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# AN EXAMINATION OF THE LABOUR MARKET TRANSITIONS OF MINIMUM WAGE WORKERS IN IRELAND

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## EXECUTIVE SUMMARY

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- This study uses a new measure of minimum wage employment in Ireland, taken from the Quarterly National Household Survey (QNHS), to assess the degree to which individuals in receipt of the national minimum wage (NMW) transition in and out of NMW employment over a period of three quarters in 2016 and 2017. We do so using longitudinal data on 1,514 employees who were in receipt of the NMW in at least one of three consecutive quarters.
- Consistent with much of the international evidence, we find that minimum wage employment often acts as a stepping stone to higher paid work. Of the 1,514 employees, 18 per cent remained on the minimum wage for all three quarters compared to approximately 30 per cent who transitioned from minimum wage to higher paid employment.
- The results also show that exits from NMW status to higher waged employment are achieved primarily through within-employer wage progression rather than between employer job change. Over 90 per cent of employees who transition to higher paid employment do not change occupation or employer.
- Approximately 13 per cent of the sample transitioned from higher pay to minimum wage employment, while 11 per cent transitioned to minimum wage employment from unemployment or inactivity.
- Approximately 17 per cent of the sample displayed multiple transitions during the three quarters. Just under 12 per cent of the sample moved into, and back out of, minimum wage employment from unemployment, inactivity or higher paid employment. The remaining 5 per cent moved from the minimum wage to higher pay, and back to the minimum wage over the three quarters.
- Our multivariate analysis shows that Irish nationals, older workers, those with higher levels of education, full-time employees and those on permanent contracts are more likely to exit minimum wage employment to higher paid employment compared to non-nationals, younger persons, those with lower educational attainment, part-time workers and those on temporary contracts.
- There is a higher transition rate to unemployment or inactivity among minimum wage employees compared to higher paid employees. Minimum wage workers are 10 percentage points more likely to become unemployed or inactive compared to non-minimum wage workers in the highest income decile. Even after controlling for education, gender, contract type (permanent/temporary), working arrangements (part-time/full-time), age and nationality, minimum wage workers are four percentage points more likely to transition to unemployment or inactivity than higher paid workers.



- Our analysis reveals that a high percentage of responses to the minimum wage question do not come from the individual themselves, but from another family member (so called 'proxy responses'). In Quarter 2 of 2016, 56 per cent of responses to the minimum wage question were proxy responses.
- Approximately one-quarter of individuals in the sample move from higher pay to minimum wage employment at some point during the three quarters, without changing employer or occupation. While it is possible that proxy responses may be leading to some misclassification among this group, our research does not find strong evidence of this.
- While the introduction of the minimum wage question is an important addition to the QNHS survey, it is important to take account of the limitations of this measure which relate to high levels of proxy responses.

## CHAPTER 1

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### Introduction

A national minimum wage (NMW) was first introduced in Ireland in 2000, with an initial rate of €5.58 per hour.<sup>1</sup> The rate was increased in subsequent years, so that by July 2007 the minimum wage stood at €8.65 per hour. However, from 2007 to 2015 there were no further increases in the NMW. Following recommendations from the Irish Low Pay Commission, which was established in 2015, the NMW was increased in January 2016 from €8.65 to €9.15 per hour, the first increase in nine years. It was further increased to €9.25 per hour in January 2017 and to €9.55 per hour in January 2018, the figure at which it currently stands. In 2016 a question was added to the Quarterly National Household Survey (QNHS) which directly asks employees whether their hourly wage is equal to, above or below the NMW. According to this new measure, the incidence of minimum wage employment was 10.1 per cent in 2016 and 8.2 per cent in 2017.<sup>2</sup> Previous work by Maître et al. (2017), investigating the characteristics of minimum wage workers in Ireland, found that women, non-Irish nationals, younger persons, people with lower levels of education and part-time workers were more likely to be on the minimum wage.

In this study, we use this new measure of minimum wage employment in Ireland to assess the degree to which individuals in receipt of the NMW transition in and out of NMW employment over a period of three quarters in 2016 and 2017. The objective of the analysis is as follows: (a) to identify the labour market status and key characteristics of individuals moving out of NMW employment to higher pay; (b) to assess the extent to which NMW status is transitory and to identify the rate at which NMW employees transition to higher paid jobs; (c) to examine whether minimum wage employees are more likely to transition to unemployment or inactivity relative to higher paid workers.

There is a limited literature on the extent to which minimum wage employment leads to future labour market progression. However, the evidence that does exist is supportive of the view that minimum wage employment can act as a stepping stone to higher earning positions for many individuals. For the US, Smith and Vavrichek (1992), using longitudinal data to examine the wage progression of workers in the mid-1980s, find that 60 per cent of workers on the minimum wage earn higher wages one year later. Similarly, Schiller (1994), also for the US, finds

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<sup>1</sup> For historical minimum wage rates, see [www.lowpaycommission.ie](http://www.lowpaycommission.ie).

<sup>2</sup> Sub-minimum rates exist for under 18s, those with less than two years of employment experience and those who are in structured training during working hours. However, the incidence of sub-minimum wage employment is just 1 per cent (approximately).

that less than 15 per cent of workers are still in receipt of the minimum wage three years following the take-up of minimum wage employment.

However, while large proportions of minimum wage workers appear to transition to higher paid employment quite quickly, a substantial minority are likely to remain in low paid jobs for a considerable period. Carrington and Fallick (2001) use the National Longitudinal Survey of Youth to study the transition patterns of young workers entering minimum wage jobs in the US, and find that approximately 8 per cent are still employed in minimum wage positions ten years into their careers. Carrington and Fallick (2001) also report that individuals remaining in long-term minimum wage positions are more likely to be from minorities, female and have lower levels of schooling. With respect to evidence from the UK and elsewhere, Dickens (2000), while not strictly focusing on minimum wage workers, finds that between 20 and 30 per cent of British males in the lowest income decile remained there after three years, with similar results for females. Stewart and Swaffield (1999), also for the UK, report high rates of persistent, low-wage employment. They also find that low wage workers tend to move more frequently between employment and unemployment. Finally, for Italy, Cappellari (2007) finds that accepting a low paid job raises the probability of future low wage episodes, with persistence levels higher for females and those with lower levels of education. Therefore, the international evidence suggests that minimum wage employment is likely to lead to higher earnings for most workers. However, a significant minority experience persistent low-wage employment.

Our results are broadly consistent with the international literature. We find that individuals are far more likely to transition to higher paid employment than remain in minimum wage employment over a period of three quarters. However, this primarily happens within the same occupation and within the same employer. Therefore, instead of changing jobs to find higher paid work, the majority of people appear to transition to higher pay within the same job. We show that Irish nationals, older workers, those with higher levels of education and full-time employees are more likely to exit minimum wage employment to higher paid employment compared to non-nationals, younger persons, those with lower educational attainment and part-time workers. Finally, our results also show that there is a higher transition rate to unemployment or inactivity among minimum wage employees compared to higher paid employees.

## CHAPTER 2

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### Data and descriptive statistics

In Quarter 2 of 2016, a question was added to the QNHS which captures information on whether a person's hourly wage is equal to, less than or greater than the national minimum wage. During the household interview, certain questions in the QNHS may be answered by another household member (known as proxy answers) as opposed to the individual in question. In some instances, such as the question capturing a person's monthly take home pay (in deciles), proxy responses are not permitted. However, proxy responses are allowed for the minimum wage question and these account for just over half of all minimum wage responses. In Section 2.2 we analyse whether proxy responses may be leading to misclassification of transition types. We find no strong evidence that this is the case.

The QNHS data are published every quarter. There is a longitudinal component to the data, whereby some individuals are followed for a maximum of five consecutive quarters. Each quarter follows 80 per cent of households from the previous quarter, meaning 20 per cent are lost from the longitudinal component with each consecutive quarter. This can create a problem when undertaking longitudinal analysis as, by definition, sample sizes will fall as the number of time periods increases.

We exploit the longitudinal component to examine the transitions into and out of NMW employment in Ireland. While the longitudinal component covers up to five quarters, due to sample size constraints which arise as a consequence of households being dropped from the survey as well as the relatively small sample of minimum wage workers, we follow people for just three quarters. Nevertheless, this gives us considerable detail on the transition patterns of NMW employees. We use two waves of data, each covering three quarters: the first wave comprises Quarters 2, 3 and 4 of 2016 and the second wave includes Quarter 4 of 2016 and Quarters 1 and 2 of 2017. In order to achieve an appropriate sample size, the data from both waves are pooled.<sup>3</sup>

The sample consists of individuals who were present in the data for all three quarters and were observed to have NMW status in at least one quarter in either wave of data. Individuals are categorised into three groups. The group *MW*

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<sup>3</sup> We have checked to ensure that the observable characteristics of both samples are comparable.

include individuals who are on or below the NMW in a given quarter; group *N* include individuals earning in excess of the NMW in the quarter; and group *U/I* are made up of those who are unemployed or inactive. This allows us to examine the relative frequency of each possible transition combination. In Table 2.1 we show the relative numbers of people who transition into and out of minimum wage employment, either from a higher paying job or unemployment/inactivity. As a basis for comparison, we also show the number of people who were on the NMW for all three periods. In total we have information on 1,514 individuals who were earning on or below the NMW in at least one of the three consecutive quarters for which they were present in the data. This figure represents the denominator in determining the shares of NMW workers undertaking various transitions in Table 2.1. Of the 1,514 individuals, just 17.7 per cent (268 cases) were earning the minimum wage or less for all three quarters (the *MW MW MW* group). The remaining 82.3 per cent transitioned into, or out of, NMW employment at some point during the three quarters.

Approximately 30 per cent of the sample exited minimum wage employment to higher paid employment.<sup>4</sup> Therefore, more employees transitioned from minimum wage to higher pay over the three quarters than remained on the NMW. Just under 6 per cent transitioned from being on or below the minimum wage to unemployment or inactivity.

Of the 24 per cent of individuals who transitioned into minimum wage employment, approximately half came from unemployment or inactivity with the other half coming from higher paid employment. A further 17 per cent of the sample displayed multiple transitions during the three quarters. Just under 12 per cent of the sample moved into, and back out of, minimum wage employment from unemployment, inactivity or higher paid employment. The remaining 5 per cent moved from the minimum wage to higher pay, and back to the minimum wage over the three quarters. There were low incidences of other types of transitions which are grouped into the 'other' category. Due to the very low numbers in these 'other' categories, we cannot report them separately due to data reporting constraints relating to low sample sizes. Details on the types of transition states included in the 'other' category are given in the notes below Table 2.1.

It is important to note that while we can identify those employees who exit NMW status, we cannot assess the extent to which they are also exiting low waged employment. The nature of other transitions is somewhat more certain;

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<sup>4</sup> Individuals less than 20 years of age could be in training and/or have less than two years' experience and therefore be less likely to move out of the minimum wage. Excluding these individuals increases the exit rate from 30 per cent to 35 per cent.

approximately 11 per cent of the sample transitioned into unemployment or inactivity at some point during the three quarters.<sup>5</sup> As we discuss in detail in Section 4, this is higher than the transition rate into unemployment or inactivity for higher paid employees. For example, just 4 per cent of higher paid workers in deciles 6 and 7 transitioned to unemployment or inactivity at some point during the three quarters. Therefore, it is more likely that a NMW employee will subsequently become unemployed or inactive in the short term compared to a higher earning employee.

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<sup>5</sup> This includes the 6 per cent from the *MW U/I U/I* and *MW MW U/I* groups as well as some individuals in the 'Other' categories, such as *MW U/I MW*.

**TABLE 2.1 TRANSITIONS OUT OF AND INTO NMW EMPLOYMENT**

	Frequency	Percentage
<b>Stayers</b>		
<i>MW MW MW</i>	268	17.7 (0.98)
<b>Transitions out of NMW to higher paid employment</b>		
<i>MW N N</i>	287	19.0 (1.00)
<i>MW MW N</i>	160	10.6 (0.79)
<b>Transitions out of NMW to unemployment or inactivity</b>		
<i>MW U/I U/I</i>	52	3.4 (0.47)
<i>MW MW U/I</i>	[36]	2.4 (0.39)
<b>Transitions into NMW from higher paid employment</b>		
<i>N N MW</i>	99	6.5 (0.64)
<i>N MW MW</i>	92	6.1 (0.61)
<b>Transitions into NMW from unemployment or inactivity</b>		
<i>U/I U/I MW</i>	96	6.3 (0.63)
<i>U/I MW MW</i>	71	4.7 (0.54)
<b>Multiple transitions</b>		
<i>N MW N</i>	141	9.3 (0.75)
<i>MW N MW</i>	76	5.0 (0.56)
<i>U/I MW U/I</i>	[40]	2.6 (0.41)
<b>Other</b>	96	6.3 (0.65)
<b>Total</b>	<b>1,514</b>	<b>100</b>

Source: Quarterly National Household Survey.

Notes: *MW*: at the national minimum wage; *N*: above the national minimum wage; *U/I*: unemployed or inactive. Parentheses [ ] indicate where there are 30-50 persons in a cell, estimates are considered to have a wider margin of error and should be treated with caution. Standard errors are reported below the estimated percentages in each group. Several transition types could not be reported separately due to too few observations and were aggregated into the 'Other' category, which includes: *N MW U/I*; *MW U/I N*; *MW U/I MW*; *MW N U/I*; *U/I MW N*; *U/I N MW*; *N U/I MW*.

While there is considerable movement in the status of employees over time, most of this appears to take place without changing occupation or employer. In Table 2.2, we show the percentage of employees that stayed in the same occupation for

all three periods.<sup>6</sup> This is shown separately for the stayers (the *MW MW MW* group) as well as other employee transition groups.<sup>7</sup> It is clear from this table that the vast majority of people stay in the same occupation, and this is true even for those who move into (out of) NMW employment from (to) higher paid employment. Of the stayers, 95.9 per cent stayed in the same occupation over the three periods. Over 90 per cent of people that move from NMW employment to higher paid work stay in the same occupation for all three periods.

To examine transitions between different employers, we exploit the questions in the QNHS data which ask people the month and year in which they started working for their current employer. Variation in this answer across quarters is taken as a change of employer. Table 2.3 shows that the vast majority of both stayers and the other transition groups stayed with the same employer for all three periods. These results, along with those in Table 2.2, suggest that people who transition from NMW employment to higher paid work typically stay in the same occupation with the same employer. It may be the case that these progressions therefore represent progressions up the pay scale that come after a certain period of service has been reached. The results showing that most transitions occur within firms are consistent with the finding that around 57 per cent of NMW employees remain with their employer for at least one year, with just under 30 per cent having tenures of 48 months or more.<sup>8</sup>

**TABLE 2.2 PERCENTAGE THAT STAYED IN THE SAME OCCUPATION FOR ALL THREE PERIODS**

	Frequency	Percentage
<b>Stayers</b>		
<i>MW MW MW</i>	257	95.9
<b>Transition Groups</b>		
<i>MW MW N</i>	146	91.3
<i>MW N N</i>	269	93.7
<i>N MW MW</i>	92	100.0
<i>N N MW</i>	91	91.9
<i>N MW N</i>	138	97.9
<i>MW N MW</i>	73	96.1

Source: Quarterly National Household Survey.

Note: *MW*: at the national minimum wage; *N*: above the national minimum wage; *U/I*: unemployed or inactive.

<sup>6</sup> Note: sample size will vary from Table 2.1 due to the availability of occupational data.

<sup>7</sup> As we are examining the occupations of employees, this analysis does not include the unemployment/inactivity group.

<sup>8</sup> [www.cso.ie/en/releasesandpublications/er/q-nmw/qnhs-nationalminimumwageseriesq42016](http://www.cso.ie/en/releasesandpublications/er/q-nmw/qnhs-nationalminimumwageseriesq42016).



**TABLE 2.3 PERCENTAGE THAT STAYED WITH THE SAME EMPLOYER FOR ALL THREE PERIODS**

	Frequency	Percentage
<b>Stayers</b>		
<i>MW MW MW</i>	152	95.6
<b>Transition Groups</b>		
<i>MW MW N</i>	84	90.3
<i>MW N N</i>	180	96.8
<i>MW N U/I</i>	*	*
<i>N MW N</i>	97	97
<i>MW N MW</i>	[47]	[100]

Source: Quarterly National Household Survey.

Note: *MW*: at the national minimum wage; *N*: above the national minimum wage; *U/I*: unemployed or inactive. Parentheses [ ] indicate where there are 30-50 persons in a cell, estimates are considered to have a wider margin of error and should be treated with caution. \* indicates the sample size was too small to report the statistic.

## 2.1 SOCIO-DEMOGRAPHIC AND JOB CHARACTERISTICS OF WORKERS STAYING AND MOVING IN AND OUT OF THE MINIMUM WAGE

In this section we profile the principal characteristics of NMW workers by transition status. Many of the descriptive results presented in the tables below are consistent with the demographic and job characteristics already found at cross-sectional level in earlier ESRI research based on the analysis of SILC and the QNHS. For example, Maître et al. (2017) found that non-Irish nationals, young adults and workers in services and sales occupations were over-represented among minimum wage workers.

In Table 2.4 we present the socio-demographic characteristics of three categories of workers; those who stay on the NMW for all three periods (referred to as *stayers*), those who exit minimum wage employment to an alternative labour market state, and those who enter minimum wage employment from an alternative labour market state. With regard to nationality, the majority of workers in all three categories are Irish. However, relatively few non-Irish nationals are shown to exit NMW employment. For example, 28 per cent of workers who stay on the NMW for all three quarters are non-Irish nationals, whereas just 20 per cent of workers who exit NMW employment belong to this group. For Irish workers however, we observe a relatively high exit rate from NMW employment. This indicates that Irish nationals are more likely to move out of NMW employment than non-Irish workers.

Previous research by the Central Statistics Office found that females account for just over half of minimum wage employees, which is consistent with the results in Table 2.5 showing that approximately 56 per cent of individuals in all three

categories are female.<sup>9</sup> The identical percentages across groups suggest there are no gender differences in the likelihood of minimum wage exit. With regard to age and education, the descriptive statistics in Table 2.4 indicate that people who exit the NMW are more likely to be older and have a higher level of education.

**TABLE 2.4 SOCIO-ECONOMIC CHARACTERISTICS OF PEOPLE BY MOVEMENT AT THE MINIMUM WAGE**

	Stayers %	Moving out of MW %	Moving into MW %
<b>Nationality</b>			
Irish	72.0	80.2	78.9
Non-Irish	28.1	19.8	21.1
Total	100.0	100.0	100.0
<b>Gender</b>			
Male	43.8	43.2	44.5
Female	56.2	56.8	55.5
Total	100.0	100.0	100.0
<b>Age</b>			
15 to 29	55.6	45.7	52.4
30 to 39	[19.0]	20.7	17.9
40 to 49	[13.3]	16.8	14.3
50 plus	[12.0]	16.8	15.4
Total	100.0	100.0	100.0
<b>Education</b>			
Lower secondary	26.0	23.7	29.3
Upper secondary	54.1	53.9	52.4
Tertiary	[19.9]	22.4	18.3
Total	100.0	100.0	100.0
<b>Marital status</b>			
Single	65.7	62.8	69.0
Married	27.8	31.6	26.0
Widowed/divorced/separated	*	[5.5]	[5.0]
Total	100.0	100.0	100.0
<b>Household type</b>			
One adult	*	6.9	[6.0]
One adult and child(ren)	*	[5.4]	[4.8]
Two adults	[16.0]	16.2	15.8
Two adults and children	31.2	25.8	25.7
3+ adults and children	22.9	19.3	22.4
3+ adults, no children	20.4	26.5	25.3
Total	100.0	100.0	100.0

Source: Quarterly National Household Survey.

Notes: Parentheses [ ] indicate where there are 30-50 persons in a cell, estimates are considered to have a wider margin of error and should be treated with caution. \* indicates the sample size was too small to report the statistic.

<sup>9</sup> [www.cso.ie/en/releasesandpublications/er/q-nmw/qnhs-nationalminimumwageseriesq42016](http://www.cso.ie/en/releasesandpublications/er/q-nmw/qnhs-nationalminimumwageseriesq42016).

In terms of marital status, while two-thirds of minimum wage stayers are single, a relatively high number of individuals exiting the NMW are married. Finally, in terms of household characteristics, 43 per cent of MW stayers come from households consisting of three or more adults, suggesting the potential presence of multiple earners within these households. This is important as it shows that, in spite of the high prevalence of single persons on the minimum wage, these tend not to be located within single person households. Therefore, these people may not necessarily constitute a group facing a high risk of poverty and social exclusion (Logue and Callan, 2016; Maître et al., 2017). There is little systematic variation in the composition of stayers, leavers and joiners by household type.

Table 2.5 shows the job characteristics of workers staying at the minimum wage as well as for those moving out and into the minimum wage. We find that 53 per cent of the NMW stayers are in sales occupations, whereas just 35 per cent of people exit NMW employment to this type of occupation.<sup>10</sup> This may suggest less scope for wage progression within service and sales occupations. The predominance of services and sales occupations is also reflected in the distribution of the economic sector of minimum wage workers. Approximately 70 per cent of minimum wage stayers are in the services sector, whereas just 63 per cent of people who exit MW employment work in this sector. The finding of a large percentage of minimum wage employees in services and sales occupations is consistent with previous work by Maître et al. (2017) who, using 2014 SILC data, find almost 30 per cent of minimum wage workers are employed in these types of occupations.

Looking at firm size, 43 per cent of minimum wage stayers work in small firms (10 employees or less). This compares to 36 per cent and 34 per cent respectively for those moving out of and into the minimum wage. Finally the full-time/part-time and hours worked information highlight the strong association between part-time jobs and minimum wage. Most of the minimum wage stayers are working part-time (60 per cent). Full-time employment is more common among workers who have moved out of minimum wage employment.

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<sup>10</sup> The occupation of those moving out of the NMW is defined as the occupation they move to after exiting NMW employment. However, as mentioned, over 90 per cent of people stay in the same occupation.

**TABLE 2.5 JOB CHARACTERISTICS OF PEOPLE BY MOVEMENT AT THE MINIMUM WAGE**

	Stayers %	Moving out of MW %	Moving in MW %
<b>Occupation</b>			
Manager/Professional	*	[4.4]	[5.9]
Technical/Clerical	*	12.1	13.2
Service/Sales	52.8	34.8	47.5
Craft/Mechanical	[12.2]	13.6	12.8
Elementary	28.1	18.3	20.7
Unemployed/Inactive	n/a	16.9	n/a
Total	100.0	100.0	100.0
<b>Sector (NACE)</b>			
Agriculture	*	[5.6]	*
Manufacturing	[12.5]	9.7	9.6
Construction	*	[4.8]	[5.0]
Services	70.0	62.6	70.1
Public	*	17.3	12.8
Total	100.0	100.0	100.0
<b>Firm size</b>			
less than 10	43.4	35.5	34.3
11 to 19	[16.9]	16.5	16.2
20 to 49	[19.0]	20.7	18.7
50 to 249	[17.2]	21.2	24.4
250+	*	[6.0]	[6.4]
Total	100.0	100.0	100.0
<b>Full-time/Part-time</b>			
Full-time job	39.4	50.1	41.0
Part-time job	60.6	49.9	59.0
Total	100.0	100.0	100.0
<b>Hours worked</b>			
Variable hours	*	7.7	9.9
1 to 19	35.0	21.9	28.9
20 to 34.5	24.2	28.5	27.8
35+	31.8	41.8	33.4
Total	100.0	100.0	100.0

Source: Quarterly National Household Survey.

Notes: Parentheses [ ] indicate where there are 30-50 persons in a cell, estimates are considered to have a wider margin of error and should be treated with caution. \* indicates the sample size was too small to report the statistic.

## 2.2 FURTHER INVESTIGATION OF TRANSITIONS FROM NON-MW TO MW EMPLOYMENT

The transition matrix in Table 2.1 highlights that a relatively high number of individuals move from higher-paying (non-MW) employment to MW employment and we have seen that transitions typically occur within the same employer. It is not immediately clear what circumstances would lead an individual to transition from higher paid employment to MW employment. One possible scenario could

be due to timing. On 1 January 2017, the NMW increased from €9.15 to €9.25. Therefore, a person earning above €9.15 and below €9.26 would be classified as a non-minimum wage employee in Quarter 4 of 2016 but a minimum wage employee in Quarter 1 of 2017. If these transitions from non-minimum wage to minimum wage employment were due to such timing issues, then we would expect to see more of them in Wave 2. Specifically, we would observe a relatively high incidence of people moving from non-MW employment in Quarter 4 of 2016 to MW employment in Quarter 1 of 2017.

Another possible explanation could be due to variations in hours worked for employees on a fixed salary. For example, consider a worker on €20,000 gross per year. If that person works 40 hours in a week, this corresponds to approximately €9.60 per hour. However, if that person works 42 hours per week, this corresponds to an hourly wage of €9.15 per hour. Therefore, if people on low fixed salaries are calculating their hourly wage based on hours worked, then small variations in hours could lead to a person earning above the minimum wage in one period and on or below the minimum wage in other periods.

Finally, it is possible that proxy responses may go some way towards explaining the relatively high incidence of transitions from non-MW to MW employment. Some questions relating to a specific individual in the household can be answered by other members of the household (known as proxy answers). The income decile data in the QNHS do not permit proxy answers, instead requiring direct participation from the individual. However, the question relating to the national minimum wage allows for proxy responses. As a result, a high percentage of minimum wage answers are proxy answers from another member of the family as opposed to the individual in question. For example, in Quarter 2 of 2016, 1,577 individuals were categorised as being on or below the MW. Of these responses, 888 (56 per cent) were proxy responses. If the type of response changes over two time periods then this may result in misreporting of minimum wage status. For example, a person may correctly categorise themselves as a non-minimum wage worker in the first time period by directly answering the survey question. However, if a family member is answering for them in the second period (a proxy response), it is possible that the family member may misclassify them as a minimum wage worker.

We begin with some descriptive statistics in Table 2.6, which show changes in hours and response types over two quarters. The hours pattern between both groups is very similar. If variation in hours was responsible for the *N MW* transitions, we would expect to observe a higher incidence of increased hours over the two quarters for this group. However, this is not the case as 19 per cent of the *N MW* experienced an increase in hours worked over two periods compared to 20 per cent of the *MW MW* group. Nevertheless, it should be noted

that while the incidence is the same for both groups, hours changes could still explain some of the *N MW* transitions. For example, individuals in the *N MW* group could have an hourly wage that lies just above the NMW in Quarter 1, meaning that even small increases in hours could affect the calculation of their hourly wage to such an extent that they cause a movement from NMW to MW status. On the other hand, the *MW MW* group will be unaffected by a comparable increase in hours worked.

We do see differences between both groups with regard to changes in response type (direct or proxy): 27 per cent of the *N MW* group had a different response type over the two quarters, which means that the individual themselves responded in one quarter and a family member in another. This compares to just 20 per cent of the *MW MW* group. This suggests that errors due to proxy responses may go some way to explaining the relatively high incidence of transitions from higher paid to minimum wage work.

**TABLE 2.6 CHANGES TO HOURS AND PROXY RESPONSE BY TRANSITION GROUP**

Hours	Group	
	<i>MW MW</i> %	<i>N MW</i> %
Constant	60	57
Increased	20	19
Decreased	20	24
Change in response type (proxy/direct)	20	27

Source: Quarterly National Household Survey.

To further investigate the issue, we carry out multivariate analysis. Our dependent variable is a dummy variable which equals one if the person is in the *N MW* group and zero if in the *MW MW* group. Our explanatory variables include changes to hours worked over the two quarters,<sup>11</sup> changes to response type over the two quarters and a dummy variable indicating whether the person was observed in Wave 1 or Wave 2. The results of this are shown in the first column of Table 2.7. While changes to hours is not statistically significant, the change in response type variable is significant at the 10 per cent level. This indicates that those whose response type changed over the two quarters are approximately eight percentage points more likely to have transitioned from higher paid to minimum wage employment, relative to those whose response type remained constant. The dummy variable for wave is not significant, which indicates that transitions do not appear to be driven by a timing issue relating to the minimum wage increase in Quarter 1 of 2017. In Column 2 we add additional explanatory variables related to

<sup>11</sup> We simply subtract hours worked in the first quarter from hours worked in the second quarter. Our results remain unchanged if we use percentage changes.

worker characteristics and sector. The results indicate having higher education and being in a higher skilled job increases a person's likelihood of being in the *N MW* group. It is possible that some individuals with higher levels of education take on occasional supervisory roles which temporarily raise their wage levels above the NMW, which could be one possible explanation behind the *N MW* group. In Column 2 we also add a dummy variable which equals one if a person changed employers over the two quarters. This is not statistically significant confirming that the change in minimum wage status is not driven by a change of employer.<sup>12</sup>

We also estimate a model to compare the *N MW* group to the *N N* group. Therefore, our dependent variable is a dummy variable which equals one if the person is in the *N MW* group and zero if in the *N N* group. The results are shown in Table 2.8 below. Before interpreting the results, it is important to note that the sample size in Table 2.8 is ten times larger than that in Table 2.7, due to the fact that there are far more *N N* workers than *MW MW* workers. Unlike in Table 2.7, in this specification, the response type variable is not statistically significant. This indicates that a change in response type over the two quarters does not impact a person's likelihood of being in the *N MW* group as opposed to the *N N* group. Therefore, taken as a whole, there is no strong and consistent evidence that proxy responses are a major factor explaining *N MW* transitions. While the coefficient for Wave is statistically significant, the magnitude is very small and the coefficient is negative, which is the opposite of what we would expect if timing issues were behind the *N MW* transitions. Males, Irish nationals, older workers, those with higher education and in high skilled occupations are more likely to be in consistent (two consecutive quarters) higher paid employment, as opposed to transitioning from higher pay to minimum wage.

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<sup>12</sup> Just 2.4 per cent of the *MW MW* group and 1.2 per cent of the *N MW* group changed employers over the two periods.

**TABLE 2.7 PROBABILITY OF TRANSITIONING FROM NON-MW TO MW EMPLOYMENT RELATIVE TO STAYING ON THE MW (PROBIT: MARGINAL EFFECTS)**

VARIABLES	<i>N</i> to MW	<i>N</i> to MW
Change in hours	0.0005 (0.0016)	0.0012 (0.0016)
Change in response type	0.0795* (0.0420)	0.0790* 0.0442
Wave 2	-0.0221 (0.0347)	-0.0401 (0.0364)
Changed employer		-0.1110 (0.1171)
<b>Education (ref: tertiary)</b>		
Lower secondary		-0.1154** (0.0550)
Upper secondary		0.0486 (0.0488)
Male		-0.0279 (0.0398)
Irish		0.0457 (0.0477)
Age		0.0072*** (0.0014)
<b>Occupation: (ref: elementary)</b>		
Manager/professional		0.3553*** (0.1077)
Technical/clerical		0.1396* (0.0750)
Services/sales		0.0458 (0.0491)
Craft/mechanical		0.1334** (0.0674)
Observations	774	733

Source: Quarterly National Household Survey.

Notes: Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. The sample size of specification (2) is lower as individuals with incomplete data are dropped from the model.



**TABLE 2.8 PROBABILITY OF TRANSITIONING FROM NON-MW TO MW EMPLOYMENT RELATIVE TO STAYING IN HIGHER PAY (PROBIT: MARGINAL EFFECTS)**

VARIABLES	<i>N to MW</i>	<i>N to MW</i>
Change in hours	0.0001 (0.0001)	0.0000 (0.0001)
Change in response type	0.0007 (0.0036)	0.0010 (0.0022)
Wave 2	-0.0122*** (0.0033)	-0.0088*** (0.0021)
Changed employer		-0.0026 (0.0072)
<b>Education (ref: tertiary)</b>		
Lower secondary		0.0304*** (0.0082)
Upper secondary		0.0147*** (0.0033)
Male		-0.0073*** (0.0022)
Irish		-0.0132*** (0.0048)
Age		-0.0008*** (0.0001)
<b>Occupation: (ref: elementary)</b>		
Manager/professional		-0.0226*** (0.0032)
Technical/clerical		-0.0166*** (0.0024)
Services/sales		-0.0007 (0.0029)
Craft/mechanical		-0.0090*** (0.0020)
Observations	10,076	9,588

Source: Quarterly National Household Survey.

Notes: Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

## CHAPTER 3

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### Modelling the characteristics of NMW leavers

We examine the effect of personal, educational and job characteristics on a person's probability of transitioning from minimum wage employment to higher pay, relative to individuals who stay on the minimum wage for all three periods (denoted *stayers*). For the exit model, our dependent variable is a dummy variable which equals zero if the person is a *stayer* and one if the person exited the minimum wage to higher paid work. The results are shown in Table 3.1. In specification (1), we define the exit group as anybody that has exited minimum wage employment to higher pay at any point during the three periods, including those who both entered and exited minimum wage employment. We include education, gender, nationality, age, occupation, a part-time indicator and a temporary contract indicator as control variables. The results show that young people, those with lower levels of education, part-time workers and those on temporary contracts are less likely to exit minimum wage employment to higher pay. Being non-Irish, relative to being Irish, considerably lowers a person's probability of exiting MW employment by approximately 13 percentage points. Our occupation variables refer to the occupation a person is in after they transition out of minimum wage employment. For those who stay, the occupation in the last quarter is recorded. This shows that manager and technical/clerical occupations are more likely for the group who exit NMW employment relative to the stayers.

In specification (2) we include those who exit only, and not those who both enter and exit NMW employment in the same period.<sup>13</sup> The results are broadly similar except for slightly higher coefficients on education, nationality and the technical/clerical occupations. As a final robustness check, in specification (3) we estimate our multivariate analysis focusing on individuals who exit minimum wage employment to higher paid employment and stay there for at least six months. As such, our dependent variable equals zero if the person is a *stayer*, the same as before, and one if the person is in the category *MW N N*. This ensures that the dependent variable identifies long-term exits from the NMW, as opposed to individuals who may have exited temporarily due to variations in, for example, hours worked or responsibility levels. The results using this restricted sample are shown in the final column of Table 3.1 and are broadly consistent with the other specifications. However, the magnitude of some of the effects in specification (3) are greater. For example, those with lower secondary education are 20 percentage points less likely to exit NMW employment relative to individuals with

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<sup>13</sup> Therefore, specification (2) includes the following exit groups: *MW N N*; *MW MW N*; *MW U/I N*; *MW N U/I*.

a tertiary education, and non-Irish nationals are 19 percentage points less likely to exit relative to Irish nationals. Part-time workers and those on temporary contracts are 12 and 16 percentage points less likely to exit to higher pay compared to full-time and permanent contract workers respectively.

Therefore, our multivariate analysis shows that, certainly over the short term, workers who are non-Irish, younger and have lower levels of schooling are less likely to exit NMW employment relative to those who are Irish, better educated and older. The model also indicates that part-time workers and those on temporary contracts are less likely to transition out of NMW employment relative to their full-time counterparts on permanent contracts.

**TABLE 3.1 PROBABILITY OF EXITING MW EMPLOYMENT RELATIVE TO STAYING IN MW EMPLOYMENT (PROBIT: MARGINAL EFFECTS)**

	(1)	(2)	(3)
VARIABLES	Exit MW	Exit MW	Restricted Sample
<b>Education (ref: tertiary)</b>			
Lower secondary	-0.148*** (0.0544)	-0.166*** (0.0642)	-0.199*** (0.0724)
Upper secondary	-0.0078 (0.0389)	-0.0273 (0.0491)	-0.058 (0.0600)
Male	-0.0265 (0.0324)	-0.0366 (0.0412)	-0.0476 (0.0500)
Irish	0.128*** (0.0456)	0.150*** (0.0558)	0.190*** (0.0621)
Age	0.0060*** (0.0012)	0.0061*** (0.0015)	0.0079*** (0.0018)
<b>Occupations (ref: elementary)</b>			
Manager/professional	0.124* (0.0602)	0.114 (0.0959)	0.230** (0.104)
Technical/clerical	0.181*** (0.0380)	0.247*** (0.0510)	0.349*** (0.064)
Services/sales	-0.0275 (0.0390)	-0.0394 (0.0506)	-0.0044 (0.0631)
Craft/mechanical	0.0478 (0.0472)	0.0570 (0.0622)	0.140* (0.0748)
Part-time	-0.066** (0.0314)	-0.088** (0.0397)	-0.121** (0.0480)
Temporary contract	-0.074* (0.0397)	-0.115** (0.0494)	-0.161*** (0.0575)
Observations	952	712	538

Source: Quarterly National Household Survey.

Notes: Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

## CHAPTER 4

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### Exits to unemployment or inactivity

We investigate whether minimum wage workers are more likely to move into unemployment or inactivity compared to higher paid workers. Using a pooled dataset of two-period transitions, we examine the characteristics of individuals who transition from employment in the first quarter to unemployment or inactivity in the second quarter.<sup>14</sup> Our dependent variable is a dummy variable which equals one for those who moved from employment to unemployment or inactivity and zero for those who stayed in employment in both quarters. Those in employment are made up of minimum wage and non-minimum wage workers. Given the nature of the data, we know precisely the hourly wage of minimum wage workers, i.e., €9.15 per hour. However, the hourly wage of non-minimum wage workers can vary significantly and exit rates to unemployment are likely to vary accordingly. In order to account for this variation, we further split the non-minimum wage workers into their respective wage deciles. Non-minimum wage workers in the highest decile are likely to be earning a far greater hourly wage than non-minimum wage workers in the lowest deciles.

We regress our dependent variable on the person's minimum wage status, i.e. minimum wage or non-minimum wage by decile. In our model the reference category against which both minimum wage and non-minimum wage workers are compared will be that of non-minimum wage workers in decile 10. We also include the additional covariates used in Table 3.1.<sup>15</sup> The results are shown in Table 4.1. The level of disadvantage experienced by minimum wage workers gradually becomes more pronounced when they are compared to non-minimum wage workers in increasingly higher segments of the wage distribution. Our results indicate that minimum wage workers are ten percentage points more likely to move into unemployment or inactivity relative to the highest paid non-minimum wage workers, i.e. those in decile 10. Non-minimum wage workers in decile 1 are 8 percentage points more likely to move into unemployment or inactivity, relative to decile 10, while for those in decile 5 this is just 3 percentage points. There is no statistically significant difference in transitions to unemployment or inactivity for non-minimum wage workers in deciles six to ten.

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<sup>14</sup> The two-period transition model includes transitions over the following time periods: Q2 2016 – Q3 2016; Q3 2016 – Q4 2016; Q4 2016 – Q1 2017; Q1 2017 – Q2 2017.

<sup>15</sup> We do not include occupations as this specification includes the person's detailed wage status as well as their educational attainment, which will be highly correlated with occupation. Including occupation does not substantially alter the other covariates nor their statistical significance, however, none of the occupation coefficients are statistically significant.

**TABLE 4.1** PROBABILITY OF EXITING TO UNEMPLOYMENT/INACTIVITY

	(1) Exit to unemployment/ inactivity (additional covariates)	(2) Exit to unemployment/ inactivity (additional covariates)
Minimum wage	0.10*** (0.023)	0.04*** (0.016)
<b>Non-minimum wage (ref: decile 10)</b>		
Decile 1	0.08*** (0.031)	0.03** (0.020)
Decile 2	0.07*** (0.025)	0.03** (0.018)
Decile 3	0.031** (0.019)	0.01 (0.014)
Decile 4	0.028** (0.018)	0.01 (0.015)
Decile 5	0.028** (0.016)	0.02 (0.016)
Decile 6	0.011 (0.013)	0.003 (0.010)
Decile 7	0.008 (0.012)	0.002 (0.009)
Decile 8	0.010 (0.012)	0.005 (0.010)
Decile 9	0.013 (0.014)	0.01 (0.012)
<b>Education (ref: tertiary)</b>		
Lower secondary		0.021*** (0.006)
Upper secondary		0.001 (0.003)
Male		0.007** (0.003)
Irish		0.00004 (0.004)
Age		-0.0002* (0.0001)
Part-time		0.008** (0.004)
Temporary contract		0.064*** (0.008)
Observations	13,596	13,362

Source: Quarterly National Household Survey.  
Notes: Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

In Column 2 of Table 4.1 we include the additional covariates. Even controlling for education, gender, part-time status, contract type (temporary or permanent), nationality and age, minimum wage workers are four percentage points more likely to exit to unemployment or inactivity relative to non-minimum wage workers in decile 10. The results also show that males, those with lower education

levels, young people, part-time workers and temporary contract workers are more likely to transition to unemployment or inactivity relative to females, those with higher education, older people, full-time workers and permanent workers respectively.



## CHAPTER 5

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### The impact of tax and welfare arrangements on minimum wage transitions

Given that the study considers the transitions both into, and out of, MW employment, it is useful to provide a brief discussion of the ways in which the structure of tax and benefits in Ireland might potentially influence individual transition decisions. An important component of the tax and welfare system that eases the transition not only from welfare to work, but also from low paid to higher paid employment, is the Family Income Supplement (FIS). FIS is a weekly tax-free top-up payment for employees on low pay with children. Once a family qualifies for FIS, payment of the supplement will continue for 52 weeks regardless of a change in circumstances, such as a move to higher paid employment.

With respect to transitions into NMW employment from unemployment and inactivity, the Back to Work Family Dividend (BTWFD) introduced in Budget 2015 is potentially an important factor. The initiative is designed to provide incentives for individuals with families to move from welfare to work, by facilitating the tapered withdrawal of benefits. The BTWFD allows individuals to retain supplementary welfare payments for dependent children (Qualified Child Increase, QCI) of €29.80 per week per child for 12 months after they return to work and 50 per cent of the payments in the second year, amounting to payments of €1,550 in Year 1 and €755 in Year 2. The BTWFD is paid in addition to any entitlement the family may have under the Family Income Supplement (FIS) scheme and will not affect the level of the FIS payment. The introduction of such a policy could substantially reduce the financial barriers of many individuals choosing to make the transition from welfare to low paid employment.

Both the FIS and the BTWFD are targeted at families; however, recent changes to the welfare system will influence incentives among young people, who are disproportionately represented among MW employees. In January 2014 the rate of Jobseekers Allowance payable to persons aged 22 to 25 fell from €144 to €100 per week.<sup>16</sup> It currently stands at €102.70 per week and is considerably lower than the rates received by individuals aged 25 (€147.80) or 26 and over (€193.00). A reduction in entitlements may incentivise the uptake of low-paid, including minimum wage, employment. Doris et al. (2018) find that unemployment benefit cuts in Ireland led to a substantial reduction in unemployment duration for young

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<sup>16</sup> The €100 rate was introduced for 18- and 19-year-olds in 2009 before being extended to 20- and 21-year-olds in 2010.



claimants. Their analysis indicates that the reduced duration is due to a higher job-search intensity rather than lower reservation wages. Young workers who were affected by the benefit cuts had a reservation wage which was already close to the minimum wage and as such, there was little scope for further reduction in reservation wages. A study by Savage et al. (2015) finds that, after taking into account various tax and welfare entitlements, more than 80 per cent of unemployed jobseekers would experience an income gain of more than 40 per cent as a result of moving back into work. The study also found that just 3 per cent of jobseekers would be financially worse off as a result of moving back into employment. Therefore, the evidence suggests that there are relatively few impediments within the structure of the Irish tax and welfare system that would actively inhibit transition rates from unemployment to employment, including to minimum waged jobs.

With respect to aspects of the tax and welfare system which would inhibit transitions from minimum wage employment to higher paying work, much less is known. There are a number of means (or earnings) tested elements of the welfare and tax entitlements, such as the Housing Assistance Payment and married tax credits that could potentially create disincentives for individuals to move out of low waged employment. The extent of disincentives leading to low wage traps can only realistically be assessed through the application of microsimulation models to various scenarios consistent with the composition of minimum wage employment.

## CHAPTER 6

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### Conclusion

This study uses a new measure of minimum wage employment in Ireland, taken from the QNHS, to assess the degree to which individuals in receipt of the national minimum wage (NMW) transition into and out of NMW employment over a period of three quarters during the years 2016 and 2017. Of those observed to be earning the NMW in at least one of the three quarters, just 18 per cent were in receipt of the NMW for all three quarters. This compares to 30 per cent who transitioned from the NMW to higher paid employment. Approximately 24 per cent moved into NMW employment from an alternative labour market state. Over half of these individuals were previously in higher paid employment with the remainder coming from unemployment or inactivity. Approximately 17 per cent of workers moved both into and out of NMW employment over the three quarters, consisting of 14 per cent who alternated between NMW and non-NMW employment and 3 per cent who alternated between NMW employment and unemployment or inactivity.

Our analysis demonstrates that individuals are more likely to transition from NMW employment to higher paid employment than stay in NMW employment over three consecutive quarters. The vast majority of individuals (over 90 per cent) who transition to higher pay do not change occupation or employer over the period. This is consistent with previous data published by the Central Statistics Office that 57 per cent of NMW workers remain with their employers for more than one year.<sup>17</sup> We also find that Irish nationals, older workers, those with higher educational attainment, full-time workers and permanent employees are more likely to transition from NMW employment to higher paid employment compared to foreign citizens, younger workers, those with less education, part-time and temporary employees. This suggests that NMW employment is likely to represent a low wage trap for particular groups of workers.

Our analysis also shows that minimum wage workers are more likely to transition to unemployment or inactivity. Even after controlling for a range of personal, education and work related characteristics, minimum wage employees are found to be up to four percentage points more likely to transition to unemployment or inactivity relative to higher paid employees.

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<sup>17</sup> This compares to a figure of 86 per cent for employees earning above the NMW.

Finally, in analysing the new QNHS minimum wage measure, our research has shown that a very high percentage of responses to the minimum wage question do not come from the individuals themselves, but from another family member (so called 'proxy' responses). In Quarter 2 of 2016, 56 per cent of the minimum wage responses were proxy responses. The incidence of proxy responses becomes especially pronounced when combining several quarters into a longitudinal dataset. In our dataset, which combines three quarters, just 23 per cent of minimum wage questions were answered by the individual in all three quarters. While the introduction of the minimum wage question into the QNHS data is a positive addition, potential misreporting due to proxy responses should be taken into account when interpreting statistics which rely on this new measure. However, our research does not find strong evidence to suggest that the observed transitions between higher paid and MW employment are likely to be attributable to inaccurate proxy responses. Finally, while our research is able to identify the incidence of exits from the NMW to higher paid employment, and the characteristics of workers most likely to make this transition, the data do not allow us to assess the extent of any wage increases experienced by such workers and, specifically, the degree to which they have also exited low-waged employment.

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