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SUB-MINIMUM WAGES IN IRELAND

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EXECUTIVE SUMMARY

- The minimum wage in Ireland in 2023 is €11.30 per hour. However, current legislation allows employers to pay young workers a sub-minimum wage. Those aged less than 18 years can be paid 70 per cent of the full minimum wage rate, while those aged 18 years and 19 years can be paid 80 and 90 per cent of the full rate, respectively.
- Legislation also exempts certain categories of workers from being paid the minimum wage. This includes apprentices, people employed by a spouse or a close relative, and prisoners involved in non-commercial work. These groups can be paid below the full minimum wage rate.
- The incidence of sub-minimum wage employment in Ireland is low. In 2022, just 1.4 per cent of all employees were sub-minimum wage employees. This is equivalent to approximately 30,000 individuals. In the same year, 5.6 per cent of employees were earning the full-rate minimum wage, equivalent to approximately 120,000 individuals.
- According to employees' self-reported status in the Irish Labour Force Survey, approximately half of all sub-minimum wage employees report earning a youth rate. Just five per cent report being employed by a relative, while apprentices and 'other reasons' both account for 20 per cent of sub-minimum wage employment.
- The overall incidence of youth-rate sub-minimum employment, therefore, is very low in Ireland. Just 0.7 per cent, or one in 140 employees, are on a sub-minimum youth rate. This is equivalent to approximately 15,000 individuals.
- While all employees aged 15–19 could legally be paid a sub-minimum wage, just under one-quarter are actually on a sub-minimum rate, with approximately three-quarters earning either the full minimum wage or higher pay.
- Not all sub-minimum wage employees aged 15–19 are classified as earning a youth rate. While the majority (83 per cent) classify themselves as earning a youth rate, approximately 11 per cent of sub-minimum wage workers in this age bracket are earning below minimum wage due to being an apprentice.
- With regard to the composition of sub-minimum youth-rate employees, just over half (55 per cent) are women, while 77 per cent work in either the accommodation, food or retail sectors. Approximately 80 per cent of sub-minimum youth-rate employees classify themselves as students. Sub-minimum wage apprentices are predominantly young men in the construction sector.

- The results of our probit regression analysis show the incidence of youth-rate employment among young women is approximately two percentage points higher than the incidence among young men. The incidence of youth rate employment among students is 12 percentage points higher than non-students. With regard to sector, the incidence of youth-rate employment for those working in accommodation, food or retail is eight percentage points higher than other sectors.
- Our analysis highlighted a data discrepancy, whereby the question in the Labour Force Survey relating to sub-minimum wages was not changed in time to coincide with the change in legislation. We recommend improved co-ordination between the Low Pay Commission and the Central Statistics Office (CSO) to ensure future policy changes are reflected in changes to the survey questions in a timely manner.

CHAPTER 1

Introduction

A National Minimum Wage was introduced in Ireland in 2000¹. The minimum wage in Ireland, as of 2023, is €11.30 per hour. However, legislation allows employers to pay certain categories of workers a sub-minimum wage. Prior to 2019, workers aged under 18 could be paid 70 per cent of the full rate. Those in their first or second year of employment from the time they turned 18, so-called ‘new entrants’ to the labour market, were entitled to 80 per cent and 90 per cent, respectively, of the full national minimum wage rate. So-called ‘trainee rates’ also existed for individuals over 18 who were undergoing a prescribed course of study or training (Low Pay Commission, 2016).² Following recommendations by the Low Pay Commission, the law relating to sub-minimum wages changed in 2019. There were concerns that, due to a lack of clear guidelines and definitions, the trainee rates were open to potential unfair use by employers. Furthermore, the rules relating to new entrants to the labour market were seen as being complicated, as they required employers to monitor the labour market history of employees. In light of these concerns, and in the interest of simplifying the rules, the trainee rates and the new entrant rates were abolished in 2019. A simplified system based on youth rates was implemented. The youth rates stipulate that an employee aged 19 can be paid 90 per cent of the minimum wage, an employee aged 18 can be paid 80 per cent of the minimum wage, and those below 18 years of age can be paid 70 per cent of the minimum wage.³

While Kelly and McGuinness (2017) provided an earlier overview of sub-minimum wage rates in Ireland, there is a gap in our understanding of the incidence of youth minimum wage rates and the characteristics of such workers, particularly since the 2019 policy change. We attempt to fill this gap by examining the incidence and composition of sub-minimum wage employment in Ireland, with a particular focus on sub-minimum youth rates. This is important given the recent focus on sub-minimum youth rates by policymakers, at both a national and international level. In Ireland, several TDs and trade unions have recently called for the abolition of youth rates on the grounds that they are too low and are unfair towards younger workers.⁴

¹ See: <https://www.irishstatutebook.ie/eli/2000/act/5/enacted/en/print>.

² Trainee rates vary from 75 to 90 per cent of the full national minimum wage rate (see Low Pay Commission, 2016).

³ Minimum wage legislation exempts apprentices, those employed by a relative, and prisoners involved in non-commercial work from being paid the national minimum wage. Apprentices were omitted in recognition of the long-standing practice of setting apprentice rates using Sectoral Employment Orders (Low Pay Commission, 2016). For current apprentice rates, see https://www.workplacerelations.ie/en/what_you_should_know/hours-and-wages/sectoral%20employment%20orders/construction-sector

⁴ See, for example, <https://mandate.ie/2023/01/mandate-trade-union-calls-for-abolition-of-discriminatory-and-disrespectful-sub-minimum-wage-rates-for-younger-workers/>; <https://www.oireachtas.ie/en/debates/question/2023-02-23/72/>

In March 2023 the European Committee of Social Rights evaluated the position of 33 countries with respect to the articles of the Revised European Social Charter relating to labour rights. The Charter is a Council of Europe treaty that aims to promote and protect several socio-economic rights. Ireland was found to be in breach of its labour rights obligations⁵, specifically in relation to Article 4 on ‘the right to a fair remuneration’: the article states that workers have the right to a level of remuneration that can guarantee them and their families a decent standard of living⁶. According to the Charter, if the net minimum wage is lower than 50 per cent of the net average wage, a decent standard of living cannot be ensured. When the net minimum wage is more than 60 per cent of the net average wage, it is considered a ‘fair remuneration’. If the net minimum wage is between 50 and 60 per cent of the net average wage, the country must evaluate whether this wage is sufficient to ensure a decent standard of living. Ireland was judged not in conformity to Article 4 because of the sub-minimum youth-rate wages, since they were considered to fall below 50 per cent of average earnings and cannot ensure a decent standard of living for young people (European Committee of Social Rights, 2023).⁷ Apart from Ireland, two other countries – Luxembourg⁸ and Malta⁹ – were officially found to be in breach of their labour rights obligations related to ‘the right to a fair remuneration’. While these countries provide a sub-minimum wage rate system, the non-conformity was not specifically related to the sub-minima rates but to the minimum wage per se, since the level was found to be below the 50 per cent of average earnings threshold. At the EU level, there are concerns about the use of sub-minimum wage rates as they can represent a limitation to minimum wage adequacy. This is reflected in the Directive on Adequate Minimum Wages in the European Union, which became law on 19 October 2022¹⁰. It sets a framework to improve the adequacy of minimum wages across the EU, to guarantee decent working and living conditions to EU workers and to increase the access of workers to minimum wage protection. The Directive provided Member States with guidelines regarding the use of the exemptions from and variations in statutory national minimum wages. Recital 29 states:

Without prejudice to the competence of Member States to set the statutory minimum wage and to allow for variations and deductions, it is important to avoid variations and deductions being used widely, as they risk having a negative impact on the adequacy of minimum wages. It should be ensured that variations and deductions respect the

⁵ For further information, see: <https://www.irishtimes.com/business/work/2023/03/22/ireland-found-in-breach-of-labour-rights-in-european-social-charter>.

⁶ The full text of the Revised Charter can be found here: <https://rm.coe.int/168007cf93>

⁷ The European Social Charter evaluates minimum wage adequacy based on the ratio of net minimum wage to net average (mean) wage, based on Eurostat data. However, Ireland and the UK set targets based on median wage. For example, the living wage target for Ireland is to achieve a minimum wage of 60 per cent of median hourly wage. Similarly, the UK have set a target of 66 per cent of median hourly wage. A more consistent and clearer approach for policymaking would be for judgements based on the European Social Charter to use hourly wage as a percentage of median wage.

⁸ See: <https://rm.coe.int/conclusions-xxii-3-2022-luxembourg-e/1680aa9855>

⁹ See: <https://rm.coe.int/conclusions-2022-malta-e/1680aa9871>

¹⁰ For more information, see: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32022L2041;>
[https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=SWD:2020:245:FIN.](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=SWD:2020:245:FIN)

principles of non-discrimination and proportionality. Variations and deductions should therefore pursue a legitimate aim.

Our research, therefore, contributes to a live policy debate that is ongoing both nationally and internationally with regard to sub-minimum wage rates. Understanding the incidence and composition of sub-minimum youth-rate employment is important, as it tells us the number of employees, as well as the type of employees, that are likely to be affected by any policy change in this area. If sub-minimum youth rates in Ireland were abolished, for example, there are potentially positive and negative impacts on affected employees. Employees would benefit as they would see their hourly wages increase. However, there are also potentially adverse effects, as several existing studies suggest that abolishing youth minimum wage rates can lead to reductions in the hours worked or employment of some affected workers (see, e.g., Hyslop and Stillman, 2021; Shannon, 2011; Neumark and Wascher, 2004). However, given the low incidence of sub-minimum youth-rate employment in Ireland, and the fact that most studies find relatively small adverse effects, the overall negative impact on employment may be quite small. From an employer's perspective, abolishing youth rates could see an increase in the wage bill of employers that employ sub-minimum wage workers, and our research will provide information on the sectors most likely to be impacted by a policy change.

To carry out our analysis, we use the Irish Labour Force Survey data. This is well suited to this type of analysis, as Ireland is the only country in the EU with specific minimum wage and sub-minimum wage questions in its Labour Force Survey. Employees are asked whether they earn the minimum wage or a sub-minimum wage rate. If they indicate that they earn a sub-minimum wage rate, then they are asked the reason for this. Therefore, the Irish data allow for a detailed examination of the sub-minimum wage employment.

Our results indicate that the incidence of youth-rate, sub-minimum wage employment is low. Approximately one in 140 employees in Ireland are on sub-minimum youth rates. The low incidence is reflected in the fact that, while all employees aged 15–19 could legally be paid a sub-minimum wage, just under one-quarter are actually on a sub-minimum rate, with approximately three-quarters earning either the full minimum wage or higher pay. Of the 15–19-year-olds that are paid a sub-minimum youth rate, approximately three-quarters work in either accommodation, food or retail. Just over half are women, while almost 80 per cent are students.

CHAPTER 2

Sub-minimum youth rates in other countries

Currently, 22 of the 27 EU countries, along with the UK, have a statutory minimum wage. However, only a minority of these countries also have sub-minimum youth rates. Currently, Belgium, Cyprus, France, Ireland, Luxembourg, Malta, and the Netherlands have some types of youth rates (Eurofound, 2021; 2023).

Belgium is the only country for which we must caveat any discussion of youth minimum wage rates. The reason is that the minimum wage framework in Belgium is so complex, that it is difficult to produce meaningful information or statistics that are relatable to other countries. Even national experts within Belgium point to the complexity of the system and the resulting difficulty when it comes to the analysis of sub-minimum rates.¹¹

Historically, Belgium has implemented sub-minimum youth rates for workers aged 20 years or younger. Beginning in 2013, a process of repealing some of the sub-minimum youth rates commenced. However, it appears that even before this process of repeal took place, very few of the youth rates were binding, as most workers were covered by sectoral agreements which were already higher than the national youth rates. Eurofound provides a recent (as of June 2023) update on the minimum wage situation in Belgium.¹² It is noted that, in April 2022, following revised collective bargaining agreements, ‘the remaining age and experience criteria for workers under the age of 21 were finally abolished’. However, the report goes on to state that in certain situations, different minimum wages can still apply to young workers. Specifically, Eurofound states:

In the absence of sectoral agreements on minimum wages for workers under the age of 21, national minimum wages for young workers under the age of 18 or for workers with a student contract, as stipulated by collective bargaining agreement no. 50/4, are as follows:

- 16 years old: 67% of the national minimum wage
- 17 years old: 73% of the national minimum wage
- 18 years old: 79% of the national minimum wage
- 19 years old: 85% of the national minimum wage
- 20 years old: 90% of the national minimum wage

¹¹ The Belgian Federal Planning Bureau on economic analyses and forecasts (López-Novella, 2018) note that, ‘Belgium has a complex minimum wage system with the sectoral level playing the main role and the national level serving as an absolute floor. This means that there are numerous minimum wages and that the sectoral minima, when they exist, are generally higher than the national minimum wage.’

¹² See: <https://www.eurofound.europa.eu/publications/article/2023/minimum-wages-in-belgium>

Therefore, based on the existing information relating to Belgium, we conclude that, while it may be possible in some cases to pay certain workers a sub-minimum rate, Belgium no longer has any practical or meaningful sub-minimum youth rates. Even before the reforms, which appear to have repealed virtually all sub-minimum youth rates, it was the case that most youth rates were not applicable due to sectoral agreements that were already in place. Later in this section, we gather information on countries with sub-minimum youth rates into a table (Table 2.1). For the reasons outlined above, we exclude Belgium from this table.

In France, workers aged 15 and 16 with fewer than six months of experience, and workers under 16 working during summer holidays, are entitled to 80 per cent of the full national minimum wage rate. Workers with fewer than six months of experience aged 17 are entitled to 90 per cent of the full rate. Young people on professionalisation contracts, depending on both previous qualifications and age (from below 18 to 25), have a reduced rate from 55 per cent to 80 per cent of the national minimum wage¹³. Luxembourg provides reduced rates for workers aged less than 17 years old (75 per cent of the national minimum wage) and workers aged 17 years (80 per cent of the national minimum wage). Malta applies reduced rates to young people aged under 17 (95 per cent of the national minimum wage), and those aged 17 (96 per cent of the national minimum wage). The Netherlands provides different reduced youth rates, and they apply to workers aged from 15 (30 per cent of the national minimum wage) to workers aged 20 (80 per cent of the national minimum wage). In 2012, following the Great Recession, Greece introduced a reduced rate for young people aged under 25, but it was abolished in 2019. Outside the EU, the UK provides reduced minimum wage rates for young people (UK Low Pay Commission, 2019). Those 23 years old and over are entitled to the national living wage of £10.42 per hour. Young people aged 21–22 years, 18–20 years and under 18 years are entitled to £10.18 per hour, £7.49 per hour, and £5.28 per hour, respectively. Table 2.1 summarises the sub-minimum youth rate regimes in place in Europe.

¹³ Professionalisation contracts combine practical work in a company with training. For more information, see: <https://travail-emploi.gouv.fr/formation-professionnelle/formation-en-alternance-10751/contrat-de-professionnalisation>.

TABLE 2.1 SUB-MINIMUM YOUTH RATE REGIMES IN THE EU COUNTRIES AND THE UK

Country	Group of workers	% of full National Minimum Wage
Cyprus	Seasonal workers younger than 18 not exceeding two continuous months of work	75
France	Workers with fewer than six months of experience aged 15 and 16; workers under 16 working during summer holidays	80
	Workers with fewer than six months of experience aged 17	90
	Workers on professional contracts, depending on both previous qualifications and age (aged from under 18 to 23)	55 to 80
Ireland	Workers under 18	70
	Workers aged 18	80
	Workers aged 19	90
Luxembourg	Workers aged 15 to under 17	75
	Workers aged 17 to under 18	80
Malta	Workers aged under 17	95
	Workers aged 17	96
The Netherlands	Workers aged 15	30
	Workers aged 16	34.5
	Workers aged 17	39.5
	Workers aged 18	50
	Workers aged 19	60
	Workers aged 20	80
United Kingdom	Workers under 18	51
	Workers aged 18 to 20	72
	Workers aged 21 to 22	98

Source: Eurofound 2021, 2023 (authors' elaboration)

The main arguments in favour of sub-minimum wage rates for young people are that they can provide wage protection for young people who choose to enter the workforce and at the same time ensure wages are not set so high that they could discourage employers from hiring them, therefore supporting youth employment. Theoretically, young people have lower productivity than older workers who have more work experience, thereby resulting in a lower wage (OECD, 2015; Kelly and McGuinness, 2017). Reduced rates for young people can also act as a disincentive to early leaving of education or training to enter the labour force, and this may negatively affect human capital accumulation. But for instance, in the case of Ireland, Kelly and McGuinness (2017) found some sort of variation in early school leaving rates between 2003 and 2015, but it was not clear to what extent this could have been related only to changes in minimum wages.

On the other hand, the main argument against youth rates is the equality argument: there should be 'equal pay for equal work', and age should not be used as a means of discrimination. To support the argument of abolishing sub-minimum youth rates in Ireland, several TDs have recently made the argument that, while under equality legislation it is illegal to discriminate based on age, the sub-minimum youth rates provide a means to allow employers to do so.¹⁴ On the issue

¹⁴ See <https://www.oireachtas.ie/en/debates/debate/dail/2022-02-15/10/>

of discrimination and the legality of sub-minimum youth rates, the Irish Human Rights and Equality Commission notes that the Employment Equality Act allows for employees to be treated differently in certain circumstances. One of those circumstances relates to the minimum wage, whereby anything that is legal under the National Minimum Wage Act 2000 is not discrimination on the age ground.¹⁵

¹⁵ See <https://www.ihrec.ie/guides-and-tools/human-rights-and-equality-for-employers/what-does-the-law-say/exemptions-to-the-employment-equality-acts/>

CHAPTER 3

Literature on the impacts of sub-minimum youth rates

While there is extensive literature on the employment effects of minimum wages, the literature focusing specifically on sub-minimum youth rates is smaller. Nonetheless, several notable studies exist which provide important information on the potential implications of altering or abolishing sub-minimum youth rates.

Several studies examine minimum wage settings across countries or regions to study the impact of sub-minimum wage regimes on employment outcomes of young workers. Using data for 17 OECD countries from 1975–2000, Neumark and Wascher (2004) find evidence consistent with the view that minimum wages cause employment loss among young people. However, they note that these adverse effects are smaller in countries that have youth minimum wage regimes. Consistent with Neumark and Wascher (2004), Marimpi and Koning (2018) study 30 OECD countries and find that the employment rate of young workers is higher in countries with youth minimum wages compared to countries with a uniform minimum wage regime. Shannon (2011) examines the effects of the abolition of seven youth minimum wage rates in different Canadian provinces during the period 1986–1998 using Labour Force Survey data. The results provide some evidence that abolishing youth rates, and thereby increasing the minimum wage rate for young people, had negative effects on employment and hours worked among 15- to 16-year-old workers.

Other work focuses specifically on policy changes in a particular country. In New Zealand, prior to 2008, a youth minimum wage rate was provided for 16- and 17-year-old workers and set at 80 per cent of the adult minimum wage. In 2008, the youth minimum wage rate was abolished and replaced with a new entrants rate, set at 80 per cent of the adult minimum wage. However, this only applied to 16- and 17-year-olds for their first three months or 200 hours of employment. At the same time, the adult minimum wage increased by 2.5 per cent. Therefore, the combined increase in the adult rate, coupled with the abolition of the youth rate (for workers not eligible for the new entrants rate) saw a 28 per cent increase in the real value of the minimum wage for 16- and 17-year-old workers. Hyslop and Stillman (2021) find that the policy change reduced the employment rate of 16- and 17-year-olds by 3–6 percentage points in the subsequent two-year period, with these effects mostly felt by students. There is also evidence of a substitution towards older workers aged 18–19 years. While it appears that young students in minimum wage employment experienced some negative employment impacts, the authors note that overall, the large minimum wage increase had fairly small adverse effects.

In Turkey, prior to 2014, 15-year-olds were entitled to receive 85 per cent of the adult minimum wage, with the adult minimum wage applying from age 16. In 2014,

the government abolished the youth rate, meaning 15-year-old workers were eligible for the full adult minimum wage rate. Using data from the Survey of Income and Living Conditions from 2012 to 2017, Dayioglu et al. (2022) investigate the impact of the abolition of the sub-minimum youth rate wage on youth employment. They find that the increase in minimum wage reduced the employment probability of 15-year-old boys by 21–26 percentage points, as the employers decided to replace this group of workers with more experienced/older workers at the same wage cost. The authors note that the abolition of the youth rate was associated with an increase in the likelihood of a worker becoming NEET (not in education, employment or training) in the short run. However, the NEET effect was transitory and in the medium term, the employment losses were largely absorbed by increased school enrolment.

Yannelis (2014) analyses the impact of a minimum wage reform which took place during the economic crisis in Greece in 2012. In order to comply with the IMF structural adjustment programme and to qualify for loan disbursements, the Greek minimum wage was reduced by 22 per cent for workers aged 25 and above and 32 per cent for workers below 25. Yannelis (2014) finds negative employment effects for older workers. Specifically, there was a reduced rate of new hires for workers aged above 25, as a result of a substitution towards the ‘cheaper’ hires under 25 years.

In the Netherlands, in 2017, a reform led to an increase in age-specific minimum wages for workers aged 20–22. Specifically, there was an increase in the age-specific minimum wage for 20- to 22-year-olds of 15 to 19 per cent, while there was no increase for older workers. Van Bezooijen et al. (2021) do not find evidence of adverse employment outcomes for the affected subgroup of workers.

López-Novella (2018) analyses the impact of reforms to Belgian sub-minimum youth rates that took place from April 2013 to January 2015, whereby youth rates for workers aged 18 to 20 were abolished. Three outcomes are analysed: the wage rate; the probability of remaining employed in the same firm; and the probability of being employed by a new firm. The authors find that the reforms to the sub-minimum youth rates had a positive impact on wages and on the probability of remaining employed within a firm. However, it had a negative impact on the probability of being employed by a new firm. Overall, the author indicates that the impact on employment was very limited, as both effects (increased probability of staying with a firm versus decreased probability of being hired by a new firm) counteract each other. However, López-Novella (2018) also notes that the limited impact on employment may also be attributed to the fact that the sub-minimum youth rates were likely not binding in most cases before the reform.

While the above literature examines the impact of youth minimum wage regimes on employment outcomes, a related strand of literature exploits discontinuities in youth minimum wage settings to study the employment effects of minimum wages more generally. Youth minimum wage settings typically involve increasing minimum wage rates that occur when a worker becomes one year older. For

example, a 17-year-old youth minimum wage worker is suddenly entitled to a higher youth rate on their 18th birthday. Several studies utilise this in a quasi-experimental research design. To continue with our example, such studies examine whether, upon turning 18, a worker experiences negative employment effects that coincide with the higher minimum wage entitlement. More formally, these studies use a regression discontinuity design. By examining employment outcomes just before the workers' birthday, and comparing them to employment outcomes just after their birthday, the causal effect of a higher minimum wage can be examined.

A number of studies apply this type of research design to sub-minimum wage settings in different countries. Applied to youth rates in the Netherlands, Kabátek (2021) finds that job separations spike just before the workers' birthdays, suggesting firms dismiss workers whose wages are about to go up. However, job accessions increase immediately after the birthdays with the net result being a dynamic impact on employment whereby there is an initial drop followed by a re-employment of workers after their birthdays. Kabátek (2021) notes that the overall employment effect is not clear as the data are not sufficient to precisely estimate this. In Denmark, when workers turn 18 the average hourly wage increases by around 40 per cent. Kreiner et al. (2020) find that the minimum wage increase at age 18 caused a 33 per cent decrease in employment of 18-year-old workers. The findings indicate that this impact is nontrivial and persistent. One year after losing their job at age 18, just 40 per cent of individuals are employed, compared to 75 per cent individuals that did not lose their job.

Other studies find no adverse employment effects. In Australia, youth minimum wages start at 50 per cent of the full rate for 16-year-olds and then increase by 10 per cent per year until the worker reaches 21, after which they earn the full rate. Olssen (2011) estimates the impact of the increasing youth minimum wage rates on the employment outcomes of workers as they get older and finds no evidence of negative employment effects.

Dickens et al. (2010) apply a regression discontinuity design to study the impact of a minimum wage change in the UK. At the time, the minimum wage regime provided a youth rate for workers under the age of 22 that was approximately 20 per cent below the adult rate. The authors did not find any adverse employment effects associated with the higher adult rate for workers that turn 22 years of age. They found evidence of an increase in the employment rate at this age. While they are unable to explain the precise reason for this, they suggest that it may be due to a labour supply effect: when a worker turns 22 and is eligible for a 20 per cent higher minimum wage rate, they increase their labour supply.

CHAPTER 4

Minimum wage policy in Ireland

In 1997, the Irish government set as a key priority the introduction of a national minimum hourly wage. A National Minimum Wage Commission (NMWC) was appointed and gave recommendations to set the initial rate for the national minimum wage at around two-thirds of median earnings. The Commission also recommended allowing some sort of sub-minimum wage rates to avoid early school leaving and promote training among employees. The Commission proposed a separate rate for those aged below 18 at 70 per cent of the full rate and a separate training rate for apprentices, trainees and job entrants without experience, regardless of age. Following the government's receipt of the National Minimum Wage Commission Report in 1998, an Inter-Departmental Group on the Implementation of a national minimum wage was also established. Regarding the sub-minimum wage rates, the Group suggested to treat separately apprentices, job entrants and trainees: apprentices should be excluded from the scope of the national minimum wage; reduced training rates should only apply in respect of people undergoing training leading to certification; those entering the labour market for the first time should have reduced separate rates for the first two years.

These deliberations ultimately led to the introduction of a national minimum wage in Ireland with the National Minimum Wage Act in 2000, which largely implemented the recommendations of the Inter-Departmental Group. A system of sub-minima rates was established, and it included:

Age based rates: an employee who has not attained the age of 18 years (17 and below) shall be remunerated 70 per cent of the national minimum hourly rate of pay.

Age and experience-based rates: a new entrant in the labour market in their first year of employment aged over 18 shall be remunerated at 80 per cent of the national minimum wage. In their second year of employment, having turned 18, they are entitled to 90 per cent of the national minimum wage. For example, if a young worker is employed upon turning 18, then they were entitled to be paid 80 per cent of the full national minimum wage for one year. If they stay employed, then upon turning 19, they would be entitled to 90 per cent of the national minimum wage. Upon turning 20, they would then be entitled to the full national minimum wage. However, the experience-based rates also applied to older employees who had not previously held employment. This required an employer to monitor an employee's work history to determine if they could be paid a sub-minimum wage rate.

Trainee rates: if an employee aged over 18 years undergoes a course of study or training authorised by the employer within the workplace or elsewhere during normal working hours, the employee shall be remunerated 75 per cent of the

national minimum wage, for the first one-third period (but not exceeding 12 months) of the total study or training period; 80 per cent of the national minimum wage, for the second one-third period (but not exceeding 12 months) of the total study or training period; 90 per cent of the national minimum wage, in respect of the third one-third period (but not exceeding 12 months) of the total study or training period. The Act provides certain criteria which the training course must meet if the trainee rates are to apply.

The National Minimum Wage Act indicated categories of workers exempt from being paid the national minimum wage, including apprentices, people employed by relatives/spouses, and prisoners engaged in non-commercial activity.

In 2015, a Low Pay Commission was established in Ireland¹⁶. Its role is to make yearly recommendations to the Irish government on a minimum wage that is 'fair and sustainable' and will 'assist as many low-paid workers as possible without harming overall employment and competitiveness'. The Low Pay Commission made recent recommendations relating to sub-minimum wages in Ireland (Low Pay Commission, 2017) that were accepted by the Irish government and introduced in Part 5 of the Employment (Miscellaneous Provisions) Act 2018¹⁷. The act was passed in December 2018, and the new sub-minima rates system came into force from 4 March 2019. The Commission recommended to:

- Abolish the training rates. The Commission had heard evidence of trainee rates not well implemented because the lack of clear definitions may have left them open to abuse by employers in order to reduce wage costs.
- Simplify the youth rates and abolish the experience-based rates. The system would be administratively simpler from an employer's perspective as it would not require an employer to establish the previous work history of an employee.

Therefore, following the policy reforms in 2019, employers can no longer pay sub-minimum training rates or experience-based rates, but can pay sub-minimum youth rates as follows: an employee aged below 18 is entitled to 70 per cent of the minimum wage; an employee aged 18 is entitled to 80 per cent of the minimum wage; an employee aged 19 is entitled to 90 per cent of the minimum wage. Those employed by a relative, as well as apprentices and prisoners engaged in non-commercial activity, are still exempt from having to be paid a minimum wage.¹⁸ Table 4.1 shows the national minimum wage rate along with the sub-minimum youth rates for 2022 and 2023.

¹⁶ For more information, see: <https://www.irishstatutebook.ie/eli/2015/act/22/enacted/en/html>.

¹⁷ For more information, see: <https://www.irishstatutebook.ie/eli/2018/act/38/section/18/enacted/en/html#sec18>.

¹⁸ The Labour Force Survey captures information from private households, and therefore does not survey prisoners.

TABLE 4.1 NATIONAL MINIMUM AND SUB-MINIMUM WAGE RATES IN 2022 AND 2023

Age group	% of minimum wage	Minimum hourly rate of pay in 2022	Minimum hourly rate of pay in 2023
Under 18	70%	€7.35	€7.91
18	80%	€8.40	€9.04
19	90%	€9.45	€10.17
20 and over	100%	€10.50	€11.30

Source: <https://www.citizensinformation.ie/en/employment/employment-rights-and-conditions/pay-and-employment/minimum-wage/>

CHAPTER 5

Data and methodology

In this study we use data from the Irish Labour Force Survey (LFS) for the years 2016 to 2022. The LFS is administered by the Central Statistics Office (CSO) in Ireland and is the official source of labour market statistics, including employment and unemployment. The survey is administered quarterly, and households are randomly selected for inclusion in the survey and are included for five consecutive quarters. Prior to the onset of the COVID-19 pandemic in 2020, the first LFS interview was conducted face to face and the majority of follow-up interviews were conducted by telephone. However, due to public health measures put in place in 2020, the initial face-to-face interview was temporarily suspended. Instead, households were sent a letter before the first interview, explaining the purpose of the survey and to arrange a suitable time for a telephone interview.¹⁹ Face-to-face interviews then resumed in late 2021²⁰.

Since 2016 the Irish LFS contains a direct question that captures information on whether a person is a minimum wage employee or not. The prevailing national minimum wage at the time of the survey is stated, and the respondent is then asked whether their hourly wages are equal to, above, or below this rate. Specifically, the LFS questionnaire states:

*The national minimum wage is € {national minimum wage} per hour.
Are your gross hourly earnings excluding bonuses, overtime and
allowances:*

- *Less than € {national minimum wage} per hour*
- *Exactly € {national minimum wage} per hour*
- *More than € {national minimum wage} per hour*

Further, respondents that indicate they are earning below the national minimum wage are asked to record the reason for earning a sub-minimum rate. They are asked, 'Do you earn less than € {national minimum wage} per hour because you are:' and presented with a list of options. From 2016 to the second quarter of 2019 possible answers to this question included: 'A special training rate', 'An age-related rate', 'A first job over 18 rate', and 'Other reason'. From the third quarter of 2019 onwards possible answers to the question include: 'On an age-based rate that is aged 19 or younger', 'Employed by an immediate relative including spouse or

¹⁹ Most of the data collection in Q1 of 2020 was unaffected. However, from Q2 in 2020, all first interviews were by telephone.

²⁰ For further information, see: <https://www.cso.ie/en/releasesandpublications/in/lfs/informationnoteonimplicationsofcovid-19onthelabourforcesurvey/>.

siblings or parents or grandparents’, ‘Participating in an apprenticeship programme’, and ‘Other reason’.

The total number of observations across all years for sub-minimum wage employees, full-rate minimum wage employees, and higher paid employees is 4,491, 19,990 and 290,612, respectively. When examining the characteristics of sub-minimum wage employees, we also utilise LFS information relating to educational attainment, age, gender, nationality, sector of employment, firm size, and whether or not the employee a student.²¹

The policy change for the categories of sub-minimum wage employment came into effect on 3 March 2019. As such, the question in the LFS should have been updated in Quarter 2 of 2019. However, it was not updated until Quarter 3 of 2019. While resulting in one less quarter of data to include in our post-policy change analysis, this will not have a significant impact on our results, as we pool the post-policy time periods from Quarter 3 of 2019 to Quarter 4 of 2022. However, we stress the importance of ensuring timely updates to LFS questions in line with policy changes to ensure the viability and reliability of future research.

Our methods consist of descriptive analysis followed by estimation of a probit regression. Our descriptive analysis looks at the incidence and composition of different types of employment: sub-minimum wage, minimum wage and higher pay. This allows us to analyse both the prevalence of sub-minimum wage employment in Ireland, as well as the average characteristics of sub-minimum wage employees. We then focus more narrowly on youth sub-minimum wage employment among 15–19-year-old employees in the post-policy change period from Quarter 3 of 2019 to Quarter 4 of 2022, again looking at the incidence of different types of employment and the average characteristics of this group.

We then use probit regression models to examine the difference in the incidence of youth-rate employment, relative to all other types of employment, controlling for employees’ characteristics. We employ different model specifications. Recall that our subsample is made up of individuals aged 15 to 19, in the post-policy change years (Q3 2019 to 2022). We estimate the following:

$$YouthRate_i = \alpha + X_i' \beta + \varepsilon_i$$

where $YouthRate_i$ is a binary variable which equals to one if an individual i is a sub-minimum wage worker on a youth rate and zero if the individual is in another type of employment. The vector X_i' denotes a set of individual characteristics of worker i , including gender, nationality (Irish/non-Irish), sector, age, education, firm size and whether the person is a student. In the first specification, we include all types of

²¹ The labour force survey captures a person’s self-defined labour status. This is used to evaluate whether a person is a student. The responses to self-defined labour status include: employed; unemployed; retired; unable to work due to health problems; student, pupil; fulfilling domestic tasks; compulsory military service; other.

employees. That is, $YouthRate_i$ is equal to zero if an individual is on a sub-minimum wage for another reason apart from a youth rate, on full-rate minimum wage, or on higher pay. The coefficients capture the relative incidence of youth-rate employment. Take, for example, the gender variable which equals one for women and zero for men. The coefficient associated with this variable compares the incidence of youth-rate employment among young women to that of young men. A coefficient of 0.02, for example, would indicate that, when looking at all young employees, the incidence of youth-rate minimum wage employment is two percentage points higher for women compared to men, while controlling for the other characteristics in the model.

We also employ separate specifications where we compare youth-rate minimum wage employees to those on other sub-minimum wages only, on full-rate minimum wages only, and on higher pay only. Therefore, we narrow the subsample and focus on the incidence of youth-rate employment relative to the group of interest. For example, our specification comparing youth-rate to full-rate minimum wage workers looks at the incidence of youth-rate employment among these two groups and compares the incidence across the variable of interest (e.g., gender). Therefore, the coefficient tells us the difference in the incidence of youth-rate employment by, for example, gender among youth-rate and full-rate employees aged 15–19.

CHAPTER 6

Results

We begin by looking at the incidence of minimum wage and sub-minimum wage employment over time. Table 6.1 shows the percentage of all employees that are on sub-minimum wage rates, as well as the percentage on the full minimum wage rate, both before and after the 2019 sub-minimum policy change. The incidence of sub-minimum wage employment in Ireland is low. In 2022, just 1.4 per cent of employees were sub-minimum wage employees. This compares to an incidence of full-rate minimum wage employment in 2022 of 5.6 per cent.

TABLE 6.1 INCIDENCE OF SUB-MINIMUM AND MINIMUM WAGE EMPLOYMENT (2016–2022)

Year	Employees on sub-minimum wage (%)	Employees on minimum wage (%)
2016	1.8	9.1
2017	1.4	7.2
2018	1.5	7.0
2019	1.4	5.9
2020	1.2	5.9
2021	1.4	7.0
2022	1.4	5.6

Source: Irish Labour Force Survey

The LFS asks respondents the reason why they earn less than the minimum wage. As outlined in Section 2, sub-minimum wage policy changed in mid-2019. The reasons for earning below the minimum wage in the LFS question also changed over time. Up until the first half of 2019, employees indicating that they earned below the minimum wage were asked why and were given the following menu of options to choose from: a special training rate; an age-related rate; first job over 18 years of age. In addition to these reasons, the LFS question also included an ‘other category’. This potentially captures individuals being paid a sub-minimum rate illegally, as well as individuals who may earn a sub-minimum rate due to working for a relative. Following the change in policy, employees earning below minimum wage were asked why, and given the following menu of options: a youth rate; employed by a relative; on an apprentice programme; for ‘other reasons’. Note that the latter question (post-policy change) specifically asks whether the person works for a relative, so while this may have been captured in the ‘other category’ in the pre-policy years (2016 to Quarter 2 2019), it is directly recorded in the post-policy years (Quarter 3 2019 to 2022).

Table 6.2 shows the distribution of sub-minimum wage employment by category for both the pre- (Panel A) and post-policy change (Panel B) time periods. In the pre-policy change period, approximately one-quarter of sub-minimum wage employees were on a special training rate, with just over one-quarter (28 per cent) on an age-related rate. Approximately one in ten sub-minimum wage employees were earning a sub-minimum wage rate due to it being their first job over 18 years of age, while just over one-third reported earning a sub-minimum wage for other reasons.

TABLE 6.2 REASONS FOR SUB-MINIMUM WAGE EMPLOYMENT

A. Pre-Policy Change (2016 to Q2 2019)				
	A special training rate (%)	An age-related rate (%)	A first job over 18 (%)	Other reasons (%)
Pre-policy change (2016 to Q2 2019)	26	28	12	34

B. Post-Policy Change (Q3 2019 to 2022)				
	Youth rate (aged 15–19)	Employed by a relative	Apprentice programme	Other reasons
Post-policy change (Q3 2019 to 2022)	53	5	21	21

Source: Irish Labour Force Survey

Following the policy change, 53 per cent of sub-minimum wage employees were on a youth rate.²² Given that just 1.4 per cent of all employees are sub-minimum wage workers and that just over half of these are on a youth rate, this indicates that the incidence of sub-minimum youth rate employment in Ireland is just 0.7 per cent. This means that just one in every 140 employees in Ireland is on a sub-minimum youth rate, equivalent to approximately 15,000 individuals. Panel B of Table 6.2 also indicates that just one in 20 people on sub-minimum rates reported being employed by a relative, while one in five sub-minimum wage employees were in an apprentice programme. The remaining 21 per cent were classified as sub-minimum wage employees for other reasons.

The post-policy period in Table 6.2 includes years where the COVID-19 pandemic and the associated public health measures were in place. Severe lockdowns in 2020 and 2021 had significant impacts on labour markets and this may impact labour market statistics. Therefore, we replicate the analysis from Table 6.2 using time periods that did not involve severe public health restrictions. Specifically, we replicate Table 6.2 using Q3 and Q4 of 2019, Q1 of 2020, and all of 2022. The results are shown in Appendix Table A.1 and are broadly consistent with the statistics in Table 6.2.

²² The minimum wage for those aged 19 is 90% of the prevailing rate, for those aged 18 it is 80% and for those aged 17 and under it is 70%.

6.1 THE CHARACTERISTICS OF SUB-MINIMUM AND MINIMUM WAGE EMPLOYEES

In Table 6.3 we show the incidence of sub-minimum wage and minimum wage employment by various employee characteristics, including gender, age, educational attainment, nationality (Irish or non-Irish) and sector. As previous research has highlighted that minimum wage employment is heavily concentrated in the accommodation, food and retail sectors (Redmond and McGuinness, 2023), we create a variable to indicate whether an employee is employed in these sectors. Many other sectors have very low numbers of sub-minimum wage employees and therefore cannot be examined separately due to too few observations. However, one other sector of note which we also include is ‘specialised construction activities’, as we find that many workers on apprentice rates are located in this sector.

While the incidence of full-rate minimum-wage employment declined over both periods (8.2 versus 6.7 per cent for women and 6.6 versus 5.3 per cent for men), the incidence of sub-minimum wage employment across groups has been relatively stable over time. It is notable that, although all employees aged 15–19 are potential candidates for youth-rate sub-minimum wage employment, just under one-quarter of these employees are actually on a sub-minimum rate. Between 35–40 per cent earn the full-rate minimum wage, with roughly the same percentage on higher pay (above minimum wage). Therefore, from 2019 to 2022, 75 per cent of employees aged 15 to 19 were either earning the full-rate minimum wage or higher pay (above minimum wage).

Minimum wage employees tend to be concentrated in the accommodation, food and retail sectors. Table 6.3 indicates that approximately 18 per cent of all employees in these sectors earn the full-rate minimum wage. Just over 3 per cent of employees in this sector earn a sub-minimum wage. While this seems low, note that it is more than double the incidence of sub-minimum wage employment generally, which stands at 1.4 per cent. The incidence of sub-minimum wage employment is also relatively high in the specialised construction activities sector. Pre-policy change, 4.8 per cent of employees in this sector were earning below the minimum wage, compared to 6.5 per cent in the post-policy period. Recall that legislation exempts certain apprentices from being paid the minimum wage, and many apprentices are located in the construction sector, hence explaining the relatively high percentage of employees in this sector earning below the national minimum wage.

Table 6.3 also shows that approximately 3 per cent of employees in small firms (less than ten employees) are on a sub-minimum wage, with 11 per cent on the full-rate minimum wage. The corresponding figures for larger firms are 1 per cent and 5 per cent respectively. When looking at students with a job, we see that approximately 15 per cent are on a sub-minimum wage rate, 36 per cent are on the full-rate minimum wage, with approximately half earning above minimum

wage.²³**TABLE 6.3 INCIDENCE OF SUB-MINIMUM, MINIMUM WAGE AND HIGHER PAID EMPLOYMENT BY EMPLOYEE CHARACTERISTIC**

	% on sub-minimum wage		% on minimum wage		% above minimum wage	
	Pre-policy change	Post-policy change	Pre-policy change	Post-policy change	Pre-policy change	Post-policy change
Female	1.4	1.3	8.2	6.7	90.4	92.0
Male	1.6	1.4	6.6	5.3	91.7	93.3
Young workers (aged 15–19)	24.0	24.8	40.0	36.0	36.0	39.2
High education	0.4	0.3	2.8	2.1	96.8	97.6
Irish national	1.6	1.5	6.6	5.9	91.8	92.6
Accommodation, food or retail	3.3	3.4	18.7	17.3	78.0	79.3
Construction	4.8	6.5	5.3	5.1	89.9	88.4
Small firm	3.1	2.7	11.9	11.4	85.0	86.0
Large firm	1.1	1.0	6.1	4.8	92.8	94.1
Student	15.6	14.2	40.7	36.4	43.7	49.4

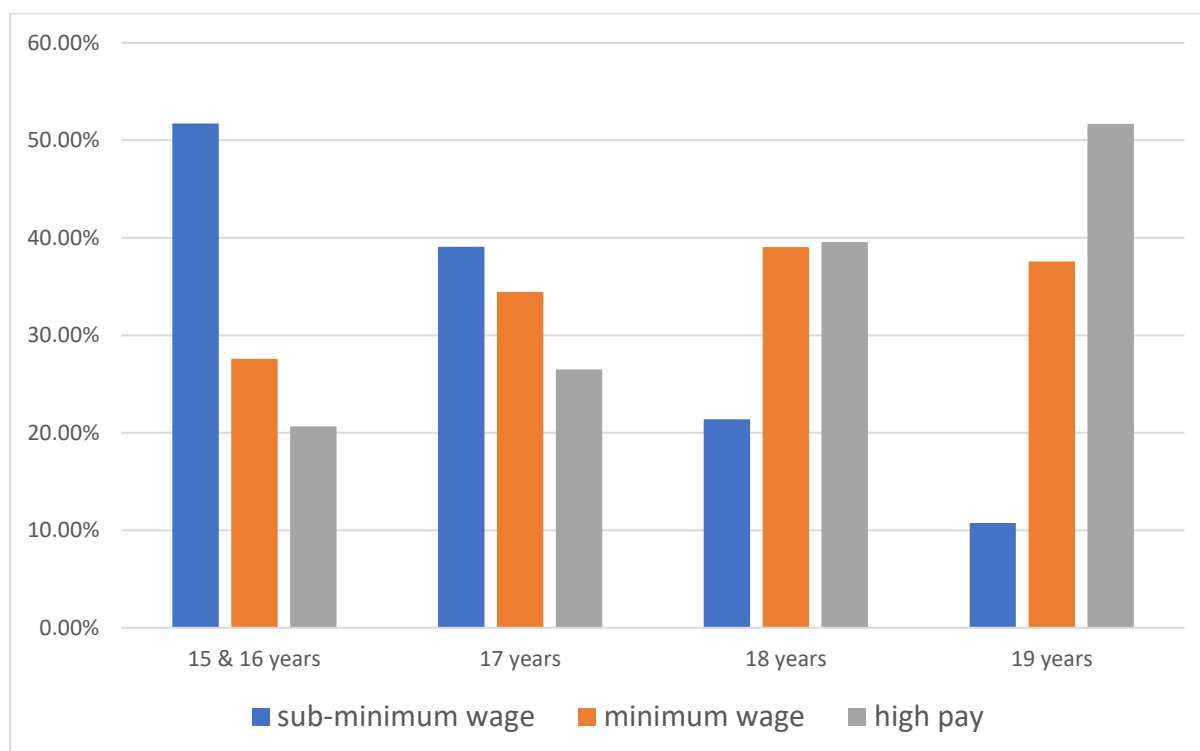
Source: Irish LFS

Table 6.3 indicates that just one in four employees in the 15–19 years age range were earning a sub-minimum wage rate. In Figure 6.1, we examine whether this varies by age within this category. Figure 6.1 shows that the incidence of sub-minimum wage employment is highest among 15- and 16-year-olds and declines with age. Just over half of employees aged 15 and 16 are on a sub-minimum rate. However, by age 19, this has declined to just 11 per cent. The incidence of full-rate minimum wage employment and higher paid employment, on the other hand, increases with age. Among 15- and 16-year-olds, 28 per cent and 21 per cent of employees are on full-rate minimum wage and higher pay, respectively. By age 19, the percentage of employees on the full-rate minimum wage has increased to 38 per cent, while the percentage on higher pay has increased to 52 per cent. Therefore, Figure 6.1 shows that among the age group that are potentially eligible for sub-minimum wage employment (15–19 years), the incidence of this type of employment is much higher among the youngest employees (15- and 16-year-olds), compared to those aged 17–19 years.²⁴

²³ As a robustness test, Table A.2 reports the statistics using the time periods during which no severe COVID-19 restrictions were in place (Q3 and Q4 of 2019, Q1 of 2020, and all of 2022). The results are consistent with Table 6.3.

²⁴ We replicate the analysis from Table 6.3 using time periods that did not involve severe public health restrictions: Q3 and Q4 of 2019, Q1 of 2020, and all of 2022. The results are shown in Appendix Table A.2 and are broadly consistent with the statistics in Table 6.3.

FIGURE 6.1 INCIDENCE OF SUB-MINIMUM, MINIMUM WAGE AND HIGHER PAID EMPLOYMENT BY EMPLOYEE CHARACTERISTIC (Q3 2019–2022)



Source: Authors' elaboration based on Irish LFS data

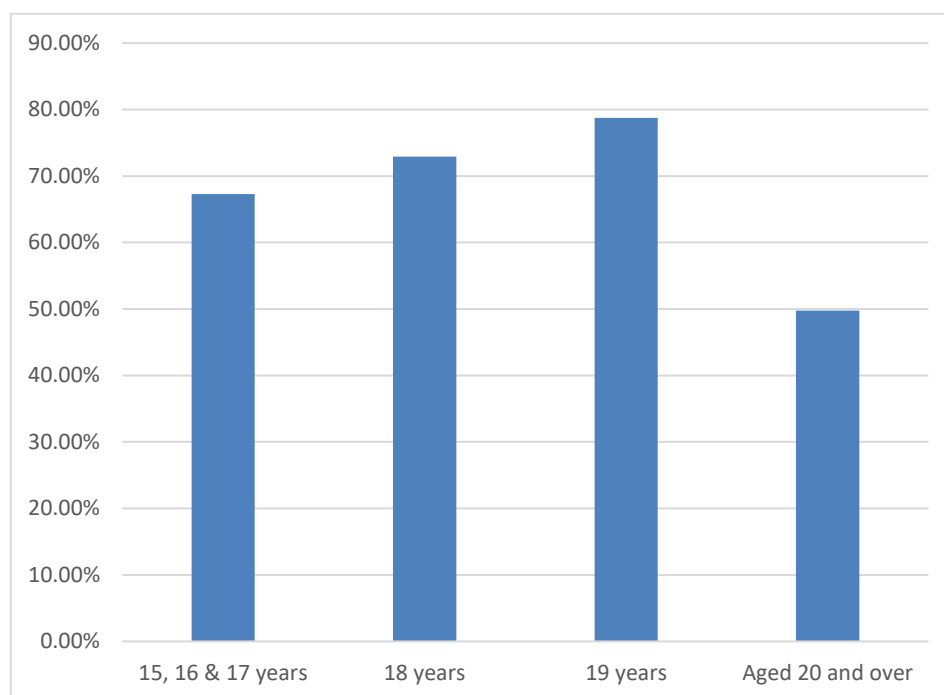
In Figure 6.2, we show the 'bite' of each of the sub-minimum youth rates by age, as well as for the full national minimum wage rate. The bite is calculated as the minimum wage divided by the median wage. We use separate median wages by age. For example, the youth rate for those aged 15–17 years in 2022 was €7.35 per hour. The median wage among 15–17-year-olds in 2022 was €10.92 per hour.²⁵ Therefore, the bite of the sub-minimum youth-rate for 15–17-year-olds was 67 per cent ($(7.35 / 10.92) \times 100$). In addition, Figure 6.2 shows that, based on the sub-minimum youth rates and median wages in 2022, the bite for those aged 18 and 19 years was 73 per cent and 79 per cent, respectively. When considering the full-rate national minimum wage, applicable to those aged 20 and over, the bite is lower at just under 50 per cent. Note that when we are calculating the bite for this group, we use a much wider age band including anyone aged 20 or above. As this includes high earners, the median wage is naturally higher, and therefore the bite is lower.²⁶

²⁵ The median wage is calculated using the Labour Force Survey administrative wage data. Some caution is called for due to potential measurement error and missing observations. The measurement error comes from the fact that we must use quarterly earnings combined with 'usual hours worked' to calculate an hourly wage rate. The administrative wage data excludes very low earners. This appears particularly problematic for sub-minimum workers as, for example, there are many sub-minimum workers that work very low hours and classify themselves as students that answer the minimum wage question but have missing information on quarterly earnings. However, in this instance we are dealing with a robust statistic (the median), which may mitigate some of these issues.

²⁶ The median wage for those aged 20 and above in 2022 was €21.10.

The UK Low Pay Commission (2023) produce a similar graph for the UK (Figure 5.10 in UK Low Pay Commission, 2023). While their system of youth rates is different from Ireland's, we can nonetheless compare the respective bites among different age groups between both countries. In the UK, the bite among 16- and 17-year-olds in 2022 was just over 62 per cent, which is slightly lower than the bite of 67 per cent for 15- to 17-year-olds based on the youth rates in Ireland. For those aged 18–20 in the UK, the bite is 70 per cent. In Ireland, the bite in 2022 based on sub-minimum youth rates for 18- and 19-year-olds is higher, at 73 per cent and 79 per cent respectively. In the UK, there is a youth rate for those aged 21–22, and this leads to a bite of 87 per cent. The national living wage kicks in at age 23 in the UK, and the UK Low Pay Commission (2023) calculates a bite of the national living wage for those aged 23 and over in 2022 of just over 60 per cent. In Ireland, the bite of the national minimum wage for those aged 20 and over in 2022 was lower, at 50 per cent. Therefore, in Ireland, the bite for younger workers aged 15–19, based on youth rates in 2022, is higher than comparable workers in the UK. However, for employees over 20 years of age, the bite in the UK is higher than in Ireland. This is because the UK currently sets the national living wage based on a percentage of median wage, effectively setting a target for the bite of the living wage. The target for the UK is to reach two-thirds (i.e., a bite of 66.6 per cent) by October 2024.

FIGURE 6.2 MW BITE BY AGE



Source: Authors' elaboration based on Irish LFS administrative wage data

Table 6.4 examines the composition of minimum wage employees. For example, we look at all sub-minimum wage employees and calculate the percentage of males, females, young workers, etc. We do the same for full-rate minimum wage employees as well as higher paid employees. Just over half of sub-minimum wage employees are men, while just over half of full-rate minimum wage employees are

women. There was a large increase in the percentage of young workers (aged 15 to 19) among sub-minimum wage employees, from 45 per cent pre-policy change to 59 per cent post-policy change. This compares to just under 20 per cent of full-rate minimum wage employees in this age category.

As expected, the percentage of sub-minimum wage employees with a high education level is lower than the percentage of full-rate minimum wage employees, which in turn is lower than the percentage of higher paid employees with this education level. There is a higher percentage of sub-minimum wage employees that are Irish nationals (90 per cent), compared to minimum wage and higher paid employees (80 per cent). In the post-policy change period, approximately half of sub-minimum wage employees and 28 per cent of full-rate minimum wage employees were students. However, just 2 per cent of higher paid employees were students. Approximately one-third of sub-minimum wage employees and one-third of full-rate minimum wage employees work in small firms. However, just 16 per cent of higher paid employees work in small firms. With regard to sector, approximately half of sub-minimum and full-rate minimum wage employees are in the accommodation, food or retail sector, compared to just under 20 per cent of all employees. There are differences between sub-minimum and minimum wage employees with regard to the construction sector. Post-policy change, approximately one in ten sub-minimum wage employees were in construction, compared to just 2 per cent of minimum wage and higher paid employees. This relates to legislation exempting apprenticeships from being paid the full minimum wage.²⁷

TABLE 6.4 COMPOSITION OF SUB-MINIMUM WAGE, MINIMUM WAGE AND HIGHER PAID EMPLOYEES

	Sub-minimum wage employees		Minimum wage employees		Employees earning above minimum wage	
	Pre-policy change	Post-policy change	Pre-policy change	Post-policy change	Pre-policy change	Post-policy change
Female (%)	46.9	47.7	55.5	56.1	49.8	49.4
Young workers (aged 15–19)	45.2	58.7	15.5	19.2	1.1	1.4
High education (%)	14.3	11.5	19.8	19.5	55.2	58.5
Irish national (%)	88.2	91.8	74.6	79.8	83.9	81.8
Accommodation, food or retail (%)	47.9	50.1	55.7	56.8	18.9	17.0
Construction	7.2	10.1	1.6	1.8	2.2	2.0
Small firm	38.0	34.2	30.4	32.2	17.0	15.5
Student	39.7	48.7	21.2	27.8	1.8	2.5

Source: Irish LFS

²⁷ We replicate the analysis from Table 6.3 using time periods that did not involve severe public health restrictions: Q3 and Q4 of 2019, Q1 of 2020, and all of 2022. The results are shown in Appendix Table A.3 and are broadly consistent with the statistics in Table 6.4.

6.2: YOUNG WORKERS (AGED 15–19) IN SUB-MINIMUM WAGE EMPLOYMENT

We now focus in more detail on young workers aged 15–19 years in sub-minimum wage employment following the policy change. Recall that a youth rate can be paid to an employee aged 15–19 years, and panel B in Table 6.2 showed that youth rates make up over half of all sub-minimum wage employment. However, it is also possible that young employees in this age category report earning a sub-minimum wage for other reasons (e.g., they are an apprentice). We examine this in Table 6.5. This shows that 83 per cent of 15–19-year-olds that report earning a sub-minimum rate state that the reason for this is a youth rate. However, 11 per cent of sub-minimum earners in this age bracket report earning a sub-minimum rate due to being an apprentice, while 4 per cent are employed by a relative. The remaining 2 per cent state ‘other reasons’.

TABLE 6.5 REASONS FOR SUB-MINIMUM WAGE EMPLOYMENT AMONG 15–19-YEAR-OLDS

	Youth rate (aged 15–19)	Employed by a relative	Apprentice programme	Other reasons
Post-policy change (Q3 2019 to 2022)	82.8	3.5	11.3	2.4

Source: Irish LFS

In Table 6.6, we examine the incidence of different types of employment: youth rate sub-minimum wage employment; other sub-minimum wage employment; full-rate national minimum wage employment; higher paid employment (above minimum wage). We focus on those aged 15–19 years. Of employees aged 15–19 years, approximately 20 per cent of men, women, Irish nationals, and those in the accommodation, food and retail sector are on a youth minimum wage rate. When we look at young employees in specialised construction activities, just 9.3 per cent are on youth rates, while a relatively high percentage (39 per cent) earn a sub-minimum wage for other reasons. Again, this relates to the high number of apprentices in the construction sector.

TABLE 6.6 INCIDENCE OF SUB-MINIMUM, MINIMUM WAGE AND HIGHER PAID EMPLOYMENT BY EMPLOYEE CHARACTERISTIC POST-POLICY CHANGE (EMPLOYEES 15–19-YEAR-OLDS)

	% on youth rate	% on other sub-minimum rate	% on full-rate minimum wage	% on higher pay (above minimum wage)
Female	21.9	1.5	36.9	39.1
Male	18.2	6.8	35.1	39.4
Irish national	20.4	4.4	36.2	39
Accommodation, food or retail	23.5	1.5	39.8	34.6
Construction	9.3	39.2	20.4	31.0
Small firm	19.4	9.2	35.3	35.5
Large firm	20.3	2.4	35.9	40.9
Student	24.7	2.3	37.6	34.9

Source: Irish LFS

Table 6.7 shows the composition of minimum wage and higher paid employees, again with a focus on those aged 15–19 years and with specific reference to youth-rate sub-minimum wage employment.²⁸ With regard to gender, just over half of sub-minimum youth rate employees aged 15–19 years are women, while over 80 per cent of employees aged 15–19 years in the other sub-minimum wage categories are men. This reflects the disproportionate number of men on apprenticeships that are earning below minimum wage. Just over three-quarters of sub-minimum youth rate employees are employed in either accommodation, food or retail, and one-quarter of these employees work in small firms (ten employees or less). Table 6.7 also shows that the vast majority (80 per cent) of sub-minimum youth-rate employees are students.

TABLE 6.7 COMPOSITION OF SUB-MINIMUM WAGE, MINIMUM WAGE AND HIGHER PAID EMPLOYEES POST POLICY CHANGE (EMPLOYEES AGED 15–19 YEARS)

	Sub-minimum youth rate employees	Other sub-minimum employees	Minimum wage employees	Higher paid employees
Female (%)	55.1	18.7	51.7	50.2
Accommodation, food or retail (%)	77.0	24.1	72.9	58.2
Small firm	24.1	55.7	24.7	22.4
Student	78.6	35.4	66.8	56.9

Source: Irish LFS

²⁸ We do not include nationality and constructions sector in this table as there are too few observations for meaningful analysis.

Table 6.8 shows the results of the probit regressions. Several specifications are employed. In the first column (Youth/All), we create a dummy variable that equals one if the individual is aged 15–19 years and on a youth sub-minimum wage rate, and 0 if they are aged 15–19 years and on either another type of sub-minimum wage, the full-rate minimum wage, or higher pay (above minimum wage). We are therefore comparing 15–19-year-olds on youth rates to 15–19-year-olds in all other types of employment.

The interpretation of the coefficients requires some explanation. Take, for example, the female coefficient in the first column (Youth/All). This captures the difference in the incidence of youth-rate employment, relative to all other types of employment, among women compared to men, for those in the 15–19 age category. It tells us that the incidence of youth-rate employment among 15–19-year-old women is 1.9 percentage points higher than the incidence of youth-rate employment among 15–19-year-old men.²⁹ The incidence of youth-rate employment among young Irish nationals is four percentage points higher than non-Irish nationals, with the effect being marginally significant. The results relating to sector are stronger. The incidence of youth-rate employment for those working in accommodation, food or retail is eight percentage points higher than other sectors. The incidence of youth-rate employment for students is 12 percentage points higher than non-students.³⁰

The second column in Table 6.8 (Youth/Sub-MW) includes only youth-rate workers and other sub-minimum wage workers. Therefore, the incidence refers to the incidence of youth rate relative to other types of sub-minimum work. We see that the incidence of youth-rate employment, relative to other sub-minimum employment in the construction sector is 22 percentage points lower than other sectors. This reflects the high proportion of apprentice workers in the construction sector that earn below minimum wage. The female coefficient, at eight percentage points, is larger than column 1, which reflects the high concentration of men in other types of sub-minimum wage employment, namely apprenticeships.

Column 3 focuses only on youth rate employees relative to full-rate minimum wage employees, while column 4 focuses on youth rate employees relative to higher paid employees (above minimum wage). Both specifications reinforce the relatively high incidence of youth rate employment in the accommodation, food and retail sectors as well as among students.

²⁹ The coefficient only marginally falls outside the range considered statistically significant (p-value 0.105).

³⁰ We replicate the analysis from column 1 of Table 6.8 using time periods that did not involve severe public health restrictions: Q3 and Q4 of 2019, Q1 of 2020, and all of 2022. The results are shown in Appendix Table A.4 and are broadly consistent with the statistics in Table 6.8.

TABLE 6.8 PROBABILITY OF BEING IN RECEIPT OF A SUB-MINIMA RATE: PROBIT REGRESSIONS

Variables	Youth/All	Youth/Sub-MW	Youth/MW	Youth/Higher paid
Female	0.0186 (0.0115)	0.0706*** (0.0196)	0.0301 (0.0186)	0.0158 (0.0180)
Irish national	0.0362 (0.0302)	-0.1000*** (0.0168)	0.0332 (0.0538)	0.0808* (0.0454)
Accommodation, food or retail	0.0834*** (0.0121)	0.185*** (0.0275)	0.0358 (0.0219)	0.178*** (0.0182)
Construction	-0.0203 (0.0372)	-0.2160*** (0.0678)	0.0097 (0.0712)	0.0767 (0.0694)
Small firm	0.0041 (0.0133)	-0.0940*** (0.0237)	-0.0074 (0.0211)	0.0456** (0.0214)
Student	0.1160*** (0.0111)	0.1900*** (0.0279)	0.1300*** (0.0193)	0.1950*** (0.0172)
Year fixed effects	Yes	Yes	Yes	Yes
Observations	5,099	1,264	2,882	3,045

Source: Irish LFS

Notes: Standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

CHAPTER 7

Conclusion

While statutory minimum wages exist in most countries in the EU, sub-minimum rates paid to young employees are less common. In Ireland, the full national minimum wage rate in 2023 is €11.30 per hour. Existing legislation also provides for sub-minimum wage rates for young workers. An employee aged 19 can be paid 90 per cent of the minimum wage, an employee aged 18 can be paid 80 per cent of the minimum wage, and those below 18 years of age can be paid 70 per cent of the minimum wage. The area of sub-minimum wage rates is a live policy debate both nationally and internationally. In Ireland, trade unions and several TDs have recently called for the abolition of youth rates on the grounds that it is unfair to pay young people below the full-rate minimum wage. This stance is supported by a recent finding that Ireland is in breach of its labour rights obligations according to the European Social Charter. This is due to the sub-minimum youth rates being too low to ensure a decent standard of living for young people. Therefore, reform or abolition of the sub-minimum youth rates in Ireland is an area of active policy debate.

In order to inform any policy decision in this area, it is important to know how many employees would be impacted, along with their characteristics. As such, in this paper we examine the incidence and characteristics of sub-minimum wage employment in Ireland. As it is the only country in the EU with detailed minimum wage and sub-minimum wage questions in its Labour Force Survey, Ireland is particularly well suited for this type of analysis.

Overall, the incidence of sub-minimum wage employment in Ireland is low. According to employees' self-reported status in the Irish Labour Force Survey, 1.4 per cent of all employees earned a sub-minimum wage rate in 2022, with approximately half of these earning a youth rate. Therefore, just one in 140 employees in Ireland earn a sub-minimum youth rate, equivalent to approximately 15,000 employees.

While all employees aged 15–19 could legally be paid a sub-minimum wage, we find that just under one-quarter are actually on a sub-minimum rate, with three-quarters earning either the full minimum wage or higher pay. Furthermore, there is significant variation even within this narrow age category. While just over half of employees aged 15 and 16 are on a sub-minimum rate, by age 19, this has declined to just 11 per cent. Of the 15–19-year-olds on a youth rate, just over half are women, while the majority (77 per cent) work in either accommodation, food or retail. Almost 80 per cent of sub-minimum youth-rate employees are students.

From a policy perspective, reforms to the sub-minimum youth-rates could have both positive and negative impacts on affected workers. If, for example, the youth rates were to be abolished so that young workers were entitled to the full national

minimum wage, then employees that are currently on a sub-minimum youth rate would see an increase in their hourly wage in the order of 11 to 43 per cent, depending on age. This would address concerns about the existing youth rates being too low and unfair to younger workers. However, it is possible that some affected workers could see reductions in their hours or employment, and there is some international evidence to support this. Nonetheless, it is important to note that the international evidence on the adverse impact on employment or hours is often of a small magnitude. This, combined with the fact that the incidence of youth-rate employment is low to begin with, means that, overall, any employment effect is likely to be quite muted.

Another important point relates to the type of worker that is likely to be affected by any adverse impacts that may occur. We have seen that 80 per cent of sub-minimum youth-rate employees in Ireland are students with a job. While not to diminish adverse employment effects among any group of workers, potential reductions in hours worked or employment among young students working part-time may be less of a policy concern than if it were to affect more vulnerable groups, such as lone parents. Therefore, when weighing up the evidence on potentially abolishing sub-minimum youth rates, this would result in approximately 15,000 young employees seeing an increase in their hourly wages in the order of 11 to 43 per cent, while at the same time potentially leading to some of these young workers, the majority of whom are students, experiencing a reduction in their hours worked or employment.

REFERENCES

- Dayioglu, M., M. Küçükbayrak and S. Tumen (2022). ‘The impact of age-specific minimum wages on youth employment and education: a regression discontinuity analysis’, *International Journal of Manpower*, 43(6), pp.1352–1377.
- Dickens, R., R. Riley and D. Wilkinson (2010). ‘The impact on employment of the age-related increases in the National Minimum Wage’, UK: University of Sussex.
- Eurofound (2021). ‘Minimum Wages in 2021: Annual Review, Minimum Wages in the EU Series’, Luxembourg: Publications Office of the European Union.
- Eurofound (2023). ‘National Correspondents Contribution for the Minimum Wage 2023: Annual Review’, Luxembourg: Publications Office of the European Union.
- European Committee of Social Rights (2023). ‘Conclusions relating to Labour Rights in respect of Ireland 2022’, Strasbourg: Council of Europe.
- Hyslop, D. and S. Stillman (2021). ‘The Impact of the 2008 Youth Minimum Wage Reform in New Zealand’, *Series of Unsurprising Results in Economics*, 5.
- Inter-Departmental Group on Implementation of a National Minimum Wage (IDGINMW) (1999). ‘Final Report of the Inter-Departmental Group on Implementation of a National Minimum Wage’, Dublin: Stationery Office.
- Kabátek, J. (2021). ‘Happy Birthday, You’re Fired! Effects of an Age-Dependent Minimum Wage on Youth Employment Flows in the Netherlands’, *ILR Review*, 74(4), pp.1008–1035.
- Kelly, E. and S. McGuinness (2017). ‘A study of sub-minimum wage rates for young people’, Dublin: The Economic and Social Research Institute.
- Kreiner, C.T., D. Reck and P.E. Skov (2020). ‘Do Lower Minimum Wages for Young Workers Raise Their Employment? Evidence from a Danish Discontinuity’, *The Review of Economics and Statistics*, 102(2), pp.339–354.
- López-Novella, M. (2018). ‘Working Paper 04–18 – Removing youth sub-minimum wage rates in Belgium: did it affect youth employment?’, Working Papers 1804, Federal Planning Bureau, Belgium.
- Low Pay Commission (2016). ‘Report on the Sub-Minima Rates of the National Minimum Wage (Part 1)’, Dublin: Low Pay Commission.
- Low Pay Commission (2017). ‘Report on the Sub-Minima Rates of the National Minimum Wage (Part 2)’. Dublin: Low Pay Commission. Available at: <https://assets.gov.ie/244510/4f9d95a6-7671-4f52-b54c-ab3629ae79fb.pdf> (Accessed 6 April 2023).
- Marimpi, M. and P. Koning (2018). ‘Youth minimum wages and youth employment’, *IZA Journal of Labor Policy*, 7(5), pp.1–8.
- National Minimum Wage Acts 2000 and 2015.
- National Minimum Wage Commission (NMWC) (1998a). ‘Report of the National Minimum Wage Commission 1’, Dublin: Department of Enterprise, Trade and Employment.

- National Minimum Wage Commission (NMWC) (1998b). 'Report of the National Minimum Wage Commission 2', Dublin: Department of Enterprise, Trade and Employment.
- Neumark, D. and W. Wascher (2004). 'Minimum Wages, Labor Market Institutions, and Youth Employment: A Cross-National Analysis', *ILR Review*, 57(2), pp.223–248.
- OECD (2015). *OECD Employment Outlook 2015*, Paris: OECD Publishing.
- Olssen, A. (2011). 'The Short Run Effects of Age Based Youth Minimum Wages in Australia: A Regression Discontinuity Approach', Paper Presented at New Zealand Association of Economists Annual Conference, Wellington, 29 June–1 July 2011.
- Redmond, P. and S. McGuinness (2023). 'The Impact of a Minimum Wage Increase on Hours Worked: Heterogeneous Effects by Gender and Sector', IZA Discussion Papers 16031, Institute of Labor Economics (IZA).
- Shannon, M. (2011). 'The Employment Effects of Lower Minimum Wage Rates for Young Workers: Canadian Evidence', *Industrial Relations: A Journal of Economy and Society*, 50, pp.629–655.
- UK Low Pay Commission (2019). 'A Review of the Youth Rates of the National Minimum Wage', London: Controller of His Majesty's Stationery Office. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/845076/A_Review_of_the_Youth_Rates_of_the_National_Minimum_Wage.pdf
- UK Low Pay Commission (2023). 'National Minimum Wage: Low Pay Commission Report 2022', London: Controller of His Majesty's Stationery Office.
- van Bezooijen, E., W. van den Berge and A. Salomons (2021). 'The Young Bunch: Youth Minimum Wages and Labor Market Outcomes', CPB Discussion Paper 422, CPB Netherlands Bureau for Economic Policy Analysis.
- Yannelis, C. (2014). 'The Minimum Wage and Employment Dynamics: Evidence from an Age Based Reform in Greece', Working Paper, available at: <https://www.sole-jole.org/assets/docs/14015.pdf>.

APPENDIX

TABLE A.1 REASONS FOR SUB-MINIMUM WAGE EMPLOYMENT (POOLED DATA FOR Q3 AND Q4 2019; Q1 2020; Q1–Q4 2022)

	Youth rate (aged 17–19)	Employed by a relative	Apprentice programme	Other reasons
Post-policy change (Q3 2019 to 2022)	56	4	23	17

Source: Irish Labour Force Survey

TABLE A.2 INCIDENCE OF SUB-MINIMUM, MINIMUM WAGE AND HIGHER PAID EMPLOYMENT BY EMPLOYEE CHARACTERISTIC (POOLED DATA FOR Q3 AND Q4 2019; Q1 2020; Q1–Q4 2022)

	% on sub- minimum wage	% on minimum wage	% above minimum wage
Female	1.3	6.2	92.4
Male	1.4	4.8	93.8
Young workers (aged 15–19)	23.8	34.6	41.6
High education	0.2	1.8	97.9
Irish national	1.5	5.5	93.0
Accommodation, food or retail	3.4	16.1	80.5
Construction	7.0	4.9	88.1
Small firm	2.7	10.1	87.1
Large firm	1.0	4.5	94.5
Student	13.9	34.9	51.2

Source: Irish LFS

TABLE A.3 COMPOSITION OF SUB-MINIMUM WAGE, MINIMUM WAGE AND HIGHER PAID EMPLOYEES (POOLED DATA FOR Q3 AND Q4 2019; Q1 2020; Q1–Q4 2022)

	Sub-minimum wage employees	Minimum wage employees	Employees earning above minimum wage
Female (%)	48.7	56.4	49.6
Young workers (aged 15–19)	60.9	21.8	1.6
High education (%)	9.9	18.0	57.3
Irish national (%)	92.2	80.3	80.9
Accommodation, food or retail (%)	51.4	59.0	17.5
Construction	11.9	2.0	2.2
Small firm	34.5	31.2	15.6
Student	50.4	31.1	2.7

Source: Irish LFS

TABLE A.4 PROBABILITY OF BEING IN RECEIPT OF A SUB-MINIMA RATE: PROBIT REGRESSION

Variables	Youth/All
Female	0.0148 (0.0150)
Irish national	0.0460 (0.0350)
Accommodation, food or retail	0.0832*** (0.0156)
Construction	-0.0530 (0.0452)
Small firm	0.0096 (0.0175)
Student	0.1080*** (0.0145)
Year fixed effects	Yes
Observations	2,951

Source: Irish LFS

Notes: Standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

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