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How Has the Gender Earnings Gap in Ireland Changed in Thirty Years?

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Abstract: Since 1987, the wages of women in Ireland have been growing faster than those of men. This, coupled with a decrease in the average hours worked by men, has resulted in a reduction in the gender earnings gap in Ireland, most notably at the bottom of the earnings distribution. This paper provides a descriptive analysis of the growth of male and female wages, weekly earnings, and differences in working patterns across the wage and earnings distribution in Ireland over the last three decades, using detailed microdata covering the period 1987–2019. Using a Oaxaca–Blinder decomposition approach, based on unconditional quantile regressions for each time period, we also show how the explained and unexplained components of the gender wage gap have changed across the wage distribution. We find that the mean and median gender gap in earnings fell by one-sixth and one-quarter, respectively, between 1987 and 2019. This change is attributable to the faster growth of women's wages compared to men's and some convergence in the average hours worked by men and women. However, there has been relatively stable structural inequality at the top of the wage and earnings distribution over the past three decades, which points towards a persistent glass ceiling in Ireland.

Keywords: gender inequality; decomposition; tax-benefit system; Ireland

JEL Classification: J16; J31

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1. Introduction

The gender gap in earnings, work, and wages is a widely studied topic among social scientists and attracts a great deal of attention among policy makers, the media, and the general public. Over the last several decades, researchers have paid close attention to the magnitude of these gaps and have sought to explain their existence. The literature has documented some important developments over time.

Firstly, there has been a general decline in the magnitude of the gender wage gap (GWG) over the last 50 years (Kunez 2018; Weichselbaumer and Winter-Ebmer 2005). This has coincided with a convergence in the wage-enhancing characteristics of men and women (Cortés and Pan 2020; Goldin 2014). For example, there has been a reversal in the gender education gap since the 1980s, with average educational attainment for women now exceeding that of men in many countries (Blau and Kahn 2017; Redmond and McGuinness 2019). As such, while the GWG today may be smaller than 50 years ago, the explained component of the gap that is attributable to gender differences in wage enhancing characteristics is also smaller. Much of the recent literature has focused on finding explanations for the remaining gender wage differential. The role of hours of work has emerged as a particularly important issue. For example, Goldin (2014) suggests that greater flexibility by employers when it comes to hours worked could help remove the final component of gender inequality in the labour market.

Gender differences in participation in the labour market have also been falling over the last few decades, but they remain an important contributor to gender differences in

earnings (Doorley and Keane 2020). Women are less likely to work, and working women tend to work fewer hours, on average, than working men. Doris et al. (2022) contributes to a rich literature on the effect of childbirth on earnings and shows that reductions in hours worked among women in Ireland following childbirth can explain approximately 60%of their initial decline in earnings, explaining much of the male–female earnings gap in the years after childbirth.

In this paper, we use a newly constructed dataset for Ireland covering the years 1987 to 2019 to study the gender gap in earnings and wages over time. Our dataset is the first of its kind to provide a continuous wage series for Ireland over such a long period of time. We use this data to make two main contributions. First, we examine changes in earnings, hours, and wages for men and women over time at several points in the wage distribution. Second, we use unconditional quantile decomposition techniques (see Firpo et al. 2009) to examine how much of the GWG can be explained by differences in wage enhancing characteristics of men and women. Again, we carry out this analysis over time and across the wage distribution.

Ireland presents an interesting case study for this type of analysis for a number of reasons. The historical role of women in Irish society and the Irish labour market resulted in relatively low attachment of Irish women to the labour force for many years.[1] The 1937 Constitution of the Republic of Ireland provided a legal basis for restricting women to home duties. The marriage bar of 1932, which required married women to leave their civil service jobs, was repealed in 1973, decades later than a similar bar in the UK. The European Union was behind the introduction of the first equality legislation in Ireland in 1974 (Anti-Discrimination (Pay) Act) and in 1998 (Employment Equality Act, 1998).

From 1994, Ireland experienced very high economic growth for a seven-year period, which led to the economy being dubbed The Celtic Tiger. This period was one in which activity in high-tech industry surged and was supported by a well-educated labour force. The work force increased in size by almost one-half during this period, and many of the labour-market entrants were women. A national minimum wage was introduced in Ireland in 2000. Previous research suggests that this closed the GWG at the bottom of the wage distribution (Bargain et al. 2018). The introduction of the minimum wage also coincided with a partial reform to Ireland's jointly assessed system of income taxation, which Doorley (2018) finds led to increases in labour-force participation among married women. Research suggests such increases in participation may have knock-on effects on the GWG, further up the distribution, by improving the incentives to invest in human capital and accumulate experience.[2] Subsequent to this, Ireland was hit particularly hard by the global financial crisis, with unemployment reaching 15% in 2012 (Bergin and Kelly 2012).

Finally, Ireland is also notable with regard to its dramatic increase in female educational attainment over recent decades (Bercholz and FitzGerald 2016). As of 2021, 57% of women in Ireland aged 25–64 years old were educated to the tertiary level, which was not only far higher than the EU-27 average of 36% but also higher than the rate in every other country in the EU-27.[3]

We use our data to examine the GWG before, during, and after these transition periods. Our results yield several notable insights into how gender inequality in the labour market has evolved over time in Ireland. We find that there has been strong wage growth since 1987, which has been faster for women than for men since the early 2000s. Average hours worked by men and women have decreased since 1987. However, on average, hours worked by women increased during the great recession, whilst the opposite was true for men. The GWG and, in particular, the unexplained component of the GWG, have been falling since 1987. While low earners had the highest GWG before the introduction of the national minimum wage, it is now high earners who experience the highest GWG. Most of this gap is unexplained and may be attributable to factors we cannot measure such as bargaining power, preferences, occupational sorting, workplace flexibility, or discrimination.[4]

While we are the first to study the gender wage gap in Ireland over this extended period of time, other notable papers relating to the gender wage gap in Ireland have emerged

in recent years. Doris (2019) provides a survey of this research, showing that the gender wage gap in Ireland is now greatest among high earners, for which it is largely unexplained. Gender differences in education and occupational choices have been found to be important factors in explaining the gender wage gap (Doris 2019; Russell et al. 2010). However, these "choices" may themselves be due to societal expectations or gender stereotypes which influence subject selection. Delaney and Devereux (2019) find that women in Ireland are less likely to choose STEM-related university degrees, and, consequently, there are fewer women in high-paying mathematical occupations (Doris 2019). Doorley et al. (2021), using linked administrative data from 2011 to 2018, show that the GWG in Ireland stagnated after the financial crisis and is now concentrated in the private sector and at the top of the wage distribution. Finally, there is evidence that the introduction of a minimum wage in Ireland reduced the gender wage gap (Bargain et al. 2018; McGuinness et al. 2009).

The remaining paper proceeds as follow: Section 2 describes the data sources and harmonisation process and discusses the method used to decompose the GWG. Section 3 presents the results, and Section 4 concludes.

2. Data and Methods

2.1. Data

We draw on data from three household surveys covering the period 1987 to 2019. These have been the subject of extensive previous research, most recently Roantree et al. (2021), who use the data to explore household income growth, poverty, and inequality over the last 30 years.[5]

The Survey of Income Distribution, Poverty and Usage of State Services was carried out by the Survey Unit of the Economic and Social Research Institute (ESRI) in 1987, with the support of the European Commission and the Combat Poverty Agency. Results were first published in Callan et al. (1988), who reported that 3286 households responded out of a valid sample of 5155: an effective response rate of 63.7%. These households contained just under 8200 adults, each of whom was interviewed individually about their income sources and experience of the labour market. Weights were derived to correct for the greater likelihood of larger households being sampled (a product of the sampling frame was based on the electoral register, so households with more voters were more likely to be selected for inclusion) and a slight over-representation of older and rural heads of households.

The Living in Ireland Survey was also carried out by the Survey Unit of the ESRI beginning in 1994, again with the support of the European Commission. Each adult in a household completed an individual questionnaire through a face-to-face interview, with a similar initial sampling frame to the 1987 Survey. However, in keeping with the European Community Household Panel (ECHP), of which it was part, the survey adopted a longitudinal design, with household members followed up on in subsequent waves of the survey. By Wave 7 (2000), attrition was deemed to be a cause of concern and the original sample of individuals still in scope of the survey (i.e., who had not died or moved to an institution or outside of the EU) were supplemented with a booster sample selected using a similar procedure as for the first wave of the survey. Weights were derived to correct for attrition and biases in the distribution of observed characteristics compared to the population of interest. There was an influx of more than 1500 new individuals into the survey, as compared to 5530 from the original sample. However, to avoid any potential concerns about the representativeness of these later waves, we use only Waves 1–6 of the Living in Ireland Survey spanning the years 1994–1999, with analysis again carried out on the anonymised survey microdata files held by the ESRI on its secure server.

The Survey of Income and Living Conditions (SILC) is an annual survey of households carried out by the Central Statistics Office since 2003. Like the Living in Ireland Survey, it was initiated with the aim of collecting harmonised information on households for all countries in the European Union. However, unlike the Living in Ireland survey, it is not primarily a longitudinal survey, with most respondents sampled anew each year.[6] We use the anonymised User Database (UDB) version of the data provided by Eurostat.

Across these three surveys, we restrict our sample to those of working-age (which we define as those aged 25 to 55) in paid employment, excluding the self-employed, those who report their principal economic status to be farming, and unpaid family workers.[7] For this sample, we then construct a measure of hourly wages, derived by dividing usual current gross weekly earnings by usual weekly hours of work. We exclude the observations for which we do not observe both usual hours and weekly earnings, as we cannot construct a measure of those hourly wages. Table A1 shows that this amounts to less than 2.5% of our total sample, though the share is larger in 1987. Table A2 shows that those with missing information on hours or earnings are more likely to have lower education levels than those without missing values. Estimations—particularly those using this early year of data—should be interpreted in light of this potential selection issue. Finally, we trim the top and bottom percentile of hourly wages in each year to mitigate the impact of measurement error on our results and put monetary values in real (January 2019) terms using the Consumer Price Index.[8]

2.2. Estimating the Gender Wage Gap

Econometric techniques such as OLS and Oaxaca decomposition provide information relating to the *average* GWG. Specifically, in a wage regression, OLS provides estimates of the effect of a change in an explanatory variable on the *mean* of the outcome variable (i.e., wages). The associated Oaxaca decomposition shows how much of the *mean* GWG can be explained by the inclusion of certain explanatory variables. However, the GWG can vary across the wage distribution in terms of its magnitude and determinants. For example, certain variables may be particularly important in explaining the GWG among high-wage earners but are less important for low earners. Likewise, the wage gap may be higher in magnitude at different points along the wage distribution. By focusing only on the mean wage gap, standard OLS and Oaxaca decomposition techniques are limited in their ability to provide insights for other parts of the wage distribution. Therefore, we employ unconditional quantile regression techniques which enable us to examine the GWG across the entire distribution.

We use a technique proposed by Firpo et al. (2009) that allows us to estimate the impact of a variable on any unconditional quantile of the wage distribution (e.g., the median, the 10th percentile, the 90th percentile, etc.). In summary, the technique involves carrying out a transformation on the outcome variable (wages) and then using this transformed variable as the outcome variable in a standard OLS framework. More formally, the transformation involves calculating the recentered influence function (RIF) for the dependent variable at a specific quantile. This is done by first calculating the influence function (IF) for the τ-th quantile of interest, denoted by q_τ, as follows:

$$IF = (\tau - 1\{Y \leq q_\tau\})/f_Y(q_\tau) \quad (1)$$

where Y denotes the dependent variable (log wages), $f_Y(q_\tau)$ is the density at point q_τ, and $1\{Y \leq q_\tau\}$ is a dummy variable that equals one for observations in which Y is less than or equal to q_τ.[9] To get the RIF, one simply adds the quantile to the IF, so that $RIF = q_\tau + IF$.

Once the RIF transformation has been carried out for the quantile of interest, the next step is to use the RIF as a dependent variable in an OLS regression. This gives the following:

$$\ln Wage_{i,t}^{RIF} = \alpha + X_{i,t}{}'\beta_X + \epsilon_{i,t} \quad (2)$$

where the *RIF* transformed log wage variable ($\ln Wage_{i,t}^{RIF}$) for person i in year t is regressed on a vector of explanatory variables ($X_{i,t}{}'$) that includes age, age squared, a dummy variable to indicate whether a person is married, a dummy variable to indicate part-time work status, and person i's highest educational attainment. The resulting estimates from the RIF regression (the β's) capture marginal effects of a change in the explanatory variables on the unconditional quantile of the outcome variable (wages).[10]

We can incorporate the RIF regression technique into an Oaxaca decomposition to study the explained versus unexplained components of the wage gap at any quantile of interest. Separate RIF regressions (Equation (2)) are estimated for men and women. As the quantile of interest is equivalent to the mean of the RIF (see Rios-Avila 2020), the unconditional quantile decomposition, for a given quantile q_τ, is given by:

$$\Delta q_\tau = \left(\overline{X}_m - \overline{X}_f\right)' \hat{\beta}_m + \left(\hat{\beta}_m - \hat{\beta}_f\right)' \overline{X}_f \quad (3)$$

where Δq_τ is the GWG at quantile q_τ. The first term on the right-hand side, $\left(\overline{X}_m - \overline{X}_f\right)' \hat{\beta}_m$, represents the explained component of the GWG at the quantile of interest; that is, the portion of the wage gap that can be explained by differences in the average characteristics of men and women.[11] The second term on the right-hand side, $\left(\hat{\beta}_m - \hat{\beta}_f\right)' \overline{X}_f$, is the part of the wage gap that is unexplained; that is, the portion of the wage gap that is due to differences in the coefficients between men and women in the separate wage regressions.

3. Results

3.1. Drivers of the Gender Gap in Earnings

Figure 1 shows how the gender gap in earnings has evolved since 1987. The gender gap in earnings is calculated for men and women with positive earnings and excludes those who do not work or are self-employed. As such, it understates the gender gap in total market income as women are less likely to be in paid employment than men. The mean gap is presented, together with the gap at the 10th, 50th, and 90th percentile.

Focusing on the mean, in 1987, men earned 28% more than women per week. This figure increased over the following 20 years, reaching a high of 34% in 2007. The beginning of the financial crisis marks the point at which the gender gap in earnings began to decline in Ireland. In 2019, men earned 24% more than women per week on average, which represents a decrease in the gender earnings gap of 14% over a 30-year period. Using the median, the gender earnings gap fell by one-quarter over this period.

At the 10th percentile, the gender gap in earnings was, and still is, much higher than the gender earnings gap at the median or 90th percentile. In 1987, men at the 10th percentile of weekly earnings earned two-thirds more than women at the 10th percentile of weekly earnings. This gap has decreased over time, but men were still earning 41% more than women at the bottom of the earnings distribution in 2019.

The pattern of change is more similar to the median and the mean further up the earnings distribution. The gender gap in earnings at the 90th percentile was lower than either the median, the mean, or the 10th percentile in 1987, at 20%. It increased over the course of the next 20 years, before falling back to a slightly higher or similar level from 2010 onwards.

The gender gap in earnings is driven by the gender gap in wages and the gender gap in hours of work. The gender gap in employment also plays a role as increasing female labour-force participation changes the composition of the female labour force and, thus, the distributions of both hours and earnings. Figure 2 shows how the evolution of wages and hours of work has differed over the last three decades. Changes are presented in percentage terms, with 1987 indexed at 100%.

The hourly wages of both men and women have risen in real terms since 1987. The steepest increases occurred between 1987 and 2010, after which average wage growth stagnated somewhat. Women's hourly wages have grown faster than men's since 1999. This indicates some convergence between the hourly wages of men and women over the last 20 years although, as we will discuss in the next section, the hourly wages of men are still higher than those of women.

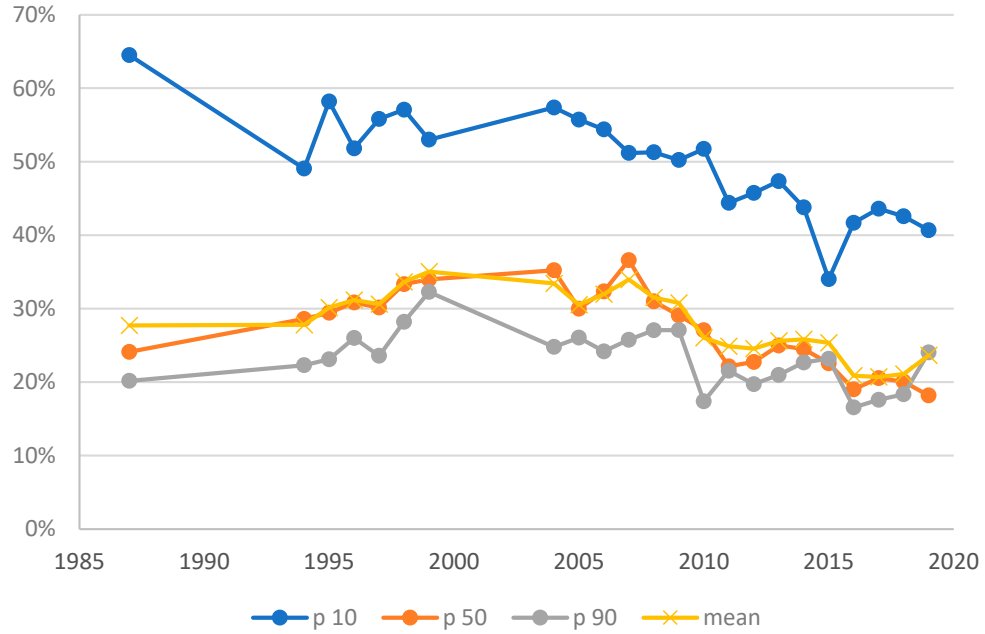

Figure 1. The gender gap in weekly earnings, expressed as a proportion of male earnings. Source: Authors' calculations using the ESRI Survey of Income Distribution, Poverty and Usage of State Services, the Living in Ireland Survey, and the European Union—Survey of Income and Living Conditions. Notes: Limited to respondents aged 25–55 and excluding the self-employed. Earnings are CPI adjusted and weighted.

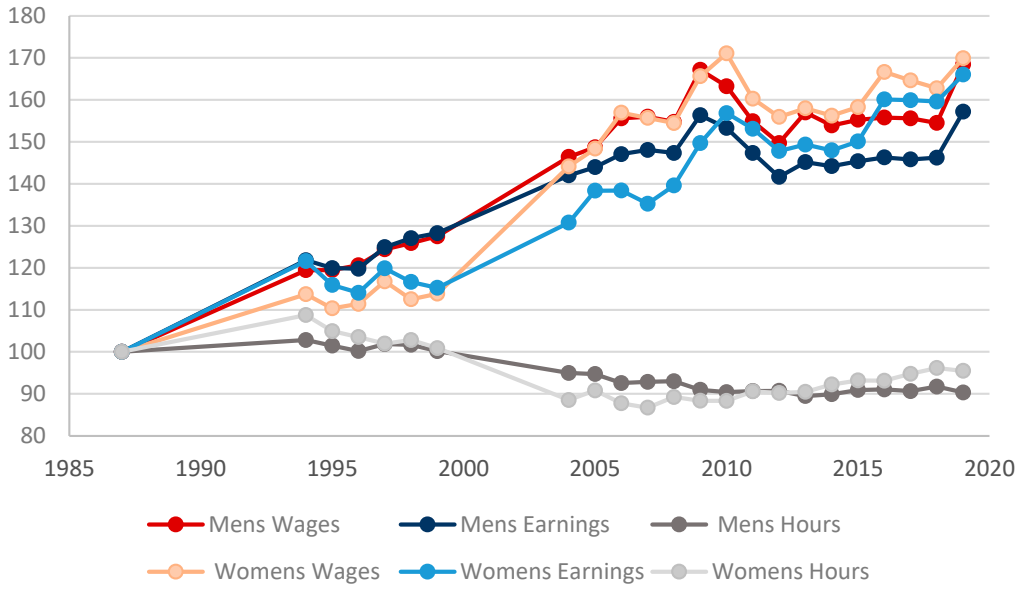

Figure 2. The evolution of real hourly wages, hours or work, and real earnings of men and women. Source: Authors' calculations using the ESRI Survey of Income Distribution, Poverty and Usage of State Services, the Living in Ireland Survey, and the European Union—Survey of Income and Living Conditions. Notes: Limited to respondents aged 25–55 and excluding the self-employed. Earnings and wages are CPI adjusted and weighted.

Figure 2 also shows that the average hours worked by male and female employees has fallen since 1987. Women's average hours of work increased briefly between 1987 and 1999, before falling below their 1987 level during the 2000s. Men's hours of work were approximately constant between 1987 and 1999, before also falling around the turn of the century. Women's hours of work have recovered slightly since 2012, so that they are just

5% lower than their 1987 level in 2019. Men's hours of work did not experience the same recovery after the financial crisis and, in 2019, were 10% lower than their level in 1987.

Figure 3 explores the evolution of hours worked by men and women in more detail. Average weekly hours of work are shown at selected percentiles of the male and female weekly-earnings distribution. The average hours worked by women around the 50th and 90th percentile of women's weekly earnings have followed similar patterns since 1987, averaging almost 40 per week until 2007. During the financial crisis, average hours worked by middle and high earning women decreased to a low of 35 per week in 2010, before fully recovering to their pre-recession level in 2019.

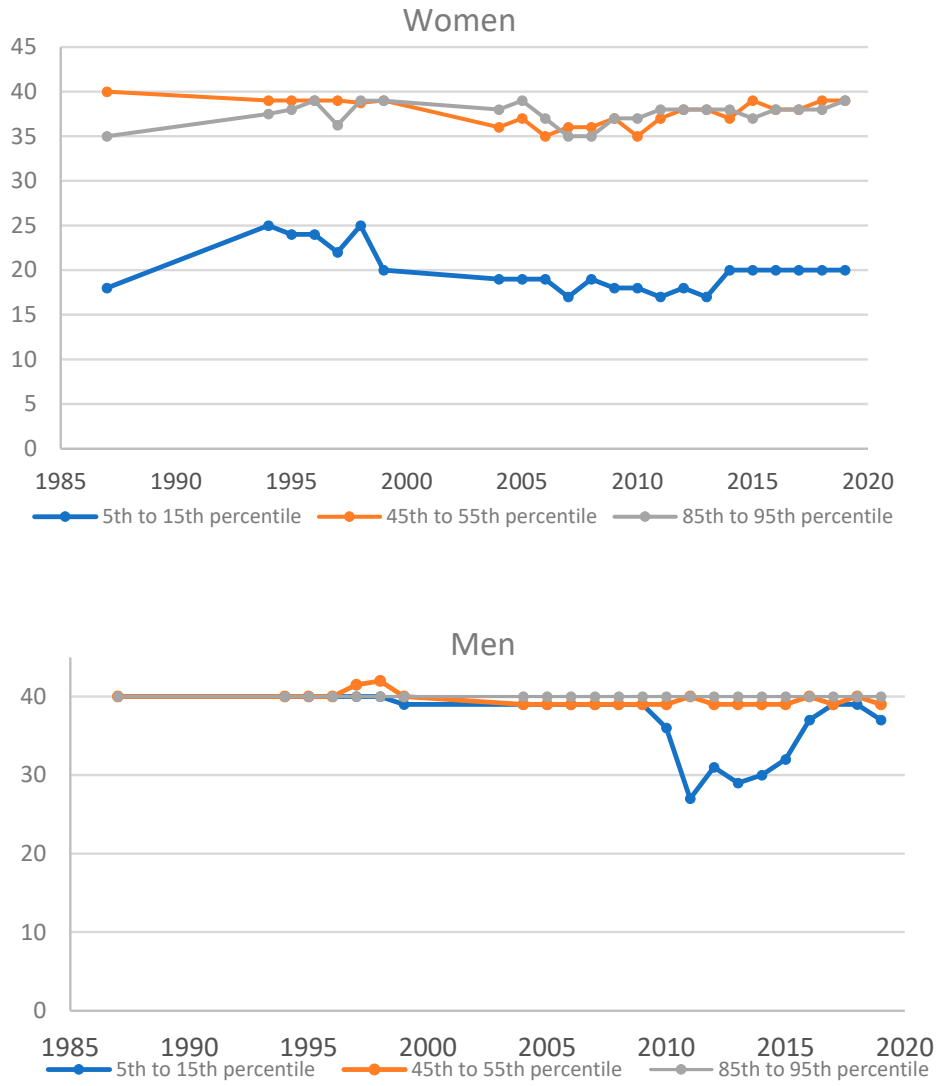

Figure 3. Hours worked by men and women across the earnings distribution. Source: Authors' calculations using the ESRI Survey of Income Distribution, Poverty and Usage of State Services, the Living in Ireland Survey, and the European Union—Survey of Income and Living Conditions. Notes: Limited to respondents aged 25–55 and excluding the self-employed.

Women around the 10th percentile of earnings have worked consistently fewer hours per week, on average, over the last 30 years than women around the 50th or 90th percentiles. In 1987, the lowest-earning women worked an average of 18 h per week. This figure rose over the next 15 years—to a high of 25 h in 1998—before falling during the financial crisis. In 2019, women around the 10th percentile of weekly earnings worked half as many hours as those around either the 50th or 90th percentiles.

Until 2009, men around the 10th, 50th, and 90th percentiles of weekly earnings worked an average of 40 h per week. This figure fell substantially for men around the 10th percentile of earnings during the financial crisis, which reflects the hours and pay cuts that were common at the time (Doris et al. 2015). In 2019, the average hours of men around the 10th percentile of men's weekly earnings were still slightly lower (37) than the average hours of men further up the earnings distribution (40).

Summarising these findings, Figure 2 shows that, since 1987, the hourly wage of women has increased faster than that of men, and the hours worked by women has fallen by less than the hours worked by men. Differences in hours of work across the earnings distribution, in Figure 3, indicate that gender differences in changes to hours of work during the financial crisis were primarily driven by the fact that there was some convergence between the hours worked by the lowest earning men and women. Taken together, these trends explain the faster growth of women's earnings than men's earnings since 2009 and the narrowing of the gender earnings gap over the same period.

3.2. Evolution of the Gender Wage Gap

Given the pronounced differences in weekly hours worked and its implications for the gender earnings gap, it is common for analysis to focus on differences between the hourly wages of men and women: that is, the gender wage gap (GWG). In this section, we explore how the GWG has changed since 1987, using the RIF technique outlined in Section 2.2 to analyse the gap at the median, 10th, and 90th percentile.[12]

Figure 4 shows that the raw gap between the median wage of men and women stood at 14% in 1987. This gap increased over the next decade, reaching a high of 23% in 1999. Since then, the GWG at the median has declined substantially, standing at just 3% in 2019. Until 2004, the GWG was much higher at the 10th percentile than the 90th. In 1987, the GWG at the 10th percentile was 30% compared to a small wage premium for women at the 90th percentile (though this could be an artefact of data issues, as noted in Section 2.1).

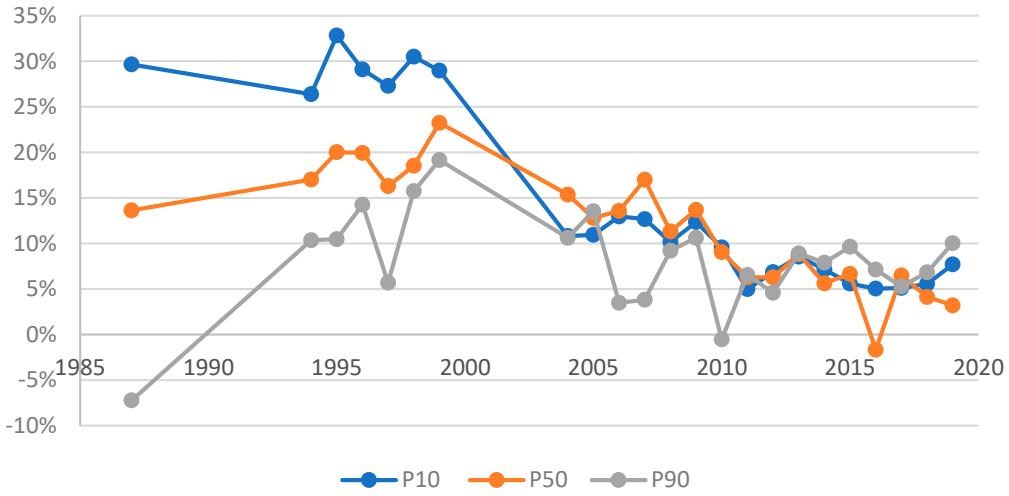

Figure 4. The gender wage gap at selected percentiles. Source: Authors' calculations using the ESRI Survey of Income Distribution, Poverty and Usage of State Services and the European Union—Survey of Income and Living Conditions. Notes: Limited to respondents aged 25–55 and excluding the self-employed. Wages are CPI adjusted and weighted.

Figure 4 shows there has been convergence between the GWGs at each of these selected percentiles with the result that by 2019, the GWG was higher at the 90th percentile (10%) than at the median (3%) or the 10th percentile (8%).[13] It is notable that the rapid reduction in the GWG at the 10th percentile over the early 2000s coincides with the introduction of the minimum wage in 2001, and that there has been relative stability in the GWG at the 90th percentile since the early 2000s.

Figure 5 shows how the GWG is decomposed into explained and unexplained components by wage percentile. The choice of variables used to "explain" the gender wage gap is driven by what is available in the data in a consistent manner over the 30-year period. A polynomial in age, dummies for marital status and part-time work, and three categories of education are used in our baseline results. Detailed decompositions and standard errors are available in Appendix B. Excluding variables such as occupation and industry from the model gives a broader view of the unexplained part of the GWG, by assigning wage differences that are due to occupational segregation—which are affected by gender norms (Arulampalam et al. 2007)—to this component. However, in a sensitivity analysis, we also include occupation in the model for the years that it is available (Appendix C).[14] Other potentially relevant variables, which we cannot account for in the analysis, include firm size and public sector employment.

The explained GWG, shown in the upper panel of Figure 5, is negative at the median almost throughout at the 90th percentile and until the financial crisis. This indicates that women at these wage levels had "better" labour-market characteristics, on average, than men.

However, the lower panel of Figure 5 shows that the bulk of the gender wage gap is not due to differences in labour-market characteristics of men and women, but due instead to the estimated returns to these characteristics and unobserved differences in labour-market attributes (such as ability and effort), preferences, or discrimination: the unexplained component in our decomposition. For the first half of the 30-year period, this unexplained component was highest at the 10th percentile of wages. However, the unexplained GWG has fallen substantially at all points of the distribution—driving the reduction in the GWG more generally—with that at the 90th percentile now the highest.

Figure 5 also suggests that there was a degree of cyclicality in the explained component of the GWG after the financial crisis, with a rise from 2007 to 2012 followed by a decline as the economy recovered. However, this cyclicality is not robust to the inclusion of occupation and citizenship as additional explanatory variables, as shown in Figure A2.[15] This suggests that the cyclicality observed in Figure 5 is likely to be driven by employment exits during the financial crisis (notably in construction) which changed the composition of the men and women left in the labour market.

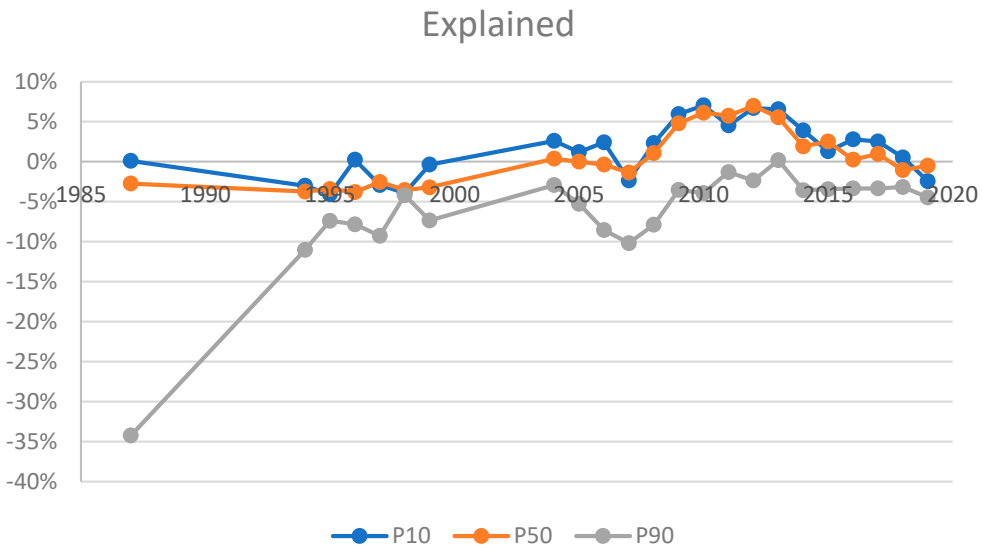

Figure 5. *Cont.*

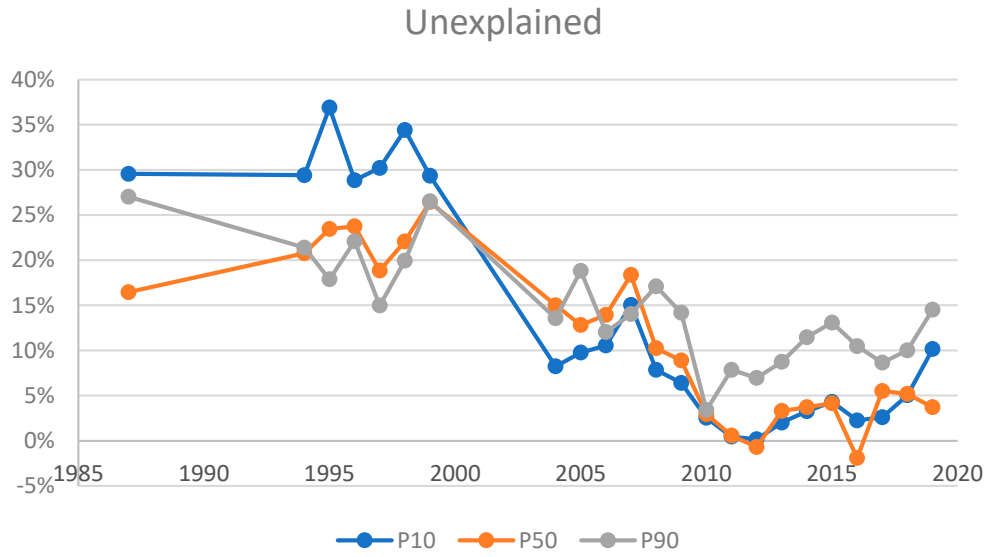

Figure 5. The explained and unexplained portions of the gender wage gap at selected quantiles. Source: Authors' calculations using the ESRI Survey of Income Distribution, Poverty and Usage of State Services, the Living in Ireland Survey, and the European Union—Survey of Income and Living Conditions. Notes: Limited to respondents aged 25–55 and excluding the self-employed. Wages are CPI adjusted and weighted.

Figure 6 illustrates the scale of this compositional change in the population of employees over time. It shows that the share of working-age men in paid employment (excluding self-employment) rose between 1987 and 2005 from 57% to 68%, before falling sharply over the course of the recession to reach a low of 51% in 2012. Since then, the share has steadily increased, so that it had almost reach its pre-financial crisis level by 2019. More striking is the change in the share of working-age women in paid employment (excluding self-employment), which doubled between 1987 and 2009 (rising from 30% to 60%). While this also fell during the recession, it did so less sharply than for men, meaning that the share of working-age women in paid employment (excluding self-employment) was slightly higher than for men between 2012 and 2017.

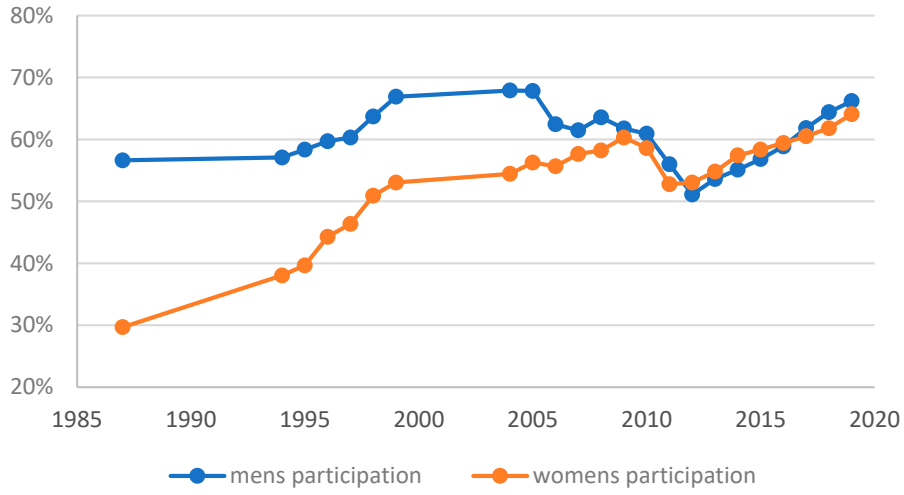

Figure 6. The share of the population in paid employment (excluding the self-employed). Source: Authors' calculations using the ESRI Survey of Income Distribution, Poverty and Usage of State Services, the Living in Ireland Survey, and the European Union—Survey of Income and Living Conditions. Notes: Limited to respondents aged 25–55 and excluding the self-employed.

The detailed decompositions shown in Tables A3–A5 shed light on how the drivers of the explained and unexplained components of the GWG have changed over time. The gender differences in the incidence of part-time work and education used to contribute substantially to the explained component of the gender pay gap. This contribution has declined over time indicating some convergence in the education level and rates of part-time work of working men and women. Age and marital status were the primary drivers of the unexplained gender wage gap in the early years of the 30-year period. This implies that the labour market returns to age (which can proxy experience), and marital status used to be lower for women than for men. In the more recent years of the time series, gender differences in the returns to age are still a large component of the unexplained gender wage gap. However, returns to marital status are now more similar for men and women, and gender differences in returns to part-time work and education are increasingly driving the unexplained component of the GWG at the bottom of the wage distribution.

Appendix C shows detailed decomposition for the period 2004–2019, with the addition of occupation and Irish citizenship as explanatory variables and largely confirms these results. Gender differences in occupation explain some of the GWG at the bottom of the wage distribution but relatively little further up the distribution in recent years. Gender differences in returns to occupation also contribute little to the GWG. Irish citizenship explains little of the GWG, but returns to Irish citizenship do play a role. In 1994, gender differences in the returns to being non-Irish worked in favour of women in the middle and top of the wage distribution and in favour of men at the bottom of the wage distribution. In recent years, returns to Irish citizenship are more similar for men and women, but they still favour women at the very top of the wage distribution.

Overall, our results point to a narrowing in the gender wage gap that was accompanied by a convergence in the wage-enhancing characteristics of men and women, including a decline in occupational segregation between genders over time. This is consistent with previous work by Blau and Kahn (2017), Redmond and McGuinness (2019), and Doris (2019).

4. Discussion

This paper has examined the evolution of the gender gap in earnings, work, and wages over the past three decades in Ireland. At the median and the bottom of the distribution, the raw gender gap in both wages and earnings remained relatively persistent over the 1990s, only beginning to narrow over the 2000s. This convergence occurred due to changes in the number of hours worked by men and women and a narrowing of the hourly wage gap between men and women.

The pace of this convergence accelerated appreciably over the 2000s, coinciding with the introduction of the minimum wage and partial individualisation of the income tax system. Previous research has suggested that both policies could play a role in advancing gender equality (e.g., Bargain et al. 2018; Doorley 2018), and the pattern of results we document are consistent with such an effect on gender gaps in earnings and wages. Future research exploiting longitudinal data could aim to shed light on the magnitude of such effects and the mechanisms underlying them. It could also indicate if a move to the full individualisation of the taxation system—which is the norm in most European countries—could improve gender equality in Ireland.

The period 2000–2010 was also characterised by a doubling of the proportion of working-age women with tertiary education. Bercholz and FitzGerald (2016) suggest that this had a major impact on female labour supply, and, indeed, we document a significant increase in female participation rates over this period. However, this is accompanied by a decrease in the average hours worked by women, suggesting that much of the extra female labour was supplied part-time. The explained component of the GWG changes little over this period, although the relative contributions of gender differences in education and part-time incidence decline. However, the unexplained component of the GWG decreases significantly—particularly differences in returns to age and marital status—consistent with

a normalisation of female work which changes bargaining power, occupational sorting, workplace flexibility, preferences, or discrimination.

The persistence of the gender gap in earnings and wages across most of the distribution before the turn of the century is also worthy of further research. Ireland retained a marriage bar—a requirement in certain jobs that women must give up that employment upon marriage—until its accession to the (then) European Community in 1973: far longer than the neighbouring jurisdictions of Britain, Germany, and the Netherlands. Comparing affected women in Ireland to similar-but-unaffected women, Mosca and Wright (2020) conclude that the marriage bar had a negative long-run effect on the length of the working lives and earnings of women. Investigating the role of the marriage bar on gender earnings and wage gaps may, therefore, offer a fruitful path for future research, as might the impact of the comparatively late legalisation of contraception (1985), divorce (1995), and abortion (2018) in Ireland.

However, our results suggest that the evolution of the Irish gender gap in earnings and wages looks quite similar to other countries in a different respect: the relative stability of the gap at the top of the distribution. Our estimates suggest that the gender gap in earnings at the 90th percentile is now larger than it was in 1987. The unexplained part of the GWG, which is one component of the gender gap in earnings, is also now larger at the top than at the median or the bottom of the wage distribution. The latter finding echoes that of Blau and Kahn (2017), who argue it points towards a "glass ceiling" for women, which may be attributable to bargaining power, occupational sorting, workplace flexibility, preferences, or discrimination. It is also in line with findings of Doorley et al. (2021), who show that the GWG in Ireland stagnated after the financial crisis and is now concentrated in the private sector and at the top of the wage distribution.

While we find that the gender gap in earnings has narrowed lower down the distribution, it remains the case that this gap is pronounced, at around 20% at both the mean and median. The gap is even larger (40%) at the bottom of distribution, where women continue to work far fewer hours than men. Indeed, the fact that the gender gap in wages is so much smaller than that in earnings points to the important role played by hours of work. This is more rigorously established by (Doorley and Keane 2020), who show that most of the gender income gap in Europe is due to the gender work gap, and Doris et al. (2022), who find that reductions in hours worked among women following childbirth in Ireland can explain approximately 60% of their initial decline in earnings.

The stickiness of the gender gap in hours of work and the unexplained portion of the GWG suggests that future progress in gender earnings inequality will be contingent on fewer barriers to female labour force participation and full-time work and enhanced promotion opportunities for women. There is potential for policies aimed at enhancing the availability of high quality, subsidised full-time childcare—which, in a similar policy environment, Brewer et al. (2022) find raises the employment rates of women but not men—to further attenuate the gender gap in earnings. Policies that remove obstacles to women's access to more senior, higher-paid positions may also help improve female career progression. Inflexible working arrangements and cultures of long hours in the early stages a career and/or in senior positions can inhibit this (Goldin 2014; Russell et al. 2017; Chung 2018). Moves to make organisational gender pay gaps transparent, a recent proposal of the European Parliament, may encourage firms to reflect on organisation culture and promotion criteria and reduce the gender pay gap (Baker et al. Forthcoming).

The COVID-19 pandemic—through school and workplace closures and elderly cocooning —will affect the future trajectory of gender-earnings, work, and wage gaps. In contrast to many countries where a "shecession" was expected, Doorley et al. (2022) estimate that, in Ireland, men were harder hit than women by employment losses during the first three waves of the pandemic. However, they also find that women's wages declined by more than men's during the same time period. The result of these two opposing forces was a stable gender earnings gap. Future data will reveal whether or not any long-term scarring to employment or wages has occurred, and what this means for gender equality.

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Conflicts of Interest: The authors declare no conflict of interest.

Appendix A. Descriptive Data for Missing Observations

Table A1. Missing observations in hours and earnings variables by year.

		Of Which, Missing		
Year	**N in Paid Work of Working Age**	**Hours**	**Earnings**	**Either**
1987	1911	9.4%	9.4%	11.5%
1994	2348	0.1%	3.2%	3.2%
1995	2152	0.0%	3.9%	3.9%
1996	1949	0.1%	4.0%	4.0%
1997	1911	0.0%	4.0%	4.0%
1998	1835	0.0%	4.7%	4.7%
1999	1613	0.0%	4.0%	4.0%
2004	3224	2.0%	0.6%	2.6%
2005	3429	1.0%	0.4%	1.3%
2006	3159	0.9%	0.5%	1.3%
2007	2939	0.6%	0.4%	1.0%
2008	2580	0.3%	0.6%	0.9%
2009	2587	0.3%	0.3%	0.6%
2010	2315	0.7%	0.3%	1.1%
2011	2299	1.2%	0.9%	1.8%
2012	2623	1.4%	1.5%	2.5%
2013	2837	1.1%	1.7%	2.4%
2014	3189	1.1%	1.6%	2.4%
2015	3150	0.9%	0.6%	1.4%
2016	2971	1.4%	1.1%	2.1%
2017	2904	0.6%	0.9%	1.2%
2018	2738	0.6%	0.7%	1.1%
2019	2630	0.6%	0.4%	0.9%

Source: Authors' calculations using the ESRI Survey of Income Distribution, Poverty and Usage of State Services, the Living in Ireland Survey, and the European Union—Survey of Income and Living Conditions. Notes: Limited to respondents aged 25–55 and excluding the self-employed.

Table A2. Characteristics of sample by whether missing information on hours/earnings, over time.

	Missing Hours/Earnings			Not Missing Hours/Earnings		
	Age	Married	>Primary Education	Age	Married	>Primary Education
1987	38.7	71.4%	26.5%	36.5	75.7%	44.8%
1994	39.3	58.5%	29.5%	37.5	70.1%	63.0%
1995	40.3	68.1%	27.0%	37.5	68.9%	62.8%
1996	41.8	66.3%	31.4%	37.6	68.2%	63.7%
1997	42.4	55.4%	26.8%	37.8	66.9%	65.8%
1998	39.3	53.7%	21.8%	37.6	63.7%	64.0%
1999	43.3	66.4%	32.6%	37.6	62.6%	64.0%
2004	40.8	68.0%	70.7%	40.1	66.7%	71.1%
2005	38.3	60.7%	69.0%	39.5	61.5%	71.8%
2006	41.6	54.8%	67.2%	39.6	61.6%	76.2%
2007	41.1	75.2%	72.5%	39.3	59.7%	76.1%
2008	43.4	86.2%	71.6%	39.2	59.5%	77.5%
2009	46.5	95.3%	94.7%	39.3	61.7%	80.8%
2010	39.0	46.7%	67.3%	38.8	61.4%	83.3%
2011	43.3	59.5%	63.6%	39.2	62.2%	84.7%
2012	40.6	60.8%	69.2%	39.4	62.3%	86.3%
2013	40.2	51.6%	88.2%	39.7	62.3%	87.8%
2014	39.5	55.1%	84.9%	39.5	63.0%	86.9%
2015	41.8	73.5%	94.0%	39.8	64.5%	89.6%
2016	40.5	48.8%	79.3%	40.1	63.4%	90.7%
2017	41.4	74.5%	70.4%	40.1	62.7%	91.1%
2018	41.3	48.7%	92.0%	40.5	63.3%	92.0%
2019	39.8	67.3%	92.7%	40.1	60.8%	91.6%

Source: Authors' calculations using the ESRI Survey of Income Distribution, Poverty and Usage of State Services, the Living in Ireland Survey, and the European Union—Survey of Income and Living Conditions. Notes: Limited to respondents aged 25–55 and excluding the self-employed.

Appendix B. Decomposition Results at Selected Percentiles

Table A3. Decomposition results from RIF regressions for selected years at the 10th percentile.

	1987	1995	2004	2011	2019
Gap	29.6%	32.8%	10.8%	5.0%	7.7%
Explained	0.1%	−4.1%	2.6%	4.5%	−2.5%
Unexplained	29.6%	36.9%	8.2%	0.5%	10.2%
Explained					
Age	0.2%	−0.1%	−0.2%	−0.7%	0.2%
Marital Status	0.1%	−0.5%	0.1%	−0.3%	0.1%
Working Part-Time	4.8%	4.2%	5.1%	6.5%	0.9%
Education	−5.0%	−7.7%	−2.4%	−1.0%	−3.7%
Total	0.1%	−4.1%	2.6%	4.5%	−2.4%

Table A3. *Cont.*

	1987	1995	2004	2011	2019
Unexplained					
Age	37.8%	150.4%	−67.8%	−63.2%	48.8%
Marital Status	17.6%	23.9%	3.6%	8.9%	9.5%
Working Part-Time	0.1%	−1.4%	−2.1%	−0.5%	−4.4%
Education	2.1%	2.0%	−0.1%	−0.1%	−8.8%
Constant	−28.0%	−138.0%	74.7%	55.3%	−35.0%
Total	29.5%	36.9%	8.2%	0.5%	10.2%
N (women)	446	816	1506	1152	1319
N (men)	882	1211	1549	1016	1236

Source: Authors' calculations using the ESRI Survey of Income Distribution, Poverty and Usage of State Services, the Living in Ireland Survey, and the European Union—Survey of Income and Living Conditions. Notes: Limited to respondents aged 25–55 and excluding the self-employed.

Table A4. Decomposition results from RIF regressions for selected years at the 50th percentile.

	1987	1995	2004	2011	2019
Gap	13.7%	20.0%	15.4%	6.3%	3.2%
Explained	−2.8%	−3.4%	0.4%	5.7%	−0.5%
Unexplained	16.5%	23.5%	15.0%	0.6%	3.7%
Explained					
Age	2.5%	1.7%	−0.3%	−1.0%	0.9%
Marital Status	0.1%	−0.3%	0.3%	0.4%	0.4%
Working Part-Time	4.7%	2.8%	3.0%	8.0%	3.2%
Education	−10.1%	−7.6%	−2.6%	−1.7%	−5.0%
Total	−2.8%	−3.4%	0.4%	5.7%	−0.5%
Unexplained					
Age	−49.6%	−110.0%	10.1%	−41.8%	62.3%
Marital Status	16.9%	17.5%	4.9%	5.2%	−1.8%
Working Part-Time	0.3%	0.4%	−0.3%	0.6%	−0.8%
Education	3.4%	0.2%	−0.1%	−2.1%	−0.5%
Constant	45.4%	115.3%	0.5%	38.7%	−55.5%
Total	16.5%	23.5%	15.0%	0.6%	3.7%
N (women)	535	816	1506	1152	1319
N (men)	1213	1211	1549	1016	1236

Source: Authors' calculations using the ESRI Survey of Income Distribution, Poverty and Usage of State Services, the Living in Ireland Survey, and the European Union—Survey of Income and Living Conditions. Notes: Limited to respondents aged 25–55 and excluding the self-employed.

Table A5. Decomposition results from RIF regressions for selected years at the 90th percentile.

	1987	1995	2004	2011	2019
Gap	−8.4%	10.5%	10.6%	6.5%	10.0%
Explained	−23.2%	−7.4%	−2.9%	−1.3%	−4.5%
Unexplained	14.7%	17.9%	13.6%	7.8%	14.5%
Explained					
Age	0.8%	3.0%	−0.5%	−0.8%	0.8%
Marital Status	2.1%	−0.2%	0.2%	0.0%	0.3%
Working Part-Time	−13.2%	−5.6%	−0.5%	0.2%	−2.0%
Education	−12.8%	−4.6%	−2.2%	−0.7%	−3.5%
Total	−23.2%	−7.4%	−2.9%	−1.3%	−4.5%

Table A5. *Cont.*

	1987	1995	2004	2011	2019
Unexplained					
Age	81.4%	−88.1%	−18.2%	−37.4%	−239.4%
Marital Status	−21.0%	9.1%	−1.1%	2.7%	5.3%
Working Part-Time	0.3%	1.2%	0.9%	0.0%	−0.4%
Education	2.8%	1.2%	0.1%	0.3%	1.7%
Constant	−48.7%	94.4%	31.9%	42.2%	247.4%
Total	14.7%	17.9%	13.6%	7.9%	14.5%
N (women)	535	816	1506	1152	1319
N (men)	1213	1211	1546	1016	1236

Source: Authors' calculations using the ESRI Survey of Income Distribution, Poverty and Usage of State Services, the Living in Ireland Survey, and the European Union—Survey of Income and Living Conditions. Notes: Limited to respondents aged 25–55 and excluding the self-employed.

Table A6. Coefficient estimates and standard errors from RIF regressions for selected years (50th percentile).

	1987	1995	2004	2011	2019
Overall					
Women	10.667	11.879	15.373	17.531	19.066
	(33.35) ***	(40.61) ***	(62.31) ***	(46.84) ***	(53.13) ***
Men	12.361	14.852	18.162	18.706	19.696
	(63.93) ***	(55.96) ***	(66.83) ***	(46.68) ***	(51.26) ***
Difference	−1.694	−2.972	−2.789	−1.176	−0.629
	(−4.53) ***	(−7.53) ***	(−7.60) ***	(−2.14) *	(−1.20)
Explained	0.34	0.51	−0.065	−1.071	0.101
	(1.08)	(1.83)	(−0.26)	(−3.07) **	(0.36)
Unexplained	−2.034	−3.483	−2.724	−0.105	−0.731
	(−4.95) ***	(−8.70) ***	(−7.43) ***	(−0.21)	(−1.45)
Explained					
Age	−1.941	−2.686	0.184	1.257	−0.478
	(−2.25) *	(−3.34) ***	(0.57)	(1.56)	(−1.32)
Age-squared	1.627	2.437	−0.125	−1.074	0.307
	(2.04) *	(3.18) **	(−0.45)	(−1.51)	(0.98)
Married	−0.01	0.046	−0.056	−0.072	−0.08
	(−0.11)	(0.74)	(−1.76)	(−1.54)	(−1.71)
Working Part-Time	−0.58	−0.421	−0.544	−1.5	−0.64
	(−3.56) ***	(−3.64) ***	(−3.41) ***	(−7.57) ***	(−4.62) ***
Lower Secondary	0.843	1.063	0.449	0.395	0.301
	(6.20) ***	(7.77) ***	(5.03) ***	(4.15) ***	(3.70) ***
Upper Secondary	−0.051	0.007	−0.087	−0.136	0.06
	(−1.18)	(0.1)	(−2.92) **	(−2.64) **	(1.47)
Third Level	0.452	0.064	0.114	0.059	0.632
	(3.97) ***	(0.61)	(1.02)	(0.4)	(4.33) ***
Unexplained					
Age	14.528	36.379	1.17	21.014	−21.263
	(1.02)	(2.25) *	(0.07)	(0.91)	(−0.90)
Age-Squared	−8.398	−20.036	−2.996	−13.191	8.995
	(−1.16)	(−2.43) *	(−0.37)	(−1.13)	(0.73)
Married	−2.083	−2.605	−0.892	−0.971	0.35
	(−3.41) ***	(−4.39) ***	(−1.62)	(−1.39)	(0.53)
Working Part-Time	−0.04	−0.065	0.063	−0.103	0.159
	(−1.31)	(−1.21)	(1.14)	(−0.65)	(1.18)
Lower Secondary	−0.458	−0.066	−0.028	0.024	−0.128
	(−1.63)	(−0.28)	(−0.17)	(0.13)	(−0.91)
Upper Secondary	−0.287	−0.132	−0.212	−0.313	0.342
	(−2.49) *	(−0.98)	(−1.47)	(−1.72)	(1.5)
Third Level	0.321	0.17	0.266	0.683	−0.119
	(3.65) ***	(1.2)	(1.64)	(1.72)	(−0.23)
Constant	−5.617	−17.128	−0.096	−7.247	10.934
	(−0.80)	(−2.18) *	(−0.01)	(−0.63)	(0.97)

Table A6. *Cont.*

	1987	1995	2004	2011	2019
N (women)	446	816	1506	1152	1319
N (men)	882	1211	1549	1016	1236

Source: Authors' calculations using the ESRI Survey of Income Distribution, Poverty and Usage of State Services, the Living in Ireland Survey, and the European Union—Survey of Income and Living Conditions. Notes: Limited to respondents aged 25–55 and excluding the self-employed. Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Appendix C. Decomposition Results at the 10th, 50th, and 90th Percentiles, Including Occupation and Citizenship

Table A7. Detailed decomposition results from RIF regressions for selected years at the 10th percentile.

	1995	2004	2011	2019
Gap	32.4%	10.3%	5.0%	7.6%
Explained	5.0%	2.7%	4.4%	−0.9%
Unexplained	27.4%	7.6%	0.5%	8.4%
Explained				
Age	−0.6%	−0.1%	−0.5%	0.0%
Marital Status	−0.3%	0.2%	−0.3%	0.1%
Working Part-Time	2.8%	3.6%	5.0%	0.2%
Education	−3.4%	−1.3%	−0.3%	−2.9%
Irish Citizen	0.0%	0.0%	−0.4%	−0.5%
Occupation	6.5%	0.3%	1.0%	2.1%
Total	5.0%	2.7%	4.4%	−0.9%
Unexplained				
Age	185.4%	−66.1%	−87.1%	59.5%
Marital Status	27.4%	2.7%	10.0%	10.0%
Working Part-Time	−1.8%	−2.1%	−0.4%	−4.7%
Education	−0.6%	−0.1%	−1.2%	−9.3%
Irish Citizen	17.6%	8.7%	3.6%	−1.1%
Occupation	−1.7%	0.6%	2.7%	−0.1%
Constant	−199.0%	64.0%	72.7%	−45.8%
Total	27.3%	7.6%	0.5%	8.4%
N (women)	814	1466	1152	1311
N(men)	1172	1509	1016	1223

Source: Authors' calculations using the ESRI Survey of Income Distribution, Poverty and Usage of State Services, the Living in Ireland Survey, and the European Union—Survey of Income and Living Conditions. Notes: Limited to respondents aged 25–55 and excluding the self-employed.

Table A8. Detailed decomposition results from RIF regressions for selected years at the 50th percentile.

	1995	2004	2011	2019
Gap	21.0%	15.2%	6.3%	3.2%
Explained	−5.9%	−2.9%	−2.7%	−0.9%
Unexplained	26.9%	18.1%	9.0%	4.1%
Explained				
Age	1.2%	−0.2%	−0.7%	0.7%
Marital Status	−0.4%	0.3%	0.4%	0.2%
Working Part-Time	2.2%	1.7%	6.5%	1.5%
Education	−2.7%	−1.4%	−0.8%	−3.2%
Irish Citizen	0.2%	0.0%	−0.5%	−0.7%
Occupation	−6.4%	−3.2%	−7.6%	0.5%
Total	−5.9%	−2.9%	−2.7%	−0.9%

Table A8. *Cont.*

	1995	2004	2011	2019
Unexplained				
Age	−38.7%	2.6%	−45.4%	72.8%
Marital Status	14.0%	6.9%	4.6%	0.9%
Working Part-Time	0.3%	−0.4%	1.6%	−1.5%
Education	−0.3%	0.0%	−2.3%	−3.3%
Irish Citizen	−67.5%	−0.3%	−4.1%	3.5%
Occupation	0.5%	1.1%	2.0%	0.6%
Constant	118.6%	8.3%	52.7%	−69.0%
Total	26.9%	18.1%	9.0%	4.1%
N (women)	814	1466	1152	1311
N(men)	1172	1509	1016	1223

Source: Authors' calculations using the ESRI Survey of Income Distribution, Poverty and Usage of State Services, the Living in Ireland Survey, and the European Union—Survey of Income and Living Conditions. Notes: Limited to respondents aged 25–55 and excluding the self-employed.

Table A9. Detailed decomposition results from RIF regressions for selected years at the 90th percentile.

	1995	2004	2011	2019
Gap	11.5%	10.8%	6.5%	10.5%
Explained	−0.6%	−4.3%	−2.6%	−5.2%
Unexplained	12.1%	15.1%	9.2%	15.7%
Explained				
Age	2.7%	−0.4%	−0.6%	0.7%
Marital Status	−0.1%	0.2%	0.0%	0.2%
Working Part-Time	−4.8%	−1.7%	−0.5%	−3.1%
Education	−1.3%	−1.5%	−0.4%	−2.1%
Irish Citizen	0.1%	0.0%	−0.2%	−0.3%
Occupation	2.8%	−0.9%	−0.9%	−0.6%
Total	−0.6%	−4.3%	−2.6%	−5.2%
Unexplained				
Age	−19.7%	−10.1%	−14.9%	−216.8%
Marital Status	7.7%	2.1%	1.7%	5.7%
Working Part-Time	1.2%	0.9%	0.4%	−1.2%
Education	0.6%	0.3%	2.3%	0.3%
Irish Citizen	−56.8%	2.2%	−1.9%	−8.4%
Occupation	−0.4%	−1.3%	−2.6%	−0.6%
Constant	79.4%	21.0%	24.1%	236.7%
Total	12.1%	15.1%	9.2%	15.7%
N (women)	814	1466	1152	1311
N(men)	1172	1509	1016	1223

Source: Authors' calculations using the ESRI Survey of Income Distribution, Poverty and Usage of State Services, the Living in Ireland Survey, and the European Union—Survey of Income and Living Conditions. Notes: Limited to respondents aged 25–55 and excluding the self-employed.

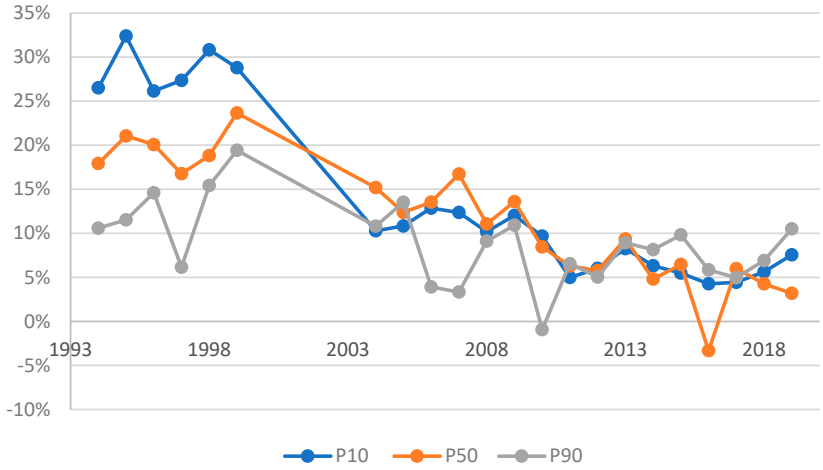

Figure A1. The gender wage gap at selected percentiles Source: Authors' calculations using the ESRI Survey of Income Distribution, Poverty and Usage of State Services and the European Union—Survey of Income and Living Conditions. Notes: Limited to respondents aged 25–55 and excluding the self-employed. Wages are CPI adjusted and weighted.

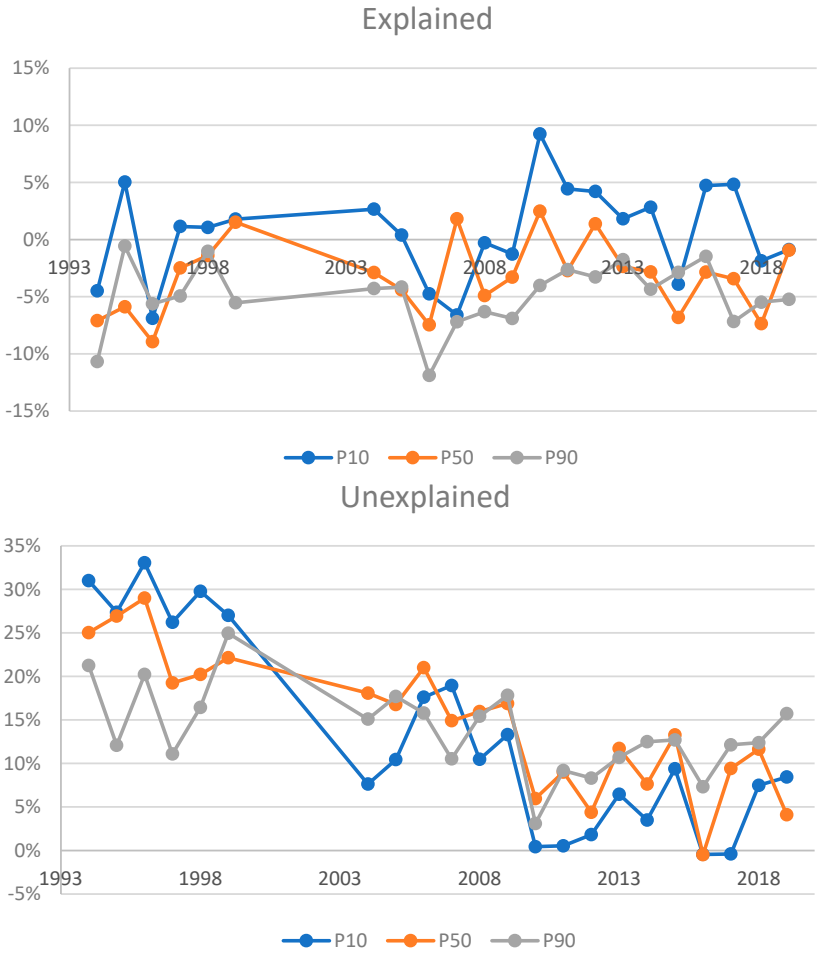

Figure A2. The explained and unexplained portions of the gender wage gap at selected quantiles. Source: Authors' calculations using the ESRI Survey of Income Distribution, Poverty and Usage of State Services, the Living in Ireland Survey, and the European Union—Survey of Income and Living Conditions. Notes: Limited to respondents aged 25–55 and excluding the self-employed. Wages are CPI adjusted and weighted.

Notes

[1] See Russell et al. (2017) for discussion of how gender equality in the Irish labour market has changed over the last 50 years.

[2] See, for example, Borella et al. (2021), Roantree (2019), and Bick and Fuchs-Schuendeln (2017).

[3] Statistics | Eurostat (europa.eu) (accessed on 25 July 2022).

[4] Women's hours and, hence, earnings, can also fluctuate across the earning's distribution due to assortative mating, in which highly paid women tend to marry highly paid men and labour-supply decisions are made based on intrahousehold specialization (see, e.g., Bredemeier and Juessen 2013).

[5] The description of data here is based on that in Roantree et al. (2021). Barrett et al. (1999a, 1999b, 2002) use the earlier years of data covering the period 1987–1997 to examine earnings inequality and returns to education.

[6] A small number of households are included in a panel element: see Central Statistics Office (2017, pp. 7–9).

[7] We exclude these groups due to concerns about the reliability of their reported usual hours of work and earnings, which give rise to many implausible values for constructed hourly wages.

[8] We use CSO series CPM01, available at https://data.cso.ie/table/CPM01 (accessed on 31 May 2022).

[9] Influence functions, in general, are used to analyse the robustness of distributional statistics (i.e., quantiles or means) to small changes to the underlying data. See Rios-Avila (2020) for a technical, yet intuitive, explanation of IFs and RIFs and their associated uses.

[10] Note that one could use standard quantile regressions. However, the estimates from standard quantile regressions show the effect of a change in the explanatory variable on the *conditional* quantile. For a more detailed discussion of conditional versus unconditional quantile regression and the RIF transformation, see Firpo et al. (2009). To implement the RIF regressions and decompositions, we use the Stata package created by Rios-Avila (2020).

[11] Note that X refers to the vector of characteristics used in Equation (2), and the βs refer to the estimates from Equation (2).

[12] Detailed decomposition results are presented for selected years in Appendix B.

[13] This is in line with the U-shaped GWG estimated by Doorley et al. (2021) for Ireland between 2011 and 2018.

[14] Specifically, we include dummies for occupation at the one-digit ISCO level (combining "skilled agricultural/fishery workers" and "skilled craft/trades workers" for reasons of small sample sizes). We also include a dummy for Irish citizenship, which is only available from 1994 onwards.

[15] We omit these characteristics from our preferred specification, as they are not available for the entire period we examine.

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