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Ireland's Gender Wage Gap, Past and Present

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Abstract: This paper first provides a brief survey of research on the gender wage gap in Ireland, particularly in *The Economic and Social Review*. It then documents recent research on how the gender wage gap varies across the wage distribution; the gap now appears to be greatest for high earners, for whom it also tends to be largely unexplained by human capital variables. Finally, it uses a combination of recent research results and some descriptive analysis of the Labour Force Survey to consider the potential importance of occupation in explaining the gender wage gap. It concludes with a call for further research in the area.

I INTRODUCTION

There has surely been no more important change in Irish society in the 50 years of the *ESR*'s existence than the change in the role of women. Although it had its roots in the labour market, the effects of this change are felt widely elsewhere. Thus, as women increased their education levels, wages and labour force participation rates, the knock-on effects on fertility, consumption patterns, and intra-household bargaining have affected every household in the country.

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On the eve of the foundation of the *ESR*, men's average industrial earnings were 48 per cent higher than women's (CSO, 2015). In 2001, the gender gap in mean hourly earnings across all sectors was about 17 per cent (CSO, 2004), and had fallen further to about 14 per cent by 2014. The initially rapid rate of change of the wage gap is not surprising considering that gender discrimination on pay was legal and commonplace before the introduction of equal pay legislation in 1975. However, the gap has persisted at a fairly stable level in recent years, despite the fact that women are now better educated than men and the gap in labour force participation between men and women has narrowed considerably.

To some extent, the gender gap in mean wages is explained by differences in observable productivity-related characteristics, but not entirely. The residual unexplained gender wage gap is particularly interesting as it is often held up as a metric of the discrimination that women continue to face. However, it is likely to reflect differences in the choices that men and women make as well as discrimination. The challenges of distinguishing between these explanations for the unexplained gap have led to an enormous literature on the subject, including in the pages of this journal.

In this paper, I consider the wage gap that remains between men and women in the Irish labour market. I first outline the history of Irish research on the gender gap and provide an account of the current understanding of its magnitude. I then draw together some recent research that suggests that the wage gap is particularly resistant to reduction for high earners. Finally, I explore one potential explanation for the persistence of the gap at the top of the distribution; that differences in occupational preferences between men and women work to women's disadvantage and that those preferences are slow to change. I conclude with some tentative policy implications and a call for further research.

II (ALMOST) 50 YEARS OF RESEARCH ON THE GENDER WAGE GAP

Research in the *ESR* has reflected – and at times anticipated – the changing economic role of women. Tussing (1976), in a paper about the labour force effects of the introduction of free secondary education in Ireland in 1968, considered the idea of a 'day of reckoning' when increased second-level education could induce higher labour force participation:

> *[the] increases in school participation rates discussed in this paper can certainly….bring about added impetus for higher levels of female labour force participation, throughout all the years of age, among married as well as single women; and what is implied is a demand for jobs with career ladders permitting lifelong advancement, as among men.*

The early years of the *ESR* coincided with a revolution in the empirical analysis of labour markets: beginning with a sample from the 1960 US Census, micro-econometric data began to be used for labour market analysis for the first time by pioneers such as Jacob Mincer (1974) and Ruben Gronau (1974). Despite the fact that no such data were available in Ireland, the *ESR* quickly joined the micro-econometric revolution. Walsh and Whelan (1976) provide an admirably early study of earnings in Ireland, using a 1972 dataset constructed from the Department of Labour's Redundancy Payments database and supplemented with survey data on 504 individuals. They find that weekly earnings for males were 73 per cent higher than for females,[1] with almost none of the differential explained by differences in characteristics. Strikingly, they find that returns to education were zero for women, but positive for men.

The next *ESR* paper on male-female wage differentials was by Reilly (1987). However, data representative of the full population were still not available, so the analysis used a 1982 survey of 15-24 year olds. The male premium for this age group is found to lie at around 11 per cent. This is substantial considering that the limited age range might be expected to reduce observable differences between men and women. As with Walsh and Whelan (1976), Reilly finds that the returns to education are substantially lower for women than for men. Of the 11 per cent wage differential, it is estimated that about 3 percentage points are explained, so up to 8 points might be considered discrimination. A follow-up paper (Reilly, 1990) estimates wage differentials for the same age group taking into account selection into occupations. He finds no wage discrimination in the manual sector, but discrimination of 6-16 per cent in the non-manual sector. Reilly (1995) uses the 1981 and 1982 School Leavers' Survey to assess the effect of unions on wages in Ireland. He finds an overall gender wage gap of about 9 per cent, a similar level to that reported in his earlier study (Reilly, 1987) of young adults in 1982. Interestingly, he finds no wage gap among union workers, but a 16.5 per cent gap between male and female non-union workers.

The first Irish paper on male-female wage differentials using data based on the whole population was Callan's 1991 study, which was published in the *ESR*. The 1987 ESRI Survey was the first nationally representative household survey in Ireland to collect data on earnings and their determinants. Callan (1991) uses data from this survey to assess differentials in hourly wages between married men and married women. The observed wage gap of 34 per cent is found to understate the true underlying wage gap: when the fact that self-selection into the labour market means that women tend to have more positive unobserved characteristics is taken into account, the gap in wage offers is estimated to be 49 per cent. Differences in labour market experience are found to explain 21 per cent (10 percentage points) of this wage gap, with a further 9 per cent (5 percentage points) explained by other

[1] Author's calculation based on the results in Walsh and Whelan (1976) Table 2.

observable characteristics. Having taken observable characteristics into account, 70 per cent (34 points) remain unexplained.[2]

Subsequent research directly on the topic has been conducted outside the pages of the *ESR*. For example, Callan and Wren (1994) use the same 1987 Survey to examine the gender wage gap for all men and women, rather than just those who are married. They find that the observed gender wage gap was smaller in the broader sample, at about 20 per cent, and that about half of this is explained by observable characteristics, with the remaining 10 percentage points unexplained. Barrett *et al.* (2000) provide updated figures using the Living in Ireland Survey (the Irish component of the European Community Household Panel) for 1994 and 1997. They find that the wage gap fell to 18 per cent in 1994 and to 15 per cent in 1997, of which 4 and 6 percentage points respectively remained unexplained after controlling for observable characteristics.

Most recently, McGuinness *et al.* (2009) uses the 2003 National Employment Survey, a large employer survey, to assess the gender wage gap and finds a somewhat larger wage gap of almost 22 per cent. Because of the large sample size – almost 40,000 individuals' data were collected – it was possible to include more comprehensive job and occupational controls than in any previous study. After accounting for all observable characteristics, including occupation and firm-level characteristics, almost 8 percentage points – about 36 per cent – remain.

The overall picture is that the mean wage gap has fallen since the 1980s, as has the unexplained wage gap. Nevertheless, progress towards parity seems to have slowed. This result is echoed in other countries. For example, a similar pattern is described in Blau and Khan's (2017) comprehensive overview of the gender wage gap in the US. They find that, while the long-term trend in the male-female wage differential is that it is falling, progress has slowed since the 1990s and this is particularly true at the top of the earnings distribution. They note that this is despite the fact that the education gap has been reversed and the experience gap has substantially narrowed, while there has been a big rise in managerial and professional jobs for women, even excluding teaching and nursing.

When Blau and Kahn examine the determinants of the gender wage gap at the mean, they find that while a reduction in the unexplained wage gap played an important role in reducing the wage gap during the 1980s, it has been a minor factor since then, with convergence in observable characteristics explaining practically all the gains during the 1990s and 2000s. They report an important role for differences in industry and occupation in the wage gap that remains, as these two factors now comprise the most important measured factors accounting for the pay gap. This remains true despite the fact that women upgraded their occupations over recent decades.

[2] Author's calculations based on the results in Callan (1991) Table 2.

Turning to the fact that the wage gap is highest at the top of the wage distribution, Blau and Kahn note that while the unexplained gap used to be smaller at the top of the distribution than in the middle, by the 2000s, it was bigger at the top of the distribution than at either the middle or the bottom, suggesting the presence of a 'glass ceiling'. They outline several possible explanations for this. One is that gender discrimination is particularly stubborn for high earners. Others relate to productivity-related characteristics that are typically unmeasured in the datasets used for analysing wage gaps. For example, men may be willing to work longer and less flexible hours than women. Finally, a group of explanations refer to the effects of the differences in choices that men and women make as regards their education and occupations. For example, it may be that occupation is important in explaining wage differentials partly because the occupations that men choose have higher returns or that there are strong penalties for flexibility in some high-paying occupations. In addition, it may be that the types of degrees that men tend to do yield higher returns than the ones women choose.

In the remainder of this paper, I collate the evidence that exists for Ireland on two aspects of the gender wage gap emphasised by Blau and Kahn (2017). First, I discuss the evidence on how the wage gap varies across the earnings distribution. Secondly, I consider the importance of occupational and educational choices for the size of the gap, including some largely descriptive analysis of the Labour Force Survey (LFS) to provide additional insights.

III RECENT RESEARCH I: THE GENDER WAGE GAP ACROSS THE DISTRIBUTION

Coffey (2019) analyses Irish Survey of Income and Living Conditions (SILC) data for 2007-2017 to examine the gender wage gap at various quantiles of the wage distribution and how these gaps evolve over the period. He shows that in 2007, the raw wage gap was higher at the bottom than at the top of the distribution. However, the gap fell consistently over time in the bottom half of the distribution, whereas in the upper half, the gap fell until 2012/2013 and then rose strongly. The result of these combined patterns is that the raw wage gap has been bigger at the top of the distribution than at the bottom since 2015.

When he decomposes the raw wage gap at various percentiles of the distribution, Coffey (2019) finds that the unexplained gap dominates at both the 75th and 90th percentiles, accounting for almost all of the raw gap. In contrast, explained components account for the majority of the gap at lower percentiles. A detailed decomposition reveals that differences in the returns to a managerial position and to public sector working are important in contributing to the raw wage gap; in 2017, for example, differing returns to a managerial role account for about

half of the total unexplained gap at the 90th percentile, suggesting that women are not attaining the very highest levels of managerial positions. On the other hand, women benefit from an unexplained advantage in returns to a public sector job, which reduces the wage gap.

Bargain *et al*. (2019) focus on the bottom of the wage distribution in order to assess the effect of the national minimum wage on the gender wage gap in both Ireland and the UK. Using the Living in Ireland survey, they find that in Ireland, the introduction of the minimum wage effectively eliminated the wage gap at low wage levels, while having no effect at higher points in the distribution.

Although not directly on the topic of the gender wage gap, Chapman and Doris (2019) include an analysis of lifetime earnings for male and female graduates using the 2006 National Employment Survey, and so provide evidence on the wage gap for well-educated workers. They find substantial gender differences in graduate earnings emerging from the age of about 30 at all quantiles of the distribution, but the differences are particularly substantial at the highest quantiles, so that female graduates at the 80th percentile of their earnings distribution are predicted to earn about 40 per cent less than male graduates by the age of 55. However, there is no analysis of the sources of the pay gap in the paper.

Redmond and McGuinness (2019) use a dataset covering all 28 EU countries to consider the gender wage gap across the earnings distribution. The unexplained portion of the wage gap is found to have a U-shaped relationship with earnings – it is highest at the bottom and the top of the wage distribution, with a figure of 14 per cent at the top. An interesting aspect of the paper is that it incorporates variables on preferences – usually treated as unobservable in this literature – into wage regressions. The results show that when choosing jobs, men tend to care more about pay, the company's reputation and career progression, while women tend to care more about security, being close to home and having a good work-life balance. They find that, across countries, differences in job preferences account for about 10 per cent of the raw gender wage gap; the figure for Ireland is somewhat lower at about 8 per cent. When the authors decompose the wage gap across the distribution, they find that differences in preferences are particularly important at the top of the distribution, where they account for about 12 per cent of the raw wage gap.

Overall, these studies point to the importance of distributional analysis of the gender wage gap and suggest a particular problem at the top of the distribution. The next section addresses differences in occupational choices between men and women and considers the extent to which these differences may contribute to the wage gap for high earners.

IV RECENT RESEARCH II: THE GENDER GAP AND OCCUPATIONAL CHOICE

The importance of occupational choice in the gender wage gap has long been recognised in the literature because of the fact that occupations in which women predominate tend to be lower paid. In this section, I report on some recent research on occupational segregation and the importance of occupational choice for the gender wage gap. In addition, I use data from the Labour Force Survey to provide some insights on recent trends in segregation and gender differences in occupation. In much of this section, I focus on graduates, in an attempt to gain insights into the reasons for the substantial unexplained gender gap at the top of the earnings distribution.

Keane *et al*. (2017) examine the extent of occupational segregation by gender from 1991 to 2006 using the Duncan Index and Census data. The Duncan Index is constructed so that it indicates the proportion of men who would have to change occupation in order for all occupations to be occupied by men and women in the same proportions. Keane *et al*. find, using a three-digit occupational classification, that the Duncan Index fell from 62.0 to 42.6 over their time period.[3] Keane *et al*. suggest that two forces led to the reduction in segregation over their 15-year period. First, women increasingly entered professional fields of study in higher education, such as Medicine and Law, which then led to increased female representation in these professions. Secondly, formalised recruitment procedures in the public sector have led to increased numbers of women entering previously male occupations, such as the Gardaí.

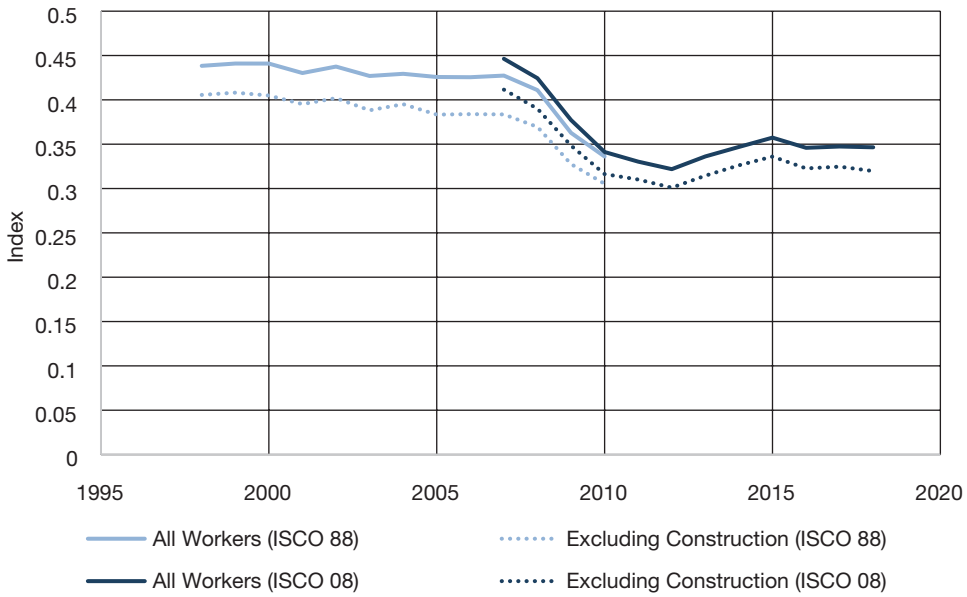
To consider how segregation has evolved more recently, the Duncan Index can be calculated using LFS data for 1998-2018. The occupational classification system changed during this time period from ISCO 88 to ISCO 08, but the CSO includes occupational classifications using both systems for 2007-2010, allowing for transparency as to the effect of the changes in classification system on measured segregation. Both classification systems are shown at the three-digit level in Figure 1.

The first point to make is that the Duncan Index calculated for all workers using the LFS is at the same level in 2006 (42.6) as that calculated by Keane *et al.* (2017) using Census data, so the two sources appear to be consistent. The LFS data indicate that occupational segregation declined only very slightly during the years of the boom but then dropped sharply from 44.6 in 2007 to 32.2 in 2012, which coincides with the years of the recent economic crisis. One potential explanation for this is

[3] Blau and Kahn (2017) report a decline in the Duncan Index calculated on US Census data from 64.5 in 1970 to 51.0 in 2009. The US Census uses 500+ occupational categories, while the Irish Census uses 225. Since it is known that levels and changes in the Duncan Index are affected by the number of occupational categories used, caution must be used in comparing US and Irish segregation indices.

that men in male-dominated occupations (e.g. construction) were worse affected by unemployment during the severe recession than men in other occupations. However, the dotted lines, which exclude those working in the main construction-related occupations, show the same patterns, so the drop in occupational segregation does not appear to be due only to the collapse of the construction industry during the crisis. An alternative explanation is that the recession may have encouraged men and women to enter previously unconsidered occupations. The fact that the segregation index seems to be staying close to its lower level during the labour market recovery, rising only slightly to 34.6 by 2018, may indicate support for the latter explanation. The question of whether the crisis has permanently lowered the degree of occupational segregation is an interesting one for future research.

Figure 1: Duncan Segregation Index 1998-2018



Source: Author's own calculations based on the CSO's Labour Force Survey.

A question that naturally arises concerns how the increasing education levels in the labour force affect the occupations chosen by men and women. The suggestion that field of study may be important for the gender wage gap has often been made in the literature, and is discussed in some detail in Blau and Kahn (2017). These authors focus not just on gender segregation of college majors, but also on the extent to which women undertake mathematically-oriented degrees in particular. They argue that although women now undertake such degrees to a greater extent than previously, little progress in this regard has been made since the 1980s in the US.

Keane *et al*.'s (2017) research confirms that the educational fields chosen by men and women affect occupational segregation in Ireland.[4]

Russell *et al*. (2010) provide some older evidence of the extent to which field of study affects the gender wage gap in Ireland. They use data on the private sector earnings of 2001 graduates three years post-graduation, so their results are relevant to well-paid young workers in the early stages of their careers. They find that field of study has a strong effect on earnings in general and on the gender wage gap. In particular, they find that undertaking Science, Engineering or Medical degrees increases earnings substantially, and that controlling for field of study reduces the unexplained gender gap from 7.6 per cent to 5 per cent.

Although many papers in this literature distinguish between STEM[5] and non-STEM degrees, there is some justification for focussing on maths-intensive degrees because of evidence that these are particularly beneficial in the labour market. Fortin (2008) investigates the role of cognitive and non-cognitive skills in the gender wage gap in the US and finds that the impact of maths skills on wages is substantial and larger for women than for men. Joensen and Nielsen (2009; 2014) provide evidence that the effect of maths on earnings is causal. They exploit a change in the education system in Denmark that made it easier to choose advanced maths at secondary school level and resulted in a doubling of the number of girls making this choice. They find that taking advanced maths at secondary school moves women to the top of the earnings distribution both by changing the fields chosen at university to more male-dominated ones and by increasing the probability of taking postgraduate degrees.

To provide some indicative evidence on the importance of occupation to the earnings of graduates, I use the LFS to examine the drivers of high earnings. Although the LFS does not include detailed earnings data, from 2009 onwards it does include a variable indicating the net earnings decile of each individual. Table 1 shows a probit regression, using 2009 and 2018 LFS data, of how being in a mathematical (Columns 1 and 3) or STEM (Columns 2 and 4) occupation relates to the probability of a graduate being in one of the top two earnings deciles.[6] Only workers holding a degree are included in the sample for each year. In addition to the occupation indicator, age, gender and hours of work are included in each

[4] Smyth and Steinmetz (2008) examine the issue of segregation by occupation and field of study across 17 EU Member States using the 2004 EU LFS, and find that educational segregation by gender plays a significant role in shaping gender segregation in the labour market.

[5] STEM refers to Science, Technology, Engineering and Maths.

[6] STEM occupations include ISCO 08 categories 2100 (Science and Engineering Professionals), 2200 (Health Professionals) and 2500 (Information and Communications Technology Professionals). Mathematical occupations include categories 2100-2159 (Science and Engineering Professionals, omitting architects and designers), 2410-2413 (Finance professionals) and 2500 (as above). Thus, STEM occupations differ from mathematical occupations because the former include Health and Architecture but exclude Finance.

regression. In each case, the results shown in the top panel refer to the regression over all graduates, with the results for the occupation indicators in the separate regressions for men and women shown below this.

Table 1: Probit Regression of the Effect of Occupation on Graduate Earnings, 2009 and 2018

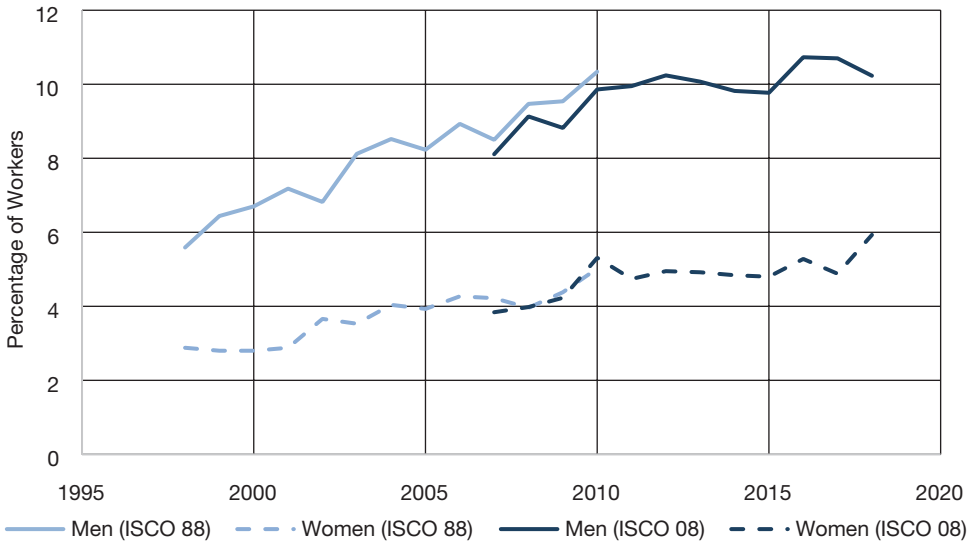
	2009		*2018*	
	Maths (1)	*STEM(2)*	*Maths(3)*	*STEM (4)*
Gender (All)	–0.109***	–0.124***	–0.096***	–0.112***
	(0.0144)	(0.0141)	(0.0131)	(0.0130)
Age (All)	0.016***	0.015***	0.010***	0.010***
	(0.0006)	(0.0006)	(0.0006)	0.0006
Hours (All)	0.008***	0.008***	0.012***	0.013***
	(0.0006)	0.0006	(0.0007)	(0.0007)
Occupation (All)	0.126***	0.108***	0.158***	0.070***
	(0.0186)	(0.0163)	(0.0165)	(0.149)
N	4,023	4,023	4,154	4,154
Occupation (Male)	0.146 ***	0.147***	0.171***	0.169***
	(0.0254)	(0.0256)	(0.0252)	(0.0246)
N (Male)	1,643	1,643	1,686	1,686
Occupation (Female)	0.110***	0.084***	0.154***	0.006
	(0.0273)	(0.0212)	(0.0224)	(0.0186)
N (Female)	2,380	2,380	2,468	2,468

Source: Author's calculations based on CSO's Labour Force Survey.
Note: Dependent variable is having earnings in the top two deciles. Marginal effects shown, standard errors in parentheses.

The results indicate that being in a mathematical or STEM occupation is strongly positively associated with high income, even when conditioning on degree holding. Being in a mathematical occupation raises the probability of being in the top two income deciles by 13-16 percentage points, while being in a STEM occupation raises this probability by 7-11 percentage points. The pattern of results is similar in all years: the effect of occupation is more positive and the gender effect less negative in the maths specification than in the STEM specification. In the regressions for all graduates, the difference in marginal effects between the maths and STEM specifications is small and not statistically significant at the start of the period for which data are available, but grows over time and becomes statistically significant by the end of the time period. In the regressions over men only, the difference between the two specifications is small and statistically insignificant throughout, whereas in the regressions over women only, the difference is significant from 2014 on; in fact, the estimated marginal effect of being in a STEM occupation is statistically insignificant for women from 2013 on.

These results suggest that among the STEM occupations, women work in the less lucrative ones, and that this is increasingly the case. Perhaps the fact that nursing is now a graduate qualification is impacting on these results; if those with nursing occupations are increasingly being included in the graduate sample, the fact that nursing is female dominated and less well paid than many other STEM occupations may be driving down the return to STEM occupations for women. On the other hand, women and men earn large and statistically indistinguishable returns to mathematical occupations.

Figure 2: Percentage of All Workers whose Occupation is Mathematical



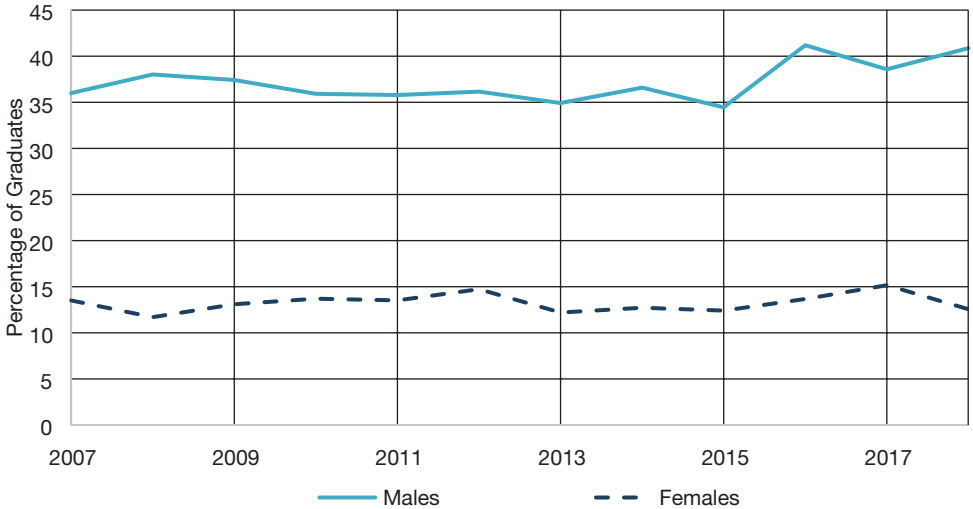
Source: Author's own calculations based on the CSO's Labour Force Survey.

With these results in mind, it is useful to assess the extent to which women and men occupy mathematical occupations, and whether there is any time trend in the prevalence of these occupations by gender. Figure 2 shows the results of an analysis of the LFS from 1998 to 2018. The figure shows that there is a steady upward trend in the proportion of both male and female workers in mathematical occupations, although the rate of growth has slowed slightly in the last decade. The growth is to be expected, as the proportion of workers with degrees has increased steadily over the period. However, there is no indication that women are making substantial inroads into the dominance of men in mathematical occupations.

A recent paper by Delaney and Devereux (2019) investigates the reasons for the gender gap in STEM field choice in Ireland. Using data from university applications in 2015-2017, they find that there is a 22 percentage point gender gap

in first preferences for STEM university courses. Males and Females are equally likely to choose Science courses, so all of the gap is in Technology, Engineering and Maths. They find that almost none of the STEM gender gap is due to differences in overall examination performance, as measured by total Leaving Certificate points. Differential subject choices and grades in STEM subjects in school explain about 13 percentage points of the gap, with the remaining 9 points gap unexplained. Subject choices for Leaving Certificate are, therefore, key in determining the explained portion of the STEM gap.

Figure 3: Percentage of Graduates whose Degree Field is 'Mathematical'



Source: Author's own calculations based on the CSO's Labour Force Survey.

To get a sense of whether the gender gap in maths-oriented degrees has been decreasing in recent years, the LFS can be used to examine changes in the degree fields of workers over time.[7] Figure 3 shows the proportion of graduates holding degrees in Science or Engineering in the Irish labour market for the years from 2007 to 2018. Women clearly earn these maths-oriented degrees to a far lower extent than men, with the ratio of men to women with such degrees typically ranging from 2.5-3 to 1. It is also clear that the proportion of the graduate workforce with mathematical degrees has been largely unchanged over the last decade. There is some evidence of an uptick amongst men in the last two or three years, but it

[7] The LFS includes information on respondents' field of study, using the International Standard Classification of Education (ISCED). Science (ISCED 4) and Engineering (ISCED 5) are classified as mathematical fields. Note that degrees in mathematical fields such as Accounting, Finance and Economics could not be distinguished from other Social Science fields, and so are not included in the 'mathematical' category.

remains to be seen if this will persist. Of course, the proportion of the workforce with degrees has increased over this time period so the proportion of all female workers with mathematical degrees has risen. But there is no evidence of a convergence in the educational field composition of the workforce. Together, Figures 2 and 3 suggest that occupational differences between men and women will continue to contribute to the gender wage gap for well-educated workers.

V CONCLUSION

The gender wage gap in Ireland has narrowed considerably in the last 50 years. However, as in other countries, the narrowing appears to have slowed. In addition, the gender gap seems to be larger for high earners, for whom the gap is not explained well by standard human capital variables. It seems likely that at least some of the unexplained gender wage gap is due to labour market discrimination; even though direct discrimination has been outlawed, the elimination of the unconscious biases that affect women's opportunities for promotion may take some time to achieve.

However, some of the unexplained gap may also be due to differences in preferences between men and women. These differences may concern work priorities, which may affect wages, a possibility that is explored in Redmond and McGuinness (2019). Other possibilities include differences in occupational preferences, or differences in preferred study fields that then develop into differences in occupations. In this paper, I have considered some recent research and provided some descriptive data analysis that focuses on mathematical fields and occupations in particular. I provided evidence that choosing a mathematical occupation increases the probability of an individual being highly paid. In addition, I showed clear and persistent differences between men and women in their propensity to choose mathematical occupations and in their choice of mathematical degree fields.

Gender differences in occupational choices may be the result of differences in innate preferences and/or abilities, in which case these differences will persist. On the other hand, they may be due to socialisation and social expectations. These are slow to change, but can do so, as noted by Keane *et al*. (2017) in their discussion of increased participation by women in Medicine and Law. Delaney and Devereux (2019) emphasise that Leaving Certificate subject choices are very important in the STEM gap, so it is likely that these choices also affect the 'mathematical field' gap. If girls (and boys) are making their subject choices in the absence of good information about the consequences for future earnings, these choices may not be optimal. The provision of better information could reduce the gender wage gap while improving efficiency.

In order to provide better information, however, more research on these issues is needed. Improved data will be key to future research. It is heartening that Delaney and Devereux have been given access to administrative educational data; if these data could be linked to earnings data, the labour market consequences of educational choices could be examined more fully. Similarly, the linking of administrative earnings data to the Labour Force Survey would allow more comprehensive research on the links between occupations and lifetime earnings. It is to be hoped that as new datasets are made available, Irish research on the gender wage gap will continue to thrive.

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