

Recent Trends in Trade Union Membership in Ireland

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Abstract: Using micro data from the Quarterly National Household Survey we look at trends in Irish union membership from 2001-2006. There was a steep decline in union density. Decomposition analysis suggests that most of the decline is associated with a decline in the underlying probability of becoming a member for different groups of workers rather than a change in composition.

I INTRODUCTION

Union membership has declined sharply in many developed countries since the nineteen eighties. As Calmfors *et al.* (2001) note for OECD countries: “The four Nordic countries (five if one includes Iceland, with a union density approaching 100 per cent) and Belgium, which are the countries with the highest density levels in Europe (and in the world) are the only cases in which union density rates have not fallen”. This trend has been no less true in

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Ireland and this paper documents a notable decline in union membership in Ireland in recent years. Clearly this has important implications for how the Irish labour market operates. The decline in membership in Ireland is given another dimension since we have adopted the partnership process as a central plank for negotiating jointly arrangement on wages, labour market policy and working conditions between the social partners in recent times. Workers are represented in these negotiations by unions who are becoming increasingly unrepresentative.

The Central Statistics Office (2005) published tabulations on union membership up until 2004 showing a decline across many dimensions of the data. At first glance this indicates that this does not just reflect a change in composition. In other words, even within reasonably homogeneous groups there appears to be a decline. We update the information to 2006 confirming a continuing decline in membership over many different dimensions. Analysing the the Quarterly National Household Survey data at an individual level we verify that the decline in membership is not explained by changes in the composition of employment. We show this by decomposing the change in membership into the part that is associated with a change in worker and job characteristics and the part associated with a change in the underlying probabilities.

Our finding raises the question as to whether the decline in unionisation is associated with a decline in union influence over the labour contracts of members? Unfortunately, the nature of our data does not allow us to test whether the number of jobs covered by union contracts has fallen by the same degree as membership, neither do we have data on earnings to see whether (as recent evidence for the UK suggest, see Addison and Siebert, 2003 or Bryson and Willman, 2007) the union wage premium has been declining.

The implications for the labour market if unions decline in influence and coverage are open questions in the literature. In efficient bargaining models (MacDonald and Solow, 1981) or imperfectly competitive models of the labour market (Booth, 1995 discusses the monopsony model for example), unions may enhance employment and efficiency. In other models, such as Calmfors *et al.* (1988), the extent to which union bargaining is centralised has important efficiency implications. In short theory suggests that the impact of unions will depend on how we believe the labour market works but also on the objective function we ascribe to unions. Metcalf (2003) surveys the impact of unions on profitability, productivity and financial performance.

The remainder of the paper is as follows. In the next section we describe our data and presents some trends in the data. Section III contains our empirical analysis. The final section concludes.

II DATA AND TRENDS

“The Quarterly National Household Survey¹ (QNHS) began in September 1997, replacing the annual April Labour Force Survey (LFS). The purpose of the survey is the production of quarterly labour force estimates (microdata) and occasional reports on special social topics (modules). Information is collected continuously throughout the year, with 3,000 households surveyed each week to give a total sample of 39,000 households in each quarter. Households are asked to take part in the survey for five consecutive quarters”. The individual level data analysed here is from the second quarter of each year from 2001 and 2006.² Where available the tabulated CSO data published for 1994 (see CSO, 2005) is also included in the Tables.³

The analysis is based on the sample of employed workers as defined by ILO economic status. That is workers who are in employment full-time, part-time or underemployed.⁴ Table 1 shows that the percentage of employees who are members of unions declined dramatically between 1994 and 2001 and this trend continues in recent years up until 2006. The figures for workers born outside of Ireland show that while foreign born workers are much less likely to be unionised the large influx of migration in recent years is not the main reason for the decline in density. The fall for native born workers is almost as dramatic as for the full sample and the densities of foreign born workers are also declining, although from Table 1(a) the share of migrants increases dramatically and this compositional shift could explain part of the decline since migrants have lower rates of unionisation.

Table 2 shows the change in density over time by sector. The pattern across sectors is as we would expect and typical of that in many countries. The public sector and industries such as transport, storage and communications or electricity, gas and water have high rates of unionisation while service industries have much lower rates. What is perhaps most striking about the Table is that since 2001 there have been declines in almost every sector outside public administration while the industries with traditionally higher densities noted above have had sharp drops in density. This trend of a growing concentration of union membership in the public sector is typical of several

¹ This description of the data comes from the Irish social science data archive website: <http://www.ucd.ie/issda/dataset-info/qnhs-details.htm> where further details are available. We are grateful to the archive for providing us with the individual level data.

² While the individual level data is available from 1998, the question on union membership is only available from 2001 onwards.

³ The observations are weighted to make them representative of the population in Tables 1-8. In the Fairlie decomposition discussed later weighting the observations would be much more difficult and is not done.

⁴ This is the same definition of employment used by the CSO in their calculation of density in CSO (2005).

Table 1: *Union Density*

| <i>Union Density(QNHS)</i> | <i>2006</i> | <i>2005</i> | <i>2004</i> | <i>2003</i> | <i>2002</i> | <i>2001</i> | <i>1994</i> |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | % | % | % | % | % | % | % |
| Density | 32.2 | 34.2 | 34.6 | 37.7 | 35.6 | 38.0 | 45.8 |
| Born outside Ireland | 7.0 | 9.8 | 12.6 | 13.8 | 12.0 | 11.9 | |
| Born in Ireland | 34.6 | 36.1 | 36.0 | 39.3 | 37.0 | 39.3 | |

Table 1(a): *Employment*

| | <i>2006</i> | <i>2005</i> | <i>2004</i> | <i>2003</i> | <i>2002</i> | <i>2001</i> | <i>Share 2001</i> | <i>Share 2006</i> |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|
| All Workers | 1,685,475 | 1,594,248 | 1,507,082 | 1,476,332 | 1,445,873 | 1,405,897 | | |
| Born in | | | | | | | | |
| Ireland | 1,440,533 | 1,40,0440 | 1,355,648 | 1,325,995 | 1,309,597 | 1,283,624 | 91.3% | 85.5% |

Note: This excludes self-employed workers.

Table 2: *Union Density by Industry*

| <i>Union Density(QNHS)</i> | <i>2006</i> | <i>2005</i> | <i>2004</i> | <i>2003</i> | <i>2002</i> | <i>2001</i> | <i>1994</i> |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | % | % | % | % | % | % | % |
| Other | 16.9 | 20.0 | 18.1 | 16.5 | 16.1 | 17.6 | 20.8 |
| Health | 47.6 | 51.2 | 51.4 | 54.0 | 51.9 | 55.8 | 57.9 |
| Education | 60.3 | 59.7 | 59.1 | 61.2 | 58.5 | 62.5 | 67.9 |
| Public Administration, Defence, Social Security | 76.3 | 79.4 | 74.6 | 80.1 | 74.1 | 77.1 | 76.4 |
| Real Estate, Renting and Business Activities | 13.6 | 14.1 | 13.9 | 14.3 | 13.8 | 16.1 | |
| Financial Intermediation | 33.1 | 35.0 | 36.0 | 40.9 | 37.2 | 39.3 | |
| Transport, Storage, Communications | 45.7 | 45.4 | 46.9 | 52.0 | 49.5 | 50.1 | 65.9 |
| Hotels and Restaurants | 9.0 | 11.3 | 9.9 | 11.2 | 11.9 | 14.3 | 21.0 |
| Wholesale & Retail | 16.4 | 17.9 | 19.6 | 20.0 | 20.3 | 21.2 | 22.8 |
| Construction | 23.7 | 26.6 | 27.1 | 33.5 | 31.9 | 33.9 | 46.8 |
| Electricity, Gas and Water Supply | 64.4 | 68.3 | 69.5 | 83.5 | 79.2 | 78.7 | |
| Manufacturing | 30.9 | 33.0 | 35.3 | 40.5 | 37.3 | 41.9 | |
| Mining and Quarrying | 47.9 | 47.1 | 48.1 | 55.3 | 41.1 | 53.6 | |
| Agriculture, Forestry, Fishing | 7.4 | 10.0 | 15.2 | 9.9 | 10.4 | 9.6 | 10.9 |

Table 2(a): *Employment by Industry*

| | 2006 | 2005 | 2004 | 2003 | 2002 | 2001 | Share 2001 | Share 2006 |
|--|---------|---------|---------|---------|---------|---------|---------------|---------------|
| Other | 100,255 | 94,439 | 87,558 | 75,589 | 80,551 | 72,668 | 5.2 | 5.9 |
| Health | 189,840 | 176,583 | 165,820 | 160,835 | 150,656 | 134,815 | 9.6 | 11.3 |
| Education | 130,023 | 118,346 | 112,875 | 111,744 | 107,010 | 99,449 | 7.1 | 7.7 |
| Public Administration, Defence, Social Security | 104,419 | 97,835 | 89,238 | 92,163 | 90,109 | 80,874 | 5.8 | 6.2 |
| Real Estate, Renting and Business Activities | 149,160 | 136,609 | 123,134 | 124,720 | 129,387 | 119,501 | 8.5 | 8.8 |
| Financial Intermediation | 81,811 | 80,283 | 79,157 | 70,046 | 67,127 | 65,187 | 4.6 | 4.9 |
| Transport, Storage, Communications | 96,057 | 93,045 | 90,751 | 90,606 | 89,964 | 92,014 | 6.5 | 5.7 |
| Hotels and Restaurants | 100,917 | 95,563 | 92,297 | 99,144 | 88,472 | 87,284 | 6.2 | 6.0 |
| Wholesale and Retail | 247,301 | 225,544 | 217,260 | 211,261 | 205,905 | 204,553 | 14.5 | 14.7 |
| Construction | 197,312 | 182,594 | 149,855 | 136,767 | 131,474 | 130,706 | 9.3 | 11.7 |
| Electricity, Gas and Water Supply | 10,661 | 12,721 | 12,952 | 12,272 | 11,782 | 11,621 | 0.8 | 0.6 |
| Manufacturing | 244,526 | 251,187 | 257,704 | 262,782 | 261,721 | 277,284 | 19.7 | 14.5 |
| Mining and Quarrying | 9,690 | 8,361 | 6,443 | 6,327 | 7,534 | 6,970 | 0.5 | 0.6 |
| Agriculture, Forestry, Fishing | 23,504 | 21,139 | 22,039 | 22,078 | 24,180 | 22,972 | 1.6 | 1.4 |

other countries and may have important implications for the role of unions in the economy. In terms of composition the most noticeable changes are a fairly sharp decline in the share of manufacturing and a rise in the share of employment in construction and health. These are fairly large changes over a short period.

Table 3 shows that across all major occupation groups there has been a decline in membership since 2001. The declines for plant and machine

Table 3: *Union Density by Occupation*

| <i>Union Density (QNHS)</i> | <i>2006</i> | <i>2005</i> | <i>2004</i> | <i>2003</i> | <i>2002</i> | <i>2001</i> |
|-----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | % | % | % | % | % | % |
| Other and Not Stated | 28.3 | 29.4 | 28.7 | 32.5 | 29.3 | 32.9 |
| Plant and Machine Operatives | 36.6 | 39.6 | 41.4 | 46.7 | 43.5 | 48.4 |
| Sales | 15.5 | 17.7 | 18.7 | 17.6 | 19.0 | 20.9 |
| Personal and Protective Service | 27.9 | 29.2 | 30.2 | 30.1 | 30.9 | 32.4 |
| Craft and Related | 29.0 | 31.5 | 33.5 | 38.2 | 38.3 | 39.3 |
| Clerical and Secretarial | 34.8 | 36.7 | 35.7 | 38.1 | 35.3 | 36.3 |
| Assoc. Professional and Technical | 47.1 | 50.7 | 49.4 | 53.7 | 48.7 | 52.0 |
| Professional | 45.4 | 46.3 | 44.6 | 50.5 | 46.9 | 50.8 |
| Managers and Administrators | 25.4 | 26.3 | 28.7 | 30.0 | 26.1 | 27.9 |

Table 3(a): *Employment by Occupation*

| | <i>2006</i> | <i>2005</i> | <i>2004</i> | <i>2003</i> | <i>2002</i> | <i>2001</i> | <i>Share 2001</i> | <i>Share 2006</i> |
|-----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|
| | | | | | | | % | % |
| Other and Not Stated | 183,405 | 170,587 | 164,021 | 136,682 | 144,232 | 133,530 | 9.5 | 10.9 |
| Plant and Machine Operatives | 142,731 | 143,467 | 137,605 | 152,729 | 164,120 | 172,129 | 12.2 | 8.5 |
| Sales | 164,934 | 149,939 | 140,076 | 137,094 | 133,205 | 130,051 | 9.3 | 9.8 |
| Personal and Protective Service | 207,063 | 187,071 | 174,608 | 173,670 | 160,752 | 155,077 | 11.0 | 12.3 |
| Craft and Related | 213,695 | 201,334 | 182,328 | 181,580 | 171,092 | 178,464 | 12.7 | 12.7 |
| Clerical and Secretarial | 242,341 | 229,322 | 215,087 | 211,053 | 219,272 | 207,409 | 14.8 | 14.4 |
| Assoc. Professional and Technical | 149,186 | 149,552 | 146,441 | 144,981 | 136,564 | 129,111 | 9.2 | 8.9 |
| Professional | 206,031 | 188,500 | 181,352 | 172,957 | 164,172 | 148,724 | 10.6 | 12.2 |
| Managers and Administrators | 176,088 | 174,475 | 165,564 | 165,586 | 152,464 | 151,403 | 10.8 | 10.4 |

operatives and craft workers are striking. Interestingly, when we look at the composition of employment by occupation in Table 3(a) we see apart from a decline in the share of machine operatives (possibly reflecting the decline in manufacturing), there has not been much change in the occupational structure in terms of employment share.

Table 4 shows the trend by firm size. Traditionally, large firms have much higher density rates. These are more likely to be firms which have some monopoly power making membership more likely (see Booth, 1995) for example, or there may be fixed costs for recruitment drives making larger establishments easier to organise. Density rates are indeed much higher as firm size increases, but there is a decline in density across all categories.⁵ Comparing 2001 and 2005 in Table 4(a) there is little change in employment share across firm size categories.

Table 4: *Union Density by Firm Size*

| <i>Union Density (QNHS)</i> | <i>2006</i> | <i>2005</i> | <i>2004</i> | <i>2003</i> | <i>2002</i> | <i>2001</i> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | <i>%</i> | <i>%</i> | <i>%</i> | <i>%</i> | <i>%</i> | <i>%</i> |
| >=50 in firm | | 49.0 | 49.4 | 54.3 | 53.0 | 53.7 |
| >=20 <=49 in firm | | 34.3 | 35.5 | 37.9 | 38.2 | 37.6 |
| >=11 <=19 in firm | | 24.8 | 25.1 | 27.9 | 28.2 | 28.6 |
| <11 in firm | | 16.1 | 16.5 | 16.5 | 17.9 | 18.1 |
| Not Stated # in firm | | 23.3 | 25.5 | 29.3 | 12.7 | 26.4 |

Table 4(a): *Employment by Firm Size*

| | <i>2006</i> | <i>2005</i> | <i>2004</i> | <i>2003</i> | <i>2002</i> | <i>2001</i> | <i>Share 2001</i> | <i>Share 2006</i> |
|----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|
| | | | | | | | <i>%</i> | <i>%</i> |
| >=50 in firm | 678,752 | 630,084 | 615,803 | 587,105 | 610,277 | 610,277 | 43.4 | 42.6 |
| >=20 <=49 in firm | 241,401 | 234,148 | 228,415 | 210,623 | 215,623 | 215,559 | 15.3 | 15.1 |
| >=11 <=19 in firm | 183,383 | 176,968 | 179,756 | 150,682 | 156,682 | 156,265 | 11.1 | 11.5 |
| <11 in firm | 425,355 | 401,589 | 364,975 | 339,900 | 339,900 | 369,874 | 26.3 | 26.7 |
| Not Stated # in firm | 65,357 | 64,294 | 87,383 | 157,564 | 157,564 | 53,922 | 3.8 | 4.1 |

⁵ The categories appear to have changed in 2006. To err on the side of caution we did not include the numbers here or use them as controls in the regression analysis later in the paper. We also conducted the regression analysis using 2001 and 2005 including firm size controls. We do not report the results here, but the qualitative results are unchanged.

Table 5 shows that prime age workers are more likely to be unionised as we would expect, again though there is a declining trend within each group. Table 5(a) shows little change in the employment distribution by age. Table 6 shows that there has been a large decline in density in the BMW (border midlands and west) region. Interestingly part-time employment which has a much lower density has not had a decline in membership share. The figures by gender are interesting. Unions were traditionally male dominated and for this reason had an ambiguous impact on gender equality. While unionised workers tended to have lower gender wage gaps which decreased the gender wage gap, the fact that females were less likely to be in union jobs which tended to have higher wages increased the gender wage gap. We see that density rates have converged and are essentially equal by 2006. While the decline in membership is much greater for males than for females this possibly does not explain much of the overall decline since both have fairly similar membership rates. From Table 6(a) we see that employment share across region, gender and part-time status did not change much.

Table 5: *Union Density by Age*

| <i>Union Density (QNHS)</i> <i>Years</i> | <i>2006</i> % | <i>2005</i> % | <i>2004</i> % | <i>2003</i> % | <i>2002</i> % | <i>2001</i> % | <i>1994</i> % |
|---|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| 65+ | 18.3 | 22.4 | 20.9 | 19.5 | 16.9 | 25.3 | 21.7 |
| 60-64 | 41.3 | 41.4 | 42.9 | 44.6 | 41.4 | 44.9 | 48.8 |
| 55-59 | 43.1 | 43.1 | 44.5 | 47.5 | 46.7 | 50.2 | 54.6 |
| 45-54 | 46.3 | 47.0 | 46.4 | 50.4 | 47.4 | 49.2 | 52.0 |
| 35-44 | 38.5 | 40.6 | 41.4 | 45.5 | 42.8 | 46.1 | 53.7 |
| 25-34 | 27.3 | 29.9 | 29.5 | 33.6 | 31.6 | 34.7 | 46.8 |
| 20-24 | 16.3 | 19.3 | 21.8 | 23.1 | 22.0 | 24.5 | 32.8 |
| 15-19 | 6.5 | 7.3 | 8.0 | 9.9 | 10.9 | 10.8 | 20.0 |

Table 5(a): *Employment by Age*

| <i>Years</i> | <i>2006</i> | <i>2005</i> | <i>2004</i> | <i>2003</i> | <i>2002</i> | <i>2001</i> | <i>Share</i> <i>2001</i> % | <i>Share</i> <i>2006</i> % |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------------------|----------------------------------|
| 65+ | 15,812 | 12,230 | 11,211 | 11,057 | 10,586 | 9,860 | 0.7 | 0.9 |
| 60-64 | 54,906 | 49,136 | 42,569 | 41,641 | 38,964 | 35,283 | 2.5 | 3.3 |
| 55-59 | 100,862 | 94,699 | 90,577 | 83,735 | 75,541 | 69,526 | 4.9 | 6.0 |
| 45-54 | 299,290 | 288,363 | 271,694 | 255,809 | 253,517 | 244,006 | 17.4 | 17.8 |
| 35-44 | 380,234 | 367,146 | 353,057 | 349,787 | 342,536 | 335,943 | 23.9 | 22.6 |
| 25-34 | 535,036 | 495,482 | 461,764 | 451,920 | 446,060 | 423,571 | 30.1 | 31.7 |
| 20-24 | 231,863 | 222,449 | 215,676 | 214,645 | 209,757 | 208,780 | 14.9 | 13.8 |
| 15-19 | 67,473 | 64,741 | 60,534 | 67,737 | 68,912 | 78,928 | 5.6 | 4.0 |

Table 6: *Union Density by Gender, Part-time Status and Region*

| <i>Union Density (QNHS)</i> | <i>2006</i> | <i>2005</i> | <i>2004</i> | <i>2003</i> | <i>2002</i> | <i>2001</i> | <i>1994</i> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <i>Years</i> | <i>%</i> | <i>%</i> | <i>%</i> | <i>%</i> | <i>%</i> | <i>%</i> | <i>%</i> |
| Border, Midlands West | 31.4 | 31.9 | 34.7 | 38.6 | 36.6 | 39.1 | |
| Female | 32.5 | 34.2 | 34.3 | 36.1 | 33.7 | 36.0 | 44.1 |
| Male | 31.9 | 34.1 | 34.9 | 39.1 | 37.3 | 39.8 | 47.1 |
| Part-time | 18.4 | 20.3 | 20.5 | 19.5 | 18.1 | 19.9 | 18.9 |
| Full-time | 35.3 | 37.3 | 37.8 | 41.7 | 39.4 | 42.0 | 49.6 |

Table 6(a): *Employment by Gender, Part-time Status and Region*

| | <i>2006</i> | <i>2005</i> | <i>2004</i> | <i>2003</i> | <i>2002</i> | <i>2001</i> | <i>Share</i> | <i>Share</i> |
|-----------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|
| | | | | | | | <i>2001</i> | <i>2006</i> |
| | | | | | | | <i>%</i> | <i>%</i> |
| Border, | | | | | | | | |
| Midlands | | | | | | | | |
| West | 413,077 | 387,768 | 364,931 | 349,468 | 336,825 | 324,987 | 23.1 | 24.5 |
| Female | 797,688 | 758,362 | 710,881 | 693,931 | 679,859 | 645,574 | 45.9 | 47.3 |
| Male | 887,787 | 835,885 | 796,201 | 782,401 | 766,014 | 760,323 | 54.1 | 52.7 |
| Part-time | 315,363 | 292,947 | 276,579 | 267,788 | 257,757 | 250,380 | 17.8 | 18.7 |
| Full-time | 1,370,112 | 1,301,301 | 1,230,503 | 1,208,544 | 1,188,116 | 1,155,517 | 82.2 | 81.3 |

Indeed given that we are looking at a relatively short period (although one of rapid economic growth) it is not that surprising that we do not see much change in the composition of employment in many of the Tables with the exception of the shifting industry shares in Table 2(a).

III EMPIRICAL ANALYSIS

Probabilities

While the above Tables are indicative that whatever way we cut the data there seems to be a decline in density, they make it difficult to pin down how much of the change is associated with compositional changes and how much with changes in the underlying probability that a worker with given characteristics will be in a union. In contrast to the analysis above which is unconditional and looks at each characteristic separately, we would like to look at the impact of a change of any characteristic on the probability of membership conditioning on the other characteristics. Fairlie (2006) illustrates how the type of decomposition in price and quantities used in the

Oaxaca-Blinder decomposition can be extended from linear regression to logit and probit analysis, where the essential problem is that logit and probit are non-linear estimators. Say Y^i is the probability of membership in year i and this is determined by a vector of independent variables X^i in each year and a vector of estimated coefficients: $\hat{\beta}$. We define the probability in each period as $Y^i = G(X^i\hat{\beta})$ where $G(\cdot)$ is some potentially non-linear estimator and N^i is the sample size in each period. Fairlie (1999) shows that the following decomposition can be written:

$$\begin{aligned} \bar{Y}^1 - \bar{Y}^0 = & \left[\sum_{j=1}^{N^1} \frac{G(X_j^1\hat{\beta}^1)}{N^1} - \sum_{j=1}^{N^0} \frac{G(X_j^0\hat{\beta}^1)}{N^0} \right] + \\ & \left[\sum_{j=1}^{N^0} \frac{G(X_j^0\hat{\beta}^1)}{N^0} - \sum_{j=1}^{N^0} \frac{G(X_j^0\hat{\beta}^0)}{N^0} \right] \end{aligned} \quad (1)$$

In the special case of a linear estimator⁶ we get that $\bar{Y} = G(\bar{X}\hat{\beta})$ but in general for non-linear functions $\bar{Y} \neq G(\bar{X}\hat{\beta})$. The difference in average membership between the two periods is decomposed into two parts. The first part in (1) gives the part of the change in the average probability of membership between the two periods that we get by keeping the probability coefficients fixed (at the later period values in this case) and allowing the characteristics of workers to vary between the two periods. That is, the first term gives us the part of the change in membership probability associated with a change in worker characteristics. The second term in (1) isolates the part of the change in average probability of membership that we get by giving workers in both periods the average characteristics from period zero but allowing the probability coefficients to differ between the two periods. In other words, it is the part of the change in average membership probability associated with a change in the probability coefficients. Whether one holds characteristics fixed at period zero and use period one probability coefficients as above, or vice versa, can of course affect the outcome – a familiar problem in the literature on the Oaxaca decomposition.

Before looking at the decompositions it may be instructive to report the results of some OLS and probit regressions for 2001 and 2006. These are given in Table 7. The variables used in the regressions are categorical variables. To make the results easier to interpret we report the deviation from the mean of all the coefficients. For example, for industry categories, one industry must be excluded from the regression. The coefficient we report for industry is the

⁶ In this case we have the linear probability model and (1) is just the Oaxaca decomposition $\bar{Y}^1 - \bar{Y}^0 = [\bar{X}^1 - \bar{X}^0]\hat{\beta}^1 + \bar{X}^0[\hat{\beta}^1 - \hat{\beta}^0]$. A bar represents the sample mean.

estimated coefficient less the mean of the other estimated coefficients. This means for zero one dummies such as born in Ireland, the coefficient for being a migrant is just the negative of being Irish. The reported coefficients in Table 7 are the coefficient from OLS regressions (which can be interpreted as marginal probabilities) and the coefficients from probit regressions on union membership in 2001 and 2006.

When we analyse the variables that predict a higher probability of union membership the results are similar to the unconditional Tables discussed earlier. We see that migrants, especially those who arrived in the last ten years, are less likely to be in unions. Prime age workers are more likely while young workers less likely to be in unions. Married and full-time workers are more likely to be in unions as are craft and professional occupations alongside industries dominated by the public sector in particular. Interestingly, when one looks at changes in the coefficients over time there are differences with the pattern that emerged in Tables 1 through 6. More specifically, for many variables the probability of being in a union changed little or even increased in some cases. For example, the impact of being born in Ireland, being married or full-time on the probability of being in a union changes little. Also, the change in probability of membership is positive for most public sector industries while there is a decline in plant and machine operative occupations and manufacturing industries. It may be worth noting that we saw in Section II that the public sector industries were expanding in their share of employment while the share of manufacturing and machine operatives declined sharply over the period. Workers over sixty-five years became less likely to be union members over the period. While it is interesting to note these patterns, one needs to weight the coefficients in accordance with their share of employment using the decomposition analysis discussed earlier to get a sense of how important they are in explaining the overall decline in membership.

Table 8 reports the results of an Oaxaca decomposition of linear probability (OLS) regressions for 2001 and 2006. The predicted probability of membership falls from 38 per cent to 33 per cent.⁷ The explained part of the decomposition refers to the first term on the right hand side of Equation (1): that is the part of this fall in membership probability that is explained by changes in worker characteristics. The unexplained part is the part of the decline in probability that can be explained by a decline in the probability coefficients from linear probability models run in both years. We report three sets of results: where 2001, 2006 or the average of the two is used as the

⁷ Because there may be missing variables the sample is not the same as used in Table 1 and so the probabilities differ slightly.

Table 7: *OLS and Probits on Union Membership 2001-2006*

| | <i>OLS 2001</i> | <i>OLS 2006</i> | <i>PROBIT 2001</i> | <i>PROBIT 2006</i> |
|-----------------------------------|---------------------|---------------------|------------------------|------------------------|
| Born in Ireland | 0.025 (4.50)** | 0.028 (4.72)** | 0.081 (4.48)** | 0.094 (4.64)** |
| Not Born in Ireland | -0.025 (4.50)** | -0.028 (4.72)** | -0.081 (4.48)** | -0.094 (4.64)** |
| Resident <10 years | -0.074 (10.16)** | -0.049 (7.02)** | -0.291 (10.03)** | -0.218 (8.10)** |
| Resident >10 years | 0.074 (10.16)** | 0.049 (7.02)** | 0.291 (10.03)** | 0.218 (8.10)** |
| Live in Border, Midlands, Western | -0.006 (2.09)* | -0.016 (5.71)** | -0.019 (2.19)* | -0.057 (5.91)** |
| Live in South or East | 0.006 (2.09)* | 0.016 (5.71)** | 0.019 (2.19)* | 0.057 (5.91)** |
| Male | 0.001 -0.35 | 0 -0.11 | -0.002 -0.2 | -0.005 -0.46 |
| Female | -0.001 -0.35 | 0 -0.11 | 0.002 -0.2 | 0.005 -0.46 |
| 15-19 years | -0.128 (13.91)** | -0.092 (10.92)** | -0.575 (14.37)** | -0.555 (10.29)** |
| 20-24 years | -0.089 (10.57)** | -0.075 (10.35)** | -0.262 (9.49)** | -0.258 (8.60)** |
| 25-34 years | -0.024 (3.27)** | -0.02 (3.35)** | -0.042 -1.83 | -0.009 -0.41 |
| 35-44 years | 0.044 (6.07)** | 0.043 (7.18)** | 0.16 (7.12)** | 0.199 (9.28)** |
| 45-54 years | 0.064 (8.39)** | 0.087 (13.73)** | 0.219 (9.29)** | 0.325 (14.81)** |
| 55-59 years | 0.081 (7.41)** | 0.07 (7.51)** | 0.27 (8.17)** | 0.274 (9.00)** |
| 60-64 years | 0.045 (3.24)** | 0.067 (5.51)** | 0.163 (3.79)** | 0.277 (7.14)** |
| 65+ years | 0.007 -0.2 | -0.081 (4.31)** | 0.066 -0.6 | -0.252 (3.16)** |
| Primary Education | -0.048 (7.19)** | -0.04 (5.00)** | -0.146 (6.72)** | -0.125 (4.63)** |
| Lower Secondary Education | 0.006 -1.12 | 0.001 -0.12 | 0.021 -1.19 | 0.006 -0.28 |
| Upper Secondary Education | 0.022 (4.92)** | 0.014 (3.11)** | 0.075 (5.16)** | 0.05 (3.04)** |
| Post Leaving Education | 0.03 (4.88)** | 0.009 -1.25 | 0.091 (4.78)** | 0.034 -1.47 |

* Significant at 5 per cent; ** Significant at 1 per cent.
Robust z statistics in parentheses.

Table 7: *OLS and Probits on Union Membership 2001-2006 (contd.)*

| | <i>OLS 2001</i> | <i>OLS 2006</i> | <i>PROBIT 2001</i> | <i>PROBIT 2006</i> |
|-----------------------------------|---------------------|---------------------|------------------------|------------------------|
| 3rd Level Non Degree | 0.019 (2.92)** | 0.031 (4.74)** | 0.06 (2.94)** | 0.098 (4.43)** |
| 3rd Level Degree or Above | -0.029 (4.32)** | -0.015 (2.36)* | -0.101 (4.59)** | -0.062 (2.76)** |
| Married | 0.033 (10.92)** | 0.028 (9.18)** | 0.098 (10.73)** | 0.091 (8.98)** |
| Not Married | -0.033 (10.92)** | -0.028 (9.18)** | -0.098 (10.73)** | -0.091 (8.98)** |
| Part Time | -0.099 (30.92)** | -0.085 (26.44)** | -0.343 (28.62)** | -0.318 (24.38)** |
| Full Time | 0.099 (30.92)** | 0.085 (26.44)** | 0.343 (28.62)** | 0.318 (24.38)** |
| Managers and Administrators | -0.136 (20.75)** | -0.113 (16.41)** | -0.421 (18.26)** | -0.381 (14.49)** |
| Professional | 0.049 (5.31)** | 0.024 (2.75)** | 0.153 (5.32)** | 0.075 (2.59)** |
| Assoc. Professional and Technical | 0.066 (8.08)** | 0.071 (7.96)** | 0.196 (7.86)** | 0.214 (7.77)** |
| Clerical and Secretarial | -0.061 (9.62)** | -0.034 (4.90)** | -0.18 (8.63)** | -0.095 (3.93)** |
| Craft and Related | 0.046 (6.13)** | 0.043 (5.33)** | 0.155 (6.92)** | 0.159 (6.05)** |
| Personal and Protective Service | -0.068 (8.98)** | -0.072 (9.56)** | -0.213 (8.16)** | -0.235 (8.50)** |
| Sales | -0.019 (2.23)* | -0.009 -1.07 | -0.069 (2.33)* | -0.045 -1.36 |
| Plant and Machine Operatives | 0.088 (11.03)** | 0.056 (5.85)** | 0.25 (11.05)** | 0.178 (6.24)** |
| Other and Not Stated | 0.034 (4.43)** | 0.034 (4.41)** | 0.129 (5.08)** | 0.131 (4.97)** |
| Agriculture, Forestry, Fishing | -0.303 (22.92)** | -0.254 (19.81)** | -1.066 (14.45)** | -1.021 (11.87)** |
| Mining and Quarrying | 0.028 -0.82 | 0.045 -1.34 | 0.082 -0.91 | 0.15 -1.68 |
| Manufacturing | -0.039 (5.65)** | -0.079 (10.20)** | -0.074 (3.53)** | -0.167 (6.88)** |
| Electricity, Gas and Water Supply | 0.288 (13.59)** | 0.217 (7.15)** | 0.865 (11.01)** | 0.629 (7.25)** |
| Construction | -0.116 (12.88)** | -0.139 (15.87)** | -0.289 (10.64)** | -0.343 (11.62)** |

* Significant at 5 per cent; ** Significant at 1 per cent.
Robust z statistics in parentheses.

Table 7: *OLS and Probits on Union Membership 2001-2006 (contd.)*

| | <i>OLS 2001</i> | <i>OLS 2006</i> | <i>PROBIT 2001</i> | <i>PROBIT 2006</i> |
|--|---------------------|---------------------|------------------------|------------------------|
| Wholesale and Retail | -0.13 (16.46)** | -0.137 (16.98)** | -0.34 (12.63)** | -0.361 (11.83)** |
| Hotels and Restaurants | -0.129 (14.26)** | -0.12 (13.24)** | -0.435 (11.70)** | -0.474 (10.28)** |
| Transport, Storage, Communications | 0.062 (6.21)** | 0.07 (6.05)** | 0.2 (7.11)** | 0.244 (7.47)** |
| Financial Intermediation | 0.023 -1.91 | -0.01 -0.82 | 0.128 (3.73)** | 0.064 -1.7 |
| Real Estate, Renting and Business Activities | -0.213 (27.57)** | -0.196 (25.00)** | -0.642 (21.14)** | -0.602 (17.85)** |
| Public Administration, Defence, Social Security | 0.358 (36.78)** | 0.395 (38.06)** | 1.047 (31.47)** | 1.175 (33.60)** |
| Education | 0.185 (17.15)** | 0.223 (19.96)** | 0.553 (17.37)** | 0.682 (20.60)** |
| Health | 0.149 (16.24)** | 0.126 (13.37)** | 0.469 (17.16)** | 0.446 (15.69)** |
| Other | -0.162 (17.57)** | -0.139 (14.98)** | -0.498 (13.91)** | -0.422 (11.42)** |
| Constant | 0.25 (29.80)** | 0.218 (33.68)** | -0.901 (27.59)** | -1.057 (37.58)** |
| Observations | 36,407 | 31,179 | 36,407 | 31,179 |

* Significant at 5 per cent; ** Significant at 1 per cent.

Robust z statistics in parentheses.

reference category. One discovers that this makes little difference in terms of the basic result. When we sum across all the categories, out of a percentage decline of about $5\frac{1}{2}$ per cent in union membership only about half a per cent of the decline is explained by a change in the composition of workers characteristics.

In Table 9 we report the results from using the Fairlie methodology⁸ to estimate a probit model of the decomposition in (1). The regressions are un-weighted so that the overall probability falls from 39 per cent to 34 per cent in this case. The Table reports the part of the fall that can be explained by changes in the coefficients or groups of coefficients. We see that overall the change in composition actually predicts a small increase in density of about half a per cent. The decomposition indicates that changes in gender, migration

⁸ The Fairlie routine developed for the Stata statistical software package was used to estimate this model.

Table 8: *Oaxaca Decomposition 2001-2006*

| | | |
|-----------------------|--------|-------|
| Mean Density 2001 | 0.384 | |
| Mean Density 2006 | 0.327 | |
| difference | -0.057 | |
| Linear Decompositions | Coef. | P > z |
| W = 1 | | |
| Explained | -0.007 | 0.000 |
| Unexplained | -0.049 | 0.000 |
| W = .5 | | |
| Explained | -0.005 | 0.008 |
| Unexplained | -0.052 | 0.000 |
| W = 0 | | |
| Explained | -0.003 | 0.194 |
| Unexplained | -0.054 | 0.000 |

W1 takes 2006 as the reference year, W1 = 2001 and W = .5 puts a weight of 0.5 on each.

or region had little impact on the change in membership. Reflecting the change in the composition in employment from Table 5(a) we see younger age categories contributing to a decline in membership which is offset by increases coming from older groups. Changes in the education structure explain almost none of the change in membership. Changes in the occupation structure have very little impact overall, the decline in membership of over half a per cent coming from plant and machine operatives is the only notable change. The overall impact of changes in the structure of industry is to predict an increase in union membership of about half a per cent, but it is interesting to look at changes within the industries. In particular we note that the decline in manufacturing employment is associated with a fall in membership of about one and a half per cent. While there are other effects such as a small increase coming from construction or decreases coming from hotels and transport, the most notable offsetting factor is an increase in membership of about 1½ per cent associated with industries dominated by public sector employees; that is public administration, education and health. As we noted earlier the evidence from several countries points to a decline in membership that would be much greater were it not for the offsetting impact of higher rates of unionisation in the public sector. This also seems to be the case in Ireland.

It is often suggested anecdotally that many foreign firms and particularly some US multinationals are hostile to the presence of unions in their plants (see Roche, 2007 for example). While we do not have data on union

Table 9: *Fairlie Decomposition 2001-2006*

| | | | | | | |
|-----------------------------------|-----------------------|---------------|-----------------------|---------------|---------------|---------------|
| Observations both years | 67,586 | | | | | |
| Predicted probability 2006 | 0.339 | | | | | |
| Predicted probability 2001 | 0.387 | | | | | |
| Difference | -0.049 | | | | | |
| Explained | 0.005 | | | | | |
| | <i>2006 Reference</i> | | <i>2001 Reference</i> | | <i>Pooled</i> | |
| | <i>Group</i> | | <i>Group</i> | | | |
| | <i>Coef.</i> | <i>P>z</i> | <i>Coef.</i> | <i>P>z</i> | <i>Coef.</i> | <i>P>z</i> |
| Irish | -0.001 | 0.000 | -0.001 | 0.000 | -0.001 | 0.000 |
| In Ireland 10 Years or Less | -0.003 | 0.000 | -0.005 | 0.000 | -0.004 | 0.000 |
| BMW region | 0.000 | 0.000 | 0.000 | 0.046 | 0.000 | 0.000 |
| Male | 0.000 | 0.729 | 0.000 | 0.840 | 0.000 | 0.599 |
| 20-24 years | -0.002 | 0.001 | -0.002 | 0.000 | -0.002 | 0.000 |
| 25-34 years | -0.003 | 0.002 | -0.002 | 0.000 | -0.002 | 0.000 |
| 35-44 years | -0.001 | 0.248 | -0.001 | 0.000 | -0.001 | 0.000 |
| 45-54 years | 0.005 | 0.000 | 0.005 | 0.000 | 0.006 | 0.000 |
| 55-59 years | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 |
| 60-64 years | 0.003 | 0.000 | 0.002 | 0.000 | 0.003 | 0.000 |
| 65+ years | 0.001 | 0.003 | 0.001 | 0.000 | 0.001 | 0.000 |
| Age total | 0.007 | 0.000 | 0.008 | 0.000 | 0.007 | 0.000 |
| Lower Secondary | 0.000 | 0.015 | 0.000 | 0.000 | 0.000 | 0.000 |
| Upper Secondary | 0.000 | 0.253 | 0.000 | 0.180 | 0.000 | 0.377 |
| Post Leaving Certificate | -0.001 | 0.000 | -0.001 | 0.000 | -0.001 | 0.000 |
| 3rd Level Non Degree | 0.000 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 |
| 3rd Level Degree or Above | 0.001 | 0.061 | 0.001 | 0.270 | 0.001 | 0.014 |
| Education Total | 0.000 | 0.695 | -0.001 | 0.090 | 0.000 | 0.447 |
| Married | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| Part-time | -0.003 | 0.000 | -0.003 | 0.000 | -0.004 | 0.000 |
| Professional | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| Assoc. Professional and Technical | 0.000 | 0.802 | 0.000 | 0.531 | 0.000 | 0.181 |
| Clerical and Secretarial | 0.000 | 0.036 | 0.000 | 0.002 | 0.000 | 0.001 |
| Craft and Related | -0.001 | 0.004 | 0.000 | 0.018 | 0.000 | 0.020 |
| Personal and Protective Service | 0.000 | 0.013 | 0.001 | 0.000 | 0.001 | 0.000 |
| Sales | 0.000 | 0.196 | 0.000 | 0.038 | 0.000 | 0.169 |
| Plant and Machine Operatives | -0.006 | 0.000 | -0.007 | 0.000 | -0.007 | 0.000 |
| Other and Not Stated | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| Occupation Total | -0.002 | 0.000 | -0.002 | 0.000 | -0.003 | 0.000 |
| Mining and Quarrying | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Manufacturing | -0.012 | 0.000 | -0.016 | 0.000 | -0.015 | 0.000 |
| Electricity, Gas and Water Supply | -0.001 | 0.001 | -0.001 | 0.000 | -0.001 | 0.000 |
| Construction | 0.002 | 0.025 | 0.004 | 0.000 | 0.004 | 0.000 |
| Wholesale and Retail | 0.001 | 0.581 | 0.001 | 0.603 | 0.001 | 0.261 |

Table 9: *Fairlie Decomposition 2001-2006 (contd.)*

| | 2006 Reference | | 2001 Reference | | Pooled | |
|--|----------------|-------|----------------|-------|--------|-------|
| | Coef. | P>z | Coef. | P>z | Coef. | P>z |
| Hotels and Restaurants | -0.001 | 0.120 | -0.001 | 0.045 | -0.001 | 0.047 |
| Transport, Storage, Communications | -0.002 | 0.000 | -0.003 | 0.000 | -0.002 | 0.000 |
| Financial Intermediation | 0.001 | 0.162 | 0.000 | 0.371 | 0.000 | 0.855 |
| Real Estate, Renting and Business Activities | 0.000 | 0.697 | 0.000 | 0.803 | 0.000 | 0.756 |
| Public Administration, Defence, Social Security | 0.003 | 0.000 | 0.002 | 0.000 | 0.003 | 0.000 |
| Education | 0.005 | 0.000 | 0.004 | 0.000 | 0.005 | 0.000 |
| Health | 0.009 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 |
| Other | 0.001 | 0.051 | 0.002 | 0.002 | 0.001 | 0.000 |
| Industry total | 0.006 | 0.000 | 0.005 | 0.000 | 0.007 | 0.000 |

membership in foreign firms over the period, we do have some data on jobs created in domestic and foreign firms supported by Forfás.⁹ Figure 1 takes data from Forfás (2007) and creates an index of employment from foreign and domestic firms supported by industrial development agencies over the period. While employment in agency supported firms clearly has much smaller employment growth than overall employment over the period, we might guess that a high percentage of foreign firms are supported. If employment in agency supported firms is a reasonable indicator for foreign employment we see that employment in such firms is declining in importance over this period, indicating that any aversion to unions in foreign firms is an unlikely cause of the decline in membership over this period. Figure 2 looks at full-time permanent employment in supported manufacturing firms taken from Forfás (2007) compared to an index of manufacturing employment from our QNHS data. We see that within manufacturing foreign employment has declined more steeply than employment in domestic firms, providing at least indicative evidence that the decline in the probability of employment in manufacturing we saw in Table 7 is unlikely to be due to an increase in the share of employment in foreign firms.

There has also been significant employment growth in some internationally traded services in recent years. We might have thought of this as a potential explanation for the decline in membership, yet in the decomposition analysis the service sector or occupations that might predominate in this

⁹ Forfás is the state's main industrial development agency.

Figure 1: *Total Employment in Irish and Foreign Agency Assisted Companies and Total Employment from The QNHS*

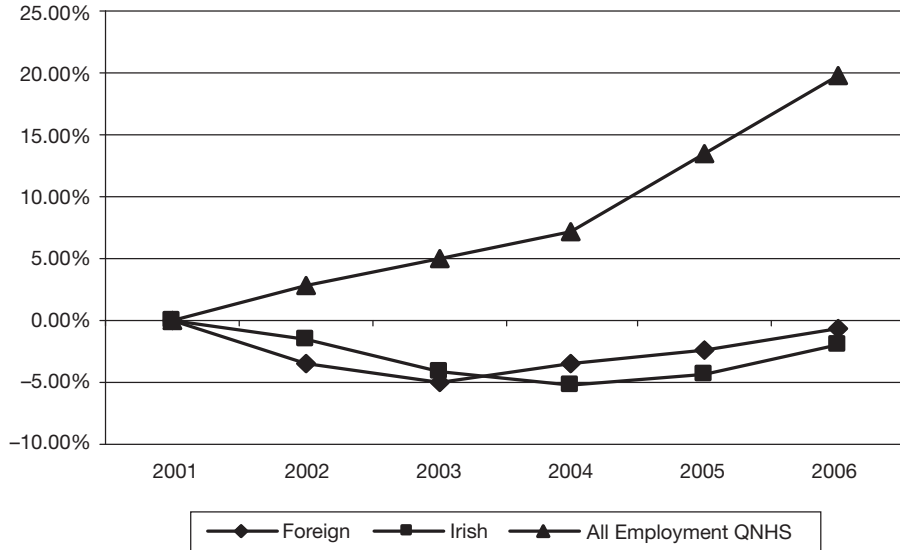
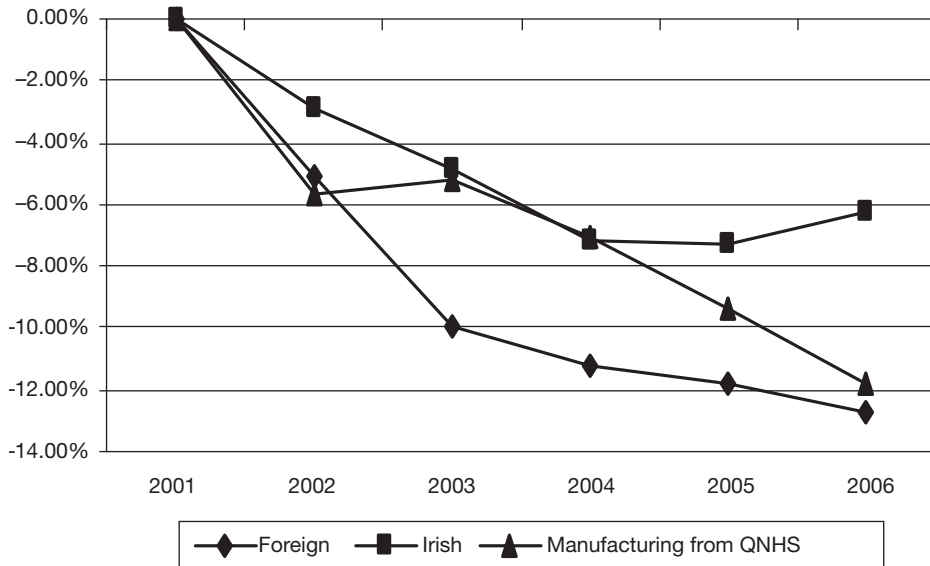
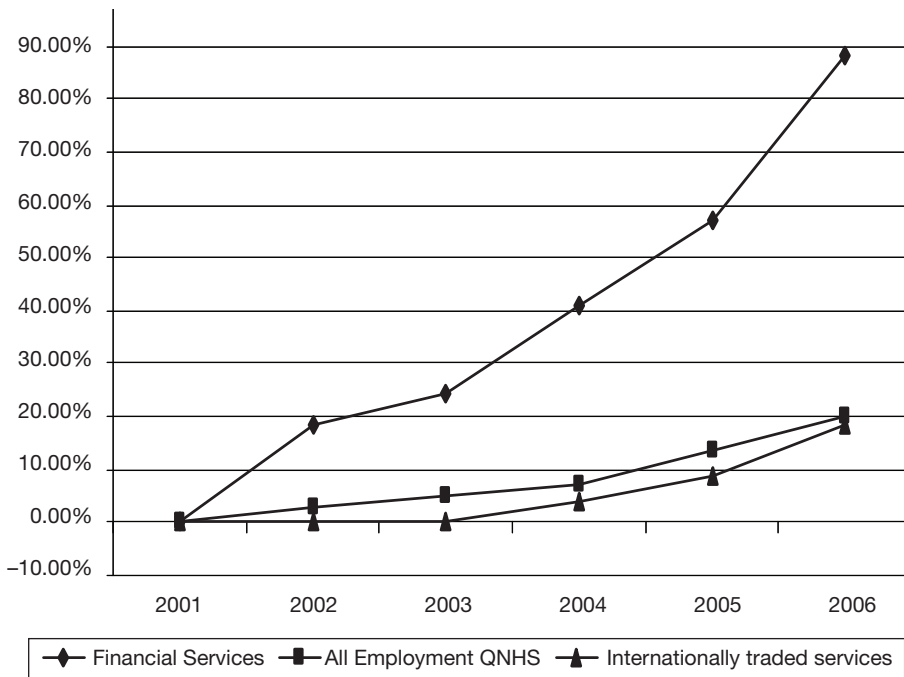


Figure 2: *Total Employment in Irish and Foreign Agency Assisted Manufacturing Companies and Total Manufacturing Employment from the QNHS*



sector do not appear to be an important explanatory factor of the change in membership. Once again we do not have detailed data on membership other than in broad occupation industry categories, but data from Forfás (2007) might shed some light on why this is. Figure 3 graphs total employment in agency assisted internationally traded services and financial services companies alongside total employment from the QNHS. We see that while there was strong growth in internationally traded services, this was a period of strong employment growth generally. There was exceptional growth in financial services, but this is only a small part of total services employment.

Figure 3: *Total Employment in Agency Assisted Internationally Traded Services and Financial Services Companies and Total Employment from the QNHS*



IV CONCLUDING REMARKS

Hirsch (2008) groups the suspected causes of union decline in the US into three categories: structural, competitive and institutional. That is a decline in unionism may come from a change in the structure of employment, because of

competitive pressures reducing union bargaining power and lowering membership within industries or finally because of a change in the institutional structure such as labour law or the industrial relations background. The main contribution of this paper is to show that the first of these three factors: a change in the structure of employment does not appear to be important as an explanatory factor in the steep decline in membership that has occurred in Ireland in recent years. The analysis indicates that the bulk of the fairly rapid decline in union membership that occurred between 2001-2006 is not associated with a change in the composition of employment towards workers and jobs that are less likely to be unionised. Rather changes in the underlying probability of being unionised for workers with given characteristics explain most of the change.¹⁰

In terms of the second category listed by Hirsch – competitive pressures – we can only speculate in this paper. On the face of it though, given that we are looking at a fairly short period where there was exceptional growth and where we were close to full employment in the Irish economy, it seems unlikely that this would be a period where company profits, and in turn the surplus that unions try and capture a share of, were squeezed to a degree that would have greatly weakened unions.

Unfortunately, we can also only speculate on the importance of the third category; the institutional background. This is a catch all category that might capture changes in the legal framework, in worker or firm preferences or in the structure and organisation of unions for example. The role of unions in labour markets may indeed be changing. Bryson and Willman (2007) provide evidence that this is the case in the UK where data allows a much richer analysis of the role of unions. They conclude that union's roles in generating wage premiums, politics and firm performance has declined. Instead, in more recent times they are more focused on vindicating individual employment rights, providing a voice for workers in unionised firms, and campaigning for policy initiatives to protect public sector workers. Hirsch (2008) suggests in the US context that there may be a demand for a representation from workers that is not being met by the traditional union model which may be seen as overly adversarial. While modern human resources' practices where worker welfare and participation are valued more might be seen as reducing workers need to join unions; Roche (2007) looks at the evidence there is and suggests that there has not been any great expansion in the use of such practices in Ireland over recent times.

¹⁰ Hirsch (2008) found that changes in the composition of industry and occupation explained only about 20 per cent of the decline in US union membership between 1983-2002.

Roche (2007) discusses recent developments in Irish industrial relations. While he suggests that there may be a more hostile attitude to unions, particularly in some sectors such as US multinational firms as discussed above, the extent of any such change is difficult to measure. On the other hand, changes in the legislative framework and the government's attitude to unions which are often seen as important determinants of unions fortunes, have arguably been reasonably favourable for unions in Ireland over recent decades. In particular the role of the 2001-2004 Industrial Relations Acts in allowing unions pursue the rights of union members in non-union firms through the labour relations commission could be important, although Roche (2007) concludes that overall this has had "a modest effect on unions fortunes". Another important legislative provision is the implementation of the EU directive on Information and Consultation. The (Employees (Provision of Information and Consultation) Act 2006) provides employees in firms with more than fifty workers with the right to consultation over major decisions at the firm. This legislative change would certainly not impact directly on our period of study and indeed the potential impact of the act on unions' ability to organise possibly still remains unclear.

If one were to think of theoretical models of union membership (see Schnabel (2003) for a discussion of this literature), the impact of the partnership process, the accompanying reduction in strike activity and the development of an industrial relations framework where individual workers may vindicate their rights without confrontation would have an ambiguous effect on whether a worker will join the union. It may well be that the incentive to free ride¹¹ is increased by the provision of these centralised institutions. In any case, as noted earlier, it must be a concern that we have adopted a model of national bargaining over pay and a range of labour market policy issues where workers' interests are represented by unions who have a diminishing share of workers in their ranks.

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¹¹ Booth and Bryan (2004) document the extent of free riding in UK unions.

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