

**A REVIEW OF EARNINGS TRENDS IN THE IRISH
ECONOMY SINCE 1987**

by

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This paper contains an analysis of the earnings of paid employees in the Irish economy over the period from 1987 to early 1999. It is in five sections. Section 2 following involves analyses of full-time employee earnings according to occupational groups; the next Section (3) contains a review of the earnings of employees in a number of important industries or sectors; Section 4 analyses aspects of the distribution of earnings while, finally, Section 5 contains an overview of the main results and briefly discusses their policy and other implications .

Section 2 involves a number of features which are new or of special interest. The basic data, which are derived from household surveys, involve consistent coverage of employee earnings in all occupations across all sectors of economic activity. Historically data on earnings trends in the Irish economy (which have been enterprise based) have been available only for specific sectors. The most important series relate to the long-standing CSO quarterly survey on earnings and hours worked in the industrial sector, and a similar survey of enterprises in private building and construction.¹ Over the past decade the sectoral coverage of official earnings data has been significantly extended. A quarterly series on employment and weekly earnings in banks, insurance companies and building societies was introduced in 1988; more recently (in 1997) a similar quarterly series covering the public sector was initiated, which involved the provision of retrospective data back to 1988. The section on the distribution of earnings represents, in summary terms, an extension of the special ESRI impact study contained in the Final Report of the Inter-Departmental Group on the Implementation of a National Minimum Wage.²

The content of this paper is of particular relevance in the context of current developments in the labour market. We are approaching an important stage in the negotiations for a new National Understanding. This, if it is agreed, will come into effect for most workers in the middle of the year 2000 when the current agreement, Partnership 2000, expires. Furthermore, a statutory minimum wage is to be introduced in April 2000.

It should be noted that all of the data presented in this paper relate to usual earnings and not to wage rates. Thus certain types of non-standard payments, such as overtime earnings, are included if they are a usual feature of working arrangements. In most cases the figures relate to hourly earnings, but in some cases there was no other option but to use weekly earnings, even though these are less satisfactory for analysis purposes. All the earnings figures used are in gross terms, before tax or other deductions.

¹ Both of these surveys cover enterprises with ten or more persons engaged.

² Nolan, B. *et al.* (1999). *The Impact of the Minimum Wage in Ireland. Report for the Inter-Departmental Group on the Implementation of a National Minimum Wage.* Dublin: Stationery Office.

2. Earnings Trends by Occupation, 1987-1997³

The figures presented in this section of the paper relate to 1987, 1994 and 1997. The basic earnings data used, which relate to full-time paid employees, have been taken from the 1987 ESRI Survey of Lifestyles and Usage of State Services and the ESRI Living in Ireland Surveys for 1994 and 1997. The total time span involved is thus of particular interest as it covers the period since the commencement of the current series of National Wage Agreements. The sub-periods involved, 1987-1994 and 1994-1997, are also of interest, especially when viewed from an employment perspective. The first was mainly characterised by sluggish jobs growth, even though it did involve a short period of very rapid employment expansion between 1989 and 1990. The second sub-period needs little description; it covers the early years of the current economic boom, which has seen an unprecedented rate of output growth and employment expansion. The analysis thus provides a unique opportunity to track earnings trends across the full range of occupational groups over these very different periods.

With regard to defining full-time employees, various definitions and measures of what constitutes “full-time” are used in different countries or datasets, ranging from self-definition by respondents to the application of different hours cut-offs to reported hours worked. Here we use total hours of work reported by respondents, and count as full-time those reporting at least 30 hours usual work per week, the cut-off regarded as most suitable for comparative purposes by the OECD.⁴ This definition is also used in Section 4 of this paper.

The Occupational Categories Used

The earnings trends are presented in terms of twelve broad occupational groups which bring together persons with similar levels of skill. These are essentially the occupational groups used in the FÁS/ESRI series of studies on manpower forecasting, and reference should be made to the recent reports in this series in order to obtain a detailed description of the composition of the groups in question.⁵ The categories used in this paper are as follows:

1. Managers
2. Professional Occupations
3. Associate Professionals
4. Clerical Occupations
5. Skilled Manual Workers (Maintenance)
6. Other Skilled Manual Workers
7. Production Operatives
8. Transport/Communications Workers

³ This section represents, in effect, an extension of an earlier analysis of earnings trends by occupation covering the period from 1987 to 1994 contained in Sexton, Frost, Hughes (1998). *Aspects of Occupational Change in the Irish Economy: Recent Trends and Future Prospects*. FÁS/ESRI Manpower Forecasting Studies, Report No. 7.

⁴ A recent study for the OECD by Van Bastelaer, Lemaitre and Marianna (1997) on how best to distinguish part-time from full-time employees for comparative purposes recommended that a threshold of 30 hours usual work per week be used.

⁵ See Sexton, Frost, Hughes (1998) referred to above (Ch I, p.4). The FÁS/ESRI system entails in the first instance a classification involving 45 occupational subgroups from which the above mentioned major groups are constructed. These more detailed subgroups were, in the first instance, derived by grouping categories involving similar levels of skill from the detailed system of occupational codes (numbering about 320) used in Censuses of Population and Labour Force Surveys.

9. Sales Workers
10. Security Workers
11. Personal Service Workers
12. Unskilled Labourers etc.

In many cases the titles adequately describe the activities covered. It should be noted, however, that professional occupations would normally include only those persons exercising professions such as medicine, engineering, teaching, accountancy etc. who possess degree level qualifications. Associate professionals would mainly (but not exclusively) involve persons in various disciplines with third level technician and diploma level awards. Skilled manual workers (maintenance) as the title suggests, relates to skilled workers involved principally in repair and maintenance as distinct from core production activities, the latter being covered under the “other skilled manual” heading. Many persons in both of these categories would have followed apprenticeship type programmes. However, evidence in Sexton, Frost, Hughes (1998) (see Note 3) indicates that up to 25 per cent of workers in the “skilled maintenance” category possess third level diploma type awards.⁶ The group “production operatives” covers semi-skilled activities not normally requiring a special qualification, even though many of the persons involved would have a good basic second level education. Most of these workers are employed in the manufacturing sector. The “security workers” group covers the defence forces and the Gardaí (excluding officers), while “personal service workers” includes catering occupations, cleaning activities and those engaged in other personal services.

Some Aspects of the Methodology

While this analysis may be unique in terms of its broad coverage, it does involve constraints arising from the data sources and the methodology applied. As the figures presented should be interpreted in the light of these limitations, it is appropriate to give a brief description of the source material as well as some of the technical aspects associated with the compilation methods used.

As already stated, the earnings data for 1987, 1994 and 1997 were drawn from ESRI surveys based on samples of households. The most recent survey used (the 1997 Living in Ireland Survey) involved some 3,000 household units, while the samples used in the surveys for the earlier years were somewhat larger. While samples of this size cannot be regarded as unduly small, their use does clearly place a limitation on the degree of detail that can be shown in the results presented if acceptable levels of accuracy are to be maintained.

The earnings data presented in this section relate only to full-time paid employees. This restriction was necessary in order to derive series that gave the most representative picture of the pattern and trend of earnings across occupations. The proportion of part-time workers varies greatly between occupations and their share of total employment has been increasing.⁷ As part-timers tend to be paid less, even on an hourly basis,

⁶ See Sexton *et al.* (1998) as referred to in Note 3.

⁷ On the basis as defined in this analysis the ESRI household based surveys indicate that the part-time share for employees rose from 10 per cent in 1987 to nearly 17 per cent in 1997.

across most occupations,⁸ their inclusion would tend to distort the picture conveyed. The trend data would, both in aggregate and for individual occupations, in these circumstances reflect compositional changes in the labour market as well as basic movement in hourly earnings. Ideally one would like to show separate series for full-time and part-time employees, but the sample numbers for the latter are too small to allow this option.

While the basic earnings figures used in this exercise have been taken exclusively from ESRI households surveys, for the analysis in this section they have been subject to structural reweighting across occupations using data from the series of CSO Labour Force Surveys. The reasoning behind this approach is, perhaps, best understood by explaining that while the presentation of final earnings figures is confined to 12 broad occupational groups, the original compilations involved a subdivision of these groups into a total of 45 more detailed occupational categories. While the hourly earnings estimates at the more detailed occupational level exhibited reasonable trend consistency, the associated sample frequencies were, in some cases, relatively small and quite volatile when viewed over the series of surveys in question. This raised the possibility that the measured trends in average hourly earnings for the broad groups shown were influenced not only by changes in earnings *per se*, but also possibly by sampling induced variations in the detailed occupational structure within each broad group. For example the “professional workers” group includes five subcategories covering the areas of health, education, engineering and science, business/finance/law and other professional activities, each involving different average hourly earnings figures. It was important, therefore, to ensure that compositional changes within the broad occupational groups were as representative as possible in order to avoid distortions to the hourly earnings trends for the group as a whole. This was achieved by using the occupational data on full-time employee numbers from the series of much larger Labour Force Surveys⁹ in order to stabilise the weighting pattern within each occupational group.

The Results

Table 1 shows average hourly earnings for the twelve standard occupational groupings for full-time employees in 1997. The figures are also provided in graphical form in Figure 1. The results are displayed in descending order of average hourly earnings instead of according to the hierarchical structure set out earlier. The overall average hourly earnings level in 1997 was £8.07. The highest amounts were earned by employees in professional occupations and by managers, for whom the average hourly earnings estimates were £13.08 and £12.43 respectively, i.e. some 55 to 60 per cent higher than the overall average.¹⁰ The next highest figure, £9.34 for associate professionals, was much lower. Continuing down the scale of earnings, security workers and skilled maintenance workers were paid average hourly earnings in the region of £7.80. Clerical workers were paid

⁸ For example the available survey evidence suggests that less skilled part-time employees are paid significantly less than their full-time counterparts.

⁹ The sample in each of the Labour Force Surveys involved (1987, 1994 and 1997) covered some 45,000 households.

¹⁰ An initial perception here is that these figures might appear low, especially for professional workers. However it should be borne in mind that the estimates relate only to *employees*. High earners in the professional sphere (e.g. many medical practitioners, accountants etc.) tend to be self employed.

on average just under £7.45 per hour, who were followed by workers in transport and communications and “other skilled” manual employees for which the hourly earnings figures were £6.69 and £6.36 respectively.

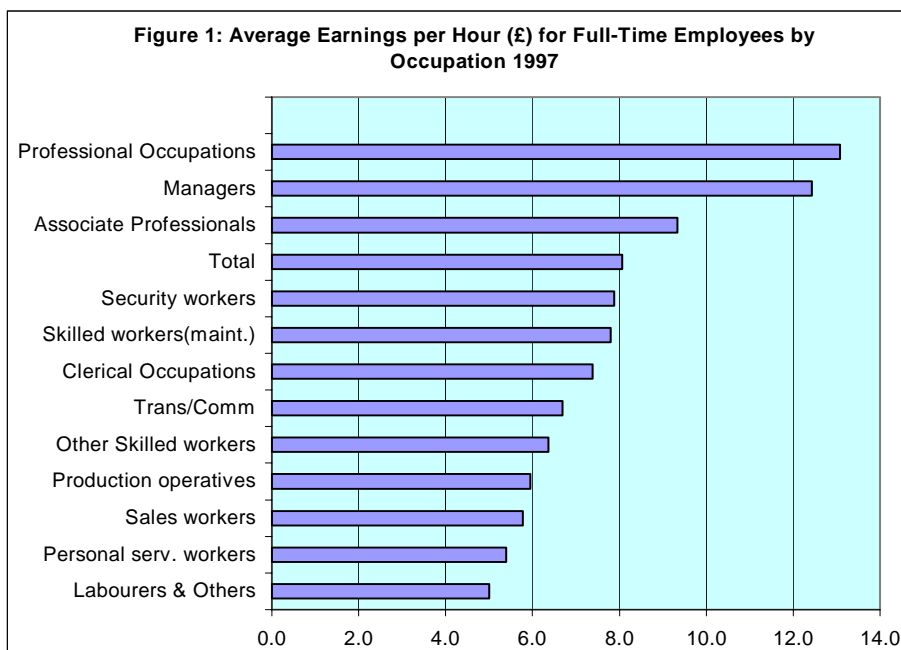
The earnings levels for the next group of occupational categories are significantly lower. The table shows that, broadly speaking, production operatives and persons engaged in sales and personal service activities all earned between £5.40 and £5.95 per hour. Unskilled manual labourers occupied the bottom position in the earnings range, with an average hourly income of just over £5, just over 60 per cent of the average for all employees.

There are a number of interesting features evident here. In the first place there is a marked association between education and skill levels and the amounts earned. Those endowed with higher levels of educational attainment and of skill acquisition obviously fare better in earnings terms. However, transport and communication workers, who would tend to fall under the “semi-skilled” heading, are an exception to this general rule. These are shown to have earned more than “other skilled” manual workers in 1997. The former category includes drivers (of all kinds) as well as postmen and couriers. The latter “other skilled” manual category essentially involves persons engaged in skilled production activities related to metals and engineering, woodworking and building and construction.

It is of further interest to note that the same category of skilled manual employee involved in core production work earns on average significantly less than skilled workers engaged in repair and maintenance functions in the electrical, electronic and mechanical spheres.

TABLE 1: Average Hourly Earnings for Full-Time Employees in 1997

Occupation	£/hr
Professional Occupations	13.08
Managers	12.43
Associate Professionals	9.34
Total	8.07
Security workers	7.88
Skilled workers (maintenance)	7.79
Clerical Occupations	7.38
Transport/Communication	6.69
Other Skilled workers	6.36
Production operatives	5.95
Sales workers	5.78
Personal service workers	5.40
Labourers & Others	5.01



Trends in Hourly Earnings by Occupation Over the Period Between 1987 and 1997

It is of equal importance to analyse how the above earnings figures have changed over time. The significance of the period covered in this analysis (from 1987 to 1997) has already been emphasised.

The relevant data are shown in Tables 2(a) and 2(b). The first table shows actual average hourly earnings figures by occupation for 1987, 1994 and 1997. Table 2(b) shows annual average percentage changes over the two periods involved. These are expressed in both nominal and real terms, the real changes being computed using the trend in the Consumer Price Index as a deflator.

The aggregate figures for all full-time employees show that average hourly earnings, when viewed in nominal terms, rose by 5½ per cent annually between 1987 and 1994 and by a somewhat smaller amount, some 4.2 per cent, between 1994 and 1997. Over the full ten year period the annual average hourly earnings rise was just over 5 per cent.¹¹ When the effects of the trend in consumer prices is removed, the increases for the

¹¹ These trends are borne out by independently compiled wage related data given in the annual CSO National Income and Expenditure publication. This contains a series on aggregate employee wages and salaries which includes, however, pension contributions (by both the employer and the employee) and benefits-in-kind. Nevertheless, while the earnings levels from the two sources may thus be different, it is not unreasonable to expect the trends to be compatible, and this in fact is the case. When the National Accounts data are transformed into annual average per employee earnings (using employee totals from the Labour Force Surveys, adjusted for numbers of part-timers) the trends are remarkably similar to those given in Table 2(b). The National Accounts figures indicate that the annual average increase in employee earnings between 1987 and 1994 was 5.8 per cent (compared with 5.5 per cent in Table 2(b)), and 4.0 per cent in 1994/97 (compared with 4.2 per cent). Over the full ten-year period both sources yield the same annual average nominal rate of increase – about 5.2 per cent.

two subperiods are 2.6 and 2.2 respectively, while the average annual rise over the full ten-year span is 2.5 per cent.

These overall trends tend to obscure sizeable differences between occupational groups. These trends are best observed in real terms, as these are essentially of greater relevance. Over the earlier period from 1987 to 1994 they show that the real increase recorded for skilled and maintenance workers (4½ per cent) significantly exceeded the overall rise. The real increases for managers and associate professionals were also relatively high, being of the order of 3½ per cent in each case. For those engaged in professional occupations, clerical workers and persons involved in security activities the annual average increases were, broadly speaking, between 2 and 2½ per cent. For the remaining occupational categories, mainly comprising semi-skilled and unskilled employees, the real increases achieved were very much less, in some cases falling below 1 per cent.

TABLE 2(a): Average Earnings Per Hour for Full-Time Employees, 1987-1997

Occupation	1987	1994 £/hr	1997
Managers	6.89	10.79	12.43
Professional Occupations	8.17	11.96	13.08
Associate Professionals	5.56	8.62	9.34
Clerical Occupations	4.57	6.49	7.38
Skilled workers (maintenance)	4.55	7.48	7.79
Other Skilled workers	4.23	5.76	6.36
Production operatives	4.22	5.41	5.95
Transport/Communications	4.40	5.76	6.69
Sales workers	3.66	4.61	5.78
Security workers	5.17	7.23	7.88
Personal service workers	3.19	4.18	5.40
Labourers & Others	3.30	4.36	5.01
Total	4.90	7.13	8.07

TABLE 2(b): Annual Average Changes in Hourly Earnings for Full-Time Workers, 1987-1997

Occupation	Nominal			Real		
	87-94	94-97 %	87-97	87-94	94-97 %	87-97
Managers	6.6	4.8	6.1	3.7	2.8	3.4
Professional Occupations	5.6	3.0	4.8	2.7	1.0	2.2
Associate Professionals	6.5	2.7	5.3	3.5	0.7	2.7
Clerical Occupations	5.1	4.4	4.9	2.3	2.3	2.3
Skilled workers (maintenance)	7.4	1.4	5.5	4.4	-0.6	2.9
Other Skilled workers	4.5	3.4	4.2	1.6	1.4	1.6
Production operatives	3.6	3.2	3.5	0.8	1.2	0.9
Transport/Communications	3.9	5.1	4.3	1.1	3.0	1.7
Sales workers	3.3	7.8	4.7	0.5	5.7	2.1
Security workers	4.9	2.9	4.3	2.0	0.9	1.7
Personal service workers	4.0	8.9	5.4	1.1	6.8	2.8
Labourers & Others	4.0	4.7	4.2	1.2	2.7	1.6
Total	5.5	4.2	5.1	2.6	2.2	2.5

Figure 2(a). Annual Real Average Changes in Hourly Earnings (%) for Full-Time Employees, 1987-94

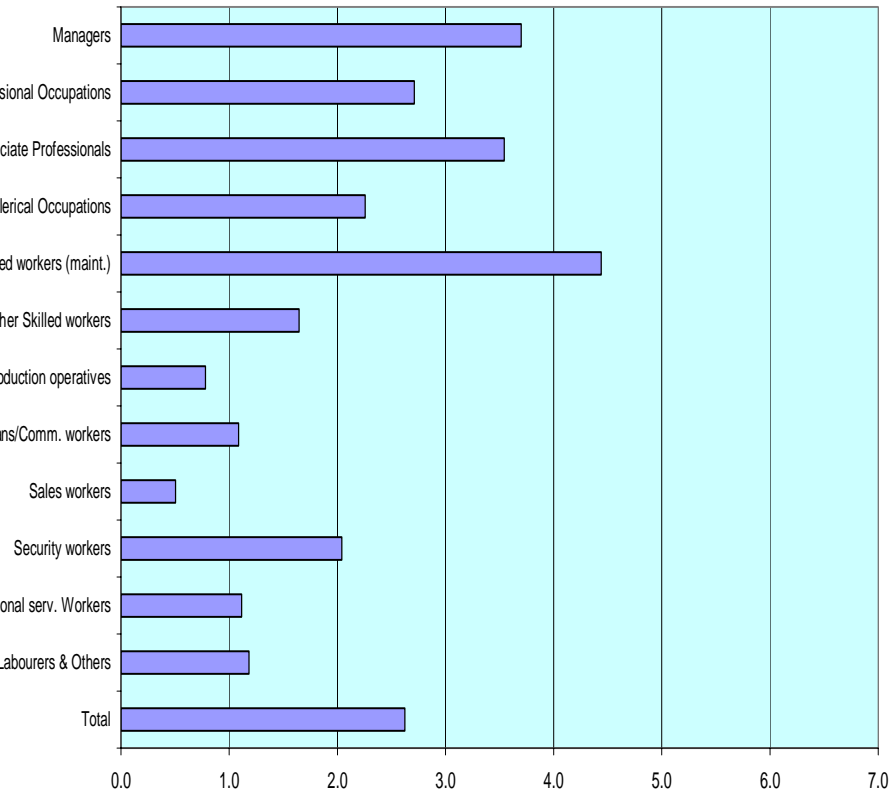
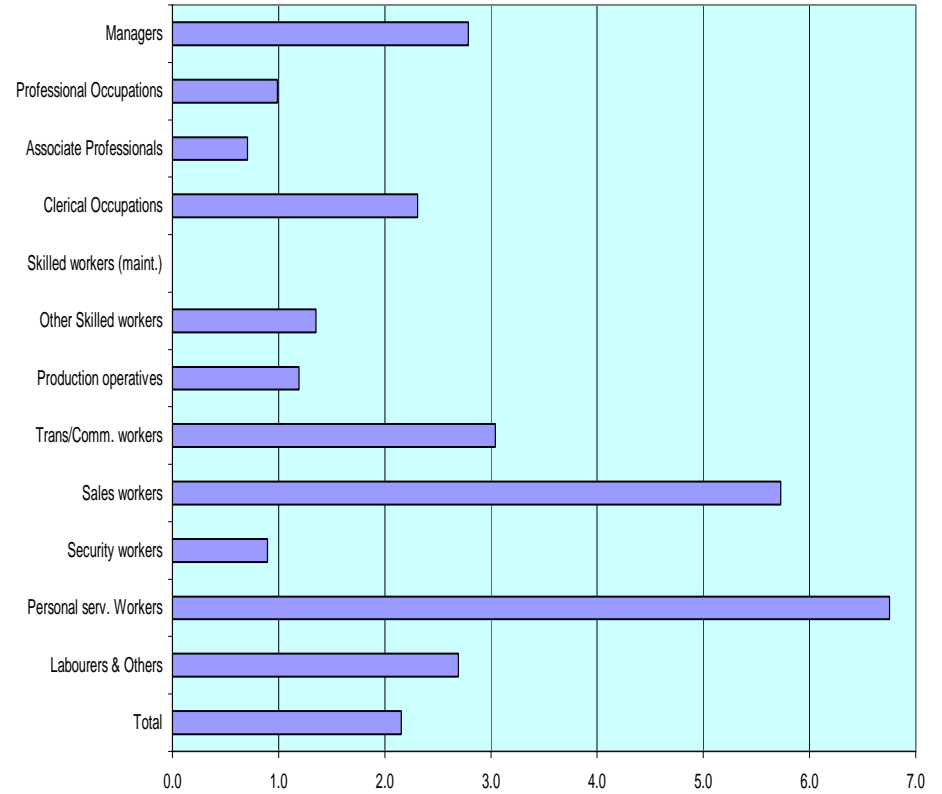


Figure 2(b). Annual Real Average Changes in Hourly Earnings (%) for Full-Time Employees, 1994-97.



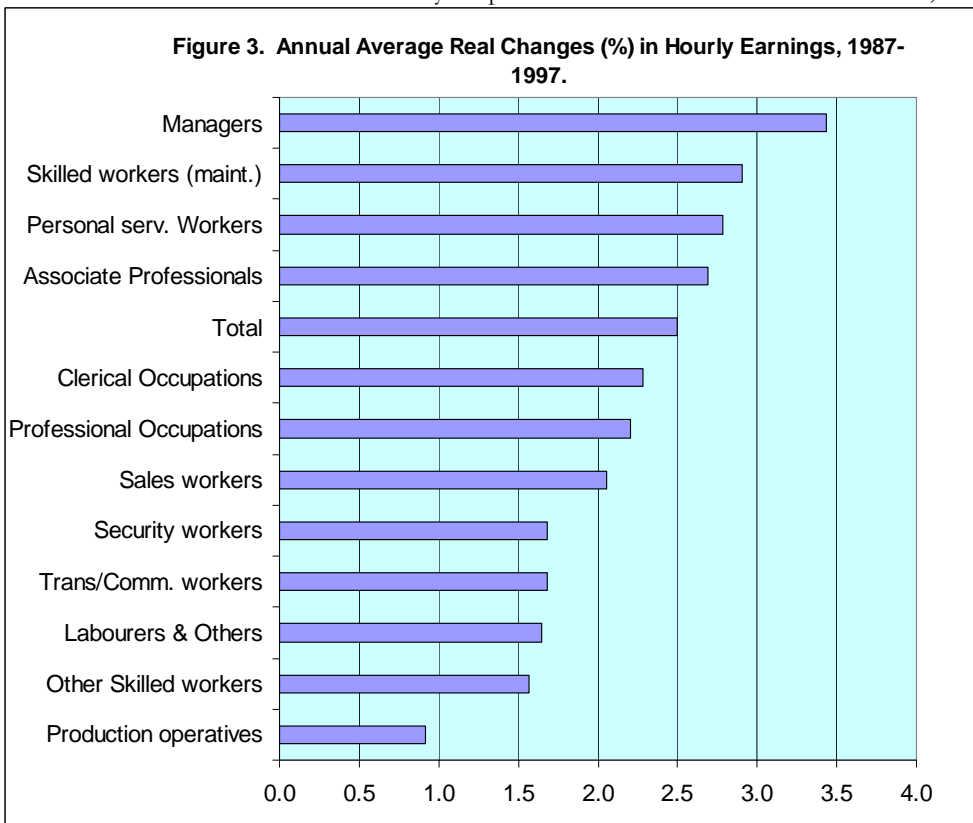
There is a very noticeable pattern to these trends. The greatest gains in this earlier period were made by persons with qualifications and with higher levels of educational attainment, while those in semi-skilled and unskilled occupations did not fare at all as well. Indeed the figures reveal that many in the latter group achieved wage increases which were barely ahead of the general rise in consumer prices.

The pattern of occupational trends in the next period (1994-1997) was, however, quite different. The greatest increases in real earnings were, for the most part, now achieved by those in less skilled occupations. The figures in Table 2(b) show, for example, that personal service workers attained an annual average real increase of just under 7 per cent in this period, followed by sales workers for whom the corresponding rise was 5.7 per cent. In the case of transport and communications workers and unskilled labourers, even though the average increases in full-time earnings in 1994/1997 were somewhat less than this, they were far greater than in the period between 1987 and 1994. These trends presumably reflect a rising demand for semi-skilled or unskilled labour in this later period, which saw a sizeable increase in employment among such workers. Broadly speaking the pattern of earnings increases for the more highly skilled employees moderated noticeably in this period.

These trends, especially when viewed in comparative terms between the two periods covered, are perhaps more readily seen by referring to Figures 2(a) and 2(b).

Longer-Term Earnings Trends

While there is clear evidence that less skilled workers made up some ground *vis-à-vis* their more qualified counterparts in the years after 1994, when the entire ten year period from 1987 to 1997 is considered, the



3. Earnings Trends in some Important Sectors

The Sectors Covered

In this section of the paper published CSO data are used to analyse earnings trends in different sectors of the economy. As already indicated, these series are not comprehensive. They are restricted to certain sectors, and while these may be important in terms of size and economic significance, there are a number of notable omissions, including for example earnings information for many areas of private services. Moreover, within the sectors covered (manufacturing industry, building and construction, financial and insurance institutions and the public sector) the indicators which are compiled tend to be of a rather aggregate nature, involving relatively broad subsectors or occupational categories. For some sectors, e.g., financial and insurance institutions, there is only one composite earnings indicator covering all employees in the sector.

The methodological basis underlying the CSO earnings series is also different to those discussed in the preceding section. The data used in all of the series are obtained from enterprises. In some instances (e.g., manufacturing and building) the series involve compilations of *hourly* earnings, while for others (e.g. the public sector and financial and insurance institutions) the information relates only to *weekly* earnings. The latter form of presentation, even if unavoidable for practical reasons, is clearly less satisfactory as changes in the trend and pattern of weekly working hours can significantly affect the weekly earnings rates. One needs to be cautious, therefore, in interpreting the figures, especially in comparing the trends for different series.

Given the aggregate nature of the series involved, all of them are subject, to some degree, to the effects of underlying compositional change.¹³ However, this is only likely to be of significance over long periods. Our view is that, if the qualifications are adequately recognised, the series can be reasonably interpreted even in comparative terms, especially in cases where substantial trend differences between series are evident.

The series do have some notable advantages. They are compiled frequently (on a quarterly basis) and are reasonably up to date. All of the series presented extend to the beginning of 1999, thus providing more recent indicators of earnings trends than those given by the preceding occupation based analysis. This is important, given the evidence of continuing strong economic growth. GNP rose by over 8 per cent in real terms between 1997 and 1998 and is predicted to record a somewhat smaller but still substantial increase of some 6 per cent in 1998/1999.¹⁴ The most recent estimates from the CSO Quarterly National Household Survey indicate that total employment rose by 72,000 (or 4.8 per cent) between the first quarter of 1998 and the corresponding period in 1999. A sectoral subdivision of this change shows that this expansion extended across all sectors except agriculture, but was particularly strong in building and construction, financial and other business services, and in personal services.

Figure 4 shows a selection of the quarterly CSO earnings series in index form, calculated to a common base (March 1988 = 100). The series are given in real terms using the trend in the Consumer Price Index as a

¹³ This can also apply, even if to lesser extent, to the occupational data, particularly for categories which are broadly based.

¹⁴ See Baker, Duffy and Smyth, 1999. *Quarterly Economic Commentary*, Dublin: ESRI, August.

deflator. This base period was chosen as not all of the series in question were available prior to 1988. The various graphs thus reveal relative trend differences between the various series, even though it should be borne in mind that the absolute earnings levels underlying these series vary significantly across sectors. The full list of series covered involve:

1. A composite index of hourly earnings in building and construction enterprises with 10 or more persons engaged, covering clerical workers and both skilled and unskilled manual operatives.
2. An hourly earnings index for all “industrial workers” (i.e. other than managerial, professional and clerical) in manufacturing industry,¹⁵ again confined to enterprises with more than 10 persons engaged.
3. A weekly earnings index for all public sector workers and,
4. A weekly earnings index for all employees in financial and insurance institutions.

Further details of the content and composition of these indexes is given in Appendix 1.

The Results

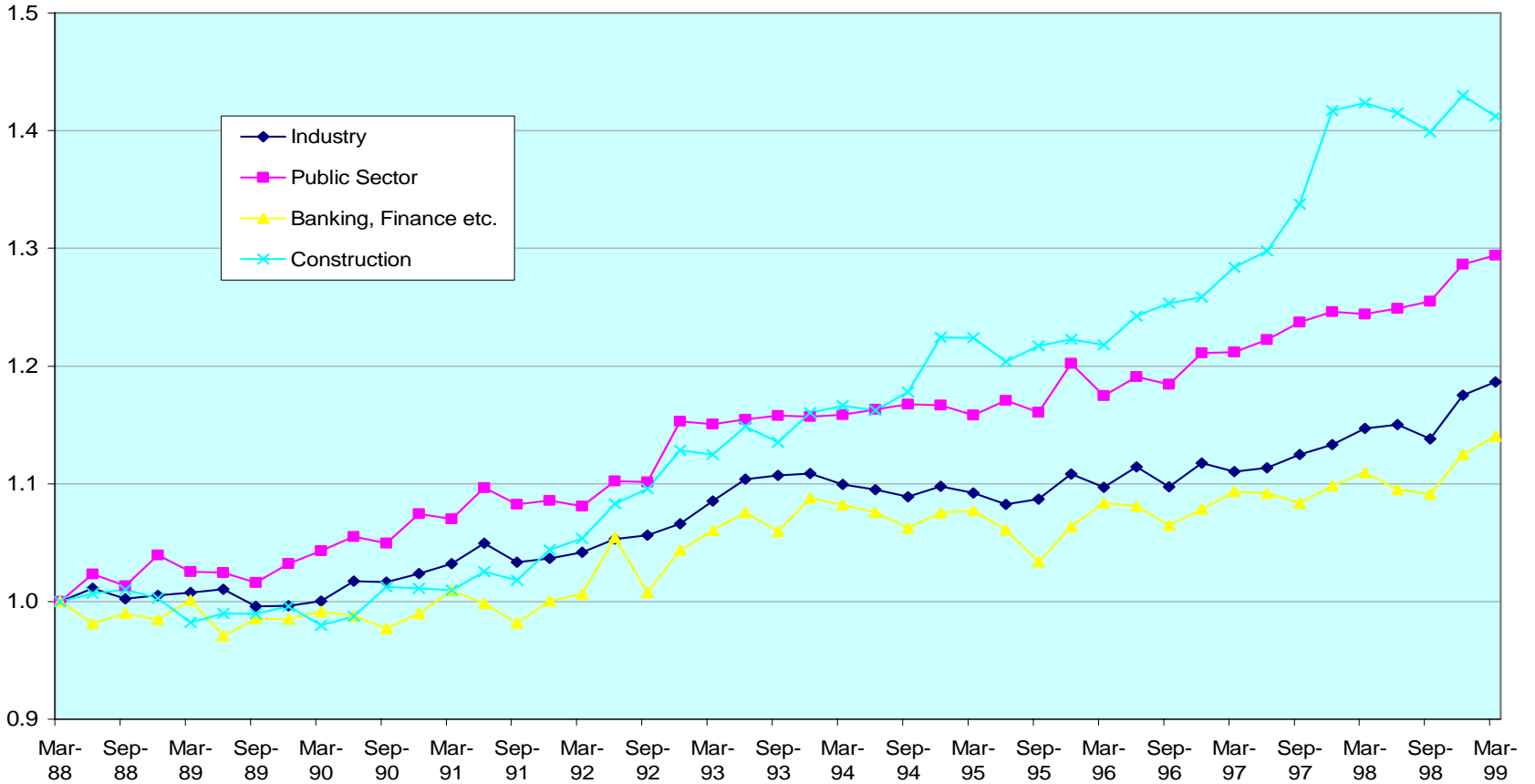
Looking first at the immediate post-1988 period, the graphs in Figure 4 indicate few differences in the relative movements in earnings for the various groups covered between the beginning of 1988 and the early 1990s. After mid-1992 some divergences began to emerge. Earnings in the building industry began to increase more rapidly, followed to lesser degree by those for the public sector. By June 1994 earnings in both the public sector and in building and construction were 16 per cent higher in real terms than in early 1988. The corresponding percentages for employees in manufacturing and in financial and insurance enterprises were 8 and 10 per cent respectively.

From 1994 on the trend differences began to assume much more significant proportions. The real earnings of employees in manufacturing industry and in the financial and insurance sectors remained more or less static, while those in the public sector continued to rise at a consistent pace. However, the most notable event at this stage was the sharp increase in earnings for those employed in building and construction. By mid-1997 the composite earnings index for employees in this sector had reached nearly 130, compared with 116 in mid-1994, representing an annual average real increase of just over 3.5 per cent in this period. The corresponding increase for public sector workers was 1.7 per cent, and it was minimal (about 0.5 per cent) for employees in manufacturing and in the financial and insurance sectors.

The graphs in Appendix Figure A1, which relate specifically to the building industry, show that all categories of employee in the sector achieved above average earnings increases in 1994/97 period. However this applied particularly to skilled manual workers, who appear to have taken a lead role in this regard. Clerical employees also attained significant earnings increases. Unskilled building workers recorded the lowest earnings rise

¹⁵ Unless where otherwise stated, the category “manufacturing industry” includes public utilities, i.e. electricity gas and water.

**Figure 4. Index Numbers of Real Wage Trends by Sector on a Quarterly Basis
March 1988 = 100**



within the sector, but this was still well in excess of the corresponding increases indicated for all classes of employees in the other industries covered.

The graphs in Appendix Figure A1, which relate specifically to the building industry, show that all categories of employee in the sector achieved above average earnings increases in 1994/97 period. However this applied particularly to skilled manual workers, who appear to have taken a lead role in this regard. Clerical employees also attained significant earnings increases. Unskilled building workers recorded the lowest earnings rise within the sector, but this was still well in excess of the corresponding increases indicated for all classes of employees in the other industries covered.

In the period since mid-1997, as the graphs show, the trend divergences have continued; indeed even greater gaps have materialised. Between mid-1997 and early 1999 the annual average increase achieved by workers in building and construction rose to over 5 per cent, significantly surpassing the earnings gains for the other groups covered. The corresponding increases for public sector workers and manual employees in manufacturing were approximately 3½ per cent.

Finally it is of interest to note the extent of divergences that materialised over the full period under consideration. By early 1999 the average earnings of employees in building and construction were some 41 per cent higher in real terms than in Spring 1988. The corresponding rise for public sector workers was just under 30 per cent. For employees in manufacturing this increase was about 19 per cent, while it was somewhat less (14 per cent) for those in financial and insurance establishments.

Comparisons with the Occupational Earnings Data

Comparisons of the data in this section with the occupational earnings figures discussed earlier in this paper are not possible in any detailed or direct sense since, as already noted, both the methodology and the basis of classification are different. It is true that in the CSO series relating to manufacturing and building, there are some occupational distinctions, but these are very broad in character and do not allow any satisfactory comparison to be made with the earlier occupational analyses.

It is possible, however, to carry out some broad comparisons for the manufacturing sector, given the comprehensive coverage of the CSO earnings series for manual workers in this area. In order to do this, the ESRI household based occupational earnings figures for 1987 and 1997 were calculated for manual employees (both skilled and unskilled) in the manufacturing sector only. This was done in order to achieve an appropriate comparison with corresponding CSO data for the category of “industrial workers” in the same sector. The relevant CSO figure for average hourly earnings in June 1997 was £6.95, compared with £6.26 for full-time manual employees in manufacturing as calculated from the 1997 ESRI Living in Ireland Survey. While one would not expect a high degree of compatibility between the two absolute earnings levels, one would consider that the trends in hourly earnings derived from the two sources should be consistent. The annual average real increase in hourly earnings between 1987 and 1997 was 1.2 per cent in the CSO inquiry, and 1.4 per cent in the ESRI survey. Given the methodological differences involved,

this represents a reassuring degree of trend consistency between the two sources.

4. The Overall Distribution of Earnings

As well as earnings trends by occupation, it is important to know how the overall distribution of earnings has been evolving. In carrying out this analysis the data sources are the same as those used in the examination of earnings by occupation given earlier in Section 2.

In looking at the distribution of earnings across individuals, it is customary to focus on either hourly earnings, or on weekly earnings for full-time employees only. Focusing first on all employees, Table 3 shows the distribution of gross hourly earnings in 1987, 1994 and 1997, as measured by the bottom decile, bottom quartile, top quartile and top decile as proportions of the median.¹⁶ This shows that from 1987 to 1994 there was a marked widening in dispersion at the top of the distribution. The ratio of the top decile to the median rose from 1.96 to 2.24, while the top quartile also moved further away from the median. In the bottom half of the distribution, the bottom quartile fell away from the median but the bottom decile did not. The overall picture is thus of widening dispersion throughout the distribution except at the very bottom, with the ratio of the top to the bottom decile rising sharply from 4.2 to 4.8.

TABLE 3: Distribution of Hourly Earnings in 1987, 1994 and 1997, All Employees

Hourly earnings as proportion of median	1987	1994	1997
		%	
Bottom decile	0.47	0.47	0.48
Bottom quartile	0.73	0.68	0.69
Top quartile	1.37	1.50	1.53
Top decile	1.96	2.24	2.32
Top decile/bottom decile	4.2	4.8	4.8

It is particularly interesting to see whether this trend continued from 1994 to 1997, as economic growth accelerated rapidly. We see from Table 3 that the top decile did continue to move away from the median, reaching 2.32 by 1997, with the top quartile also moving slightly further from the median. In the bottom half of the distribution, however, both the bottom decile and the bottom quartile now kept pace with the median, if anything increasing marginally faster. As a result, the ratio of the top to the bottom decile was unchanged at 4.8.

Over the whole period from 1987 to 1997, then, there was a substantial widening in earnings dispersion in terms of hourly wages among all employees. This was more pronounced in the 1987-94 period than from 1994 on, so rapid economic growth did not lead to an acceleration in the trend. It was primarily driven by relatively rapid increases for those towards the top of the distribution, with no indication – unlike for example the UK or the USA – that the bottom has been falling behind the median.

¹⁶ When employees are ranked from the lowest to the highest level of earnings the bottom decile cuts off the lowest 10 per cent of the distribution, while the bottom quartile cuts off the lowest 25 per cent. The median represents the mid-point (with 50 per cent of the earnings observations on either side) while the highest 25 per cent are above the top quartile and 10 per cent are above the top decile.

Given the relatively rapid increase in the top decile compared with the median it is of interest to look at the scale of increase towards the very top. The 95th percentile rose even more rapidly than the 90th percentile, going from 2.4 times the median in 1987 to 2.8 in 1994 and 3.0 in 1997. The 99th percentile went from 3.6 in 1987 to 3.8 in 1994 and 4.3 in 1997. So over the whole period top earnings rose very rapidly, but it is only at the very top that there is any suggestion that this might have accelerated from 1994 to 1997.

It is also of interest to look at the distribution of weekly gross earnings for full-time employees. Table 5 shows the distribution of gross hourly and weekly earnings in 1987, 1994 and 1997 among such employees.¹⁷

TABLE 4: Distribution of Weekly Earnings in 1987, 1994 and 1997, Full-time Employees

Weekly earnings as proportion of median	1987	1994	1997
		%	
Bottom decile	0.50	0.48	0.51
Bottom quartile	0.75	0.72	0.71
Top quartile	1.35	1.43	1.42
Top decile	1.82	1.97	2.02
Top decile/bottom decile	3.6	4.1	4.0

Once again, from 1987 to 1994, the results show a consistent widening in dispersion at the top of the distribution. The top decile as a proportion of the median rose from 1.82 to 1.97, and the top quartile also moved further from the median. The bottom decile did not fall behind, going from 50 per cent to 48 per cent of the median. By 1997, however, it has recovered ground, returning to about half the median. The top half of the distribution shows little change between 1994 and 1997. Over the decade as a whole, then, the ratio of the top to the bottom decile increased markedly, but this was concentrated in the period from 1987 to 1994.

These results are broadly consistent with the occupation-related trends for the earnings of full-time employees given earlier in this paper. These, it will be recalled, indicated that those in occupations associated with higher skills and greater educational attainment (who would tend to be positioned near the top of the percentile band) made the greatest earnings gains between 1987 and 1997.

A comparative perspective on the Irish earnings distribution in 1994 and on the way it has changed since 1987 was presented in Barrett, Callan and Nolan (1999), using measures of earnings dispersion for a range of developed countries brought together by OECD (1996). These figures generally refer to full-time employees, and to weekly, monthly or annual rather than hourly gross earnings.¹⁸ This showed that Ireland had a relatively high level of earnings inequality in 1987, compared with other OECD countries, and that the scale of increase in dispersion between 1987 and 1994 was also exceptionally rapid. Table 5 shows the ratio of the top to the bottom decile in 1987 and 1994 for Ireland and the other

¹⁷ In this context full-time employees are defined as set out earlier in Section 2 of this paper – those whose usual weekly work duration is 30 hours or more.

¹⁸ There are potentially important differences in definition and coverage across countries (including the period over which earnings are measured, how “full-time” is defined and measured, and whether all sectors are covered), so these comparisons should be treated with extreme care, but they can serve to highlight some key features of the Irish results.

OECD countries for which the figures are available for both points in time. It will be noted that the increase in earnings dispersion for Ireland is the greatest of any of the countries shown. Information is not available to update these comparative data to 1997.

TABLE 5: Trends in Earnings Dispersion, Ireland and other OECD Countries, 1987-1994

	Top decile/bottom decile		
	1987	1994	Change
Canada**	4.44	4.20	-0.24
Germany*	2.54	2.32	-0.22
Belgium*	2.44	2.24	-0.20
Finland	2.52	2.38	-0.14
Japan	3.15	3.02	-0.13
Sweden	2.09	2.13	0.04
Australia	2.81	2.87	0.06
Netherlands	2.53	2.59	0.06
France	3.19	3.28	0.09
United Kingdom	3.20	3.31	0.11
New Zealand**	2.92	3.05	0.13
Austria	3.47	3.66	0.19
Italy*	2.42	2.80	0.38
USA	-	4.40	-
Ireland	3.67	4.06	0.39

* = 1993 not 1994; ** = 1988 not 1987.

Source: OECD (1996b), Table 3.1, p. 61-62, and Table 4 above.

5. Overview: Some Policy Implications

Turning first to the analysis of earnings trends by occupation, perhaps the most significant aspect to emerge here is that over the ten-year period from 1987 to 1997 the more skilled and better qualified employees made the greatest gains in earnings terms. It is true that the earnings of semi-skilled and unskilled workers rose rapidly after 1994, and some of the ground previously lost was made up. However, in the final analysis over the longer period those who were better endowed in terms of skill and education still fared better.

While the research literature would suggest that strengthening demand was an important influence underlying the more rapid earnings increases achieved by those with higher levels of skill (especially in technical areas), there are other factors to be borne in mind. The more qualified employees tend to be better organised than unskilled and semi-skilled operatives in terms of trade union structures and membership. It is noticeable that these workers were able to attain above average increases even in the relatively sluggish period between 1987 and 1994 when employment expansion was very limited. The unskilled made little progress in earnings terms in this period. They had to await the onset of (for them) more favourable market forces which pushed up pay levels after 1994 when labour shortages for many classes of worker (including the less skilled) began to emerge.

The intriguing question now is whether further occupation-related earnings data, according as they become available, will reveal if the earnings of the less skilled have continued to rise at a rapid pace. All the economic portents would suggest that they probably have, as labour shortages have intensified in the intervening period.

Further features of interest have emerged from the analysis of earnings trends across sectors. The first relates to the relative gains achieved by public sector workers. At any one stage the earnings increases attained by

public service workers were not necessarily dramatic, but they were steady and consistent. As a result, at the end of the full period covered (from early 1988 to the beginning of 1999) they had achieved real increases noticeably greater than the general body of employees in manufacturing industry and in financial and insurance institutions.

It should be borne in mind, however, that the earnings data for the public sector are probably more influenced by compositional effects than those for other series. Over the past decade, for example, the grade structure within the central civil service has involved a marked trend towards a greater share of more highly paid administrative and professional staff. Neither is the public sector (as defined in this study) a homogenous area. It covers a wide range of activities in central and local government, health, education and semi-state institutions. Moreover this diversity within the same wider family has the potential to create ongoing pay pressures. At any one time it is almost inevitable that some group of public sector workers is negotiating a special wage increase. There is therefore an in-built mechanism in the system which has the potential to create constant upward pressure on earnings according as different groups in succession initiate moves to restore lost pay relativities. It is understandable in these circumstances that there have been calls for the reform of the mechanisms determining public sector pay, and to institute performance related criteria in this regard.

The next aspect of interest relates to the spectacular increases associated with employee earnings in the building industry in the period after 1994 when the current economic boom really began to take hold. While the evidence suggests that the earnings trends for building workers generally were not materially different from those for other groups prior to 1994, the large post-1994 increases ensured that by early 1999 the earnings increases for these workers, even when compared with base year 1988 figures, far surpassed those for employees in all of the other sectors covered. As already indicated, within the building sector these increases seem to have been driven by the gains achieved by skilled manual workers (see Appendix Figure A1). The annual average real increase for these employees between end-1994 and end-1998 was more than 5.5 per cent, significantly higher than the corresponding increases for other workers in building and construction (which were, however, also large when compared with general economy-wide earnings trends).

The most interesting feature associated with the earnings increases for employees in manufacturing and in the financial and insurance sectors is that they have remained moderate. Over the ten years between 1988 and 1998 the annual average real increase for manual employees was only just over 1 per cent in manufacturing industry and somewhat less than 1.5 per cent in the finance and insurance sector. It is only relatively recently, i.e., in late 1998 and early 1999, that significant increases appear to be emerging in these areas. An important factor underlying these moderate trends is likely to have been the influence of working in a highly competitive environment, especially in the international market place in so far as manufacturing industry is concerned.¹⁹ The trends suggest that the industrial work force generally have a strong perception of the significance of this constraint. Skill shortages are now an emerging problem in many

¹⁹ This would, of course, include competing imports.

industrial areas, but the evidence to hand does not suggest that these have heretofore put undue upward pressure on wages, at least insofar as industrial or shopfloor workers are concerned. This is not to say, however, that such shortages have not become a problem in creating bottlenecks in more specific occupational areas, such as highly qualified technical workers. As for the extent of employee organisation, it is difficult to assess any possible effects of this. Some areas of industry are substantially unionised, others are not. However, given that industrial unrest has not been a major problem in any area of industry in recent years, it is unlikely that this issue has constituted a significant influence in the context of earnings trends in this sector.

Earnings Trends and National Wage Agreement Basic Pay Norms

There is another perspective from which one can view nominal changes in earnings. It is of interest to observe, over an extended period, how the nominal earnings increases attained compare with the cumulative increases included under successive National Wage Agreements. This can be viewed, in a sense, as an alternative form of “deflation”. The objective is to determine, in relative terms, the additional or excess earnings gained (if any) by persons in different occupations over and above those specified under the NWA norms. For example, over the ten-year period from the end of 1987 to the corresponding point in 1997 the cumulative *basic* wage increases agreed under the terms of successive NWAs was 32.7 per cent (or 2.9 per cent on an annual average basis), somewhat greater than the corresponding rise in consumer prices.²⁰ One can abstract this rise from the nominal increases over the same period (in a compound sense) for different categories of worker in order to identify the extent of additional increases earned.

These calculations cannot, however, take into account in any mathematical sense the effect of extra special provisions contained in the accords. For example, the agreements generally involved minimum absolute increases for low paid workers, which meant that in percentage terms they received wage rises somewhat greater than the relative norms which were basic to the agreement in question. Moreover, in some of the agreements it was possible to negotiate additional pay increases (usually subject to specified maxima) on the basis of enterprise related or local conditions. However, over the period covered in this analysis there was only one such “local” arrangement – a concession which allowed the negotiation of an additional 3 per cent (maximum) in the Programme for Economic and Social Progress (PESP). In the calculations that follow the aggregate wage rises derived from the basic NWA increases referred to above have been augmented by 1.5 per cent to take account of this.²¹ This would indicate an earnings rise of 34.7 per cent attributable to the basic

²⁰ This covers the basic increases provided for in the Programme for National Recovery (1988-1990), the Programme for Economic and Social Progress (1991-1993), the Programme for Competitiveness and Work (1994-1996) and the first increase of 2.5 per cent included in Partnership 2000 which basically covered the period up to the end of 1997 or the beginning of 1998.

²¹ A survey carried out by the Department of Enterprise, Trade and Employment in late 1993 which covered over 400 private and public sector firms (or some 120,000 employees) indicated that over 75 per cent of enterprises had agreed to pay all or some of the 3 per cent increase allowed under the PESP local bargaining clause. On this basis it is considered reasonable to assume an aggregate rise of 1.5 per cent on average.

NWA increases and to the one “special” provision relevant to the ten year span in question.

It is to be expected, therefore, when viewed in this way that the earnings trends for all the groups identified should exhibit some gains over and above the NWA increases as calculated. In view of this it is necessary to interpret the figures given in this section with caution. The main interest centres not so much on the relative “NWA excess” calculations for any one category, but on the degree to which these amounts vary as between occupations.

The relevant data, expressed in the form of annual averages, are shown for different occupational groups in Table 6. Looking first at the overall figures for all full-time employees, these indicate an annual average “excess” of 2 per cent over the NWA provisions. This is a significant figure, but the outcome is hardly surprising in view of the demand pressures that have come into play in the Irish labour market in recent years. What is surprising, however, is the extent to which these additional increases vary across occupational groups. The figures reveal that qualified and skilled workers achieved increases significantly in excess of the National Wage Agreement norms to a much greater degree than those in less skilled occupations. In the ten-year period up to the end of 1997 managers, associate professionals and skilled employees engaged in repair and maintenance all gained on average increases of more than 2 per cent per year in excess of the NWA provisions. In the case of managers the “excess” was as high as 3 per cent. However, for skilled production workers and those at the lower end of the skill spectrum (e.g. semi-skilled operatives, employees in transport and communications, labourers) the additional increments earned were much smaller – of the order of 1 per cent per annum. The smallest NWA “excess” (½ per cent annually) was for semi-skilled manual operatives, many of whom are employed in the manufacturing area. The size of these differentials is somewhat surprising, given that many low paid workers in less skilled occupations would have been able to avail of the NWA provisions specifying absolute minimum increases. Indeed the figures suggest that some such workers attained earnings increases that were only marginally in excess of the basic norms set out in these agreements. Workers in personal service activities (who would also tend to be less skilled) were, however, an exception to this general pattern. For this group the excess over the NWA norms as calculated was 2.3 per cent per year on average.

TABLE 6: Annual Average Nominal Earnings Increases by Occupation 1987-1997, Compared with Basic NWA Increases

Occupation	Nominal	Excess over NWA %
Managers	6.1	3.0
Professional Occupations	4.8	1.7
Associate Professionals	5.3	2.2
Clerical Occupations	4.9	1.8
Skilled workers (maintenance)	5.5	2.4
Other Skilled workers	4.2	1.1
Production operatives	3.5	0.5
Transport/Communication workers	4.3	1.2
Sales workers	4.7	1.6
Security workers	4.3	1.2
Personal service workers	5.4	2.3
Labourers & Others	4.2	1.2
Total	5.1	2.0

Policy Implications

Finally, we offer some comments on the policy implications arising from our results. The first point of note is the degree to which, at the overall level, earnings have exceeded the norms embodied in the National Wage Agreements over the period from 1987 to 1997. While this excess is significant, it is not, perhaps unexpected in the light of recent economic progress, and when account is taken of the manner in which NWA wage provisions operated. This excess is not as yet of a magnitude so as to render the negotiation of a further national understanding impossible. The degree of variation in the earnings increases across occupations is, however, a worrying aspect, even allowing for the fact that some such diversity is a normal consequence of labour market forces. While acknowledging the tensions that currently exist in the labour relations front, if the current pay pressures in the public sector are conceded, then our analysis suggests that these divergences will be greatly accentuated, with the result that the negotiation of a further accord would be then extremely difficult. The problem here would not only be leapfrogging claims within the public sector, but also knock-on effects in the private sector (including manufacturing industry) which would have serious consequences for our position in the global economy. Even allowing for the moderation in earnings which has heretofore applied in the industrial sphere, recent figures suggest that our competitive advantage is already slipping somewhat²² and if this were to deteriorate further, the consequences for the Irish economy would be serious, given its openness and sectoral structure. Reductions in competitiveness would have an especially severe effect on the indigenous component of Irish manufacturing. The problem is not solely confined to the issue of

²² See Baker *et al.* (1999). ESRI *Quarterly Economic Commentary*, August. In reviewing aspects of the short-term economic outlook, the authors indicate that the anticipated rise in hourly earnings in Ireland in 1999 (6 per cent) is expected to be double the corresponding figure for all other OECD countries combined (p.11).

industrial wages rising rapidly due to re-establishing broad relativities with earnings in other sectors. Escalating wages in the public sector and in the wider non-tradable area ultimately impose additional costs on industry through the services they purchase, thus further squeezing competitive price margins.

That being said, however, in the light of recent economic growth one can understand that some groups of employees (especially the unskilled and those generally on low pay) consider that they should have a greater share of the gains that are being made. Some limited relaxation of constraints on the pay front is now indeed possible as a more moderate rate of economic growth (and employment expansion) would allow time and space to address serious levels of congestion in the economy. These relate mainly to deficiencies in the physical infrastructure and labour shortages. The case for moderating expansion in the years ahead is supported by the fact that labour supply is likely to diminish according as significantly fewer young people exit from the educational system. In summary, such an approach involves substituting a degree of additional reward for those in employment and thus forfeiting a measure of potential employment creation. Our evidence suggests that such future earnings increases should be weighted more significantly towards those on low pay (bearing in mind, however, the effect of the introduction of the minimum wage). This has, however, to be achieved in a structured and balanced way so as to avoid serious earnings distortions among the employed workforce and to keep costs within reasonable bounds. The negotiation of an appropriately balanced National Understanding offers the best way to accommodate the conflicting aims involved.

It is also relevant to point out that equity can take different forms. The restraint exercised by wage earners over the past decade contributed significantly to the impressive job creation performance of recent years. Net employment expansion totalled over 370,000 (some 4.7 per cent per year on average) between Spring 1993 and early 1999, many of the beneficiaries being young people. Thus while individual members of the employed work force accepted moderate wage increases, the financial circumstances of the newly employed, and of many households, must have been improved. Furthermore, since the series of National Wage Agreements involved tax concessions as a quid quo pro for wage moderation, the net increases in take home pay would have been greater than the increases indicated for the gross earnings figures presented in this paper. It should be noted again, however, that the tax concessions would have, with few exceptions, been of greater benefit to those on higher levels of pay, given the limited tax liability of low paid workers. While it was thought that the 1999 Budget signalled a movement towards a greater accommodation for the low paid in terms of reducing tax liabilities,²³ Budget 2000 (which was particularly regressive) involved a return to previous policies.

Finally it is important to mention that it is not being suggested that a NWA should be achieved at any cost. Such accords can only be beneficial

²³ A number of the provisions in the 1999 Budget (such as restricting the value of personal allowances to the standard rate of tax and focusing tax relief on increasing this standardised allowance) went some distance in redirecting the balance of advantage towards those on low pay. For a more detailed discussion of this and related issues, see Callan *et al.* (1999) *Income Tax and Social Welfare Policies*, ESRI, Dublin.

if the agreed provisions are appropriate in the context of the prevailing economic and social circumstances. While the post-1987 Agreements made a significant contribution to the improvement in our economic circumstances, there were earlier agreements that were not particularly successful. There were accords in the 1970s, which instead of improving Ireland's position in the global market, worked to undermine the economy's competitive position.²⁴ Governments have understandable fears of the political fallout that may result from a failure to achieve a national accord and come under considerable pressure to make additional concessions which prove unwise in the longer term. Undesirable as it may be, in such circumstances decentralised or localised bargaining would be better than a National Wage Agreement creating more problems than it solved.

²⁴ See Sexton and O'Connell (eds.) (1996). *Labour Market Studies. Ireland*. EU Commission, Brussels. The report indicates that these agreements included provisions for above the norm increases which were intended to be exceptional and dependent on local or enterprise related circumstances. However these became a matter of course rather than a means of eliminating inefficient workplace restrictions and inflexibilities, in both the public and private sectors.

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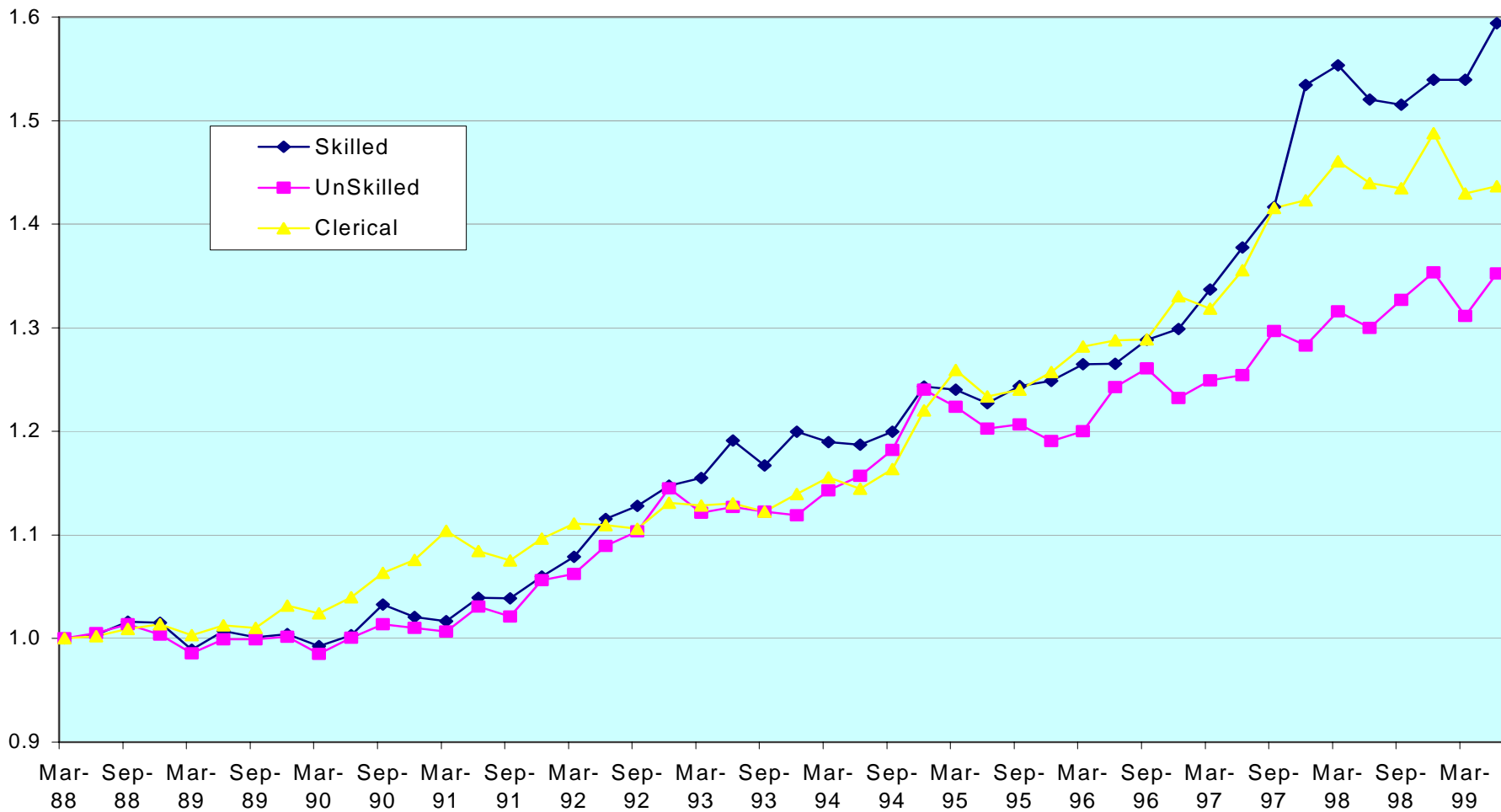
Details of the Sectoral Earnings Indexes

The composite hourly earnings index for the building and construction sector was used as it was considered that, in the circumstances, this was the simplest way to demonstrate the relevant trends. Appendix Figure A1, which shows separate indexes for different occupational groups in the building sector (clerical, skilled and unskilled manual employees), indicates that while the earnings trends for each of these categories differ somewhat, they share a common feature in that the upward trend in earnings for all of them is much more pronounced than for other indexes. The composite index therefore allows one to display the essential changes for earnings in the building industry in a simple and succinct way.

It was considered that the hourly earnings index for “all industrial workers”, i.e. basically manual employees at all levels, was the most appropriate to use in reflecting the trend for manufacturing industry. There are other indexes computed for this sector (on a weekly earnings basis), for managerial and clerical staff. However the trends shown for all the series are fairly similar (see Appendix Figure A2).

The index of weekly earnings for the public sector covers Government departments (including the prison service), the army, Gardaí, local authorities and other regional bodies, educational institutions at all levels and commercial and non-commercial semi-state bodies. In the case of the prison service and the Gardaí the earnings data used relate to weekly earnings exclusive of overtime (which are published in addition to the more aggregate figures). This required the compilation of special composite public sector earning index, other than the published one. For this it was necessary to use weights applied to the separate earnings indexes for the subsectors referred to above. The weights were based on the employment profiles for these subsectors, averaged over the period covered by the series.

Appendix Figure A1. Index Numbers of Real Wage Trends in the Construction Industry on a Quarterly Basis, March 1988=100



Appendix Figure A2. Index Numbers of Real Wage Trends in the Industrial Sector on a Quarterly Basis, March 1988 = 100

