70 are compared—the increase in labour's share over this period being approximately 3 per cent.

Given the reservations which must be borne in mind in connection with the division of independent traders income, too much should not be read into these results. However it is fair to say that they are in accord with the more detailed analyses of the reasons for the increase in the aggregate employee share of domestic income. These analyses indicated that the increase in employees share of domestic income was accompanied by a similar increase in the percentage of employees in the labour force and that the increase in the aggregate employee share did not result from an increase in the employee share in each sector of the economy but rather from structural changes in the economy *viz.*, the increase in the proportion of national output produced by the high employee share industrial sector and the decrease in the proportion of national output produced by the low employee share agricultural sector.

Labour and Capital Shares of Independent Traders Income

A result of some interest which emerges from the calculations involved in finding the distribution of income between labour and capital for the whole economy using the labour basis is the division of independent traders income into its labour and capital components. The division in the agricultural and non-agricultural sectors is shown in Table 10.

The contrast between the division of independent traders income in the agricultural and non-agricultural sectors is striking. In the non-agricultural sector the predominant characteristic of the division is that after the traders own labour is remunerated at the average income of employees in the sector there is little or no return on capital. In half the years for which figures are given in Table 10 the traders in the non-agricultural sector did not even receive an income equal to that of an employee in the sector. While this may seem a surprising result it is by no means unusual. Denison [7, p. 256] for example, noted in a similar study for the United States:

“that most non-farm proprietors are in firms whose total net income per proprietor is much below average employee earnings, and that the bulk of total proprietors income is accounted for by the larger firms, where property income may predominate”.

TABLE 10: *Distribution of the Income of Independent Traders in the Agricultural and Non-Agricultural Sectors Between Labour and Capital Using the Labour Basis, 1938, 1946 and 1951-70.*

Year	Agriculture		Non-Agriculture	
	Labour Share	Capital Share	Labour Share	Capital Share
1938	89.1	10.9	75.0	25.0
1946	67.1	32.9	70.6	29.4
1951	82.7	17.3	119.2	-19.2
1952	76.4	23.6	101.0	-1.0
1953	71.0	29.0	99.4	0.6
1954	86.3	13.7	99.4	0.6
1955	77.7	22.3	107.4	-7.4
1956	89.8	10.2	115.4	-15.4
1957	78.6	21.4	112.2	-12.2
1958	85.8	14.2	100.3	-0.3
1959	80.6	19.4	99.2	0.8
1960	82.5	17.5	98.0	2.0
1961	78.4	21.6	96.3	3.7
1962	79.5	20.5	99.8	0.2
1963	81.1	18.9	96.0	4.0
1964	76.9	23.1	102.3	-2.3
1965	84.2	15.8	100.5	-0.5
1966	93.7	6.3	106.4	-6.4
1967	83.2	16.8	98.7	1.3
1968	76.4	23.6	101.5	-1.5
1969	80.2	19.8	97.7	2.3
1970	83.6	16.4	101.0	-1.0

It should be noted in connection with Tables 9 and 10 that in cases where the estimated labour income of independent traders in the non-agricultural sector exceeded the total income available to the group the total income available has been used for the purposes of deriving the labour share in Table 9.

In the agricultural sector the share of capital is substantial though liable to very large changes from year to year. Two points should be borne in mind in connection with the relatively large share of capital in the agricultural sector:

(1) the incomes of agricultural employees relative to the incomes of non-agricultural employees are low*. The ratio of agricultural employees average income to non-agricultural employees income, for certain years in the period 1938-70 was as follows:—

*See however the remarks on pages 27-28 in connection with this comparison.

Year	<i>Agricultural Employees Average Income as a Percentage of non- Agricultural Employees Average Income</i>
1938	41.9
1946	52.4
1951	57.9
1961	57.0
1966	59.0
1970	55.1

It is obvious from these figures that if independent traders in agriculture had received the average income of employees outside agriculture there would have been little or no return on capital employed in the agricultural sector.

(2) The fact that the capital share is high in agriculture does not mean that the rate of return on capital is high. The rate of return will depend on the value of capital employed. It is generally believed that the rate of return on capital employed in Irish agriculture is low. O'Connor [26] for example has estimated, on the basis of the National Farm Surveys for 1955-56 and 1957-58, that:

“on the mid income farms of all sizes and types, the residual return is less than 5.5 per cent”

Given the small or negative returns on capital of independent traders when their labour is charged at average *non-agricultural* employee income, it is hardly surprising that the numbers of independent traders in both agricultural and other sectors have declined steadily throughout the post-war period.

6. WAGE AND SALARY SHARE OF NET OUTPUT IN CIP INDUSTRIAL GROUPS, 1926-68

Because of the reservations which must be borne in mind about the division of income between labour and capital due to the problem of independent traders income it would be useful to investigate the distribution of income in sectors of the economy where the problem of independent traders income is not of major significance. It has been shown in Table 7 that in the Industrial and Other domestic sectors the proportion of employment accounted for by independent traders is rather small (about 7 per cent on average in both sectors between 1951 and 1966). Statistics on the composition of income within industries in the Industrial sector, but not for the Other domestic sector, are available in the Census of Industrial Production (CIP) reports from 1926 onwards.

The objective of this section, therefore, is to find out what has happened to the wage and salary share of net output of Transportable Goods Industries as a whole and to the share of wages and salaries in the industrial groups of the Transportable Goods sector for the period 1926-68. Attention in this sector is concentrated on the Transportable Goods Industries rather than on All Industries because the problem of independent traders is minimal for the Transportable Goods Industries. In 1966 the percentage of independent traders in the Manufacturing and mining sector was 3.6 as against 6.1 (see Table 7) when Building etc., is included.

It would be extremely useful if the national accounts figure for the output of the Industry sector could be reconciled with the CIP figure for the value of output of All CIP Industries. Unfortunately this cannot be done because the national accounts Industry figure is based on returns from "all concerns engaged in industrial production, whether covered by the Census of Industrial Production or not" [4, p. 39]. If information were available on the output of small industries not covered by the CIP it would be possible to reconcile the CIP wages and salaries figure with the national accounts figure for remuneration of employees in Industry. Difficulties would arise in attempting to reconcile the CIP figure for remainder of net output with the national accounts figure for other income in Industry because the CIP remainder of net output includes certain supplementary costs of production such as depreciation, rents and rates, as well as profits.

Given these differences between the two sets of figures it is not surprising that the level and trend in the share of remuneration of employees in the Industry sector and in the wage and salary share of All CIP Industries are different. However if depreciation is included in the value of the output of the Industry sector the long term trends in employees' share for the two series since 1953 are similar as Table 11 shows.

The evidence for similarity of trend in the Industry series when the largest supplementary cost of production, depreciation, is included in the CIP series is important as a major problem in using the CIP series in an examination of the behaviour of the relative shares of pay and profits within industries is the behaviour of supplementary costs relative to the behaviour of profits. It may happen that proportionate changes in supplementary costs differ over a period of years from the proportionate changes in profits and therefore the trend in the wage and salary share of net output would be distorted.

Unfortunately detailed information on supplementary costs by industrial groups is available from the CIP only for the years 1946-50. Less detailed information covering only some of the supplementary costs identified in the Censuses for 1946-50 and referring only to group totals (such as All Manufacturing Industries and All Building and Service Industries) is available as a consistent series only for the years 1953-59 in [5, Table 7]. However this information together with the information in Table 11 will give some indication

TABLE II: *Wage and Salary Share in All CIP Industries and Share of Remuneration of Employees in Income Arising in (i) Industry and (ii) Industry Including Depreciation, 1953-68*

Year	Industry	Industry including Depreciation	All CIP Industries
1953	77.0	73.5	58.7
1954	76.5	72.7	59.4
1955	78.2	74.0	59.8
1956	78.3	73.3	59.4
1957	78.2	72.3	58.7
1958	76.8	71.1	57.2
1959	76.0	69.6	55.0
1960	75.2	68.9	56.2
1961	74.7	68.5	54.8
1962	76.0	69.0	55.3
1963	76.4	68.7	55.0
1964	78.9	70.9	55.9
1965	78.0	70.1	54.7
1966	79.1	70.8	54.3
1967	76.9	69.1	51.9
1968	75.5	67.8	51.2

Basic Sources: [4], Table A2 and B2; [3], Table B2; ITJSB (now ISB), September issues, 1956-65 and 1967-69 and December issues, 1966 and 1970.

of whether the proportionate changes in supplementary costs and profits have been of the same order of magnitude.

In the censuses of 1946-50 detailed information was published on certain supplementary costs of production and the remainder of net output was split into two portions (a) certain supplementary costs (b) the residue. The supplementary costs distinguished amounted to 33 per cent of the remainder of net output of All Industries and Services in 1946 and to 35.9 per cent in 1950. The wage and salary share for each industrial group was calculated on the basis of the adjusted net output (i.e., wages and salaries as a percentage of wages and salaries plus residue) and an index of the wage and salary share was computed with 1945 as the base year. A similar index was calculated for the usual wage and salary share (i.e., wages and salaries as a percentage of wages and salaries plus remainder of net output). The results are contained in Table 12.

It is clear from Table 12 that there is very little difference in the level of the indices at the aggregate or industrial group levels. Some small differences could be expected as there has been a slight increase in the proportion which supplementary costs form of net output as noted already. Furthermore one does not expect complete correspondence of the indices because of the difference

TABLE 12: Comparison of Indices of Wage and Salary Share of Adjusted Net Output and of Net Output of Industrial Groups, 1946-50

Base 1945 = 100

Industrial Group	Adjusted Net Output					Net Output				
	1946	1947	1948	1949	1950	1946	1947	1948	1949	1950
Mining and quarrying	105.9	97.4	119.3	115.6	102.0	104.6	98.1	107.6	102.7	93.0
Food	105.8	108.0	98.5	105.8	101.8	105.1	107.8	98.6	103.5	99.0
Drink and tobacco	107.6	110.9	156.7	142.2	150.2	106.7	109.4	150.4	131.1	135.0
Textiles	112.2	116.9	118.6	112.2	105.4	110.6	115.1	114.5	107.8	100.8
Clothing and footwear	99.7	105.3	111.4	113.2	111.4	100.2	105.2	109.3	110.3	108.1
Wood and furniture	94.5	91.6	84.4	88.7	90.4	96.3	93.9	86.7	90.0	90.5
Paper and printing	102.0	100.3	102.5	107.8	105.7	102.0	100.9	101.8	105.4	103.1
Chemicals and chemical products	101.7	105.4	112.1	102.4	106.3	101.4	107.7	111.8	102.0	103.2
Clay products, glass, cement	88.3	110.6	103.0	96.1	98.3	90.7	110.6	103.8	96.2	99.1
Metal and engineering	88.7	87.3	88.5	84.5	82.6	90.9	90.3	89.1	84.2	83.6
All other industries	100.9	114.3	107.7	108.3	100.3	101.0	112.4	105.0	103.1	109.9
Total: Transportable Goods	103.5	107.4	112.9	112.3	111.0	103.3	107.5	111.0	108.3	107.8
Laundry and dry cleaning	96.0	101.2	103.8	104.2	103.5	97.4	103.8	105.1	104.7	102.3
Building and construction	97.6	95.9	96.7	100.1	99.6	98.0	95.9	95.9	98.9	98.6
Utilities (gas, electricity, water)	113.5	168.6	220.2	247.8	223.0	115.0	163.8	195.3	199.8	184.8
Transport	100.0	100.0	100.0	100.0	100.0	98.8	100.0	99.2	98.8	97.3
Local Authorities	100.0	100.0	100.0	100.0	100.0	101.0	97.8	96.9	96.6	96.6
Total: Building and Services	101.8	108.6	112.0	114.6	112.6	103.2	110.1	112.3	113.5	111.3
Total: All Industries	104.1	109.7	115.6	116.3	114.4	104.3	110.0	114.3	113.0	111.5

Basic Sources: CIP, 1945-47 and ITJSB (now ISB), June 1950-52.

in the absolute level of the wage shares under the two income concepts. Our main interest is in the trend; it appears that, with some exceptions (e.g., Textiles 1947-48) the trend in the two indices has almost always been in the same direction for the industrial groups and for the aggregates. For the period 1953-59 the position with regard to supplementary costs was the same as for the period 1945-50. Using the same index number approach as for Table 12 it was found that the trend in the wage and salary share using the adjusted and unadjusted net output concepts was the same in all years, 1953-59, for the Transportable Goods and All Industries aggregates and the levels of the index numbers for the two series for these aggregates were almost identical in 1959.

On the basis of this evidence it is concluded that between 1946-50 and 1953-59 there was very little divergence between proportionate increases in supplementary costs and in profits. It therefore appears legitimate to continue the analysis in terms of the wage and salary shares of net output, without making any adjustment for supplementary costs.

Because of the revision, in 1953, of the CIP industry classification scheme which resulted in an expansion of the number of industries identified and some changes in the industrial composition of the Mining, Metals and Utilities groups the data on the wage and salary share of net output are shown separately for the period 1926-52 and 1953-68 in Tables 13 and 14. Due to the difficulty of dealing with the number of industries separately distinguished in the CIP the statistics on the wage and salary shares are given for the sixteen industrial groups used by CSO, since 1958, in summarising the CIP results for individual industries. Even for this number of industrial groups comparison of trends over a long period is difficult.

In order to bring out contrasts between the behaviour of comparable series in the Transportable Goods Industries during the two periods, summary statistics of means, variances and coefficients of variation are shown in Table 15.

Table 15 indicates that the mean wage and salary shares for five of the industrial groups were lower in 1953-68 than in 1926-52; the mean wage and salary share was unchanged for one group and for the three remaining groups the mean wage and salary shares were higher in 1953-68 than in the earlier period 1926-52. It also shows that there was less variation in the shares for most industrial groups in the period 1953-68 than for the period 1926-52.

It has already been noted that there were classification changes in 1953 which affected the comparability of the figures for All Transportable Goods Industries in the two periods. For this reason no data are given in Table 15 for All Transportable Goods or for the two industrial groups affected (Mining and quarrying and Metal and engineering). However an interesting result emerges when the variances in the wage and salary share of All Transportable Goods Industries for the two periods are compared with the variances in each industrial groups' wage and salary share; the variance in the wage and salary share of All Transportable Goods in the period 1926-52 was 7.7 while

TABLE 13: Wage and Salary Share of Net Output in Major Industrial Groups, 1926-52

Industrial Group	1926	1929	1931	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952
Mining and quarrying	77.6	70.7	66.1	65.4	68.5	66.4	71.2	65.8	57.9	66.2	73.9	72.8	73.3	76.7	71.9	78.9	75.3	68.2	67.9	72.8
Food	62.0	54.9	49.8	45.8	48.1	52.3	47.0	50.6	51.7	50.5	49.0	54.5	51.2	53.8	55.2	50.5	53.0	50.7	51.5	49.4
Drink and tobacco	24.9	23.3	24.1	25.0	25.4	28.9	28.3	27.1	21.5	23.2	25.8	20.5	25.4	27.1	27.8	38.2	33.3	34.3	36.5	33.3
Textiles	66.0	71.2	67.3	60.1	61.0	60.7	55.7	50.7	48.2	47.3	45.6	52.6	50.2	55.5	57.8	57.5	54.1	50.6	55.3	60.3
Clothing and footwear	70.1	63.3	61.0	61.6	64.9	65.3	64.3	64.3	60.9	56.9	56.1	58.1	59.0	59.1	62.1	64.5	65.1	63.8	66.3	67.4
Wood and furniture	73.1	71.9	69.0	65.8	68.1	68.9	66.9	61.2	62.9	65.2	67.6	66.3	64.1	61.7	60.2	55.6	57.7	58.0	58.9	66.8
Paper and printing	62.0	62.7	63.4	59.2	57.1	58.2	56.1	56.2	54.4	53.9	54.5	55.1	54.0	55.1	54.5	55.0	56.9	55.7	54.7	61.4
Chemicals and chemical products	64.8	55.3	52.5	49.6	47.8	50.9	46.9	53.3	46.7	40.9	41.5	47.2	44.0	44.6	47.4	49.2	44.9	45.4	50.2	42.5
Clay products, glass, cement	73.1	64.1	68.1	65.0	70.8	57.4	51.8	51.5	51.8	51.0	51.1	51.3	54.9	49.8	60.7	57.0	52.8	54.4	53.9	54.3
Metal and engineering	74.5	81.5	68.1	60.8	62.0	62.8	61.0	61.7	63.3	65.1	64.5	63.4	68.9	62.6	62.2	61.4	58.0	57.6	59.1	65.3
All other industries	62.9	60.7	58.1	46.8	49.1	51.9	45.8	43.4	47.1	51.6	54.6	56.0	51.5	52.0	57.9	54.1	53.1	56.6	58.0	59.6
Total Transportable Goods	47.9	47.5	44.5	46.7	48.3	51.2	48.6	48.5	45.4	45.8	46.9	49.6	48.2	49.8	51.8	53.5	52.2	51.9	53.7	53.8
Total Transportable Goods excluding Drink and tobacco	65.3	63.0	57.5	54.3	56.0	58.0	54.2	54.6	54.2	53.5	53.3	56.6	55.1	56.2	54.1	56.3	56.0	55.0	56.5	57.8
Laundry and dry cleaning	63.8	60.4	61.5	60.3	61.5	62.8	n.a.	n.a.	n.a.	n.a.	58.3	61.8	61.2	59.6	63.5	64.3	64.1	62.6	65.0	64.9
Building and construction	80.5	81.5	76.0	77.1	73.9	77.1	n.a.	n.a.	n.a.	n.a.	78.2	78.6	73.9	72.4	70.9	70.9	73.1	72.9	72.6	73.4
Utilities	63.5	57.0	51.8	48.9	53.3	55.6	n.a.	n.a.	n.a.	n.a.	48.1	51.6	46.7	53.7	76.5	91.2	93.3	86.3	103.1	114.4
Transport	100.0	100.0	100.0	100.0	100.0	100.0	n.a.	n.a.	n.a.	n.a.	100.0	100.0	95.8	94.7	95.8	95.0	94.7	93.2	94.2	95.1
Local authorities	100.0	100.0	100.0	100.0	100.0	100.0	n.a.	n.a.	n.a.	n.a.	100.0	100.0	92.9	93.8	90.9	90.0	89.7	89.7	95.2	96.3
Total: Building and Services	87.0	84.1	80.1	78.1	79.6	80.6	n.a.	n.a.	n.a.	n.a.	76.7	78.5	72.6	74.9	79.9	81.5	82.4	80.8	84.9	87.0
Total: All Industries	59.2	57.2	54.8	55.2	56.7	60.1	n.a.	n.a.	n.a.	n.a.	53.8	56.3	53.9	56.2	59.3	61.6	60.9	60.1	62.4	63.1

Basic Sources: CIP, 1926 and 1929, 1931, 1937, 1938-44, 1945-47 and ITJSB (now ISB), 1951-55.

- Notes: 1. Wages only, and not salaries, were ascertained in the CIP enquiries for the years 1932-35. Figures for these years are therefore not included in the table.
2. The wage and salary share for the Utilities group exceeds 100 per cent in 1951 and 1952 because of capital development costs incurred in these years which according to Census of Production accounting are fully charged against current output.
3. n.a. = not available.
4. From 1945 onwards, the net output of the Transport and Local authorities sectors contains an allowance for establishment changes. Prior to 1945, the net output of these sectors was defined as wage and salary payments only.

TABLE 14: *Wage and Salary Share of Net Output in Major Industrial Groups, 1953-68*

<i>Industrial Group</i>	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Mining and quarrying	65.5	64.8	63.0	66.5	64.9	82.1	53.8	68.5	64.3	60.6	64.4	67.3	68.5	53.3	44.1	37.3
Food	45.5	49.1	50.6	50.9	53.5	52.2	50.3	52.7	48.9	51.7	51.3	53.1	50.5	49.7	48.0	47.8
Drink and tobacco	36.2	35.3	34.6	33.2	34.3	32.4	33.0	33.3	33.9	32.7	33.0	35.9	38.6	35.6	36.8	39.8
Textiles	50.4	52.5	53.1	52.9	56.1	56.6	53.1	55.6	52.6	54.4	53.9	54.7	52.5	54.1	49.9	49.0
Clothing and footwear	66.3	68.6	67.8	67.9	66.3	65.4	64.8	64.3	60.9	62.3	61.2	59.1	58.6	59.5	59.2	58.0
Wood and furniture	67.3	68.4	68.3	69.2	72.4	71.2	70.2	67.2	62.8	60.4	60.7	60.1	58.2	61.4	59.9	55.9
Paper and printing	58.6	58.2	56.5	60.2	59.0	58.9	56.5	56.5	57.2	59.3	58.8	58.7	56.7	57.8	57.8	55.7
Chemicals and chemical products	46.6	46.0	45.3	48.4	46.2	45.5	43.9	43.7	40.2	37.1	36.4	38.3	35.3	33.1	29.1	28.2
Clay products, glass, cement	55.4	52.7	52.6	52.5	53.8	48.6	45.7	46.8	48.7	48.2	46.1	43.6	44.7	46.9	44.0	44.7
Metal and engineering	67.6	65.5	66.1	67.8	67.3	63.3	59.8	62.4	61.3	59.9	61.4	59.7	57.7	56.6	55.4	53.0
Other manufacturing industries	54.6	56.5	56.8	56.2	53.7	52.8	48.9	43.8	40.7	43.1	39.8	40.8	40.5	43.4	38.7	38.5
Total: Manufacturing Industries	52.3	53.5	53.7	54.0	54.9	53.4	51.5	52.4	50.5	51.2	50.8	51.4	50.2	49.9	47.9	47.3
Total: Transportable Goods Industries	52.9	54.0	54.2	54.7	55.5	54.6	51.6	53.2	51.2	51.7	51.5	52.2	51.0	50.1	47.7	46.5
Laundry, dyeing and cleaning	61.9	60.1	58.5	60.1	60.4	58.3	57.3	56.2	54.9	54.7	54.6	57.4	54.7	56.4	57.5	57.3
Building and construction	73.0	75.0	75.9	73.8	74.1	68.9	70.6	75.4	74.1	74.6	70.4	71.0	70.9	72.0	68.7	67.7
Utilities (gas, electricity, water)	50.6	45.6	49.8	46.1	41.6	38.4	39.9	38.4	41.1	42.1	42.4	45.2	42.8	42.5	42.3	46.6
Transport	90.0	92.0	94.6	95.1	93.9	94.2	93.5	93.6	93.2	93.1	93.4	92.6	93.3	93.0	93.0	92.4
Local authorities	96.6	97.4	97.0	96.2	94.3	94.7	94.1	94.5	92.2	92.3	91.1	91.2	90.2	90.3	91.4	93.0
Total: Building and Services	73.5	72.6	74.0	71.3	67.8	64.5	65.3	65.5	66.4	67.0	65.7	67.4	65.6	66.6	65.2	66.6
Total: All Industries	58.7	59.4	59.8	59.4	58.7	57.2	55.0	56.2	54.8	55.3	55.0	55.9	54.7	54.3	51.9	51.2

Basic Sources: ITJSB (now ISB), September issues, 1956-65 and 1967-69 and December issues, 1966 and 1970.

- Notes:* 1. These series are directly comparable with the series shown in Table 13, with the exception of the series for Mining and quarrying Metal and engineering and Utilities (see ITJSB, June 1956, p. 74).
 2. Because of increased coverage of the Building and construction industry from 1966 onwards, the series for 1966 and following years are not comparable with earlier years for this industry and consequently for Building and Services and All Industries.

TABLE 15: Means, Variances and Coefficients of Variation of Wage and Salary Shares in Comparable Industrial Groups, 1926-52 and 1953-68

Industrial Group	1926-52			1953-68		
	Mean	Variance	Coefficient of Variation	Mean	Variance	Coefficient of Variation
Food	51.6	11.7	0.0663	50.3	4.3	0.0413
Drink and tobacco	28.0	20.8	0.1630	34.9	4.4	0.0598
Textiles	56.4	44.8	0.1187	53.2	4.3	0.0389
Clothing and footwear	62.7	12.5	0.0564	63.1	12.8	0.0567
Wood and furniture	64.5	22.3	0.0732	64.6	25.3	0.0778
Paper and printing	57.0	9.1	0.0529	57.9	1.5	0.0212
Chemicals and chemical products	48.3	28.5	0.1106	40.2	39.2	0.1555
Clay products, glass, cement	57.2	49.2	0.1226	48.4	13.6	0.0763
All other industries	53.5	26.7	0.0966	46.8	47.6	0.1475

Source of data: Tables 13 and 14.

it was 5.7 in the later period. Thus the variances in the All Transportable Goods wage and salary share are lower than one would expect from an examination of the variances of the shares of the industrial groups. This is particularly evident in the case of the period 1926-52 when the variance for the All Transportable Goods group was lower than the variance for any of the individual industrial groups. It would seem therefore that the relative stability in the All Transportable Goods wage and salary shares in the two periods cannot be a result of constant mark-up pricing policies on the part of firms in the individual industrial groups, because the wage and salary shares for the industrial groups are not correspondingly stable over time. Similar results have been found in a study of American industries by Solow [30].

It is possible that the changes in the wage and salary share of All Transportable Goods Industries may be smaller than the changes in the wage and salary shares of the industrial groups because changes in the weights of the industrial groups can affect the overall shares. The effect of changing weights on the overall share can be assessed by using shift-share analysis (already discussed in pages 35-36). Using fixed 1926 net output weights for the earlier period it was found that the All Transportable Goods wage and salary share

in 1952 would have been 46.5 as against the actual figure of 53.8. Thus the increase in the overall wage and salary share which took place during this period has been mainly due to weight changes in the component industrial groups. The major weight changes which led to this result were (1) a decline in the weight of the Drink and tobacco* group from 43 per cent in 1926 to 16 per cent in 1952 and (2) increases in the weights of the Metal and engineering and Clothing and footwear groups from 5 and 4 per cent respectively in 1926 to 11 and 9 per cent respectively in 1952. These weight changes are particularly significant as, throughout the period the wage and salary share in the Drink and tobacco industrial group was very much lower than the wage and salary share in other industrial groups.

While there was no long term trend in the aggregate wage and salary share, during the period 1926-52, due to changes in the wage and salary shares of individual industrial groups, examination of trends in the aggregate wage and salary share for various sub-periods indicates that between 1926 and 1936 the small decline in the aggregate wage and salary share resulted from a decline in the wage and salary shares of nearly all industrial groups which was substantially offset by weight changes. Between 1936 and 1952 the increase in the aggregate wage and salary share resulted from increases in the wage and salary shares of nearly all industrial groups complemented by weight changes. The net effect of the contrary movements in the wage and salary shares of individual industrial groups during the two sub-periods was to nearly cancel each other out leaving the effect of weight changes as the major influence on the aggregate wage and salary share during the period 1926-52. The influence of weight-changes on the overall wage and salary share in the period 1926-52 arises to a large extent from the behaviour of the Drink and tobacco industrial group during this period. In 1926 this industrial group accounted for 43 per cent of the net output of Transportable Goods Industries and the share of wages and salaries in its net output was 24.9 per cent. In 1952 its share of the net output of Transportable Goods Industries had fallen to 16 per cent while the share of wages and salaries in its net output had risen to 33 per cent. Thus there is a tendency for the increase in the wage and salary share of this industrial group to be offset by a decline in the weight of the industrial group when the effect of this industrial group on the wage and salary share of Transportable Goods Industries is considered. When the wage and salary share for Transportable Goods Industries excluding Drink and tobacco (see Table 13) is calculated a strong downward trend in the overall wage and salary share emerges for the period 1926-36 with very little change in the overall wage and salary share between 1936-52. Use of fixed 1926 weights in order to assess the effect of weight changes on the wage and salary share of Transportable Goods Industries excluding Drink and tobacco indicates that there was little

*Note: the net output of the Drink and tobacco industrial group is calculated exclusive of Excise duty.

or no difference in any year between the current weight and fixed weight series. Thus in 1936 the fixed weight series was 53.5 as against 54.3 for the current weight series while in 1952 the fixed weight series was 56.6 as against 57.8 for the current weight series. Therefore, the sharp decline in the overall wage and salary share between 1926-36 was due to decreases in the wage and salary shares of all industrial groups. Furthermore the relative stability of the wage and salary share of Transportable Goods Industries excluding Drink and tobacco in the period 1936-52 was not a result of weight changes but resulted from changes in the wage and salary shares of the industrial groups. It has been shown in Table 15 that the wage and salary shares of the industrial groups were not as stable as the wage and salary share for Transportable Goods Industries so that the relative stability of the wage and salary share of Transportable Goods Industries excluding Drink and tobacco during the period 1936-52 probably resulted from offsetting positive and negative changes in the wage and salary shares of industrial groups in most years.

Calculation of a fixed (1953) weight series for the overall share in the period 1953-68 indicates that the overall share would have been 47.7 in 1968 as against 46.5 for the current weight series. Therefore the changes which did occur in the industrial group weights between 1953 and 1968 did not significantly affect the overall wage and salary share. Most of the decline of 6.4 percentage points in the overall share between 1953 and 1968 must have occurred because of decreases in the wage and salary shares of the individual industrial groups.

Trends in the Wage and Salary Shares, 1953-68

The direction and degree of change in the industrial group shares and in the share for All Manufacturing Industries* for the period 1953-68 can be established by fitting trend lines of the form

$$s_{it} = a + bt + ct^2$$

where s_{it} = wage and salary share of net output in the i th industrial group at time t .

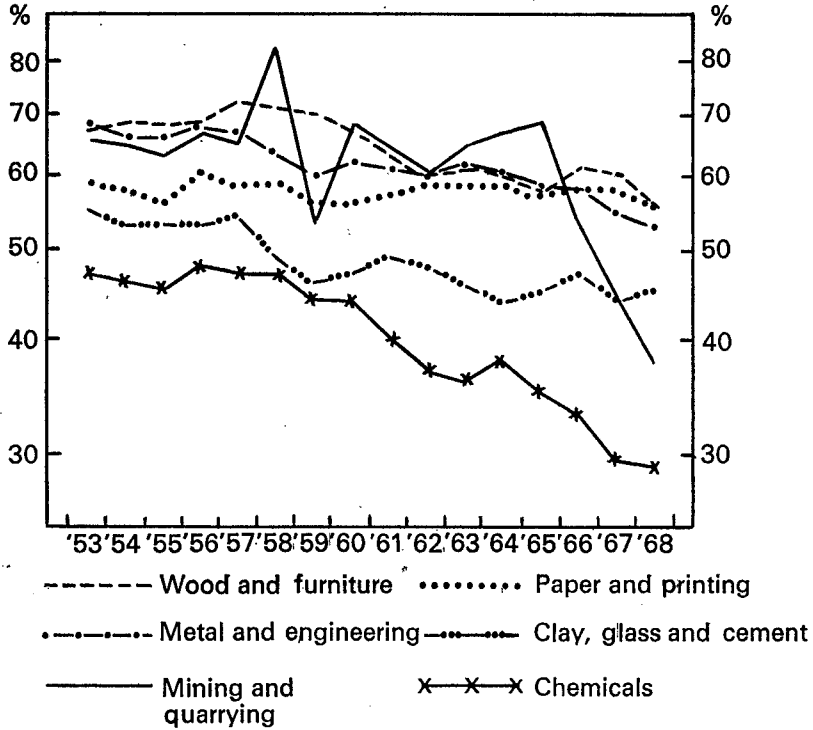
t = time.

A quadratic term (t^2) is included in the trend equation in order to see if the wage and salary share is changing at an increasing or decreasing rate. The series to which the trend lines will be fitted are graphed in Chart 5.

*Up to this point in this section the analysis has dealt with the Transportable Goods sector. However the Mining and quarrying industrial group is now omitted from the analysis because the changes which have occurred in the mining industry since the opening of the Tynagh mine in 1965, have had a dramatic effect on the trend of the wage and salary share in the Mining and quarrying industrial group *viz.*, a decline from 68.5 in 1965 to 37.3 in 1968. Attempts to establish a trend given such changes would not be very useful. Attention is therefore confined to All Manufacturing Industries.

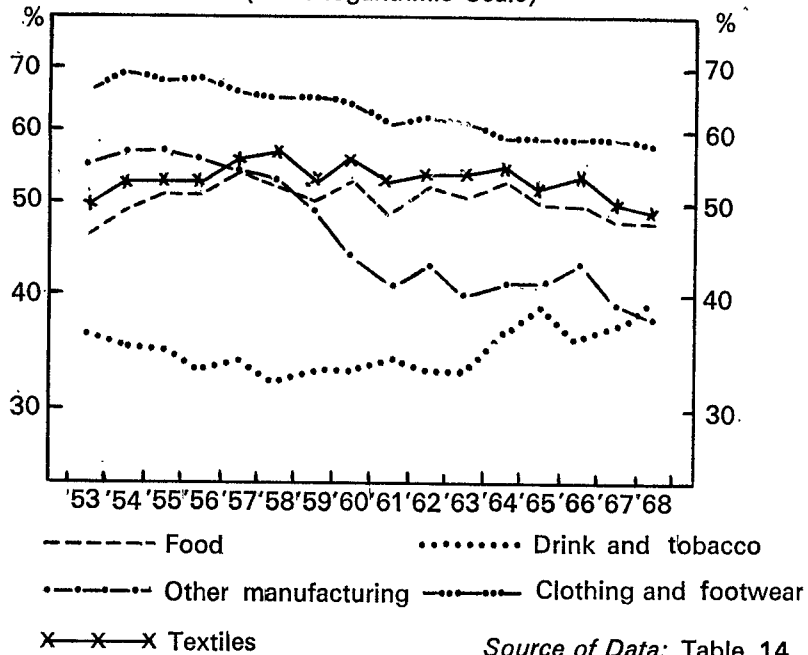
Chart 5: Wage and Salary Share of Net Output in
A. Six Industrial Groups, 1953-68

(Semi-logarithmic Scale)



B. Five Industrial Groups, 1953-68

(Semi-logarithmic Scale)



Source of Data: Table 14.

Examination of the trends in the series graphed in Chart 5 gives the impression that the wage and salary shares in most of the industrial groups behaved rather differently in the period 1959-68 than they did in the period 1953-58. In the first period (1953-58) the share rose in 4 groups, fell in 4 groups and remained more or less the same in 3 groups. In the second period (1959-68) the share rose in 1 group, fell in 8 and remained about the same in 2. Because of the apparent difference in the behaviour of the wage and salary shares in the two periods trend lines were fitted for the two sub-periods in order to see whether there was any difference in trends in the two sub-periods.

The results for the sub-period 1953-58 were poor. Only four of the linear and three of the quadratic trend lines were significant. The results for this sub-period are, therefore, not shown here. The equations which give the best fit to the data for the periods 1953-68 and 1959-68 are shown in Table 16.

The criterion used to select the best equation for each industrial group is \bar{R}^2 i.e., R^2 corrected for degrees of freedom. Taking the equations for the whole period first, it will be seen from the F values that there was a highly significant trend in the wage and salary share for nine of the industrial groups and for All Manufacturing Industries. The behaviour of the wage and salary share was trendless (i.e., almost constant) in only one case—Paper and printing. Of the nine industrial groups with significant trends during this period, four of them (Clothing and footwear, Wood and furniture, Metal and engineering and Other manufacturing) had negative linear trends; two of them (Drink and tobacco and Clay products, glass, cement) had negative curvilinear trends and three of them (Food, Textiles and Chemicals and chemical products) had positive curvilinear trends. The equation for All Manufacturing Industries was positive curvilinear although the linear term in the equation is not significant. In the linear equation for All Manufacturing Industries the trend is negative and the t value is highly significant. The lack of a positive quadratic term in the trend of the wage and salary share in Clothing and footwear, Wood and furniture, Metal and engineering and Other manufacturing indicates that there is, as yet, no tendency for the decline in the wage and salary share of these groups to level off; its presence in the case of Drink and tobacco and Clay products, glass, cement indicates that the decline in these groups' share was levelling off at the end of the period. In fact the trend in the wage and salary share of the Drink and tobacco industrial group was positive in the latter part of the period 1953-68 as is clear from the trend equation for this group in the period 1959-68. The fit of the equations to the wage and salary share data is satisfactory, judging by \bar{R}^2 . For 8 of the 9 industrial groups with significant trends, over 70 per cent of the variance is "explained" by a linear or quadratic equation.

The results of fitting trend equations for the period 1959-68 show that the tendency for the wage and salary shares of most industrial groups to decline, did not become more accentuated in this period. In fact the general negative tendency of the wage and salary shares over the whole period was somewhat

TABLE 16: *Regression of Wage and Salary Share of Net Output (Y) on (t) and (t²) by Industrial Group, 1953-68 and 1959-68*

Industrial Group	Coefficient of:			\bar{R}^2	S ²	F
	Constant	t	t ²			
1953-68						
Food	46.10	1.42 (4.09)**	-0.08 (4.21)**	.76	1.49	8.87**
Drink and tobacco	37.19	-1.15 (4.42)**	0.08 (5.40)**	.72	1.13	20.79**
Textiles	49.79	1.33 (4.18)**	-0.08 (4.63)**	.59	1.37	11.67**
Clothing and footwear	69.44	-0.74 (11.99)**		.90	1.14	143.67**
Wood and furniture	72.46	-0.92 (5.98)**		.70	2.85	35.80**
Chemicals and chemical products	46.89	0.12 (0.36)	-0.08 (4.24)**	.95	1.47	137.63**
Clay products, glass, cement	56.64	-1.44 (3.65)**	0.04* (1.91)	.80	1.70	31.13**
Metal and engineering	69.16	-0.89 (10.38)**		.88	1.59	107.69**
Other Manufacturing	58.52	-1.38 (8.84)**		.84	2.88	78.08**
All manufacturing industries	53.18	0.17 (0.82)	-0.03 (2.75)*	.82	0.90	35.23**
1959-68						
Drink and tobacco	27.26	0.69 (4.31)**		.66	1.46	18.59**
Textiles	40.21	2.88 (2.19)*	-0.14 (2.55)*	.61	1.30	8.14*
Clothing and footwear	78.11	-2.41 (2.57)*	0.07 (1.82)	.84	0.93	25.68**
Wood and furniture	97.56	-5.32 (2.69)*	0.18 (2.11)*	.78	1.96	17.03**
Chemicals and chemical products	56.22	-1.71 (10.17)**		.91	1.53	103.44**
Metal and engineering	48.56	2.86 (3.27)**	-0.16 (4.29)**	.91	0.87	49.83**
Other manufacturing	65.44	-3.54 (1.60)	0.12 (1.27)	.50	2.19	5.54*
All manufacturing industries	46.12	1.29 (1.91)*	-0.07 (2.59)*	.82	0.67	22.15**

* $p < .05$ ** $p < .01$

Note: No equations are shown for Paper and printing in either of the periods nor for Food and Clay products, glass, cement in the period 1959-68 because no trends were evident in the behaviour of the wage and salary shares of these groups.

weaker during the period 1959-68. Two groups (Food and Clay products, glass, cement) which had significant trends over the whole period were trendless in the years 1959-68. Of the four industrial groups Clothing and footwear, Wood and furniture, Metal and engineering and Clay products, glass, cement,

which had negative linear trends over the whole period, the first two of them had quadratic negative trends in the period 1959-68. The share of wages and salaries in these two industrial groups showed a tendency to level off in the period 1959-68 which was not evident from the equations for the whole period. Only one group (Chemicals and chemical products) which had a positive trend over the whole period took a negative trend in the shorter period of 1959-68. In general the fit of the trend equations in the period 1959-68 is not as good as the fit for the whole period.

It has been shown in the analysis of the behaviour of the wage and salary share for the whole economy that this share increases in depressed economic conditions and decreases in times of economic expansion. The question of whether this cyclical influence affects the wage and salary shares of the industrial groups in Manufacturing Industries was tested, when the trend lines were being fitted, by including a variable for the percentage unemployed in each industrial group. In only two cases (Clothing and footwear and Other manufacturing) was the regression coefficient for the unemployment variable significant at the .05 level when it was included in the best fitting equations for the period 1953-68. In neither of these cases was there a large improvement in the fit of the equation, judged by \bar{R}^2 . Cyclical influences therefore were not important determinants of the behaviour of the wage and salary shares of the industrial groups during the period 1953-68.

While changes in the weights of the industries in each industrial group may have had an effect on the wage and salary share of each industrial group it would appear from an examination of changes in the wage and salary shares of the industries in each group that most of the industry wage and salary shares changed in the same direction as the industrial group wage and salary shares between 1953 and 1968. Changes in industry weights therefore do not appear to have been a major cause of the general decline in the industrial group wage and salary shares during the period 1953-68.

The reasons for the general decline in the wage and salary shares of the industrial groups which make up the manufacturing sector cannot be gone into here as a large scale econometric study, beyond the scope of this paper, would be required. However some of the questions which such a study should investigate are:

(i) to what extent has the decline in the wage and salary shares been due to the increase in capital employed in Irish industry which is generally believed to have taken place in the 1960s? In this connection it is well to note that there is no *necessary* relation between increases in capital employed and a decrease in the wage and salary share. If such a connection exists it will depend on the elasticity of substitution of capital for labour.

(ii) to what extent has the decline in the wage and salary shares been due to the reliance of the trade union movement on the comparability criterion

in carrying out wage negotiations? An observation by Blum [1, p. 71] on Irish trade union practice is relevant to this question:

“... more than is typical elsewhere, the Irish labour movement focusses on it [i.e., comparability] as the key to wage settlements. Other factors such as cost of living, productivity, profits and all the host of other criteria that would normally go into determining what would be a fair wage demand, or at least as a rationalisation for a wage demand, are rarely expressed in collective bargaining.”

7. SUMMARY OF MAIN FINDINGS

Summary

1. The trend in the shares of income accruing to employees and independent traders is similar for each of the five income concepts (i) Domestic income; (ii) Domestic income excluding stock appreciation; (iii) Domestic income including adjustment for retail value of farm produce consumed on farms without process of sale; (iv) Gross domestic income and (v) National income. The trend in the share of income from property is similar for four of the income concepts; it differs from the other four trends when the national income concept is used. There are differences in the *level* of income shares for each of the three categories when different income concepts are used. However the relationships between the level of each category's share under the different income concepts are fairly stable. Serious overlapping of levels occurs only in the case of income from property under the first two income concepts mentioned above.

2. The wage and salary share of domestic income in Ireland is *not* constant. Its trend is quite definitely upward. Between 1938 and 1970 the wage and salary share of domestic income increased from 51 per cent to 65.4 per cent. Exclusion of the agricultural sector from the analysis does not change the trend in the behaviour of this category's share of income. Under the non-agricultural domestic income concept it increased from 66.5 per cent to 75.7 per cent between 1947 and 1970. While the trend of the overall wage and salary share has been upwards over most of the period 1938-70, two points are worth noting about the trend in this category's share, (i) there was a very sharp, though temporary, decline in the wage and salary share during the war-time period and (ii) agricultural employees wage and salary share of domestic income has halved between 1938 and 1970. It has been indicated in the text that the reason for the sharp decline in the overall wage and salary share during the war-time period may have been the imposition of a wages freeze without effective price control. The reason for the sharp decline in

agricultural employees share of domestic income is the general decline in the importance of the agricultural sector in the economy.

3. The substantial increase which has occurred in the wage and salary share of domestic income has been accompanied by a marked increase in the proportion of employees in the total at work. Particularly between 1959 and 1970 the changes in the wage and salary share and the changes in percentages of employees in the total at work have been almost identical. The rather erratic relationship which existed between these two series in the 1950's has therefore been changed in the 1960's. The result of this stabilisation has been that the relationship between the average income of employees and the average income of all occupied persons has also stabilised. This means that while employees share of domestic income has increased substantially they have not improved their income position relative to the national average for occupied persons as a whole. In short, the growth in the employees share of domestic income has simply kept pace with the growth in the percentage of employees in the total at work in the period 1951-70.

4. The same cannot be said of the relative income position of independent traders in agriculture. During the war-time period there was a substantial increase in family farm workers share of domestic income. By 1947 their share had dropped back to around 24 per cent; the same level that it was in 1938-39. It fluctuated around this level until 1957. Since 1957 there has been a nearly continuous downward trend in their share of domestic income. Contrary to the relationship between employees share and the representation of employees in the total at work the relationship between family farm workers share and their representation in the total at work has not been stable as their share of income has declined faster than their representation in the total at work. Their income position relative to the national average per person at work has deteriorated from 75 per cent of the national average in the 1950s to around 65 per cent in 1970. This has meant that the gap between family farm workers average income and the average income of the rest of the working population widened in the late 50s and in the 1960s. Despite the deterioration since 1958 in the average income of family farm workers relative to the national average per person at work there has been a significant improvement in this ratio over the longer period, 1938-70. In 1938 the ratio of the average income per family farm worker to the national average per person at work was 53 per cent while in 1970 it was around 65 per cent as already noted. In the non-agricultural sector between 1938 and 1970 the income share of non-agricultural independent traders declined by more than a half from 13.9 per cent to 6.5 per cent. Most of this decline occurred by 1950. Between 1950 and 1963 there was little change in the non-agricultural independent traders' share but since 1963 a strong downward trend has been evident. However the decline in this group's representation in the labour force was greater between 1951 and 1970

than the decline in their income share and consequently their income position relative to the national average per person at work has improved from 88 per cent in 1951 to 96 per cent in 1970. Over the longer period, 1938-70, the ratio of the average income of non-agricultural independent traders relative to the national average per person at work has declined from 150 per cent in 1938 to 96 per cent in 1970.

5. There have been significant changes between 1938 and 1970 in the importance of the constituents of income from property. Trading profits of companies have always been the most important element in this category's income share. In 1938 trading profits of companies accounted for around 54 per cent of the income from property; in 1970 they accounted for almost 75 per cent. The increasing importance of trading profits of companies, which reflect of course the increasing industrialisation of the Irish economy, has been accompanied by a significant reduction in the importance of the income share arising from rent of dwellings. Between 1938 and 1970 the income share arising from rent of dwellings declined by just over 50 per cent, from 4.8 per cent to 2.3 per cent of domestic income. Most of the increase in trading profits of companies share of domestic income took place in the war-time period. While there has been a small increase in the share of trading profits in the post-war period the behaviour of trading profits share has been rather volatile during this period. Given these facts about the behaviour of trading profits of companies share it is reasonable to conclude that the significant increase which occurred between 1938 and 1970 in the income share of employees has not been made at the expense of trading profits of companies share of domestic income.

6. A hypothesis which is sometimes advanced as an explanation of the increase in employees share of income is that there has been a rapid growth in the activities of the government sector and as the contribution of the government sector to national output is measured in the national accounts by the value of wage and salary payments to government employees and the trading income of government enterprises, this might account for the rise in the employee share. There is no evidence that this hypothesis is a valid explanation of the rise in the employee share in the Irish economy over the period 1947-70. The income of the Public administration and defence sector was 5.8 per cent of domestic income in 1947-49 and 6.4 per cent in 1968-70. Admittedly the Public administration and defence sector does not include a large number of government employees in the educational and health services. The incomes of employees in these two services are included in the remuneration of employees in the Other domestic sector. There has been an increase in the share of employees in the Other domestic sector from 63.7 in 1953 to 66.9 in 1970; however even if all of this increase has been due to the expansion of the educational and health services it would still not account for a significant proportion of the increase in the share of employees in the economy as a whole.

7. The explanation for the increase in employees share of domestic income is that there were large structural changes in the Irish economy during the period dealt with in this paper. It has been possible to examine the nature of these structural changes from 1953 to 1970 using national accounts data on the division of domestic income between the four sectors, Agriculture, Industry, Distribution and Other domestic. As might be inferred from point 3 above regarding the increase in the proportion of employees in the labour force, there has been a significant increase in the proportion of domestic income produced in the non-agricultural sector of the economy and a corresponding decline in the proportion produced in the agricultural sector. The increase in the proportion of domestic income produced has been greatest in the Industrial sector. At the same time there has been no increase in the income share of employees in the Industrial sector, and though the income share of employees in the Distribution sector did rise, it did not increase by as much as the aggregate income share for all sectors combined. An analysis of the contribution of the changing weights of sectors and of changing sector shares to the change in the aggregate employee share showed that nearly 78 per cent of the increase in the aggregate employee share between 1953 and 1970 was due to changes in the sector weights. That is to say that the decline in importance of the low employee share Agricultural sector combined with the increase in importance of the high employee share Industrial sector led to an increase in the aggregate employee share and that the changes in the employee shares which did occur in two sectors were not major causes of the rise in the aggregate employee share.

8. Confirmation of the results discussed in 7 is provided when the division of independent traders income into its labour and capital components is undertaken. The trend in the distribution of labour income for the whole economy which emerges from this division is slightly upward. However the trend is very slight and it would appear that there has been no significant redistribution of income between labour and capital in the years covered in this study. A result of some importance which arises from the division of independent traders income is that when non-agricultural independent traders are remunerated for their labour services at the same average income as employees in the non-agricultural sector, they have little or no return on their capital. In the agricultural sector on the other hand the capital share was around 20 per cent in most of the years covered in this study. This does not mean that the rate of return on capital employed in agriculture was higher than the rate of return on capital employed in other sectors of the economy. There is some evidence in fact which suggests that the rate of return in agriculture on mid-income farms was less than 5.5 per cent in the period 1955-58. In view of these results it is hardly surprising that the numbers of independent traders in the economy as a whole have declined substantially throughout the post-war period.

9. The behaviour of the wage and salary shares of nine comparable indus-

trial groups in the Transportable Goods sector of Irish industry was different in the two periods 1926-52 and 1953-68. In general the mean wage and salary shares of the industrial groups were lower in the period 1953-68 than they were in the period 1926-52. There was also less variation in the wage and salary shares of most industrial groups in the period 1953-68 than in the period 1926-52. The increase in the wage and salary share of All Transportable Goods which took place between 1926 and 1952 resulted from weight changes in the component industrial groups. The most important weight changes which led to this result were (1) a decline in the weight of the low wage and salary share Drink and tobacco group and (2) increases in the weights of the high wage and salary share Metal and engineering and Clothing and footwear groups. When the behaviour of the wage and salary share of All Transportable Goods excluding Drink and tobacco is examined over this period it appears that there was a strong downward trend between 1926 and 1936 in the wage and salary share which resulted from significant decreases in the wage and salary shares of most of the industrial groups during this period. During the period 1936-52 the wage and salary share of All Transportable Goods Industries excluding Drink and tobacco was relatively stable. This relative stability did not result from weight changes but may have been caused by offsetting positive and negative changes in the wage and salary shares of the industrial groups.

10. In the period 1953-68 there was a decline in the wage and salary share of All Transportable Goods Industries which resulted from a decline in the wage and salary shares of most of the individual industrial groups. Trend lines were fitted to the wage and salary share data for each industrial group in Manufacturing Industries in order to assess the direction and degree of change in the wage and salary shares during the period 1953-68 and also for the sub-period 1959-68. Over the whole period four of the industrial groups (Clothing and footwear, Wood and furniture, Metal and engineering and Other manufacturing) had significant negative linear trends; two groups (Drink and tobacco and Clay products, glass, cement) had significant negative curvilinear trends with a positive quadratic term which indicates that the decline in the wage and salary shares of these two groups was levelling off towards the end of the period; three groups (Food, Textiles and Chemicals and chemical products) had positive curvilinear trends with negative quadratic terms which indicates that the increase in the wage and salary shares of these three groups was levelling off at the end of the period. Only one group (Paper and printing) had an insignificant trend equation during the period 1953-68 which indicates that the wage and salary share during this time was fairly constant. The trend equations which were fitted for the sub-period 1959-68 showed no tendency for the generally negative trend in the wage and salary shares of the industrial groups in the years 1953-68 to be accentuated in the period 1959-68. In fact some weakening of this tendency towards declining wage and salary shares is evident in the period 1959-68. No attempt is made to explain the reasons for

the general decline in the industrial groups wage and salary shares but two lines for further research are suggested (a) what effect has increasing capitalisation of Irish industry had on the wage and salary shares and (b) has the decline in the wage and salary shares been due to excessive reliance by the trade union movement on the comparability argument in conducting wage negotiations? It has been suggested by Blum [1, p. 71] that other factors such as cost of living, productivity and profits are rarely used in wage negotiations in Ireland as factors justifying wage demands.

APPENDICES

TABLE A1: *Percentage Distribution of Domestic Income Excluding Adjustment for Stock Appreciation Among Three Income Categories, 1947-70*

<i>Year</i>	<i>Remuneration of Employees</i>	<i>Independent Traders</i>	<i>Income from Property</i>	<i>Total</i>
1947	51.7	33.1	15.2	100
1948	52.8	33.7	13.5	100
1949	52.5	34.3	13.2	100
1950	54.4	32.0	13.6	100
1951	54.8	32.0	13.2	100
1952	54.1	33.9	12.0	100
1953	53.9	34.1	12.1	100
1954	55.5	31.9	12.6	100
1955	54.7	32.9	12.4	100
1956	57.4	30.1	12.5	100
1957	55.8	32.3	12.0	100
1958	57.0	29.9	13.1	100
1959	56.0	30.5	13.6	100
1960	56.3	29.5	14.2	100
1961	56.8	29.1	14.1	100
1962	58.2	28.0	13.8	100
1963	59.0	26.7	14.3	100
1964	59.9	27.0	13.1	100
1965	60.7	25.8	13.5	100
1966	62.9	23.8	13.3	100
1967	62.2	24.0	13.8	100
1968	61.5	24.0	14.5	100
1969	62.7	22.6	14.7	100
1970	64.7	21.6	13.7	100

TABLE A2: Percentage Distribution Among Three Income Categories of Domestic Income Including Adjustment for Retail Value of Farm Produce Consumed on Farms Without Process of Sale, 1947-70

<i>Year</i>	<i>Remuneration of Employees</i>	<i>Independent Traders</i>	<i>Income from Property</i>	<i>Total</i>
1947	50.7	36.1	13.2	100
1948	50.4	36.7	12.9	100
1949	50.2	37.4	12.4	100
1950	54.0	35.0	10.9	100
1951	55.4	34.9	9.7	100
1952	51.9	36.8	11.2	100
1953	51.2	36.9	11.9	100
1954	53.2	34.6	12.2	100
1955	52.8	35.8	11.5	100
1956	55.9	33.0	11.1	100
1957	54.5	34.9	10.6	100
1958	54.5	32.9	12.6	100
1959	53.7	33.3	13.0	100
1960	54.5	32.0	13.6	100
1961	55.2	31.5	13.3	100
1962	56.9	30.0	13.1	100
1963	57.6	28.8	13.6	100
1964	59.2	28.7	12.0	100
1965	59.6	27.6	12.8	100
1966	62.2	25.5	12.3	100
1967	61.5	25.5	13.0	100
1968	61.3	25.3	13.4	100
1969	62.4	23.8	13.8	100
1970	64.3	22.8	12.9	100

TABLE A3: *Percentage Distribution of Gross Domestic Income Among Three Income Categories, 1947-70*

<i>Year</i>	<i>Remuneration of Employees</i>	<i>Independent Traders</i>	<i>Income from Property</i>	<i>Total</i>
1947	50.8	33.9	15.3	100
1948	50.5	34.5	15.0	100
1949	50.3	35.1	14.6	100
1950	53.8	32.9	13.3	100
1951	55.0	32.9	12.1	100
1952	51.6	34.8	13.6	100
1953	50.8	34.8	14.4	100
1954	52.4	32.8	14.8	100
1955	52.1	33.7	14.2	100
1956	54.6	31.1	14.3	100
1957	52.8	33.2	14.0	100
1958	52.9	31.0	16.1	100
1959	51.9	31.5	16.6	100
1960	52.4	30.5	17.1	100
1961	52.8	30.2	17.0	100
1962	53.9	29.2	16.9	100
1963	54.4	28.0	17.6	100
1964	55.8	28.2	16.0	100
1965	55.9	27.2	16.9	100
1966	58.1	25.4	16.5	100
1967	57.2	25.5	17.3	100
1968	56.7	25.5	17.8	100
1969	57.5	24.3	18.2	100
1970	59.3	23.5	17.1	100

TABLE A4: *Percentage Distribution of National Income Among Three Income Categories, 1947-70*

<i>Year</i>	<i>Remuneration of Employees</i>	<i>Independent Traders</i>	<i>Income from Property</i>	<i>Total</i>
1947	51.8	31.3	16.9	100
1948	51.4	31.9	16.7	100
1949	51.5	32.7	15.8	100
1950	55.2	30.5	14.4	100
1951	56.3	30.3	13.4	100
1952	53.1	32.4	14.4	100
1953	52.3	32.7	15.0	100
1954	54.1	30.5	15.4	100
1955	54.1	31.5	14.4	100
1956	57.1	28.9	14.0	100
1957	55.3	30.9	13.8	100
1958	55.5	28.6	15.8	100
1959	54.9	29.3	15.8	100
1960	55.3	28.4	16.3	100
1961	55.8	28.0	16.2	100
1962	57.4	26.9	15.7	100
1963	58.2	25.7	16.1	100
1964	59.8	26.0	14.2	100
1965	59.7	24.7	15.6	100
1966	62.4	22.8	14.8	100
1967	61.6	23.0	15.3	100
1968	61.1	22.9	16.0	100
1969	62.5	21.7	15.8	100
1970	64.4	20.8	14.8	100

Basic sources of data in Appendix Tables A1 to A4: [3], Tables A1, A2, B1 and B2 and [4], Tables A1, A2, B1 and B2.

TABLE A5: Reconciliation of Original with Officially Revised National Income Figures for 1938 and 1944 and Revision of National Income Figures for 1939-43

CATEGORY	Sources of Original and Revised Figures	1938				1939			1940			1941			1942			1943			1944			
		Original	Revisions	Original plus Revisions	Official Revision	Original	Revisions	Original plus Revisions	Original	Revision	Original plus Revisions	Original	Revisions	Original plus Revisions	Original	Revisions	Original plus Revisions	Original	Revisions	Original plus Revisions	Original	Revisions	Original plus Revisions	Official Revision
£m.																								
Income from Agriculture, Forestry, Fishing: Profits (including income of farmers and members of their families)	[31], Table 22 items 42 and 43.	33.4				39.1			48.6			55.4			66.0			75.2			78.7			
Less: Rates collected in rural districts	RLT, 1939-45, pages 15 or 16.		-3.2				-3.4			-3.4			-4.1			-4.3			-4.0					
Total: Profits excluding rates				30.2	30.2																			
Wages and Salaries	[31], Table 22, item 4.	5.9		5.9	5.9	6.6		35.7	7.3		45.2			51.2		61.7								
Non-Agricultural Income: Domestic:																								
Profits, professional earnings etc.	[31], Table 22, items 2, 11(½), 16, 32 (½)	38.7				39.3			41.3			44.4			48.0			53.8			57.7			
Less: Rent element in land annuities	[31], page 58, note on item 42.		-2.2				-2.2			-2.2			-2.2			-2.2			-2.2					
Less: Business rates	[31], Table 23, item 26.		-0.7				-0.7			-0.7			-0.7			-0.8			-0.9					
Less: Dividends, profits and interest from abroad	ISB, 1943-49, B of P items 13 or 16 less item 37 in Table 22 of [31].		-5.1				-5.4			-5.8			-3.7			-3.7			-5.4					
Total: Domestic profits etc., less land annuities, business rates and profits etc., from abroad				30.7	31.1			31.0			32.6			37.8		41.4			45.3			48.7		45.9
Employers' contributions to social insurance funds	[31], Table 27, Sec. II, item (a)		1.2	1.2	1.2		1.2	1.2		1.2	1.2		1.2		1.2				1.2			1.2		1.1
Income from buildings	[31], Table 22, item 1	3.5				3.7			3.6			3.5			3.8			3.8			3.9			
Plus: Underestimate shown up by the 1946 Census of Population rent inquiry	[6], Table 1 item 5 minus item 1 Table 22 of [31].		3.5				3.3			3.4			3.5			3.2			3.2			4.1		
Total: Income from buildings				7.0	7.0			7.0			7.0			7.0		7.0			7.0					
Rent element in land annuities	[31], page 58, note on item 42.		2.2	2.2	2.1		2.2	2.2		2.2	2.2		2.2		2.2			2.2			2.2			
Wages, salaries and pensions	[31], Table 22, items 3, 5-10, 11(½), 12-15, 17-31, 32(½), 33-36 and 38.	67.1				69.8			73.1			76.8			78.1			83.0			84.4			
Plus: Diplomatic, consular and similar expenditures	ISB, 1943-49, B of P						0.1			0.1			0.1			0.1			0.1					
Less: British government pensions and other payments to Irish residents	ISB, 1943-49, B of P, item 19 plus 10% of item 24 less item 40 in Table 22 of [31].		-1.2				-1.1			-0.9			-1.1			-1.3			-1.8			-2.0		
Total: Domestic wages, salaries and pensions				65.9	68.7			68.8			72.3			75.8		76.9			81.2			82.5		91.7
Foreign:																								
Dividends and profits from abroad accruing to persons with total incomes of £150 per annum or less	[31], Table 22, item 37	1.2				1.2			1.2			1.2			1.2			1.2						
Other dividends and profits from abroad	ISB, 1943-49, B of P items 13 or 16 less item 37 in Table 22 of [31].		5.1				5.4			5.8			3.7			3.7			5.4			5.9		
Total: Net inflow of profits etc., from abroad				6.3	6.3			6.6			7.0			4.8		4.8			6.6			7.2		7.1
Pensions paid by British government to persons with total incomes of £150 per annum or less	[31], Table 22, item 40	1.5				1.5			1.7			2.0			2.1			2.3			2.4			
Other British government pensions and payments	ISB, 1943-49, B of P, item 19 plus 10% of item 24, less item 40 in Table 22 of [31].		1.2				1.1			0.9			1.0			1.3			1.8			2.0		
Total: Net inflow of wages, salaries and pensions from abroad				2.7	2.7			2.6			2.6			3.0		3.4			4.1			4.4		5.1
Net inflow of emigrants' remittances etc.	[31], Table 22, item 39	3.0		3.0	3.0	2.8		2.8	2.1		2.1		3.9											
Addition for omissions	[31], Table 22, item 41	0.1		0.1		0.1		0.1	0.1		0.1		0.1		0.1			0.1			0.1			
Total National Income		154.4	0.8	155.2	158.2	164.1	0.5	164.6	179.0	0.6	179.6	195.1	-0.1	195.0	215.9	-0.6	215.3	241.3	-0.4	240.9	252.0	0.2	252.1	253.8
Domestic Income				143.2	146.2			152.7			167.9			183.3		198.7			217.6			227.0		232.5
Foreign: Net Income from Rest of World				12.0	12.0			11.9			11.7			11.7		16.6			23.3			25.1		21.3

Basic Sources: [6], Table 1; [31], Tables 22, 23, and 27; Returns of Local Taxation (RLT) 1938-45 and Irish Trade Journal and Statistical Bulletin (now ISB), 1943-49.

Note: 1 There were three conceptual changes in the way in which national income was calculated between the first [31] and second [6] white papers. The changes in the approach of the second white paper were:

- (i) Employers' contributions to the social insurance funds were considered as a direct instead of an indirect tax and were therefore an allocation of profits in which they were included in the second white paper.
- (ii) Business rates, including the rates on land and farm buildings are not, as formerly included in profits, i.e., they are treated as an indirect tax in the second white paper.
- (iii) The payments of Irish diplomatic and consular representatives abroad are included in national income, while similar payments by foreign governments to their representatives are excluded.

These conceptual changes have been taken into account in compiling the above table.

2 Due to rounding the totals may not balance exactly.

TABLE A6: *Composition of the Total at Work in Census Years in the Period 1936-66 and Estimates of the Composition of the Total at Work in 1938 and in Non-Census Years in the Period 1951-70*

Year	At Work in Non-Ag. Sector			At Work in Ag. Sector			Percentage of Total at Work				
	Employees	Independent Traders	Total	Employees	Family Farm Workers	Total	Total Employees	Total at Work	Employees	Family Farm Workers	Non-Agric. Independent Traders
						000's					
						per cent					
1936	506.7	115.4	622.1	106.1	507.2	613.4	612.8	1,235.4	49.6	41.1	9.3
1938	522.4	114.3	636.7	105.2	482.5	587.7	627.6	1,224.4	51.3	39.4	9.3
1946	551.1	101.5	652.7	116.7	458.4	575.1	667.8	1,227.7	54.4	37.3	8.3
1951	622.2	98.7	720.9	85.8	410.4	496.2	708.0	1,217.1	58.2	33.7	8.1
1952	616.5	96.5	713.0	82.4	399.6	482.0	698.9	1,195.0	58.5	33.4	8.1
1953	613.2	94.8	708.0	77.3	380.7	458.0	690.5	1,166.0	59.2	32.7	8.1
1954	616.9	94.1	711.0	75.4	376.6	452.0	692.3	1,163.0	59.5	32.4	8.1
1955	611.9	92.1	704.0	72.8	369.2	442.0	684.7	1,146.0	59.8	32.2	8.0
1956	605.1	89.9	695.0	70.0	360.0	430.0	675.1	1,125.0	60.0	32.0	8.0
1957	584.4	85.6	670.0	66.5	347.5	414.0	650.9	1,084.0	60.0	32.1	7.9
1958	577.5	83.5	661.0	64.6	342.4	407.0	642.1	1,068.0	60.1	32.1	7.8
1959	579.4	82.6	662.0	62.3	335.7	398.0	641.7	1,060.0	60.5	31.7	7.8
1960	583.1	81.9	665.0	60.3	329.7	390.0	643.4	1,055.0	61.0	31.2	7.8
1961	591.8	82.0	673.8	57.8	320.9	378.7	649.6	1,052.5	61.7	30.5	7.8
1962	607.3	81.7	689.0	55.8	315.2	371.0	663.1	1,060.0	62.6	29.7	7.7
1963	621.8	81.2	703.0	53.9	309.1	363.0	675.7	1,066.0	63.4	29.0	7.6
1964	636.4	80.6	717.0	51.8	302.2	354.0	688.2	1,071.0	64.3	28.2	7.5
1965	649.3	79.7	729.0	49.0	291.0	340.0	698.3	1,069.0	65.3	27.2	7.5
1966	654.6	77.9	732.5	47.4	286.1	333.5	702.0	1,066.0	65.9	26.8	7.3
1967	664.6	76.4	741.0	45.1	276.9	322.0	709.7	1,063.0	66.8	26.0	7.2
1968	678.6	75.4	754.0	43.2	269.8	313.0	721.8	1,067.0	67.6	25.3	7.1
1969	695.4	74.6	770.0	41.2	261.8	303.0	736.6	1,073.0	68.6	24.4	7.0
1970	702.3	72.7	775.0	38.9	252.1	291.0	741.2	1,066.0	69.5	23.7	6.8

Basic Sources: CP, 1936, Vol. VI, Table 5; CP, 1946, Vol. VI, Table 5; CP, 1951, Vol. III, Part II, Table 13; CP, 1961, Vol. IV, Tables 7 and 8A; CP, 1966, Vol. III, Table 10A; *Economic Statistics, Budget 1964*, Table 15; *Review of 1970 and Outlook for 1971*, Table 10 and *Review of 1971 and Outlook for 1972*, Table 10.

- Notes: 1. The Census figures for 1936 and 1946 are not strictly comparable with the Census figures for 1951, 1961 and 1966 because of changes in the coverage of the term "at work" which were made in the 1961 Census (see CP, 1961, Vol. IV, p. vii). The 1951 Census figures for the total at work were reclassified in the 1961 Census but the breakdown into employees and independent traders in each sector in 1951 on the 1961 Census definitions has not been given. The figures for the number of employees in each sector in 1951 shown in the above table were derived by multiplying the revised total employee figure (i.e., 708.0) for 1951 by the percentage of total employees in each sector as given by the 1951 Census. The figures for the number of independent traders in each sector in 1951 were then derived by subtracting the estimated number of employees in each sector from the officially revised totals of those at work in each sector.
2. Official estimates of the total at work in the agricultural and non-agricultural sectors for non-census years since 1951 are given in *Economic Statistics, Budget 1964*, (Pr. 7640), *Review of 1970 and Outlook for 1971* (prl. 1788) and in *Review of 1971 and Outlook for 1972* (Prl. 2357). As only the total at work in each sector is given in these publications the breakdown into employees and independent traders in each sector in non-census years was derived by taking the average annual intercensal changes between 1951-61 and 1961-66 in (i) employees in agriculture as a proportion of those at work in agriculture and (ii) independent traders in the non-agricultural sector as a proportion of those at work in the non-agricultural sector and linearly interpolating the annual percentage composition of those at work in each sector during the two periods. The totals at work in each sector in each year were then multiplied by the interpolated percentages to give estimates of the annual numbers of employees and independent traders at work in each sector. The breakdown into employees and independent traders in each sector in the years 1967-70 was derived by extrapolating the 1961-66 average-annual intercensal changes for categories (i) and (ii) and multiplying the total at work in each sector in these years by the extrapolated percentages.
3. The 1938 figures for total at work in each sector are taken from Kennedy's [15] Table 1.8. The breakdown into employees and others in each sector was derived by taking the average annual intercensal changes between 1936-46 for categories (i) and (ii) and applying the interpolated percentages in the same way as for the other non-census years.
4. Due to rounding the totals may not balance exactly.

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