EXECUTIVE SUMMARY

1. Background

This report, which contains occupational employment forecasts for 2010 classified by region, is the eleventh in the joint FÁS/ESRI publication series and the sixth such report presenting forecasts for broadly defined occupational groups. The main objective of this series is to develop a database which can be used for analytical purposes and, in particular, to provide information on the changing pattern of occupations and to identify variations in skill requirements across broad occupational areas of the economy. A full list of the publications issued to date is included in Appendix I.

This report breaks new ground insofar as the forecasts involve a regional dimension. In this regard, as the data involve a greater degree of disaggregation than in earlier publications, the regional forecasts should be viewed as somewhat more tentative than the national estimates. This is a feature that should be borne in mind in interpreting the results. The regional classification used, which is based on the EU NUTS III system,[1] involves three broad regional categories:

- Border, Midlands, West (BMW)
- Dublin, Mid-East (DUBME) and
- Rest of the State (REST), comprising the South-East, South-West and Mid-West regions.

The distinction of the BMW region is important as, unlike the other regions, it retains Objective 1 status in the context of EU Structural Funds support. The composition of these regions is defined in more detail in Chapter I.

When interpreting the regional data in this report it is important to remember that the employment estimates are based on the concept of residence, rather than relating to the location where an individual works. This follows automatically from the use of Census and Quarterly National Household Survey (QNHS) data, which are obtained from households. Some of the household respondents covered in these inquiries would live in one region, but work in another. However, as the regions used in this study are quite large, this is unlikely to constitute a major issue, or to seriously distort the results.

At national level the forecasts contained in this report are based on sectoral employment projections derived from the most recent ESRI *Medium-Term Review* (MTR), published in July 2003.[2] These forecasts provide the basis for the current study and, in particular, determine the predicted level of employment for the chosen forecast year (2010) and its disposition among broad sectors of the economy. In view of this, it is clear that changes in the sectoral structure of employment will have a significant impact on the forecast outcomes in terms of occupations.

[1]Nomenclature des Unites Territoriales. These regions, of which there are eight, consist of groups of counties and/or county boroughs. They were established by Statutory Order under the terms of the Local Government Act 1991.

[2] Bergin A., J. Cullen, D. Duffy, J. Fitz Gerald, I. Kearney, D. Mc Coy (2003). *Medium Term Review 2003-2010.* Dublin: The Economic and Social Research Institute.

The employment forecasts contained in this report relate to the MTR "Benchmark" forecasts, which are considered to represent the most likely future scenario in a medium-term context. The MTR forecasts do not, however, involve a regional dimension and, therefore, further estimation procedures had to be developed to deal with this additional feature. These, and other methodological aspects, are described in Chapter I.

It is important to note that the methodology used in incorporating a regional dimension into the forecasts is based mainly on trends in the regional pattern of employment observed in different sectors and occupations in the 1990s. In this sense, therefore, the regional forecasts for 2010 as given in the main analysis (in Chapter II) can be regarded as reflecting past trends, while at the same time being influenced by national developments.[3] While this provides a useful baseline or reference point when charting the way forward, the eventual outcome may, of course, be different. Indeed Government policies as set out in the National Development Plan 2000-2006 and the National Spatial Strategy (NSS) contain provisions designed to specifically direct a greater share of resources to less developed areas, particularly the BMW region. There is also the stated Government intention to redeploy sizeable elements of the Civil Service to centres outside of Dublin. With this background in mind it was decided that it would be appropriate to present a further set of forecasts based on an alternative spatial distribution of employment that attempts to take account of the broad thrust of these objectives. This is done in Chapter III; the main results are reviewed in Section 4 of this Summary.

2. Aggregate Regional Employment

Let us first review the global employment situation in the different regions. Table 1 shows that there were 1,648,000 persons at work in the State in Spring 2001, of which 703,000 (43 per cent) were in the DUBME region, over 534,000 (32 per cent) were in REST, while almost a quarter (410,000) were in BMW.[4]

Table 1. Total Employment by Region, 1991-2010

Year	BMW	DUBME	REST	State
		000		
1991	292.8	452.3	388.5	1,133.6
2001	410.4	703.1	534.4	1,647.9
2010	465.1	883.3	614.5	1,963.0

Table 2. Employment Population Ratios for 2001

	BMW	DUBME	REST	State
		Ratios		
Men	0.641	0.696	0.648	0.665
Women	0.395	0.483	0.397	0.431
All Persons	0.518	0.585	0.522	0.546

[3] For example, one of the main outcomes envisaged in the 2003 ESRI *Medium Term Review* involves a growing concentration of activity in the services area – a feature that would apply in all regions.

[4] The employment figures used in this report are defined according to the principal economic status (PES) concept. The reason for this is explained in Chapter I (Section VII).

Table 3. Annual Average Employment Change (%) by Region, 1991-2010

	BMW	DUBME	REST	State
		(%)		
1991-2001	3.4	4.5	3.2	3.8
2001-2010	1.4	2.6	1.6	2.0

If these totals are viewed in relation to the adult population in each region, the data show that the intensity of employment is markedly higher in DUBME than in the other regions. Table 2 shows that the employment/population ratio (defined as the number of persons at work aged 15 years or over divided by the population in the same age category) [5] for DUBME is 58.5 per cent, compared with figures of about 52 per cent for the other two regions. Furthermore, the differential for women is greater than that for men. The DUBME employment population ratio for women is over 48 per cent, some 8 percentage points higher than that for the BMW and REST regions. This pattern is also evident for men, but to a lesser extent.

Looking at regional trends, Table 3 shows that the annual rate of employment growth in the Dublin/Mid-East region between 1991 and 2001 (4.5 per cent) was significantly higher than in the BMW and REST regions, where it was somewhat less than 3.5 per cent in each case. For the State as a whole in this period the annual rate of employment expansion was 3.8 per cent. However, when agricultural activities are excluded from this calculation the annual expansion rates are similar, broadly speaking all lying in the 4.5 to 5.0 range (see Table 2.4(b) of the main report). This is, of course, due to the fact that agricultural activities, which exert a strong downward or negative influence on employment change, are still significant in terms of size in the two provincial regions.

Turning to the forecasts, total employment in the State is predicted to rise from 1,648,000 in 2001 to 1,963,000 in 2010, an annual average increase of 2.0 per cent. This is noticeably less than in the 1991/2001 period when the annual rise was nearly 4 per cent. Over the forecast period employment growth is expected to be higher in DUBME at 2.5 per cent, as against some 1.5 per cent in the other two regions. While the exclusion of agricultural activities again tends to reduce the inter-regional differences, the impact in this instance is not as significant as in the 1990s; even when viewed in this way, the DUBME region still outstrips the other two in terms of employment expansion. The projected annual jobs expansion outside of agriculture in DUBME in 2001/2010 is over 2.6 per cent, compared with figures of 1.8 and 2.0 per cent in BMW and REST respectively.

3. Sectoral and Occupational Forecasts

There are many ways in which the regional employment data in this report are analysed in terms of sectors and occupations, e.g., from cross-sectional, structural and time trend perspectives. In this summary, given the space constraints, the emphasis is on describing sectoral and occupational employment trends, both past and future, as these are considered to be particularly important.

[5] This concept now tends to be frequently used in an EU context, for example in the National Employment Action Plans, which form part of the EU Employment Strategy.

Figure 1. Annual Average Changes (%) in Employment 1991-2001, by Region and Sector

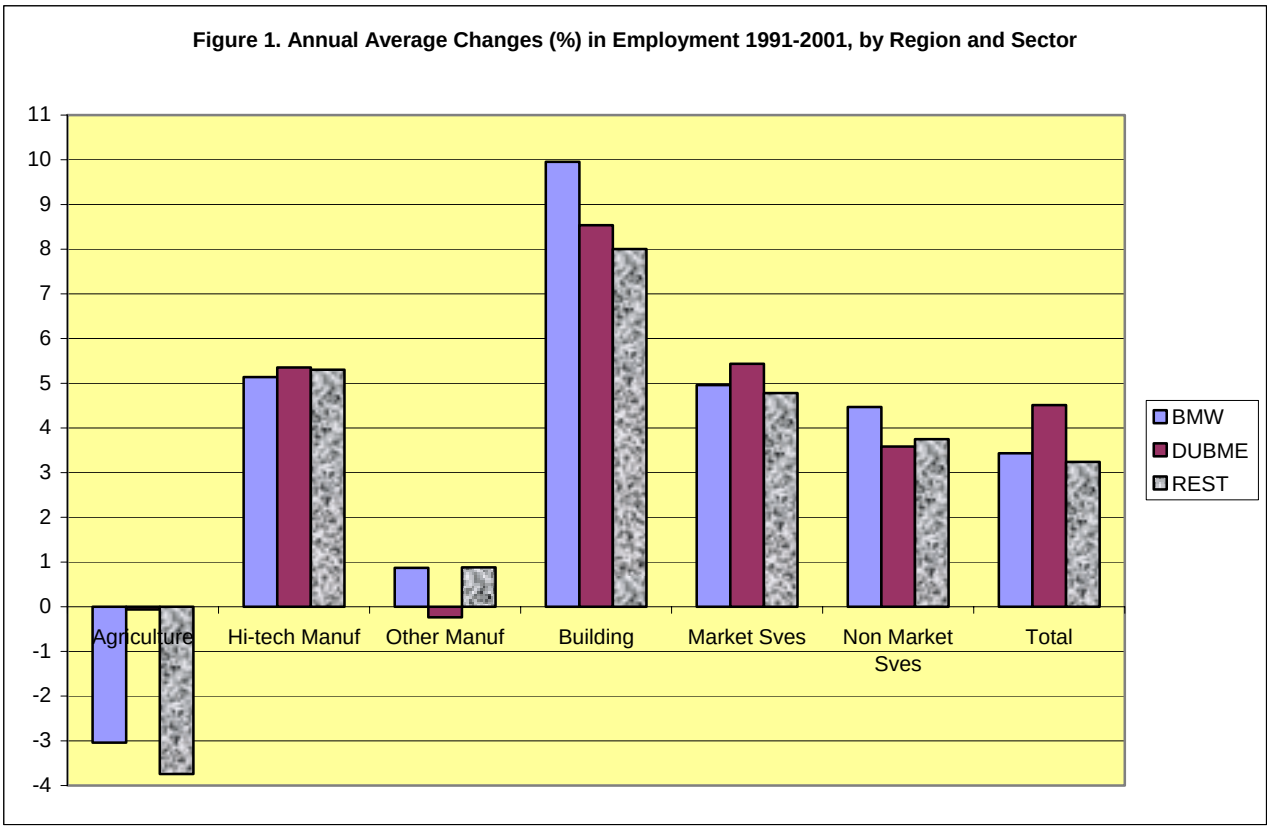
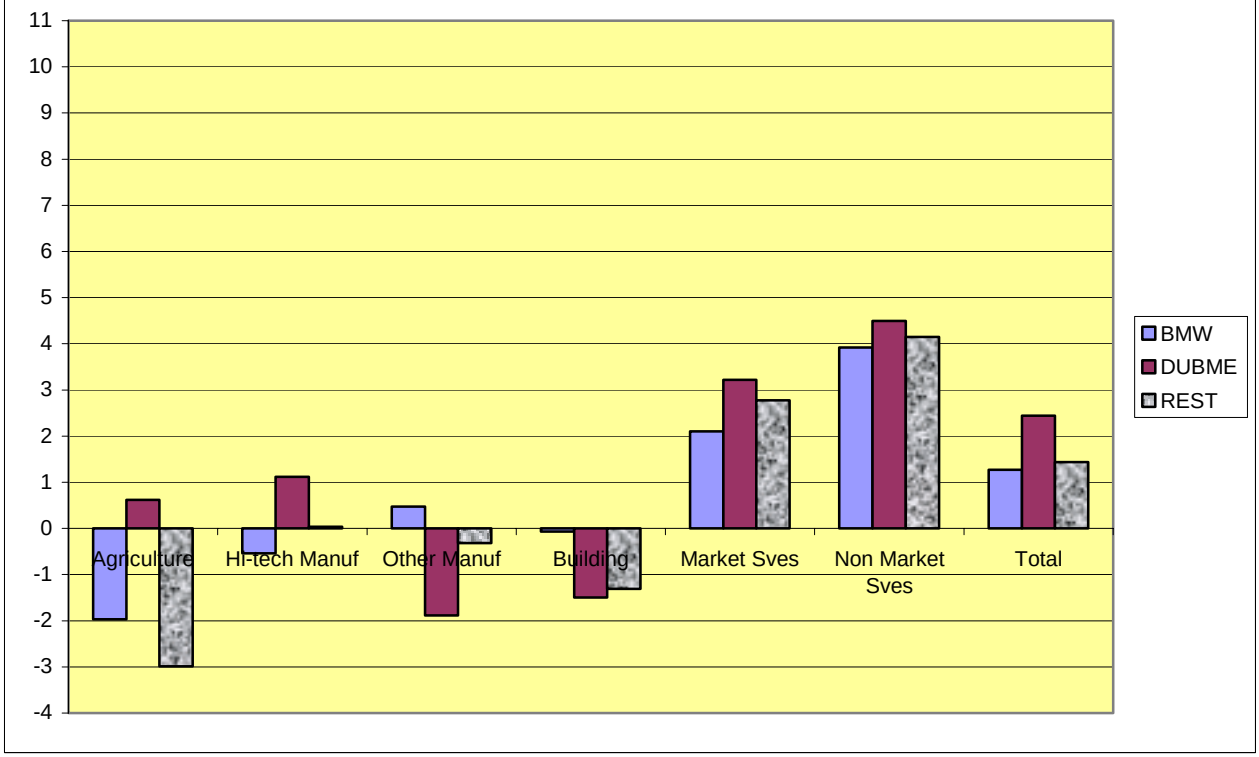


Figure 2. Annual Average Changes (%) in Employment 2001-2010, by Region and Sector



Sectors

Figures 1 and 2 show annual average employment changes (per cent) for broad sectoral categories[6] for the period from 1991 to 2001 and for the forecast period from 2001 to 2010.

Even a cursory inspection of the content of these two figures indicates how different the predictions for the current decade are when compared with the boom years of the 1990s.While significant employment growth in private market services is forecast to continue in all regions, this will not match the very large increases that occurred in the 1990s. Expansion in this sector is expected to be highest in DUBME (3.2 per cent per year), driven mainly by rapid jobs growth in business and financial services. This compares with corresponding growth rates of 2.8 and 2.1 per cent in REST and BMW respectively. The rate of employment expansion in the public sector (non-market services) is predicted to be somewhat greater in the forecast period than in the 1990s. The projected rate of increase for the Dublin region (4.5 per cent) is greater than that indicated for the other two regions, which are expected to be of the order of 4 per cent. Rising employment in the health and social welfare subsector is one of the main factors contributing to these increases.

The forecasts indicate a decline in total manufacturing employment in the period up to 2010. A small increase is predicted for the high-technology sector, but this is expected to be more than offset by a fall of much greater proportions in the numbers in traditional manufacturing. With regard to the regions, little employment change (in either subsector) is forecast for BMW and REST. In the Dublin/Mid-East region traditional manufacturing is expected to experience a very substantial fall, resulting in a net decline of some 4,000 in the wider industrial sector in this area. Overall, these results are in contrast to the trends in the 1990s when employment in the traditional sector remained more or less static, but high technology industry recorded very large increases, of over 5 per cent per year on average in each region.

With regard to building and construction, in contrast to the 1990s (when the numbers employed in this sector soared) the predicted outcome for the forecast period makes somewhat more sombre reading. At State level employment is expected to decrease significantly (by about 16,000, from 180,000 to 164,000) between 2001 and 2010. However, this will occur exclusively in DUBME and REST; employment in this sector in the BMW region is forecast to remain unchanged.

Occupations

Changes in occupational patterns over the 1991-2010 period are illustrated in Figures 3 and 4. The method of presentation is the same as with the sectoral data just discussed. As in the previous analysis, the number of categories as used in the main report has been reduced in order to simplify the presentation. The eighteen standard occupational categories have been amalgamated into six wider groups which, broadly speaking, attempt to bring together similar occupational activities.[7] More detailed occupational data are, of course, given in the main text of the report.

[6] In order to simplify the presentation (especially with analyses involving sectors, regions and time trends), the sectoral categories are shown in a more aggregated form than in the main report. In particular, all private market services comprising distribution, transport and communications and other private service activities are grouped.

[7] The “managers and proprietors” category covers managers, and proprietors in services. The “professional” group includes both those at degree level as well as associate professionals with diploma type qualifications. The “manual” group includes all skilled craft workers, semi-skilled operatives and transport and communication workers, as well as labourers and others involved in unskilled manual work. The “services and sales” category covers the remaining occupations, including security workers.

Figure 3. Annual Average Changes (%) in Employment 1991-2001, by Occupation and Region

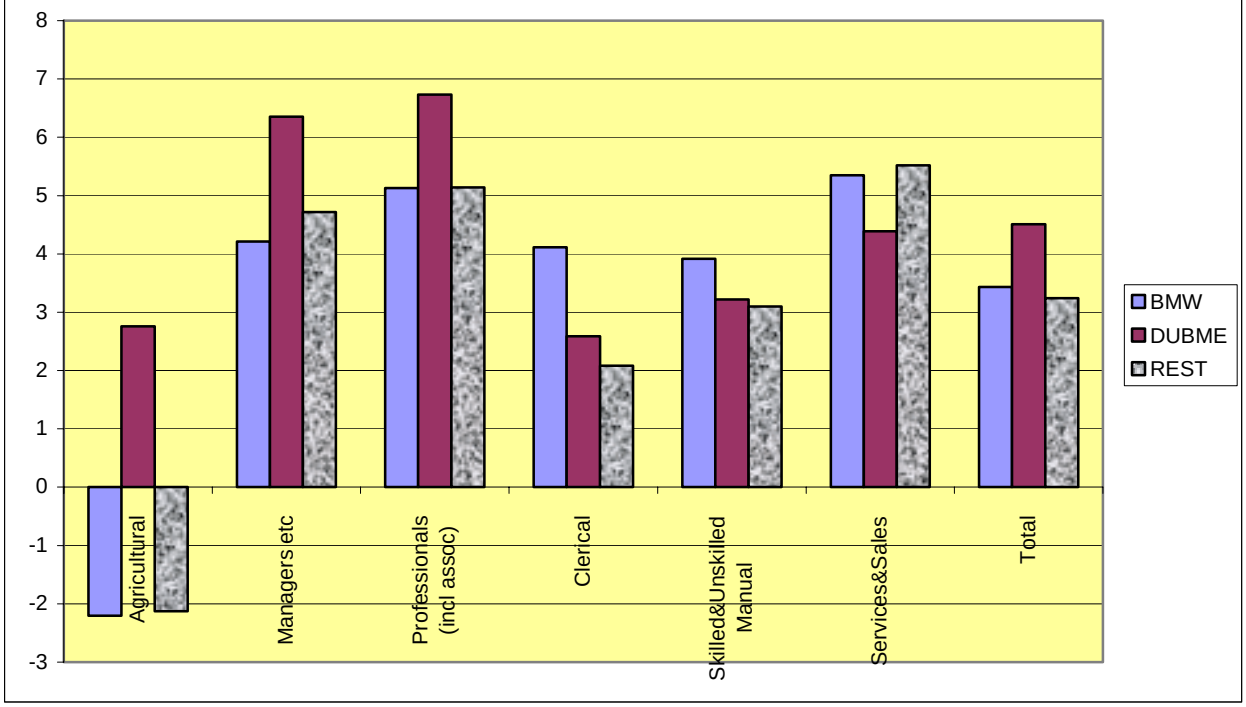
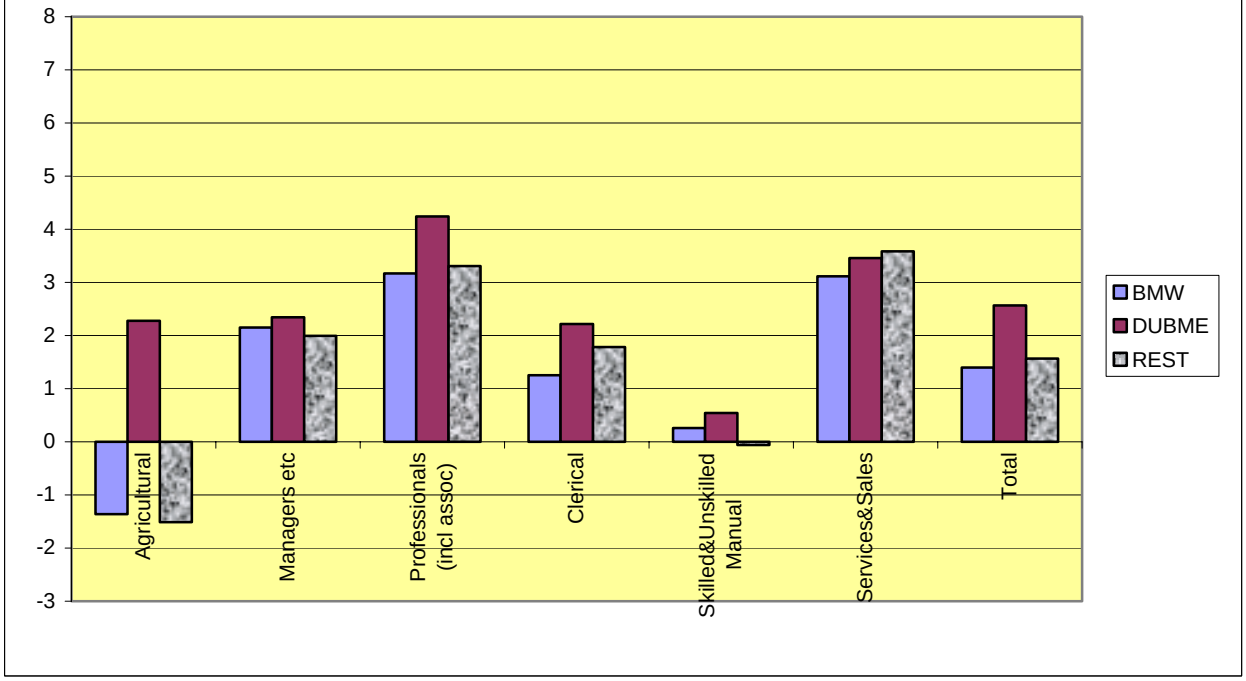


Figure 4. Annual Average Changes (%) in Employment 2001-2010, by Occupation and Region.



Not surprisingly, the employment increases predicted for the 2001/2010 period for virtually all occupations are much lower than in the preceding decade. While managers and professional and service type occupations are forecast to show significant but slower employment growth in every region, no jobs expansion is expected in the manual area (either skilled or unskilled). This is, of course, to a large degree a consequence of the underlying sectoral trends as described. With regard to services occupations, the "carers" category (see Table 2.5 in the main text) is an important underlying influence. The predicted annual average increases for this activity in 2001/2010 are of the order of 6 to 8 per cent across the - different regions (the highest such figures evident for any occupation): by comparison the corresponding figures for professionals and associate professionals are in the 3 to 5 per cent range.

For occupations such as "carers" and professionals generally, it is important to emphasise that the change in the underlying industrial structure is not the only influence contributing to the continuing employment increases. These occupations exhibit what is termed a "positive" occupational effect insofar that they are assuming greater importance across enterprises and sectors generally. This serves to augment the numbers employed in these activities, irrespective of economic circumstances. On the other hand, such effects for unskilled manual occupations tend to be negative, thus contributing to decreasing employment levels. These issues are described in the "shift-share" analysis contained in Chapter II.

The higher than average employment growth forecast for the DUBME region derives mainly from rapid expansion in the managerial and professional categories. This is, in turn, attributable to the underlying MTR assumptions, which envisage more rapid jobs expansion in services generally, with declining employment levels in industry and associated areas. As services (especially business and financial activities) account for a much larger proportion of economic activity in the Dublin/Mid-East region, it follows that the region would benefit more from a scenario of this kind. A further implication here is the continuation of an existing trend (already evident in the 1990s) towards a higher skill profile for employed persons generally in the greater Dublin region relative to elsewhere.

4. An Alternative Regional Scenario

The approach used in the alternative regional scenario, as referred to earlier, is to make an adjustment to the existing forecasts which involves a re-allocation of employment growth in high-technology manufacturing and in the public service from Dublin/Mid-East to the other regions, mainly to BMW. Details of the methodology used in compiling these estimates are given in Chapter III.

With regard to industry, the existing trend based forecasts involve a modest rise (of some 5,000) in high-technology manufacturing in DUBME in the period between 2001 and 2010, and little or no change in this subsector for the BMW and REST regions. Under the alternative assumptions all of the net rise in DUBME over this period has been transferred to BMW, with the result that this region now shows a small increase (of some 3,000) in high-technology manufacturing. Thus, with this adjustment the employment levels for the sector in question remain unchanged in the Dublin Mid-East and REST regions. This new scenario is designed to reflect, at least in broad terms, the policy objective set out in the National Development Plan that 50 per cent of all aided green field projects in the State in the period up to 2006 should be channelled to the BMW region.

The adjustments made to reflect the redeployment of public service personnel was also relatively simple. It involves a reduction of 10,000 in the 2010 employment forecast for Public Administration and Defence (PAD) in DUBME and balancing increases of 5,000 in this sector in both the BMW and REST regions.[8] This in effect means that the stated Government aim to redeploy 10,000 public service personnel out of Dublin would be achieved by 2010.

In total, when primary and induced secondary effects are taken into account, the addition to the 2010 employment forecast for BMW is 15,000, some 3 per cent higher than that given by the original scenario. Some 5,000 of this increase arises from secondary employments effects. The total increase in the REST region is of the order of 6,000 (up 1 per cent), which includes a small induced secondary employment component of about 1,000. The overall total for the two regions is thus about 21,000, which is, of course, deducted from the forecast jobs total for DUBME in 2010.

Table 4. Employment Differences Between the Original and Alternative Scenario Forecasts, by Occupation

Occupation	BMW	DUBME	REST	State
		000		
Agricultural Occupations	0.1	-0.2	0.1	0.1
Managers/Professionals	3.4	-6.1	1.3	-1.4
Clerical	3.5	-5.8	2.2	-0.1
Skilled Manual	1.2	-1.3	0.1	0.0
Operatives and Unskilled Manual	3.6	-2.4	0.3	1.5
Sales and Service	3.0	-5.2	2.2	0.0
Total	14.8	-20.9	6.2	0.0

Table 4 shows the implications for regional occupational profiles arising from the alternative scenario assumptions. The data show the actual employment differences by occupation between the two approaches for each region. In the case of BMW, under the alternative scenario, there would be somewhat more than 3,000 additional personnel in the manager/professional area in 2010, and similar increases (in each case) for clerical staff, operatives and unskilled manual workers and for service personnel. As one would expect, the net gains in the REST region relate mainly to the clerical and sales/service areas.

An interesting feature to note in this particular aspect of the analysis is that while the changes in the aggregate regional totals offset one another when viewed in national terms, the same need not apply for individual occupations. In fact Table 4 shows that the projected State occupational profile for 2010 under the alternative scenario indicates slightly fewer managers and professionals and increased numbers of operatives and unskilled workers. This results principally from the application of the projected 2010 occupational profiles for the BMW region to the additional employment increments for this region.

5. Female Employment

Returning to the main trend-based forecasts, these show that the proportion of women in total employment is forecast to increase from just over 40 per cent in 2001 to more than 44 per cent in the year 2010. While this is, in effect, a modest rise over the nine-year period in

[8] This alternative regional scenario was formulated *before* the recent public service redeployment decisions contained in the December 2003 Budget Statement were announced. However, it would appear, on the basis of the content of this Statement, that the assumption involving a 50/50 subdivision of re-allocated staff between BMW and REST is very close to what is intended.

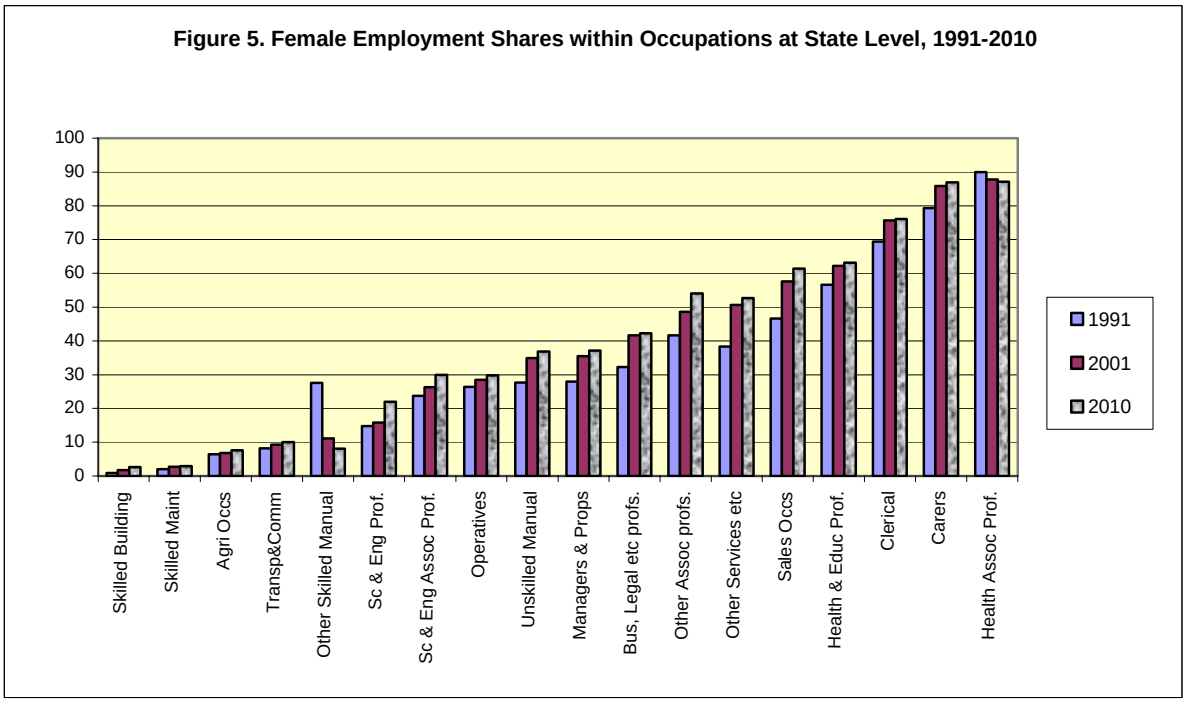
question, the actual share as forecast for 2010 represents a relatively high figure compared with those which prevailed in the 1990s; the share in question was just over 35 per cent in 1991. If these data are viewed in absolute terms (i.e. in terms of actual numbers at work) they indicate a significant increase in female employment over the period, but particularly between 1991 and 2001. Female employment stood at just under 400,000 in 1991, rising to 660,000 in 2001 and is predicted to increase further to almost 865,000 in 2010. These numbers indicate an annual average rise of 5.2 per cent in 1991/2001, even though this is predicted to decline to 3.0 per cent between 2001 and 2010. The number of men at work in the economy, which was 735,000 in 1991 and rose to 988,000 in 2001, is expected to increase to over 1,098,000 in 2010. Thus, while these estimates also indicate an upward trend, it is at a somewhat slower pace than for women, the relevant estimates being 3 per cent and 1 per cent respectively in the two periods in question.

As for regions, the female share of employment in DUBME in 2001 was just under 43 per cent, compared with 38 per cent in both BMW and REST. However, the shares for the latter regions appear to be increasing more rapidly, leading to greater convergence across regions. The forecasts for 2010 indicate a female employment proportion of just under 46 per cent in DUBME and values of the order of 43 per cent in each of the other two regions.

Female Shares within Occupations

The relevant data for individual occupations are best interpreted in graphical terms as given in Figure 5, which shows female shares for different occupations at State level for 1991, 2001 and 2010. These figures indicate that in 2001 the highest female proportions applied to those engaged as health associate professionals and to persons in "caring" activities (between 85 and 90 per cent in each case).[9] These are followed by clerical workers (with a female share of over 75 per cent) and health and education professionals for which the corresponding share is just over 62 per cent. Agricultural occupations and skilled manual work generally tend to be

Figure 5. Female Employment Shares within Occupations at State Level, 1991-2010



[9] It is relevant to note that the "carers" category, which covers both those engaged in childcare and other caring activities, does not include nurses. The latter are classified as associate professionals.

positioned at the other end of the female share spectrum with quite small proportions – of the order of 10 per cent or less. The lowest female employment share in 2001 (just under 2 per cent) related to the skilled building worker category.

The forecasts for the period from 2001 to 2010 indicate quite small increases in the female employment shares for most occupations – much smaller than in the 1990s. It may, perhaps, be somewhat puzzling to comprehend why this is so, given the substantial rise in relative female involvement that occurred during the 1990s. A closer examination of past trends revealed, however, that the female share increases for quite a number of occupations were beginning to taper off in the final years of that decade, a factor that is taken account of in the forecasts for the post-2001 period. The commentary in the main report indicates that this trend is evident in each region.

6. The Educational Levels of Those at Work

Finally, let us consider the question of educational qualifications in relation to those in employment and how various aspects of this have been changing over time. Table 5 shows persons in employment in 2001 classified by educational level both for the State as a whole and within each of the three standard regions. At State level just under 40 per cent had achieved higher secondary standard, while about 15 per cent were in each of the lower secondary and primary categories. Nearly 30 per cent of those at work in 2001 had third level qualifications (which includes those with diploma level qualifications).

Table 5. Persons in Employment in 2001 classified by Region and Educational Level

Educational Qualifications	BMW	DUBME	REST	State	BMW	DUBME	REST	State
			(000)			%		
Primary	82.9	86.6	84.2	253.6	20.2	12.3	15.8	15.4
Lower Secondary	78.0	99.2	93.5	270.8	19.0	14.1	17.5	16.4
Upper Secondary	158.8	265.2	216.2	640.1	38.7	37.7	40.4	38.8
Third Level	90.8	252.1	140.5	483.4	22.1	35.9	26.3	29.3
Total	410.4	703.1	534.4	1647.9	100.0	100.0	100.0	100.0

However, the position varies significantly across regions. The third level share for those in employment in DUBME is nearly 36 per cent, compared with much lower proportions of 26 and 22 per cent in REST and BMW respectively. The proportions associated with the upper secondary category do not vary very much across regions – about 40 per cent in each case. The shares for both lower secondary and primary levels are much smaller (at some 12-14 per cent) in the Dublin/Mid-East region; the corresponding proportions in BMW and REST all lie in the 15-20 per cent range.

Turning to the trends in the occupational composition of employment, perhaps the most dramatic change relates to the increasing number of persons with higher education qualifications. Much of the remaining commentary in this Summary is, therefore, concerned with this issue. Table 6 shows both absolute employment numbers and shares for persons with third level qualifications by region for the period from 1991 to 2010. For the State as a whole the higher education share is expected to rise from 20 to 35 per cent over the nineteen-year period in question. As for regions, this indicator is predicted to increase most rapidly in DUBME, from 25 to 41 per cent, an increase of 16 percentage points. The figures show that

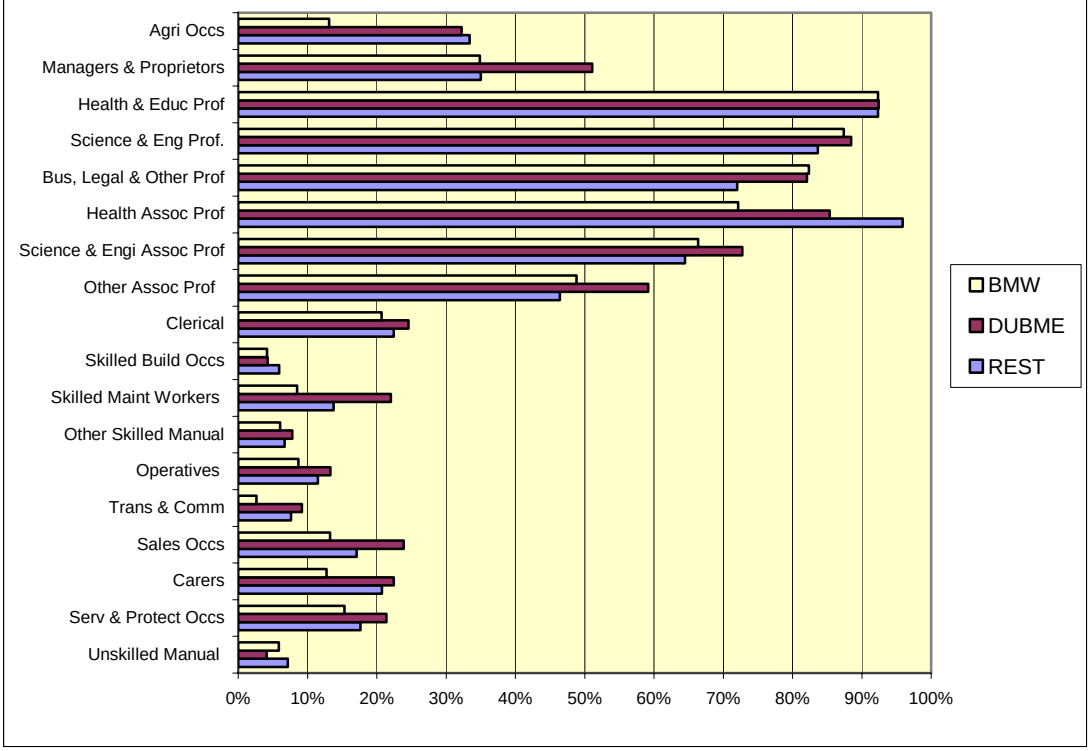
the scale of this increase is expected to be similar in the REST region, but significantly lower in BMW where the proportion in question is expected to increase from 16 to 26 per cent. When viewed in absolute or numerical terms, the number of persons in employment in the State with third level qualifications increased from 235,000 in 1991 to over 480,000 in 2001, and is expected to rise to nearly 680,000 in 2010.

Table 6. Persons in Employment with Third Level Qualifications by Region, 1991-2010

Region	1991	2001	2010	1991	2001	2010
		000			%	
BMW	48.1	90.8	121.9	16.3	22.1	26.2
DUBME	114.8	252.1	362.7	24.8	35.9	41.1
REST	71.7	140.5	193.9	18.3	26.3	31.6
State	234.5	483.4	678.5	20.4	29.3	34.6

Regarding the question of occupations and educational levels, Figure 6 shows projected third level employment shares for 2001 by occupation for each of the three regions. A notable feature of this graph is that the higher education share is greater in the Dublin/Mid-East region for virtually all occupations. While this may be attributed in part to the more advanced nature of the industrial structure in DUBME, the fact that this feature is so widespread across

Figure 6. Forecast Third Level Education Shares (%) for each Occupation in 2010, by Region.



many activities involving different skill types suggests that a supply influence is also present, i.e., that the labour force generally in the Dublin region has a more advanced educational profile which employers can take advantage of.

Figure 7. State Employment Shares (%) for Persons with Third Level Education, by Occupation, 1991-2010

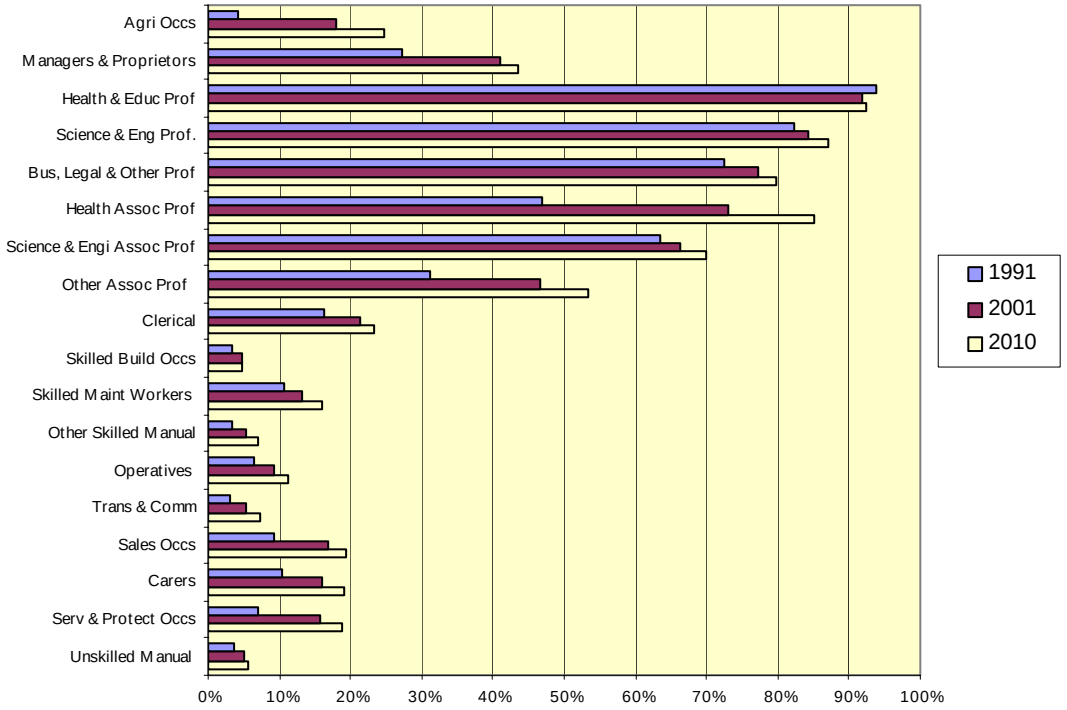


Figure 7 shows, for the State as a whole, third level employment shares for different occupations for 1991, 2001 and 2001.[10] The most marked increases in these shares relate to managers and proprietors, health associate professionals, other associate professionals and a number of service occupations. In the case of the last mentioned (i.e. service) categories, however, the actual third level proportions are relatively small.

7. Meeting the Future Labour Demand for Third Level Graduates

Table 6 indicates that there will be a net additional employment requirement of some 195,000 for persons with third level qualifications over the forecast period, which raises interesting questions regarding the adequacy of the higher education supply provision in the medium term. Moreover, it should be borne in mind that a significant degree of attrition (due to retirements, deaths and other reasons) will apply to the 2001 base year employment stock, giving rise to an additional element of "replacement" demand. Earlier published work in this series[11] would indicate, in this instance, an attrition outflow of some 106,000. This, when taken with the projected net increase, suggests a third level labour force inflow requirement of just over 300,000 over the period from 2001 to 2010 (see Section VI in Chapter III).

[10] In interpreting these data it should be borne in mind that in some cases institutional changes have influenced the position. Some associate professional activities in particular, which in earlier times were not categorised as third level, have over the years been upgraded and assimilated into the CAO system.

[11] Sexton J.J., G. Hughes, B. McCormick, C. Finn (2001). *Estimating Labour Force Flows, Job Openings and Human Resource Requirements 1990-2005.* FÁS/ESRI Manpower Forecasting Studies, Report No.9, Dublin: FÁS/ESRI.

The application of this estimation procedure to the period from 1991 to 2001 reveals that a similar gross labour force inflow requirement for graduates arose over this time span, which was, of course, met. However, this inflow involved an estimated 110,000 third level immigrant graduates who entered the Irish labour force from abroad.[12] The balance of the supply requirement of some 200,000 was covered overwhelmingly by the outflow from third level institutions, with a modest contribution (of some 20,000 to 30,000) from those re-entering the labour force after a period of absence.

On the basis of this evidence, bearing in mind current trends in the age structure of the Irish population, third level immigration of even higher proportions will be needed if the projected demand for graduates in the forecast period is to be met. Existing CSO and other projections indicate that the population aged 15 to 24 years is set to fall by more than 15 per cent between 2001 and 2011, which will give rise to a substantial decline in the numbers entering and exiting from third level institutions, even if reasonable allowance is made for a rise in participation in higher education. While there is also the likelihood of further initiatives in the area of retraining and lifelong learning, and the possibility of an increase in the number of labour force "re-entrants", when compared with the expected level of demand, these factors do not appear to provide sufficient scope for meeting a serious shortfall.

8. Concluding Remarks

While the report highlights many aspects in both a national and regional context, the main issues to emerge are essentially as follows.

Employment growth was broadly the same in all regions in the 1990s, if agricultural activities are excluded. However in the current decade, total jobs growth is expected to be somewhat higher in the Dublin/Mid-East region, even if this occurs at a somewhat slower pace than in the 1990s. This derives not so much from any regional influences, but due to the overriding pattern of national growth over the coming decade. This is expected to be largely concentrated in services, with little or no expansion (in employment terms at any rate) in the broad industrial/building area.

In terms of occupations the results predict, in all regions, a continuation of the trend towards increased high skill employment. It is not surprising that the Dublin region, being a large commercial and services centre, involves a much greater concentration of high skill activities. This is a feature that has become more pronounced over the last ten years and, if past trends are maintained, is expected to continue.

The alternative regional scenario as presented attempts to highlight the implications of adjusting regional growth patterns by diverting a somewhat greater share of national expansion to less developed areas. The changes in the regional pattern of employment forecasts may be small, but it is possible that they could be of greater significance in the event of more rapid overall economic growth, which would allow more scope for a redirection of resources, especially in the market sector. Apart from the actual outcomes, which can only be regarded as broadly indicative, the exercise is additionally useful insofar as it serves to highlight important issues related to regional development, such as the question of induced or secondary employment and the problem of "leakage" of secondary effects from

[12] This figure is based on estimates of the share of third level graduates in immigrant inflows over a three-year period in the mid-1990s contained in the paper "Who is Coming Back? The Educational Profile Of Returning Emigrants in the 1990s" published by Alan Barrett and Fergal Trace in the Summer 1998 edition of the *Irish Banking Review.*

less developed regions. Given the current interest in regional matters, these are issues that should be the subject of further research.

The forecasts, when expressed in terms of educational levels, point to a much more advanced skill profile for those in employment in future years. This presents a formidable challenge, as over the current decade this will coincide with a decline in the outflow from third level institutions according as the youth population suffers a significant decline. It is likely that the employment levels indicated for those with third level qualifications in 2010 can only be attained if there is a sizeable migratory inflow from abroad of persons with third level qualifications, even if allowance is made for increased participation, training initiatives etc.