



UK COMMISSION FOR
EMPLOYMENT AND SKILLS

Opportunities and outcomes in education and work: Gender effects

Research briefing
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Foreword

The UK Commission for Employment and Skills (UKCES) is a publicly funded, industry-led organisation providing leadership on skills and employment issues across the UK. Together, our Commissioners comprise a social partnership of senior leaders of large and small employers from across industry, trade unions, the third sector, further and higher education and all four UK nations.

Our vision is to create, with industry, the best opportunities for the talents and skills of people to drive competitiveness, enterprise and growth in a global economy.

Over the next three years our ambition is to see industry in the UK create “ladders of opportunity” for everyone to get in and on in work. This means employers improving entry routes into the labour market for young people, ensuring the existing workforce has the skills businesses need to compete and individuals need to progress, and deploying those skills in a way that drives productivity and growth. This is a collective agenda for employers working in partnership with government, trade unions, education providers, industry bodies and local organisations.

Our Research

Our research mobilises impartial and robust national and international business and labour market research to inform choice, practice and policy. We aim to lead the debate with industry to drive better outcomes for skills, jobs and growth.

Our ambition is to cement the UK Commission’s reputation as the ‘go-to’ organisation for distinct high quality business intelligence, and communicate compelling research insights that shape policy development and influence behaviour change.

In order to achieve this, we produce and promote robust business intelligence and insights to ensure that skills development supports choice, competitiveness and growth for local and industrial strategies.

Our programme of research includes:

- producing and updating robust labour market intelligence, including through our core products (the Employer Skills Survey (ESS), Employer Perspectives Survey (EPS) and Working Futures Series)
- developing an understanding of what works in policy and practice through evaluative research
- providing research insight by undertaking targeted thematic reviews which pool and synthesise a range of existing intelligence.

Our research programme is underpinned by a number of core principles, including:

- providing business intelligence: through our employer surveys and Commissioner leadership we provide insight on employers' most pressing priorities
- using evaluative insights to identify what works to improve policy and practice, which ensures that our advice and investments are evidence based.
- adopting a longer term, UK-wide, holistic perspective, which allows us focus on big issues and cross cutting policy areas, as well as assessing the relative merits of differing approaches to employer engagement in skills
- providing high quality, authoritative and robust data, and developing a consistent core baseline which allows comparison over time and between countries and sectors.
- being objective, impartial, transparent and user-friendly. We are free of any vested interest, and make our LMI as accessible as possible.

We work in strategic partnership with national and international bodies to ensure a co-ordinated approach to research, and combine robust business intelligence with Commissioner leadership and insight.

Tackling the gender imbalance in the UK labour market has been one of UKCES's areas of focus since inception following the Women and Work Commission which reported its findings in 2006. The UKCES Women and Work projects were designed to support Sector Skills Councils (SSCs) in providing women with the skills, confidence and mentoring support to progress or move into male-dominated occupations. Through the UK Futures Programme UKCES is exploring how innovations in the workplace can address some of the persistent constraints that women face in the labour market.

This paper extends the UKCES's series of briefings on equality groups, including gender. It follows on from the 2011 publication Gender and skills in a changing economy. It is not intended as a straightforward update to that publication which focused on the differences between men and women from the perspective of the acquisition and use of work-related skills. This paper gives a broader perspective on the current situation for women in education and work in the UK. It describes educational choices and outcomes from formal schooling, higher education, and vocational routes to work, including apprenticeships. In addition, the remit is expanded beyond skills to consider labour market drivers and outcomes with respect to differences by gender.

As well as presenting evidence from latest data, this report sets out to situate the issues around gender within the context of the UK Commission's flagship strategic analysis, Growth Through People. This analysis, published in December 2014, identified the key issues and challenges currently facing the employment and skills system in the UK with recommendations for action to secure prosperity and growth. At its heart, the ambition that was set out is to ensure a sustained recovery for the long-term driven by the skills and talents of people. As we show in the current report women are almost half our existing

workforce. They are consistently demonstrating that they are ahead in achieving qualifications and skills and that they are able and increasingly involved across disciplines and subjects critical for future economic success.

Sharing the findings of our research and engaging with our audience is important to further develop the evidence on which we base our work. Evidence Reports are our chief means of reporting our detailed analytical work. All of our outputs can be accessed at www.gov.uk/government/organisations/uk-commission-for-employment-and-skills

We hope you find this report useful and informative. If you would like to provide any feedback or comments, or have any queries please e-mail info@ukces.org.uk, quoting the report title or series number. We also welcome feedback on Twitter.

I would like to take this opportunity to thank all contributors to this work, particularly Professor Derek Bosworth who conducted in-depth data analysis on behalf of UKCES.

We hope you find this paper useful and informative. If you have any feedback or comments to suggest on this report please email info@ukces.org.uk.

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UK Commission for Employment and Skills

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1 Introduction

Opportunities for women in the labour market have changed dramatically over the past half century. Female employment has risen rapidly but gender inequality at work has been described as “a hardy perennial” – an enduring feature of the economic landscape that has been hard to root out.¹

Forty-five years on from the Equal Pay Act progress on tackling gender pay and opportunity gaps has been energetically sought and made in many ways. However, sizeable differences in outcomes for women and men in the labour market persist even though girls and women have been demonstrating greater than equal achievements to their male counterparts on a majority of the measures of educational attainment in recent years.

Of the equalities groups (identified around gender, disability and ethnicity for example) experiencing barriers to full and equal economic participation women make up the largest. Women comprise 50.3 per cent of the UK’s population of working age (16-64) and 47 per cent of those in work so women are not a minority group in the available and engaged workforce.² Despite the strong trend towards equalising the male/female balance in the overall workforce recent signs are that women’s progress in the workplace has been slowing (England, 2010; Women and Work Commission, 2006) and latest data on one of the key indicators of gender inequality shows that the gender pay gap among all employees, full and part time, remains at 19 per cent on a per hour worked basis.³

¹ Cartmail, G. We need new tools to stamp out the hardy perennial of gender inequality at work. Real Business, 21st May 2015. <http://realbusiness.co.uk/article/30220-we-need-new-tools-to-stamp-out-the-hardy-perennial-of-gender-inequality-at-work-> accessed 15th September 2015

² Office for National Statistics: Summary of Labour Market Statistics, 13th May 2015

³ Office for National Statistics: Annual Survey of Hours and Earnings, 2014 Provisional Results. 14th November 2014

Gender inequality is of course a global issue but indicators suggest that the UK is stalling comparative to other developed economies. For example, the UK ranked 26th in the world for overall gender equality in a recent analysis, down from 9th place in 2006 (WEF, 2015). In terms of labour force participation and wage equality, however, the UK was even lower down the ranking at 48th place. In addition, the UK ranked 14 out of 27 OECD countries in the latest 'Women in Work Index' (PwC, 2015). One indication of how countries differ in their outcomes on tackling gender inequality is in the experience of relative pay and security among women at the lower end of the earnings distribution. This is because the problems of gender inequality impact most acutely on those at the bottom. This is important in the UK where women are over-represented in lower paid jobs, making up as they do 64 per cent of the total low paid workforce.⁴ Part of the reason the UK compares poorly is because of the relatively high share of low quality part time jobs on offer (Grimshaw and Rubery, 2007; UKCES, 2015).

1.1 About this report

This publication presents an exploration of latest data and evidence on women's current position in terms of experience in and outcomes from education and the world of work in the UK. It provides a comparison by gender across a number of key domains in educational qualification and skills acquisition, and in the labour market including measures of under-employment and skills utilisation at work. The analysis and comparisons are intended to aid insights and understanding into the employment challenges, needs and opportunities faced by individuals because of their gender.

The report is written in the context of the UKCES Growth Through People strategic analysis.⁵ This benchmark publication outlined the condition of the skills system and employment challenges in the UK and their impact on economic performance. It set out a statement on the priorities that need to be addressed. The report presented here relates the evidence and debate on gender to the themes discussed in Growth Through People in order to put the challenges facing women into our core strategic perspective. It considers how the Growth Through People framework can help shape practical, employer-led action to help tackle gender inequality.

⁴ Pay Progression: understanding the barriers for the lowest paid. CIPD, October 2014

⁵ UKCES, 25 November 2014, Growth through people: a statement on skills in the UK. <https://www.gov.uk/government/publications/growth-through-people-a-statement-on-skills-in-the-uk> accessed on 16th September 2015

1.2 Methodology

A comprehensive review of the education and labour market data was conducted for UKCES between January and April 2015 by Professor Derek Bosworth.

A range of data sources was accessed including surveys (e.g. the Labour Force Survey - LFS, and the Skills and Employment Survey - SES), as well as various types of administrative data (e.g. from the Department for Education, the Higher Education Statistics Agency - HESA). Every attempt was made to ensure consistency and comparability across the statistics although this was not always possible. For example, educational awards and attainment measures differ across the nations of the UK. Data for the past decade, and in some instances over a longer period, was analysed in order to capture trends and changes pre and post-recession where possible.

The data analysis which forms the core evidence base for the paper is supplemented by qualitative research, involving a literature review and conversations with stakeholders conducted by UKCES since January 2015. This qualitative research has been used to shape the Commission's latest UK Futures Programme investment theme on workplace solutions for tackling gender inequality.⁶ It also informs the discussion in this paper which relates findings from the data to the wider debate on women's economic equality issues.

1.3 Structure of the report

The body of the report takes a broadly life-course approach in its structure, beginning with an analysis of educational achievements by gender as the precursor to work, followed by an examination of labour market trends for women and men.

- Section 2 looks at outcomes for women and men in formal education and the wider skills system across the four nations of the UK. This includes an analysis of data on work-based training and apprenticeships as well as attainment at GCSE and A level (and their equivalents in Scotland) and in higher education.

⁶ UKCES Futures Programme: Workplace solutions to the gender pay and opportunity gap competition brief. <https://www.gov.uk/government/publications/ukces-futures-programme-workplace-solutions-to-the-gender-pay-and-opportunity-gap-competition-brief> accessed on 16th September 2015

- Section 3 analyses labour market experience and outcomes by gender. This covers economic activity rates and employment data (including employment by sector and occupation) as well as earnings. It drills down into the issues of under-employment and skills utilisation at work looking at whether and how men and women are impacted differently. Job-related training provision is also covered in this section as another dimension of work-related experience.
- Section 4 presents a concise discussion of key questions and themes in the debate on gender inequality. The discussion then applies gender inequality themes to the perspective of the UKCES Growth Through People analysis and its priorities for action in the UK skills and employment system.

2 Participation and achievements in education and training by gender

This section looks at outcomes by gender from secondary education (GCSEs and A levels and Scottish equivalents), higher education and work-based learning and apprenticeships. Within each level and type of qualification, information is presented for England, Wales and Northern Ireland and then for Scotland.⁷

2.1 Secondary education - GCSE, A levels and Scottish equivalents

The data show that girls do better than boys at both GCSE and A level in England, Wales and Northern Ireland. For Scotland, data for school leavers show more girls than boys staying on beyond 16 and achieving higher level qualifications.

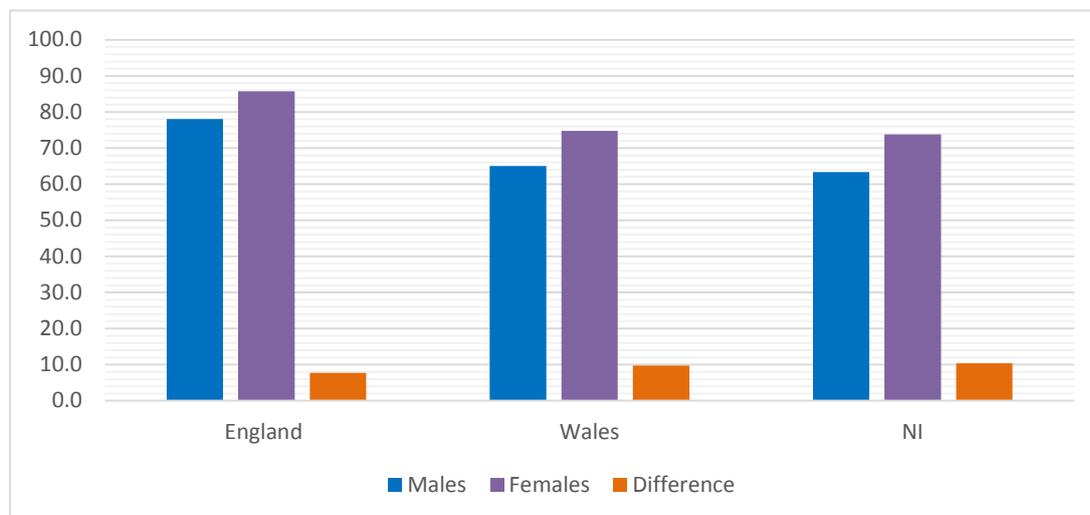
At GCSE level, in England the extent to which girls out-perform boys is larger in the higher grades (A*-C) than in the lower grades (A*-G). The difference in the proportion of girls and boys who achieved 5 or more GCSEs including English and Maths at grades A*-C rose from a low in 2008/09 of around 7%, to 11% by 2012/13.

In Wales and Northern Ireland the pattern is also one of girls doing better than boys especially in the higher grades. In Wales, at grades A*-C the percentage point gender difference is large and is increasing over time, reaching 9.7% by 2013/14. In Northern Ireland where standards reported include attainment of seven or more GCSEs at A*-C a positive differential of over 10% between girls and boys occurs in each year from 2008/09 to 2013/14. Figure 2.1 below shows proportions of boys and girls achieving 5 or more A*-C in GCSEs or equivalent across England, Wales and Northern Ireland in the most recent year for which data is available.⁸

⁷ Straightforward comparisons are complicated by differences between qualification types and availability of directly comparable data in the four nation states but overall patterns are drawn out in the descriptions of the data.

⁸ England proportions based on 2012/2013 data, Wales proportions based on 2013/2014 data, NI proportions based on 2013/2014 data, Scotland proportions (SQF5) based on 2012/2013 data.

Figure 2.1: Percentage attainment at GCSE: 5 or more A*-C grades by gender



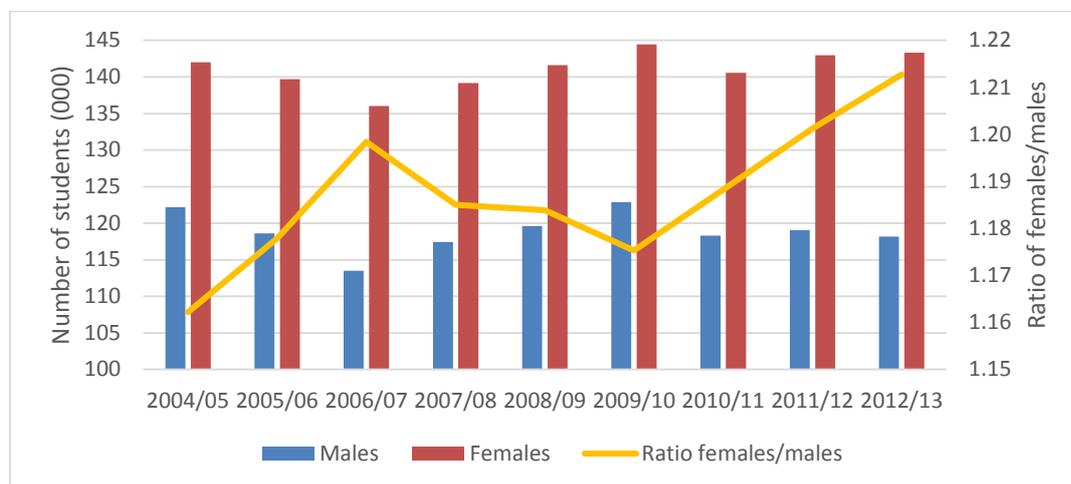
Source: statswales.wales.gov.uk⁹

In the Scottish education system GCSEs and A Levels are replaced by examinations in the Scottish Credit and Qualifications Framework (SCQF). Data is reported by highest qualification attained by school leavers and reveals that at SCQF levels equivalent to GCSEs higher proportions of boys than girls leave school at this stage. Proportions of both boys and girls leaving with the equivalent of no qualifications or GCSE grades D-G have been falling quite strongly. Proportions leaving with the equivalent of A*-C have remained relatively stable at around 30% for boys and 24% for girls although the proportion of girls leaving at this stage has fallen slightly.

At A level, English data show that at the latest data point, 2012/13, close to 25,000 more women than men entered for at least one A level or equivalent. The differential in female to male numbers entering A levels has been rising over the period since 2004/5 reaching 21% by 2012/13 as shown in Figure 2.2. At the highest level of attainment, 3 A*-A or above gender differences are much less evident. Men and women performed relatively equally by this standard across the period from 2004/05 but since 2009/10 men have marginally pulled away performing slightly over one percentage point better than women.

⁹ <https://statswales.wales.gov.uk/Catalogue/Education-and-Skills/Schools-and-Teachers/Examinations-and-Assessments/Key-Stage-4/GCSEEntriesAndResultsPupilsAged15Only-by-SubjectGroup> (as at 6/1/2015)

Figure 2.2 Students in England entered for at least one A level or Applied single/double award A level (000)



Source: Department for Education¹⁰

In Wales as in England and Scotland, females are far more likely than males to stay in education after age 16. Overall, the data show a higher proportion of females achieve A level grades A*-C in every year and the differential has been rising. There are considerable differences in the subjects chosen by males and females but just because some are more popular among men than women does not mean that men perform better in those subjects. Data for 2008/09 showed female/male attainment gaps at A*-C for Physics, ICT and Physical Education of 11.6%, 11.8% and 14.5%.

There is clear evidence for Northern Ireland, that females again perform better than males at A-level, particularly at the higher grades A*-C. In Scotland the data show increasing proportions over time of men and women leaving school with the equivalent of high grades at A levels - SCQF 6 and 7 but with the proportion of women greater than that of men in each year.

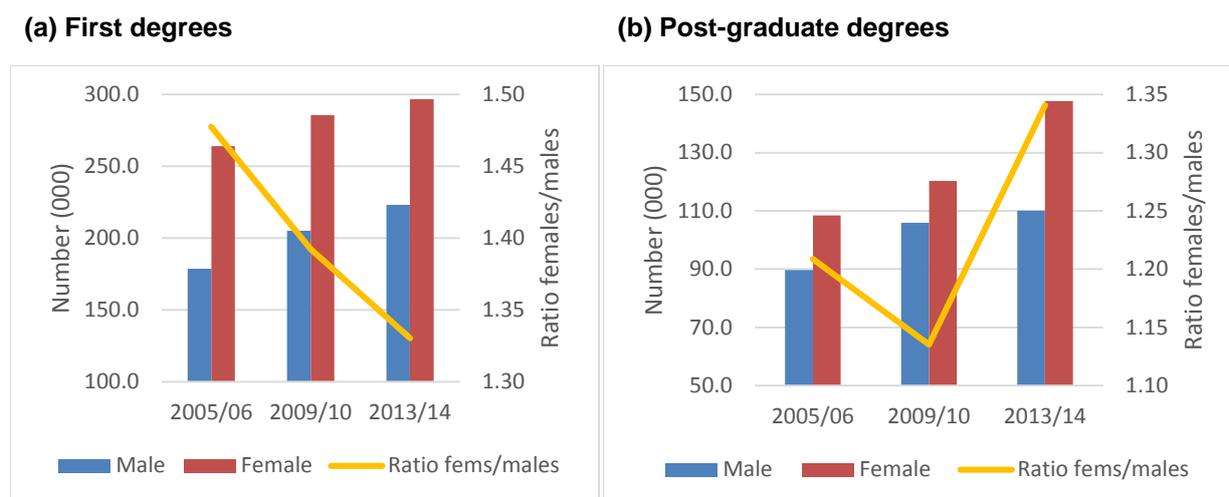
¹⁰ SFR02/2014 National Tables (accessed at 7/1/2015).

2.2 Higher education

The picture of generally superior female performance at secondary school across the UK continues into higher education.

Figure 2.3 provides information on the numbers of males and females obtaining first degrees and post-graduate degrees in the UK as a whole. The most obvious feature is that participation in higher education has been significantly greater amongst females than males over the last 10 years. To some extent males have been catching up; the number of female first degrees increased by 12.4 per cent, while the number of males increased by 24.9 per cent over the period. Even so, as shown by the ratio of females to males there were still over 30 per cent more female qualifiers in 2014 than males.

Figure 2.3 Numbers of students qualifying by level of degree (000), UK



Source: Higher Education Statistics Agency¹¹

Significantly more women than men obtain post-graduate degrees as shown in Figure 2.3(b). In addition the number of women gaining post-graduate qualifications has increased faster over the past decade, by a total of 36.1%, with most of this growth occurring in the last five years. The increase for males was 22.7%. The number of all individuals (males and females, first degree and post-graduate level) qualifying from the higher education system exceeded three quarters of a million (777.8 thousand) by 2013/14.

¹¹ <https://www.hesa.ac.uk/free-statistics> (accessed at 26-30/01/2015).

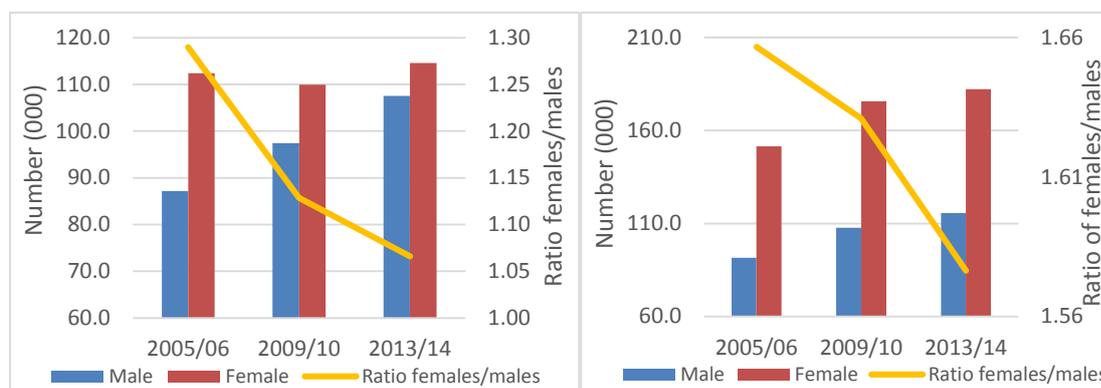
2.2.1 Gender comparisons by discipline - STEM and non-STEM¹²

By broad discipline group – STEM and non-STEM – as shown in figure 2.4, more women than men attain a first degree in both, although the ratios between women and men have been falling over the past decade. This is particularly marked in the case of STEM, in which the number of men achieving a first degree rose by 23.4% whereas the number of women has only marginally increased, reducing the female to male ratio to just over 1.05, a fall of 17.4 percentage points. The non-STEM discipline area has also seen a fall in the female to male ratio, but here there were still 58% more women than men in these areas in 2013/14.

Figure 2.4 First degree by discipline, number of male and female students

(a) Participation in STEM subjects

(b) Participation in other subjects



Source: Higher Education Statistics Agency¹³

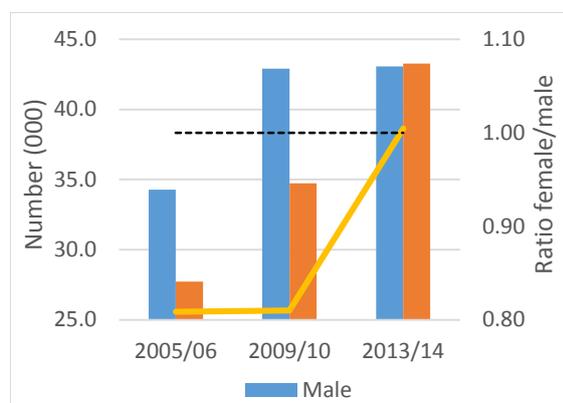
Growth in the number of female post-graduate qualifiers in STEM has been strong over the past decade so that by 2013/14 the number of female post-graduates just surpassed numbers of male post-graduates in STEM for the first time. The growth in the number of female post-graduate qualifiers in non-STEM has also been very strong since 2009/10 such that the ratio of females to males increased by around 10 percentage points to 2013/14. Of all female post-graduate qualifiers, just under 30% were in STEM subjects, which compares with just under 40% among male post-graduates. These trends are shown in Figure 2.5 below.

¹² STEM is made up of Science, Technology, Engineering and Maths disciplines and subjects; non-STEM includes Social sciences, Humanities and Arts disciplines and subjects.

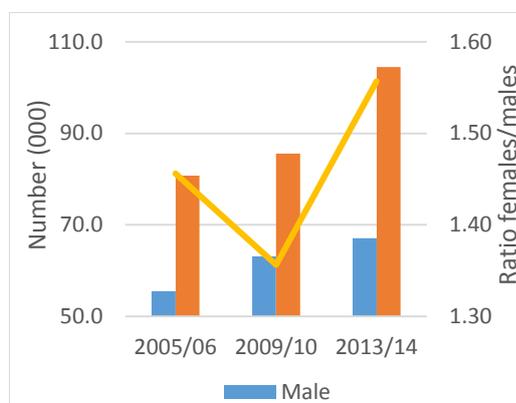
¹³ <https://www.hesa.ac.uk/free-statistics> (accessed at 26-30/01/2015).

Figure 2.5 Post-graduate degree by discipline, number of male and female students

(a) Participation in STEM subjects



(b) Participation in other subjects



Source: Higher Education Statistics Agency¹⁴

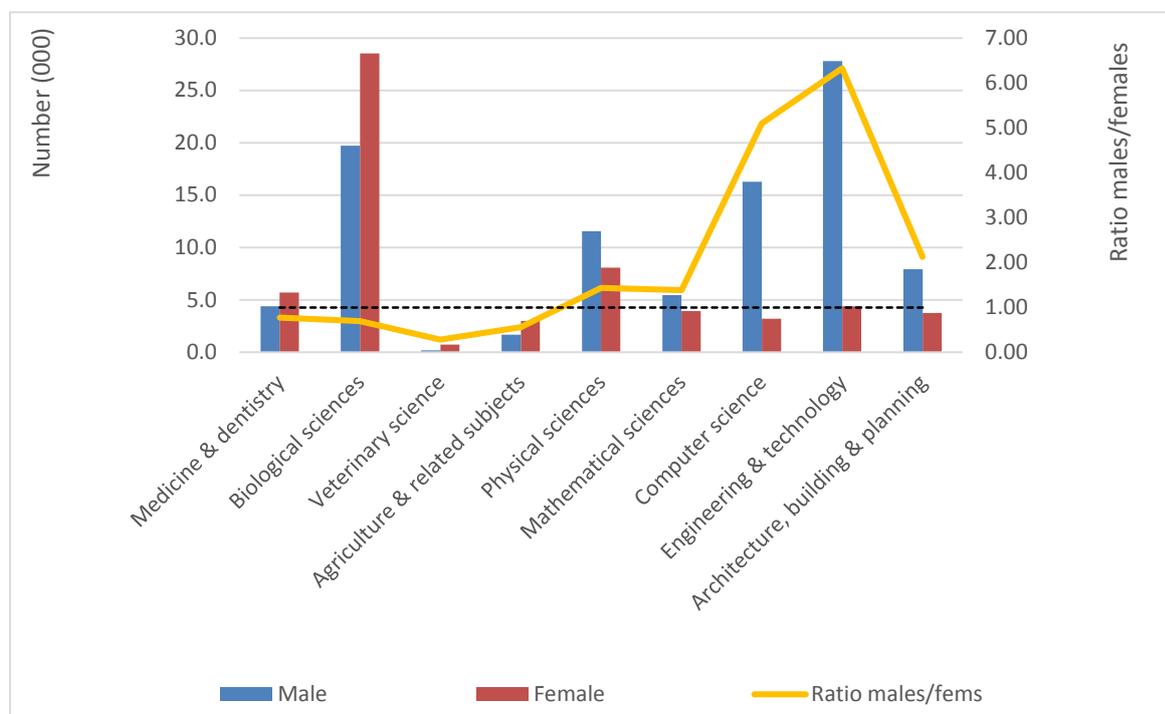
2.2.2 Gender comparisons by subject

Within disciplines there are important differences in the total number of students (male and female) qualifying in different subject areas at both first degree and post-graduate level. There are some very large subject groups within the STEM discipline, such as subjects allied to Medicine (85,400 individuals in 2005/06 and 84,400 in 2013/14), Biological sciences (40,200 at the start of the period and 62,700 at the end) and Engineering (37,800 in 2005/06 and 50,200 at the end). There are also some comparative minnows amongst the STEM subjects, such as Architecture (870 qualifiers in 2005/06 and 1,155 in 2013/14). There are even larger numbers of students in some of the Social sciences, Humanities and other subjects, such as Business and administration (95,500 at the beginning of the period and 135,000 at the end) and Education (70,400 thousand in 2005/06 and 75,200 in 2013/14). Creative arts and design and Social studies are also large.

¹⁴ <https://www.hesa.ac.uk/free-statistics> (accessed at 26-30/01/2015).

As shown in Figure 2.6 below, there are three subject areas within STEM that stand out in terms of differences in the number of male and female qualifiers at first degree level. Many more women than men obtained first degrees in Biological sciences in each year over the past decade, although the ratio of males to females increased from 0.55 to 0.69 over the period (i.e.: men were catching up). In Computer science the male/female ratio rose from 3.64 men to women qualifiers in 2005/06, to 5.10 by 2013/14. In Engineering the male/female ratio rose from 5.72 in 2005/06 to 6.33 in 2013/14.

Figure 2.6 First degree in STEM subjects, numbers of male and female students,2013/14

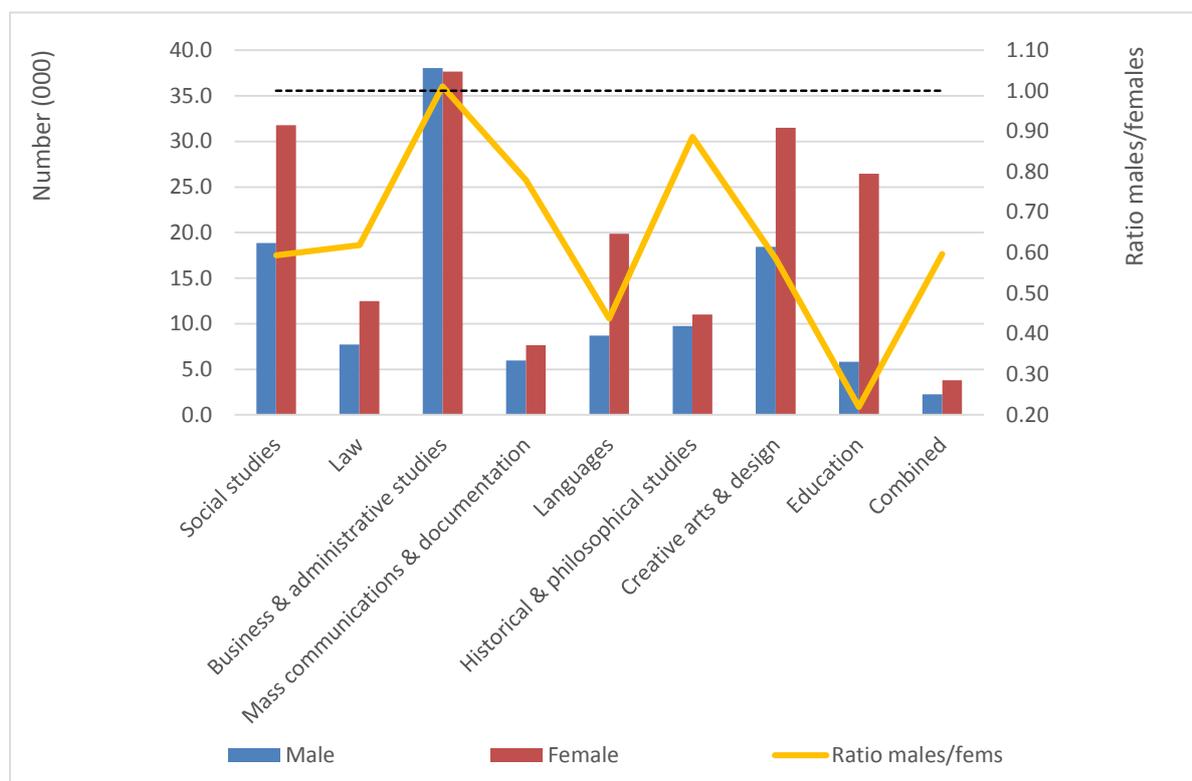


Source: Higher Education Statistics Agency¹⁵

In the case of the Social sciences, Humanities and other subjects female numbers exceeded male numbers in every subject across the past decade. This pattern was only marginally reversed in one subject, Business and administration, such that there were slightly more male than female graduates in 2013/14 (see Figure 2.7).

¹⁵ <https://www.hesa.ac.uk/free-statistics> (accessed at 26-30/01/2015).

Figure 2.7 First degree in non-STEM subjects, numbers of male and female students,2013/14



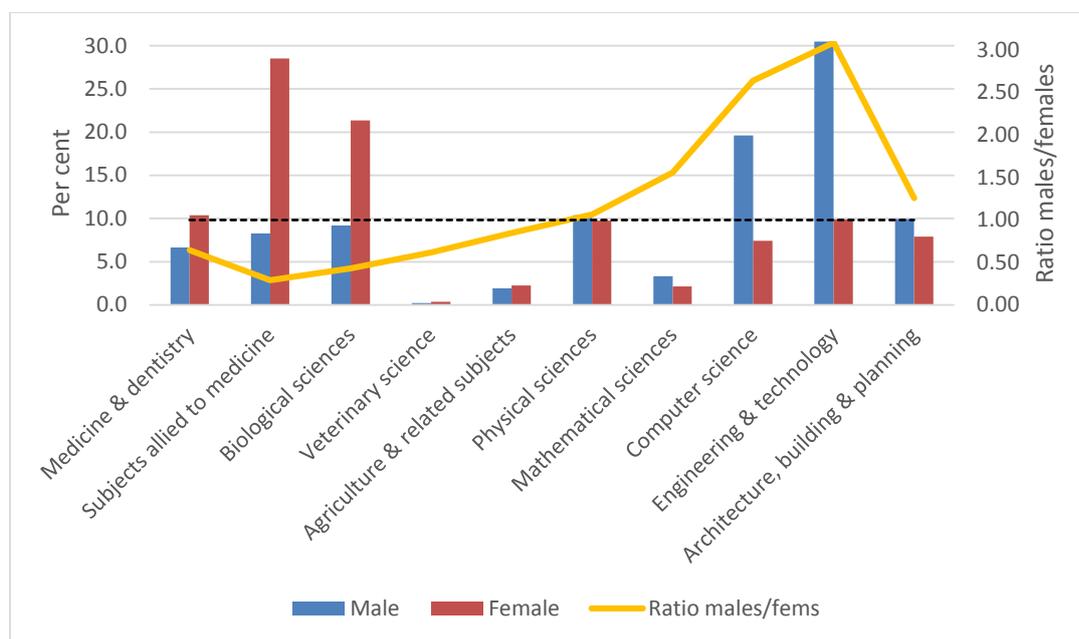
Source: Higher Education Statistics Agency¹⁶

As shown in Figures 2.8 and 2.9 below, the pattern across the post-graduate STEM subjects is very similar to that of first degree qualifiers. There are higher numbers of females to males in in Medicine and dentistry, Biological sciences and Veterinary science, with an especially high female/male ratio in Subjects allied to medicine. Much higher numbers of men to women post-graduate qualifiers occur in Computer science and Engineering.

In Social studies, Humanities and other subjects, female post-graduates outnumber males in every subject area other than Business and administrative studies. Education stands out as the subject with the biggest differential between numbers of women to men post-graduates.

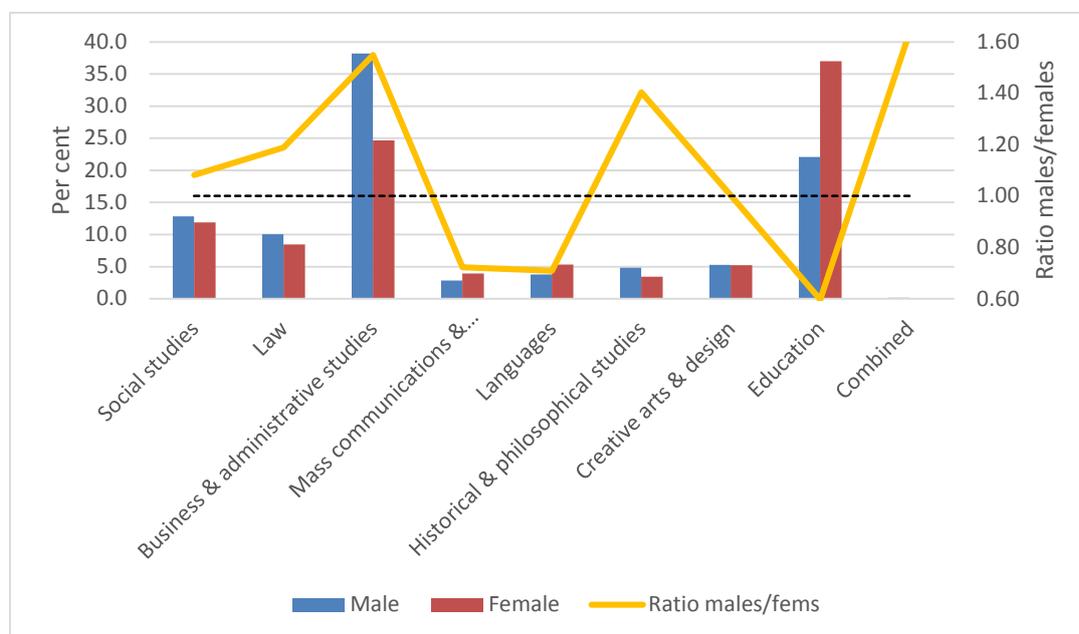
¹⁶ <https://www.hesa.ac.uk/free-statistics> (accessed at 26-30/01/2015).

Figure 2.8 Post-graduate degree in STEM subjects, numbers of male and female students 2013/14



Source: Higher Education Statistics Agency¹⁷

Figure 2.9 Post-graduate degree in non-STEM subjects, numbers of male and female students 2013/14



Source: Higher Education Statistics Agency¹⁸

¹⁷ <https://www.hesa.ac.uk/free-statistics> (accessed at 26-30/01/2015).

¹⁸ <https://www.hesa.ac.uk/free-statistics> (accessed at 26-30/01/2015).

2.2.3 Destinations for those leaving higher education

The Destinations of Leavers from Higher Education (DLHE) survey asks those who have graduated from a course in higher education what they are doing six months after graduation¹⁹. The principal destination for both males and females is full-time employment. In 2002/03, 57.7 per cent of females leaving higher education entered full-time employment compared with 54.1 per cent of males; these percentages fell to 52.8 and 50.6 respectively by 2011/12. While females were 7 percentage points more likely to enter full-time employment than males in 2002/03, by the end of 2012 this had fallen to 4 percentage points. Both males and females show a dip in this destination at the beginning of the recession, in 2008.

In the case of part-time student leavers, full-time employment is also the principal destination. Part-time male student leavers are particularly likely to enter full-time employment: in 2002/03, 65.9 per cent of part-time males entered full-time employment and, although there was a slight dip around the 2008 recession, the proportion rose back to 66.3 per cent by the end of 2011/2012. On average the figure for females is just over 10 percentage points lower than males.

In terms of other destinations, one notable impact of the recession was an increase in the proportions of men and women leaving both full and part-time education who were unemployed six months after graduation. Figures for the latest data point, leavers in 2011/12, showed a slight dip back in proportions entering unemployment.

¹⁹ Higher Education Institutions (HEIs) survey their students under direction from the Higher Education Statistics Agency (HESA). About three quarters of leavers complete the survey.

2.3 Work-based learning and apprenticeships

2.3.1 Destinations for those leaving higher education

Apprenticeships have become an increasingly important feature of education and training provision in England, as well as in the transition from full time education to work. There are three main levels of apprenticeship: Intermediate, Advanced and Higher. The total number of apprenticeships (males and females combined) has grown from just over 42,000 in 2003/04 to 253,000 in 2012/13. This is set to rise markedly given the Government's ambitions to create 3 million apprenticeships by 2020²⁰. All three categories of apprenticeship show downward trends in the ratio of males to females with numbers of male apprenticeships greater than female apprentices between 2004/05 and 2010/11, but numbers of females overtaking males in the most recent years for which data are available, 2011/12 and 2012/13. This has in part been due to the expansion of apprenticeships into areas traditionally dominated by female workers, such as the retail sector.

Tables of subject area by gender are included in the Appendix. Within the total numbers undertaking apprenticeships, the gender breakdown by subject area²¹ shows marked differences. Some areas are highly male dominated, for example Construction skills, Automotive industry/Vehicle maintenance and repair and Electro-technical all have less than two per cent of female apprentices, while Engineering has about three per cent female participation. Other areas are largely filled by females, for example, Health and social care has 83 per cent or more female participation in all three years and Hairdressing 92 per cent or higher. In fact there are relatively few examples where the proportions of males and females are roughly equal (Hospitality and catering, and IT user are the two main examples).

²⁰ Press Release, 21st August 2015. PM unveils plans to boost apprenticeships and transform training. <https://www.gov.uk/government/news/pm-unveils-plans-to-boost-apprenticeships-and-transform-training> accessed 15th September 2015

²¹ These are the Framework areas which are under the auspices of the Sector Skills Councils (e.g. Cogent, Lantra and Senta) and various sector skills bodies (e.g. the ECITB and Skills for Security).

2.3.2 Further education, LEA Community learning and work-based learning in Wales

In Wales when comparing the number of male and female learners in further education institutions, Local Education Authority (LEA) Community Learning or work based learning (WBL) over the period 2004/05 to 2013/14, there have been considerably more females than males taking these learning routes. Despite women outnumbering men in each year, the total number of males and females enrolled has been falling over the past decade, as has the size of the differential between the genders. Within these overall numbers, the numbers of females on apprenticeships also exceed males. In 2012/13 there were 10.1 thousand males on Foundation Apprenticeships, compared with 13.2 thousand females; 8.6 thousand on Level 3 Apprenticeships, compared with 10.7 thousand females; and 745 males on Higher Apprenticeships compared with 2.0 thousand females.²²

As with apprenticeships in England, there are major gender differences in the choice of areas to study. Hospitality is the area that comes closest to unity and only in 2012/13 but even so there were 17% more women than men. In the extreme examples, for every woman choosing Construction there were generally over 60 men over the period 2006/07 to 2012/13. In the case of engineering for every woman there were generally between 20 and 40 men, with ratios in both cases steepening across the period. In areas where women have predominated there was a ratio of between 7 and 11 women to men in Hair and beauty, and between 3 and 5 women to men in Health care and public services, but here the ratios were falling across the period.

2.3.3 ApprenticeshipsNI in Northern Ireland

In Northern Ireland the overall numbers of males and females following the apprenticeship route (looking at all levels of apprenticeship combined) are very similar albeit that there is always more male than female participation even if the difference is small.

In terms of the framework or subject areas, Electrotechnical, Vehicle maintenance and repair and Mechanical engineering services (plumbing) which rank 2nd, 3rd and 6th for males have ranks of 34th, 31st and 47th respectively for females. Conversely, Child care, learning and development and Beauty therapy rank 5th and 15th for females but 42nd and 59th respectively for males.

²² Further Education, Work-based Learning and Community Learning in Wales Statistics, 2012/13. Welsh Government. Table 1.1.

2.3.4 Modern Apprenticeships in Scotland

Within the Modern Apprenticeship scheme (MA) in Scotland, male participation far outnumbers that of females although female participation has been increasing while for males it has been stable. However, the proportion of males successfully completing the MA has been significantly lower than females in several years (for example 64.0 per cent success rate for males, compared with 74.0 per cent for females in 2008/09) and at parity in 2013/14.

Subject areas, or frameworks, vary distinctly by gender. Male participation is heavily concentrated in Engineering and Automotive apprenticeships. For females the predominant subjects are Hospitality, Business and administration, Hairdressing and barbering, Children's care, learning and development and Health and social care. Ranking of subjects similarly shows distinct gender patterns; for example, Construction: civil engineering, ranks 15th amongst male choices and 55th amongst females; Social services (children and young people) appears 12th in the female rankings and 81st in the male rankings.

Overall success rates in MA are almost identical for males and females, 76.7% and 76.4% respectively. However, looking at the top 20 framework areas where both men and women are present, females tend to do better. One stand-out example is IT and telecommunications, where the male achievement rate is 45.8% but for females it is 80%.

2.3.5 Life-long learning

As a concluding note to this section, LFS data for enrolment on non-leisure educational courses shows how individuals participate in educational courses at different life-stages. Enrolment rates are strongly influenced by the 16-19 age group which includes part of the school, higher and further education populations. The overall enrolment rate for the 16-19 group is 83.9 per cent (83.5 and 84.3 per cent for males and females), while the corresponding rate for 25 to 69 year olds in 2014 is only 5.3% (4.3 and 6.3 per cent for males and females respectively).

In 2014 the proportion of women enrolled in educational courses exceeded the proportion of men enrolled in every age band from 16-19 to 65-69 with the female to male ratio increasing with age. Breaking the picture down further by type of activity by gender, particularly high female to male ratios are observed among older full-time employees (above the age of 55 and especially in the group aged 65-69), older unemployed people especially those in the 50-54 and 65-69 age bands, and older inactive people 55-59 and 60-64. Conversely female to male ratios below parity (i.e. greater enrolment among men than women) are especially observed among part-time workers between the ages of 25 and 39.

3 Labour market patterns of activity and outcomes by gender

As we have seen in Section 2 although gender differences in subject choices are still very much evident, the gender gap in overall attainment has closed, with women tending to outperform men in most areas. The picture changes when we look at the world of work. Analysis of the labour market reveals gender differences in pay and employment with important consequences for the economic empowerment of women compared to men.

This section describes data by gender on economic activity rates, employment patterns, earnings, rates of under-employment, utilisation of skills and job-related training.

3.1 Economic activity

3.1.1 Employment rates

In 2014 73.7% of men and 61.7% of women were employed.²³ Employment rates have fallen between 2005 and 2014 but much more so for women who have experienced a 9.4 percentage point fall, compared with a 5.7 percentage point fall for men. A drop in the employment rate has occurred for men and women across the qualification profile but especially for men and women with lower qualifications.

Employment rates for both men and women are typically lower the lower the qualification level but with a much stronger difference between high and low qualifications for women than men. This means that the male/female differential in employment is greatest among the lowest qualified. More than 80% of men and women with QCF7-8 qualifications were employed in 2014. This falls to around 45% for men and less than 30% for women with no qualifications.

3.1.2 Unemployment rates

Male unemployment rose more sharply than female unemployment between 2005 and 2010, but also dropped back by more than female unemployment by 2014. At that point male and female rates were 5.3% and 4.2% respectively. Generally speaking unemployment rates have remained higher the lower the qualification level for both men and women.

²³ Source: Labour Force Survey (based on the first three quarters).

3.1.3 Inactivity rates

The main change with respect to economic activity over the past decade has been in inactivity rates. Both male and female inactivity rates jumped between 2005 and 2010 from 16.2% to 21.0% and from 25.6% to 33.3% respectively. By 2014 in the case of men there was no reversal in the rate rise and in the case of women only a marginal drop. The inactivity rate is generally higher for women than men because of family responsibilities including maternity and child care; and older women are also pushed out of the labour market on the grounds of caring responsibilities.²⁴ The overall inactivity rate for females has been increasingly impacted over time by the fact that more women than men stay longer in education.

3.1.4 Type of employment

Over the past decade changes in the gender split by different types of employment have been small so that patterns remain consistent. The proportion of males in full-time employment is around 20 percentage points higher than females (in 2014, 52.9% of men were employed full-time compared with 33.9% of women). Meanwhile the proportion of females in part-time employment is some three to four times higher than males (23.6% to 7.0% in 2014).

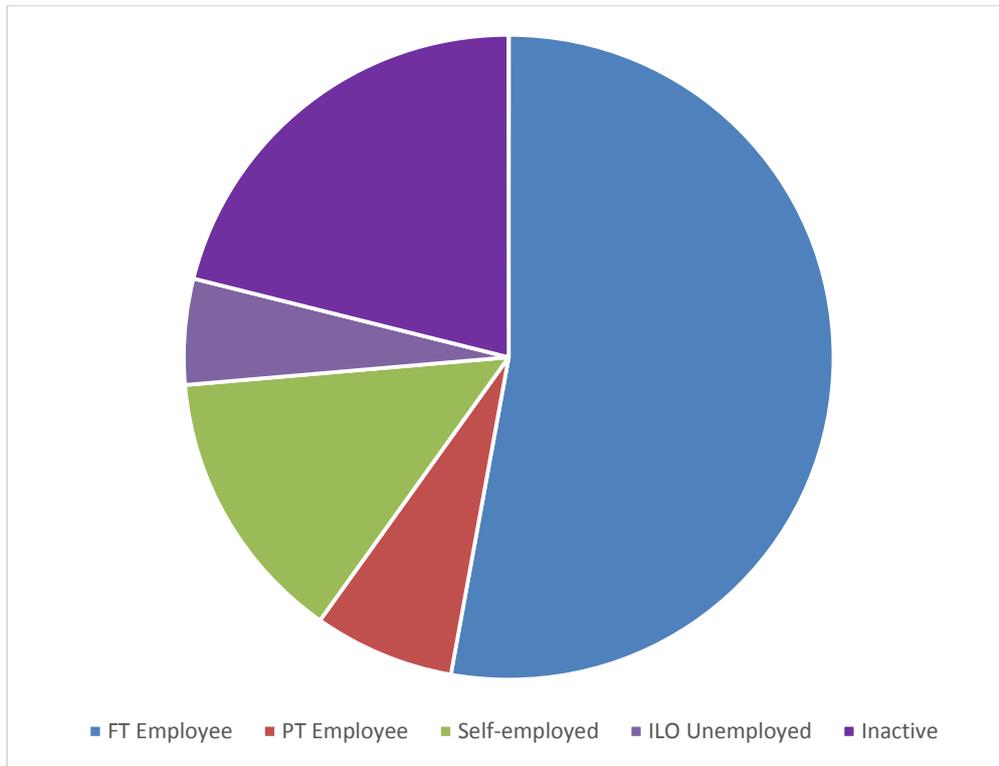
The data show that many more men than women are found to be self-employed with the proportion among men being between two and three times higher than among women (13.8% to 6.2% in 2014). Beneath the headline numbers the implications of a growth in self-employment show differences by gender. In terms of self-employment by occupation, nearly one in three (31%) self-employed women have been found to have taken up self-employment in low paid occupations such as Caring, leisure and other services; Elementary occupations or as Process, plant and machine operatives. This compares with one in every twenty self-employed men taking up self-employment in these occupations. Meanwhile, the largest increase in male self-employment since 2010 was for self-employed Managers, directors and senior officials, increasing by 133,000 compared to rise of 70,000 for women.²⁵

The charts below depict the profile of economic activity for males and females in 2014.

²⁴ European Commission (n.d.) *Female Labour Market Participation*. Figure 11b. Percentage of inactive females age 55-64 who are inactive on the grounds of looking after children or incapacitated adults or other family responsibilities http://ec.europa.eu/europe2020/pdf/themes/31_labour_market_participation_of_women.pdf Accessed on 16th September 2015.

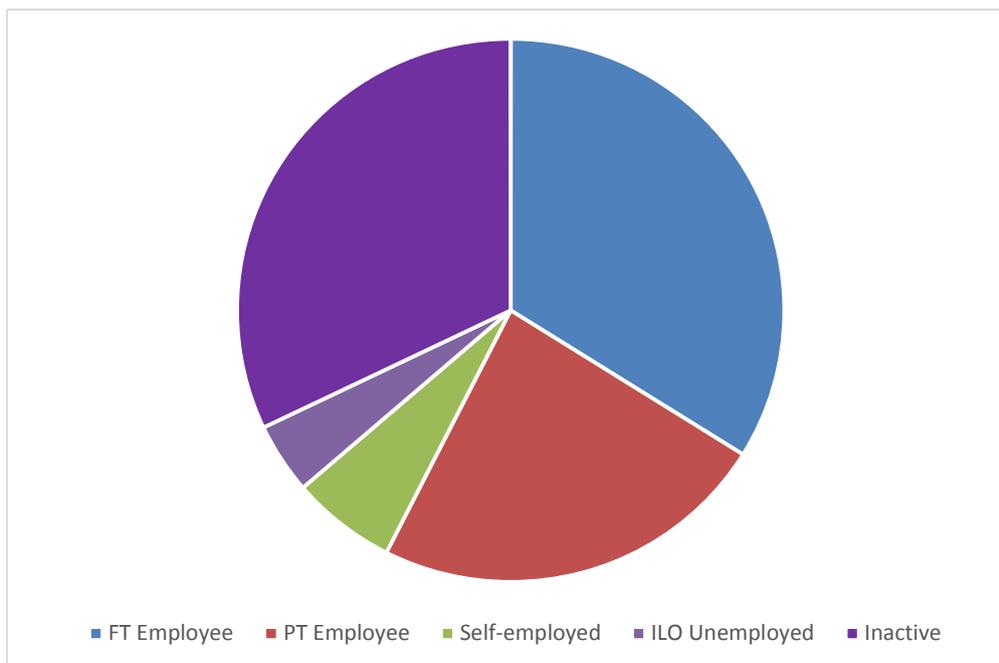
²⁵ Thomson, E. and Ross, S. 27th July 2015. Women post-recession: moving towards insecurity. Open Democracy <https://www.opendemocracy.net/5050/emily-thomson-and-susanne-ross/women-postrecession-moving-towards-insecurity>

Figure 3.1 Economic activity rates for males in 2014



Source: Labour Force Survey (first three quarters)

Figure 3.2 Economic activity rates for females in 2014

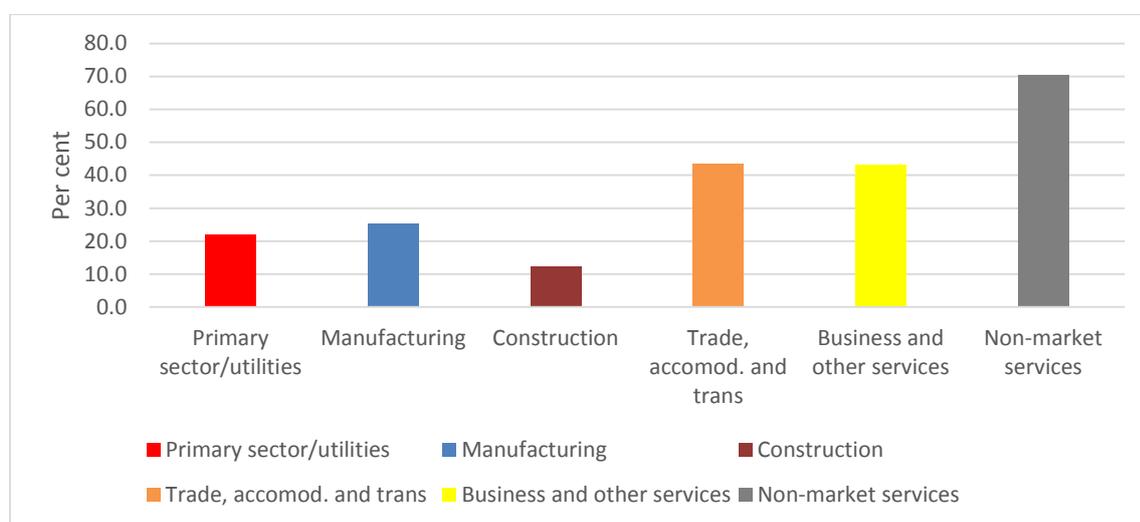


Source: Labour Force Survey (first three quarters)

3.2 Male and female employment by sector and occupation

The proportion of the female workforce is much higher in the service sectors than in production. The chart below presents the data showing that whereas 25.3% of the workforce in Manufacturing is female, and only 12.3% is in Construction, the share is much higher in Trade, accommodation and transport at 43.4% and especially in Non-market services (which includes Health and Education) at 70.5%.

Figure 3.3 Proportion of females within total employment, by sector²⁶



Source: Labour Force Survey (first three quarters)

With the much higher share of women working in non-market services it is also the case that more females are employed in the public sector than the private sector. By 2014, females accounted for 41.2% of employment in the Private sector, compared with 66.0% in the Public sector.

²⁶ Non-market services include the Health service and Education

The analysis of occupational breakdown by gender shown in Figure 3.4 shows that women predominate in three main occupational groups – Administrative and secretarial where 76.5% are female (job titles include accounts clerk, and clerical assistant), Personal service occupations where 82.4 per cent are female (job titles include hairdresser, and nursery assistant), and Sales and customer service occupations where 63.7 per cent are female (job titles include shop assistant and call centre operator). Women achieved parity with men by 2014 in Professional occupations but the rise here over the past decade was approximately matched by the fall in women's share in the Associate professional group (this may be related to the introduction of degree-only nurses in 2008).

Figure 3.4 Proportion of females within total employment, by occupation in 2014



Source: Labour Force Survey (first three quarters)

3.3 Earnings and pay

The headline to the debate on gender differences in the world of work is still that women earn substantially less than men. Looking at hourly pay rates in order to level for the difference in the number of hours worked (particularly given that many more women than men work part-time) the latest figures for earnings in 2014 (excluding overtime) show that women across the workforce are still earning 19.1% per hour less than men on average. The discount for part-time working is shown by the fact that the comparable earnings differential for full-time workers only stands at 9.4% per hour. This section digs beneath the headline numbers to show more detail on male and female earnings and work arrangements. While the comparisons carried out in this section can illustrate some of the key differences between male and female remuneration, they do not directly evidence causes, particularly whether or not differences are due to some form of discrimination against women.²⁷

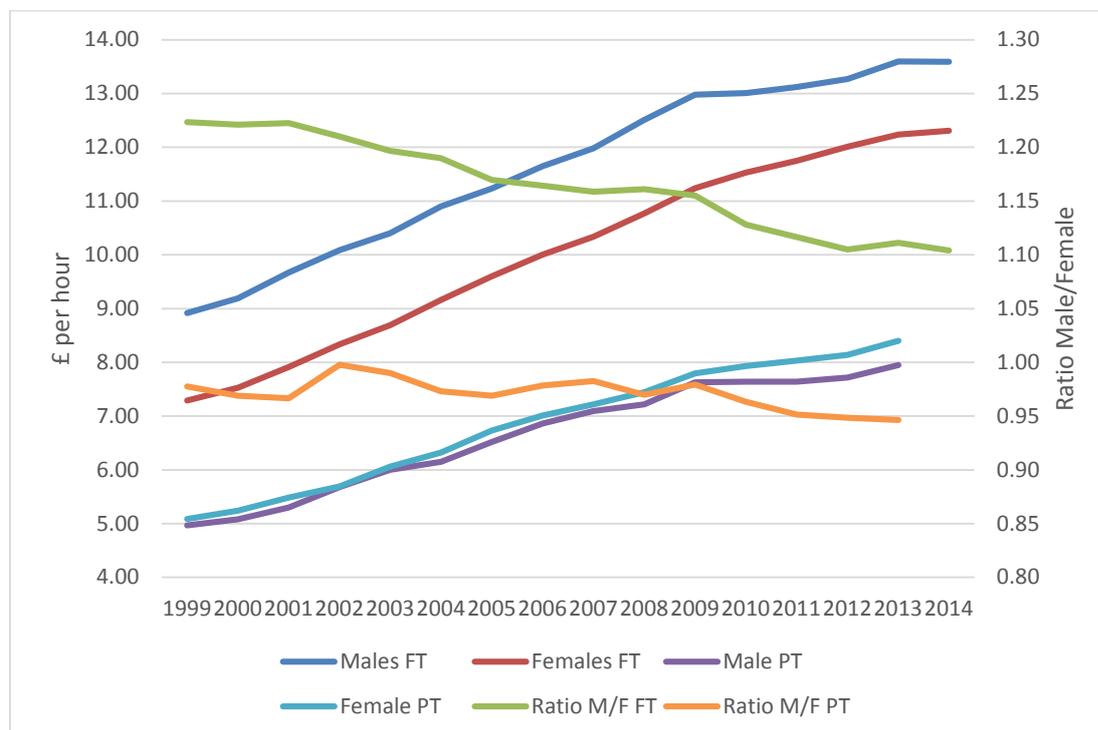
3.3.1 Trends in pay by gender

Chart 3.5 below indicate clearly that hourly rates of pay for full-time workers exceed rates for part-timers. For women the difference in 2014 was between £12.31 and £8.44 per hour at the median. The male differential is even greater with £13.59 for full-time work and £8.00 for part-time in 2014.

In terms of gender differences full-time pay rates are consistently higher for men than women across the period shown although the ratio of male to female pay has been falling reasonably steadily over time. Since 1999 median pay rates for part-time work differ little between men and women; if anything the female rate is slightly higher for much of the period, as it is in 2014. But clearly rates of pay for part-time work are low for both genders. This impacts more heavily on the female cohort in the workforce because a fifth of female employees work part-time compared with only around 6% of male employees.

²⁷ The source of information used is the ONS Annual Survey of Hours and Employment (ASHE). ASHE is the principal source of information about earnings and hours, but it is important to note that while it covers adult employee jobs in the UK it does not cover the self-employed; employees not paid during the reference period; adults who have been in their job for less than a year; or those whose earnings for the survey pay period were affected by absence.

Figure 3.5: Median hourly earnings, excluding overtime pay and hours (£)



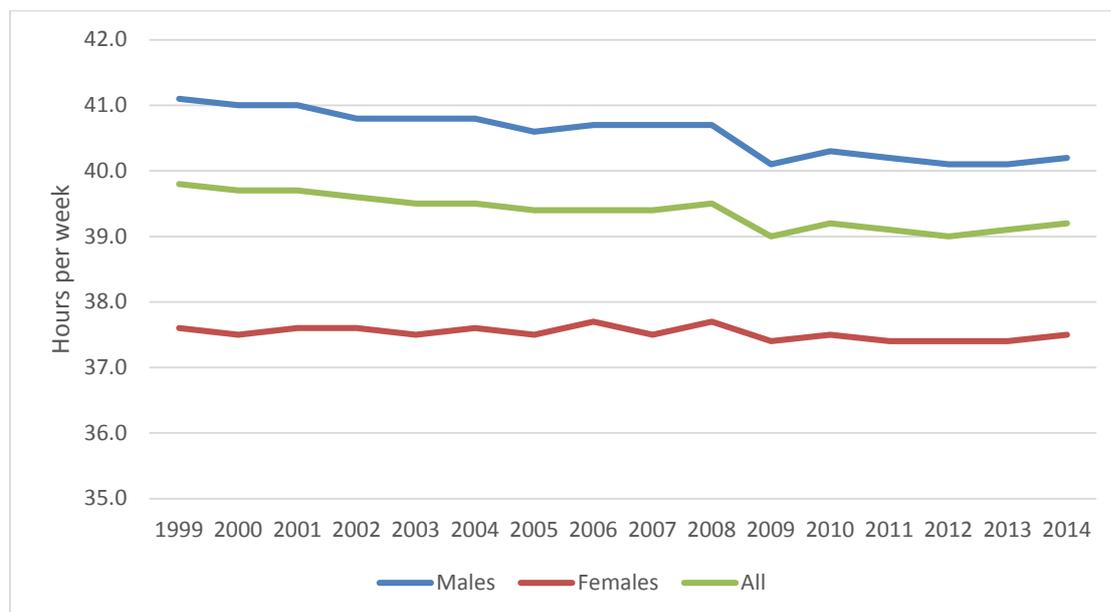
Source: Annual Survey of Hours and Earnings²⁸

Gross weekly and annual pay differences are also affected by the fact that women in full-time work on average work less hours than men. Figure 3.6 shows the mean hours of paid work for males and females, including overtime. The difference in hours worked is 3.5 hours per week at the beginning of the period, falling to 2.7 hours by the end. At basic pay rates this adds about £36.7 per week to males' salaries in 2014 (just under 7 per cent of male gross weekly earnings) and slightly more than that if it includes some overtime premia. If females worked the same weekly hours as males, at basic rates this would increase their pay by £33.24 (just over 7 per cent of gross earnings).

Payments of premia and bonuses is a further feature of earnings differentials between men and women. Payments for overtime and payments by results have typically benefited men over women. The male/female ratio for the impact on earnings from payments by results showed that men benefited over women to a value of between 2 and 2.5% of their average pay. This differential benefit has if anything been increasing since 2000.

²⁸ <http://www.ons.gov.uk/ons/rel/ashe/annual-survey-of-hours-and-earnings/index.html>

Figure 3.6 Mean full-time weekly paid hours of work (including overtime)



Source: *Annual Survey of Hours and Earnings*²⁹

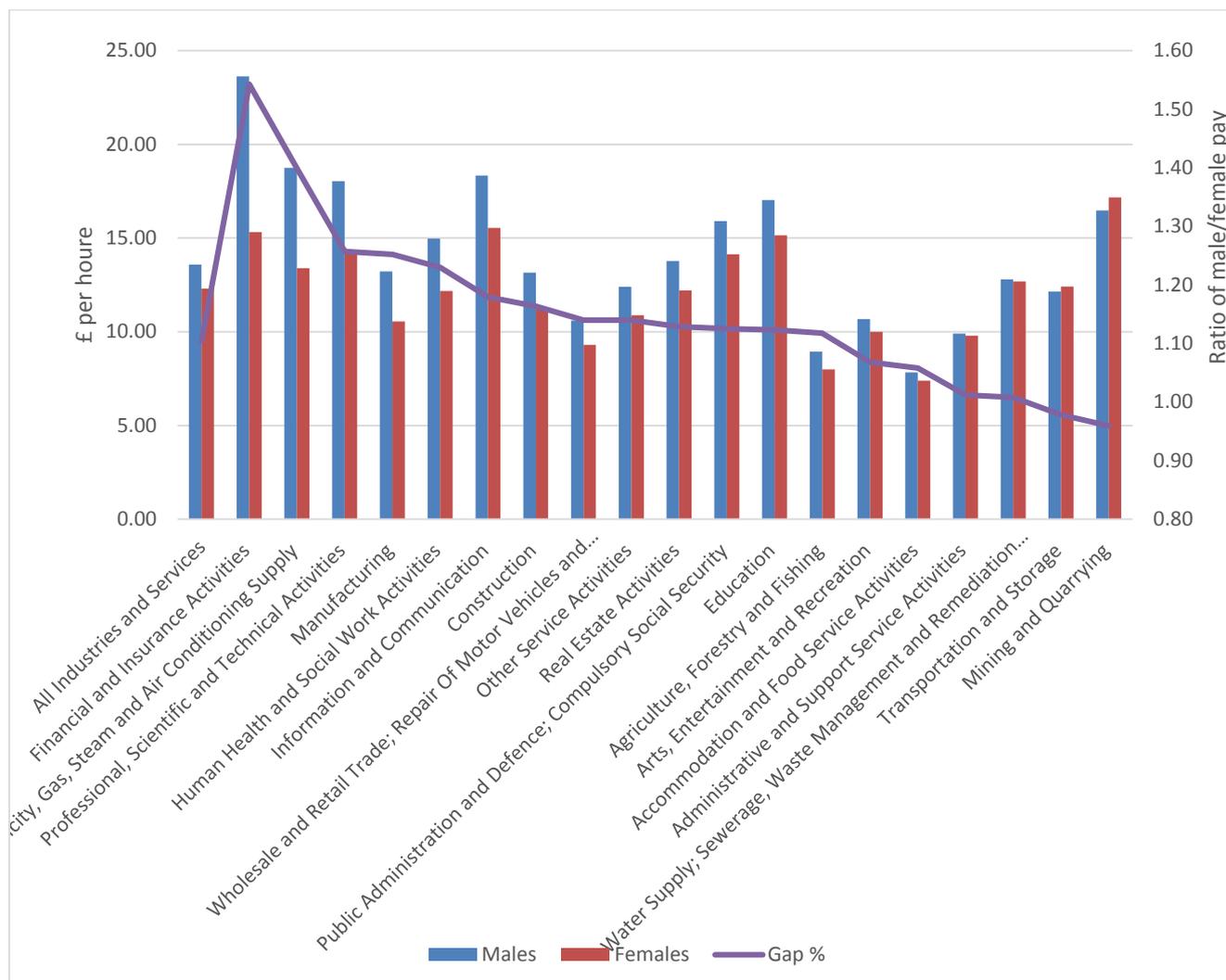
3.3.2 Differences in pay by gender across sectors

Looking first of all at differences between male and female pay in the public and private sectors, the data show that the private sector differential between males and females lies above that for the public sector. The private sector starts (1997) with a pay gap of just over 25 per cent, which falls to about 18 per cent by the end of the period (2014); the public sector starts with a gap of 16 per cent, which falls to a value of 11 per cent by the end of the period.

Figure 3.7 shows pay per hour for males and females across sectors in 2014. The sectors are ordered in terms of ranking of the ratio of male to female pay rates (with the exception of the All industries and services result). This ratio runs from a 50 per cent differential in Finance and insurance activities to a modest negative value in Mining and quarrying.

²⁹ <http://www.ons.gov.uk/ons/rel/ashes/annual-survey-of-hours-and-earnings/index.html>

Figure 3.7 Median hourly pay (excl. overtime), full-time employees and ratio of male/female pay

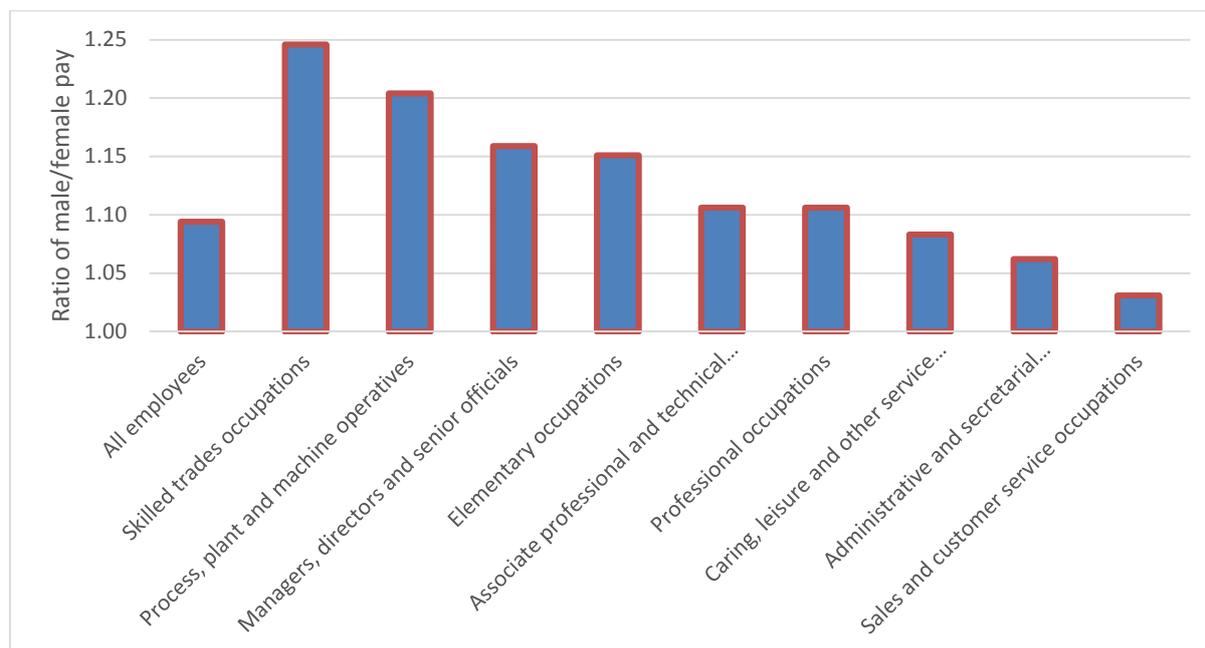


Source: Annual Survey of Hours and Earnings³⁰

Figure 3.8 shows the ratio of male to female hourly pay (excluding overtime) for full time workers, by major occupational group, in 2014. By far the highest differential is in Skilled trades occupations, but Managers and senior officials have a differential that is still over 15 per cent. The lowest differentials are in Administrative and secretarial occupations and Sales and customer service occupations (6 per cent and 3 per cent respectively).

³⁰ <http://www.ons.gov.uk/ons/rel/ashe/annual-survey-of-hours-and-earnings/index.html>

Figure 3.8 Pay gap for median full-time hourly earnings (excl. overtime), by occupation group



Source: Annual Survey of Hours and Earnings³¹

The issue of seniority was not explored in the data analysis for this report but recent findings by the Chartered Management Institute found a wider pay gap than shown in the chart above for female managers and senior leaders working full-time of 22%, with average full-time pay for female directors of £123,756 compared with £138,699 for male directors (Chartered Management Institute, 2015). The report also found that only 29% of directors were female. Male managers were found to receive on average twice the bonus payments received by female managers.

The findings on gender differences in sectoral and occupational trends in self-employment described earlier indicate that the increase in female self-employment has been largely in low paid, low status sectors. This has reinforced the gender pay gap for self-employment such that self-employed women earned 30% less than self-employed men on average in 2012/13 (TUC, 2015).

³¹ <http://www.ons.gov.uk/ons/rel/ashe/annual-survey-of-hours-and-earnings/index.html>

3.4 Type of agreed work arrangement

An important development affecting pay and working conditions in recent years has been the growth in non-standard working arrangements such as flexitime, annualised hour contracts, and zero-hours contracts. The list of such arrangements covered in the Labour Force Survey is set out in Table 3.1. Non-standard work arrangements are more common for men than women with a greater proportion of men in each category except for term-time working which accounts for nearly one-third of non-standard work arrangements for female employees. Flexitime is the most common type of non-standard work arrangements for men and women but the biggest change for both genders has occurred in the expansion of zero-hours contracts. In 2010 2.1% of men working to non-standard arrangements had zero hours contracts but this jumped to 9.3% by 2014. For women the equivalent numbers are 1.7% and 8.0%.

Table 3.1 Type of work arrangement, as a percentage of all non-standard work arrangements,

	2010			2014		
	Male	Female	Ratio female/male	Male	Female	Ratio female/male
Flexitime	50.2	42.6	0.85	46.5	38.8	0.84
Annualised hours contract	21.5	16.4	0.76	19.9	14.6	0.73
Term time working	7.9	29.2	3.71	7.5	29.8	3.96
Job-sharing	0.7	3.3	4.91	0.4	2.4	6.87
Nine-day fortnight	1.4	0.8	0.57	1.6	0.6	0.38
4.5-day week	4.4	1.2	0.28	3.8	1.5	0.39
Zero hours contract	2.1	1.7	0.84	9.3	8.0	0.86
On-call working	12.0	4.7	0.40	11.0	4.2	0.39
All work types	100.0	100.0		100.0	100.0	

Source: Labour Force Survey (2010 and first three quarters 2014)

3.5 Under-employment

Typical working hours and patterns of paid hours impact differently on men and women primarily because of the differential gender share of out-of-work responsibilities particularly childcare but also elder-care.

Far more women than men work part-time and the evidence suggests that sometimes this is not by choice. Survey results indicate that women are proportionately more under-employed meaning they would like to work more hours. In survey responses, in 2005 6 per cent of males and 8 per cent of females responded that they would like to work longer hours at their current basic rate of pay. These percentages correspond with quite large numbers of individuals, 871 thousand males and 997 thousand females, a total of just under two million. By 2010, when the economy was still in recession, the corresponding proportions had increased to 9.7 for males and 11 per cent for females (approximately 1.4 million each of males and females). While the economy was moving out of recession by 2014, increases in earnings had markedly lagged behind inflation, and the proportion of males wanting longer hours of work only fell marginally from its 2010 value to 9.4 per cent; the proportion of females rose once more reaching 11.6 per cent (1.4 million males and 1.5 million females out of a total employment of 25 million).

Sectoral patterns also show that the recession impacted negatively on under-employment rates. Trade, accommodation and transport stands out in all three years (2005, 2010, 2014) as having high under-employment rates and the data across these years suggest under-employment increased as a result of recession. By occupation Elementary administration and service occupations and Sales occupations appear with the highest proportion of under-employment among all individuals, both male and female.

Related to non-standard hours of working and the relationship with under-employment, recent TUC analysis looked at the phenomenon of workers on short-hours contracts who report being underemployed (TUC, 2015). Women were found to be particularly at risk accounting for nearly three-quarters (71.5%) of those working short-hours who are underemployed. Retail was the worst affected sector, accounting for nearly 250,000 workers and almost a third (29 per cent) of the total of underemployed short-hour workers. These are workers employed in supermarkets, shops, warehouses and garages. Large shares were also employed in Education (16 per cent), Accommodation and food services (14 per cent) and Health and social care (12 per cent) – all areas dominated by a female workforce.

The under-employment of individuals varies fairly systematically by level of qualification. The most highly qualified are least likely to report wanting longer hours of work, with only four to five per cent of QCF7-8 (post-graduate or equivalent) of males and females doing so in 2005, compared with 7.3 per cent of males and 9.8 per cent of females at QCF 1 (lower level GCSE passes). Only the no qualification group seem out of line with the pattern across the other qualification levels, with a lower proportion wanting longer hours than QCF 2 and, in the case of females, QCF 3 in 2005. The pattern across levels is repeated in 2010 and 2014, although the proportions shift upwards for males and females in 2010, and further upwards, at least for females in 2011.

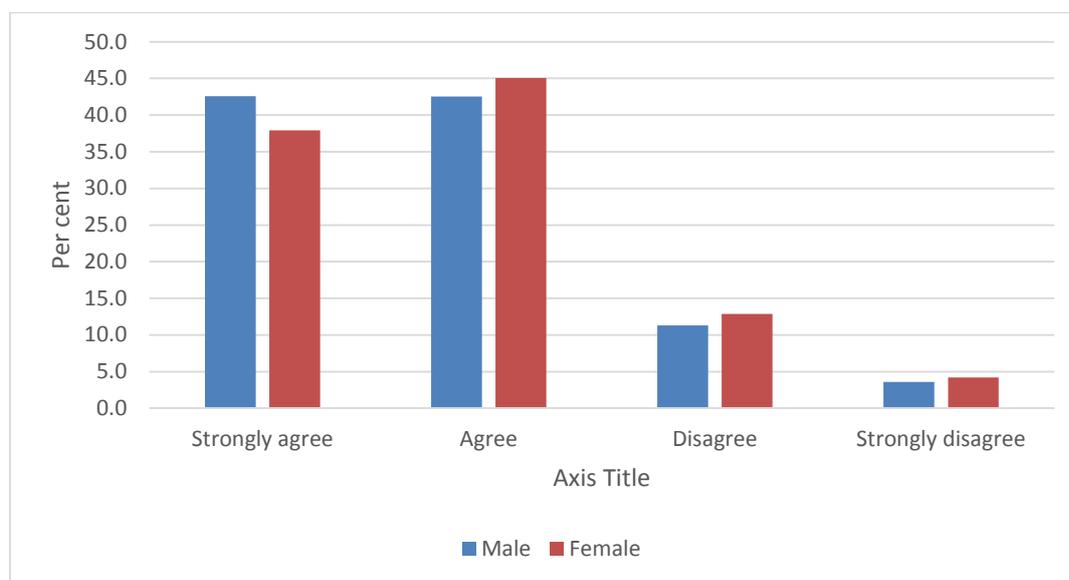
A main feature of the data is the way in which the female to male ratio of under-employment is much higher for QCF 3 (A-level and equivalent) than other groups. Part of the answer for this lies in the types of occupation undertaken by QCF 3 males and females. A cross-tabulation of qualification levels by occupation reveals that the largest proportions of females at this level are concentrated in Caring personal service occupations³² (22.6 per cent of all females, only 2.4 per cent of males) and Administrative occupations (16.3 per cent, only 4.9 per cent of males). On average, these are relatively lowly paid occupations. The largest occupations at QCF 3 for males are Skilled metal and electronic trades (13.4 per cent, only 0.2 per cent of females) and Skilled construction and building trades (12 per cent of males and, again, 0.2 per cent of females) where pay tends to be higher.

3.6 Under-utilisation of skills

Data on the utilisation of skills explores to what extent individuals are employed in jobs for which they are under or over-qualified or skilled. The main source is the Skills and Employment Survey (SES). The most pertinent question takes the form: "How much do you agree or disagree with the following statement: "In my current job I have enough opportunity to use the knowledge and skills that I have." The responses are set out in Figure 3.9.

³² Levels 2 and 3 are recommended and, in some instances, required qualification levels for employment in the social care sector.

Figure 3.9: Responses “I have enough opportunity to utilise the knowledge and skills I have”



Source: Skills and Employment Survey, data for 2001, 2006 and 2012.

The chart shows that for both genders there are high proportions of respondents agreeing or strongly agreeing that they have the opportunity to utilise their skill sets.

Breaking the picture down by sector reveals that there are five sectors where over 15 per cent of individuals (both male and female) report limited use of their own-skills set: Agriculture (15.2 per cent); Wholesale (17.3 per cent); Manufacturing (17.9 per cent); Real estate (19.1 per cent); and Hotels and restaurants (25.4 per cent). By sector the data on under-utilisation suggests a relatively high proportion of women reporting insufficient use of their skills in Agriculture, Electricity, gas and water, and Hotels and restaurants.

Among occupations the proportion of workers reporting that they do not have the opportunity to use the skills they have is low among Managers and Professionals (below 10%). By contrast it is much higher in the case of Sales, Operatives and Elementary occupations (above 20% in the case of the first two of these, and above 30% in the case of the last). Male employees in Administrative and secretarial and Personal service occupations are more likely than females to report under-utilisation. In Skilled trades it is more likely that women report under-utilisation than men.

3.7 Job-related training

Overall, according to the Labour Force Survey, 28.3 per cent of individuals (both male and female) in employment in 2005 reported participating in job-related training during the previous three months. This figure fell to 25.8 per cent in 2010, reflecting the recession, and had only recovered to 26.0 per cent by 2014. A considerably higher proportion of females report receiving job-related training than males, 32.0 compared with 25.1 in 2005, 29.2 compared with 22.8 per cent in 2010 and 29.0 compared with 23.3 per cent in 2014.³³

Employees in the public sector are more likely than those in the private sector to receive job-related training. In line with this, Non-market services is the industrial sector which stands out for job-related training. It comprises education, health and social care. In 2005, 44 per cent of individuals working in the sector received training during the previous 12 months; the corresponding figure in 2010 is 40.1 and in 2014, 39.5. A slightly higher proportion of females in Non-market services receive job-related training than males. By occupation, Health professions, Health and social welfare associated professions and Caring personal service occupations rank in the top ten for job-related training for both men and women. The sector with the second highest reported incidence of job-related training is Business and other services and the sector with the largest differential in favour of females is Construction, with a ratio of female to male proportions at 1.28 in 2005, falling to 1.05 in 2010 during the recession, but recovering slightly to 1.10 in 2014.

As already explored in Section 2, observing how enrolment rates for non-leisure courses are divided by gender and employment status, can also shed light on lifelong learning trends and the appetite for self-training. Enrolment rates are fairly high for the 20 to 24 age group, around 20 per cent or more for both the employed and unemployed groups, with female rates higher than male in both groups. Amongst the employed aged 16 to 19, 65.0 per cent of males and 74.7 per cent of females are enrolled on educational courses. Unemployed males have a slightly higher proportion aged 16-19 enrolled than the employed group, but the proportion of females is lower. Those who are inactive have by far the highest probability of being enrolled at ages 16 to 19, with 94.0 per cent of males enrolled and 91.6 per cent of females.

³³ It should be noted, however, that the evidence here is mixed. A recent study by NIACE based on analysis of the Adult Participation in Learning Survey for example found that women (31%) were significantly more likely than men (26%) to say that they have received no 'employer arranged training' at all in the previous 12 months 'Learning skills and progression at work', (NIACE, 2015).

By contrast self-employment does not seem to match well with educational enrolment, particularly in the case of males, for whom almost all of the proportions for educational enrolment are lower for the self-employed than for the employed across almost every age band.

Data for self-enrolment by occupation reinforces the picture for job-related training in that those occupations which rank highest for men and women include Health professions, Health and social welfare associated professions, Teaching and research professions and Caring personal service occupations. In each case male and female enrolment rates are very similar at around 10% with a slightly higher proportion of males in each occupation except for Caring personal service occupations.

4 Discussion – gender imbalance and economic implications

The previous sections have looked at male and female participation and achievements in education and training, and at labour market trends and outcomes by gender. In this part of the report we briefly explore how this latest evidence from the data relates to the key themes in the gender inequality debate. We then look at these themes from the perspective of the UKCES's Growth Through People analysis, which sets out priorities for action in the labour market and skills systems which have been identified by the UKCES as critical for future prosperity in the UK.

4.1 Manifestations and drivers of gender inequality at work

A review of the literature on the gender pay and opportunity gap quickly highlights that the issue is multi-dimensional and complex in its causes and consequences.³⁴ This reflects the systemic nature of the challenge which includes the effects of historical and contemporary social attitudes around women's roles and attributes as well as the structures and patterns of the labour market and work itself.

The key manifestations of gender inequality can be described under four main headings below:

³⁴ See for example, Women and Work Commission 2006 report

1 Persistence of an economy-wide gender pay gap

As noted previously, the current gender pay gap across full-time and part-time workers is 19% per hour. While the gender pay gap is relatively small for the young and single, it increases with age, marriage and parenthood. In addition, women in some ethnic groups fare particularly badly (Yeandle et al. 2006). Women are disproportionately affected by the relatively low pay and quality of part-time work because nearly one-fifth of women work part-time compared with only around 6% of male workers. The data for under-employment presented in the previous section of this report suggested that low pay could explain part of the difference in more females than males expressing a preference for additional hours of work. Pay and progression disparities affect women's lifetime income both in work and in retirement as the impact of lower pay and differential pension contributions accumulates over the life course (Polacheck, 2014; Javornik, 2014).

In deciphering the causes and persistence of the gender pay gap, the concept of undervaluation has been identified (Grimshaw and Rubery, 2007). The literature cites evidence that key occupations in which women have traditionally concentrated often attract low pay and status partly because the skills required in them go unrecognised – occupations in which women predominate as a share of the labour force are characterised as the 5 'C's – caring, cleaning, catering, clerical and cashiering. Indeed, Grimshaw and Rubery suggest that the closer women's work skills are to skills they use in the family the more they are likely to be undervalued. These authors also note that the undervaluation of women's work is further demonstrated by the feminisation effect, or as women become a greater share of the workforce in previously male occupations, pay for everyone in that occupation falls. As the data explored in Section 3 of this report reveals, a second major feature of undervaluation refers to the routine way in which part-time workers, most of whom are women, are less well paid on an hourly basis, imposing a part-time 'pay penalty'.

The matter of part-time working has much to do with the uneven distribution of caring responsibilities carried by women, and how those responsibilities interweave with available patterns of work in the economy and the affordability of childcare and elder-care. Even with some distinctive changes, such as remote working, still the prevailing model of working hours and patterns does not fit well for many workers with significant out-of-work responsibilities. Typical work patterns which limit the choice of roles feasible for those needing to combine work with family care therefore disadvantage women more than men. With good-quality part-time and flexible opportunities limited many work below their potential (failing to utilise all their skills, experience or qualifications) often becoming 'stuck' in low-paid, part-time jobs (Grant et al. 2005) because of their better fit with maternal and caring roles (Sefton et al. 2008) and to reduce childcare costs. Progression into more senior roles can also be problematic linked as they often still are too long or unsociable hours at odds with the capacity of workers who need to combine a paid job and unpaid work in the home. The lack of progression opportunities is a further important factor behind the ongoing gender pay gap.

2 Gender pay gaps for equal or equivalent work still exist

Although evidence for this phenomenon was not explored in the data analysis conducted for this report, it is included here as an important ongoing theme in the debate. As one example of gender pay disparities for equal or equivalent work, the latest report from the Chartered Management Institute suggests that senior women experience a greater than average gap in their pay compared with men (CMI, 2015).

Leaving aside debates about discrimination, bias is recognised by firms as an issue to be tackled.³⁵ Such bias can result in certain types of attributes and skills traditionally associated with men, such as risk-taking for example, being recognised in recruitment and reward structures in pay and progression, while characteristics more readily associated with women, such as communication skills and team-working are less well recognised (Grimshaw and Rubery, 2007). As seen in Section 3 of this report for example, the data reveals that males benefit more than females from performance related pay. There is strong evidence that the 'motherhood penalty' and in particular the way in which time out of the labour market for child-rearing is negatively regarded, more so than a period of unemployment for example.

³⁵ Documented in UKCES forthcoming publication: Workplace Gender Initiatives Best practice case studies of organisational interventions to improve women's position in the workplace

3 Occupational segregation remains a feature of the labour market

The numbers of women employed in occupations such as engineering and skilled trades, and in sectors such as IT and construction are small; for example, fewer than 10% of British engineers are female. Conversely, occupations in caring and some allied health professions for example employ few men. As well as being a phenomenon of concern in itself since segregation risks apportioning workforce talent sub-optimally, segregation interconnects with the issue of the gender pay gap. Occupations in which a high proportion of the workforce is female, such as Wholesale and retail trade, Accommodation and food service activities, and Administrative and support service activities attract relatively low hourly pay as shown in Figure 3.8 of this report. Typically male dominated occupations in manufacturing and construction and in skilled trades by contrast are seen to attract higher median rates of pay. Figure 3.9 showed that Skilled trades occupations are where the gender pay gap is greatest. Clearly, occupational segregation risks limiting female access to these higher paying roles.

Processes of segregation are apparent where women are effectively if not formally segregated from opportunities in key parts of the labour market. Barriers may be: overt (e.g. the type of careers advice girls may receive at school highlighting stereo-typical options); and more subtle (e.g. socialisation influencing the messages girls receive from an early age stereotyping what women do), (Women and Work Commission, 2006). The nature of sectors and workplaces within them can also act as effective barriers. Some firms, such as British Gas, have discovered for example that job advertising strategies can help to avoid discouraging female applicants and those from ethnic minorities.³⁶ In areas like construction, workplace cultures and also facilities, can be off-putting to women (Munn, 2014).

4 Women are under-represented in management and senior positions

The lack of women in senior positions is a high profile issue in the debate and was the subject of the Davies review which attracted high level attention (Davies, 2011). Concerted efforts and campaigns have been made to bring more women into leadership positions, and some progress has been made but the UK is still a long way from equal representation.

³⁶ IDS Diversity at Work No. 64 (2009) Changing the Face of British Gas. <http://www.stem-e-and-d-toolkit.co.uk/sites/default/files/Changing%20the%20Face%20of%20British%20Gas.pdf> accessed on 16th September 2015

The under-representation of women in senior positions has roots in both the perception and reality of the need to work long or unsocial hours where women carry an uneven share of family caring responsibilities. The literature discusses relative limits to female progression not just as a result of conscious or unconscious bias or discrimination but also because women have been found to be less forthcoming in applying for promotion opportunities and believing they have sufficient skills to perform at a higher level in their organisation.³⁷

4.2 Consequences of the gender pay and opportunity gap

The individual consequences of limited choices, opportunities and outcomes for women as compared to men combine both financial impacts for women and their families and non-financial impacts, including greater insecurity and unfulfilled potential. For society as a whole it is clear that there are also major impacts on the economy. The Women and Work Commission report (2006) estimated that the under-utilisation of women's skills costs the UK economy between 1.3 and 2% of GDP every year. Other estimates of the potential benefit of fully tapping into female talent in the economy are that raising the level of women's employment to the same as men's could lift GDP by 10% by 2030, while eradicating the full-time gender pay gap would contribute additional spending into the economy of £41 billion each year (Women's Business Council, 2015).

Businesses and industry groups also recognise the waste of talent that gender inequality creates and that is costly in terms both of the available pool of workers from which they can recruit and productivity losses within their operations.³⁸ This is particularly the case when the performance of women and girls throughout education is recalled such that women make up the majority of the UK's most highly educated population. Research evidence shows that there are benefits to businesses from both gender and ethnic diversity in the workforce; not only have more diverse companies been found to perform better than average, but less diverse companies perform less well than average. (Women's Business Council, 2015).

³⁷ Eagly, A.H & Carli, L.L. (2007) *Through the Labyrinth: The Truth about how women become leaders*

³⁸ Described in interviews for UK Futures Programme Competition 6 and UKGES forthcoming publication: *Workplace Gender Initiatives Best practice case studies of organisational interventions to improve women's position in the workplace.*

4.3 Achieving gender equality and growth through people of the gender pay and opportunity gap

Since the 1970s there has been ongoing legislative attention to correcting gender imbalances at work beginning with the Equal Pay Act from 1970 which have been instrumental in effecting positive change. Most recently in the Summer of 2015, the Government announced its intention of using its powers under Section 78 of the Equal Pay Act to make regulations requiring mandatory gender pay gap reporting for large firms.³⁹ This responded to the results of a 2011 initiative encouraging voluntary gender pay reporting which had a poor response from business.

Well-crafted policy and legislation will continue to be vital in addressing the ongoing challenges but UKCES, along with many others, consider that a new emphasis on policy and practice working together is essential. Access to high quality jobs with decent pay and progression opportunities and job design which enables female participation and skills utilisation are as much industry and firm-level prerogatives as policy ones. This is why the need for employer leadership is becoming more evident in the gender inequality debate.

The ambition set out in the UKCES's Growth Through People statement is for a sustained recovery for the long-term that is driven by the skills and talents of people in the UK. As we have seen in section 2 of this report, many of the most talented people coming through our education and training systems are women. A labour market that better reflects educational outcomes and that works as well for women as for men is therefore essential if we want to maximise the productive potential of our national talent. As the evidence discussed in Section 3 and earlier in this section indicates, we have some way to go to bring that to fruition. However, we are seeing more opportunities for women to capitalise on their educational achievements. Projections indicate a number of positive developments in train including a faster pace of growth in female than male full-time employment up to 2022 with more new job opportunities for women than men in top occupational categories – Managers, directors and senior officials, Professional occupations and Associate professional and technical (UKCES, 2014). This is encouraging, but we should not be complacent about ongoing barriers that need to be overcome. The Growth Through People framework offers a fresh perspective for thinking about effective routes to making a greater difference.

³⁹ Government Consultation. Closing the Gender Pay Gap. 14th July 2015.
<https://www.gov.uk/government/consultations/closing-the-gender-pay-gap> accessed on 16th September 2015

Growth Through People sets out 5 overarching priorities for action. Under each of these priorities below we briefly describe the relevance to tackling gender inequality.

1. Employers should lead on skills and government should enable them – UKCES has consistently argued that strong employer leadership is the key to tackling skills and productivity challenges. Part of this is about employers working together on what's needed for long-term business and career development. Ensuring that women have career support and trajectories that can maximise their potential offers employers and industries a wider talent pool of skills for the long-term. Part of this is about action at the local level. We know that women are more tied to their local economy than men because of family responsibilities (Yeandle, 2008). Strategic leadership on skills at the local level should have a focus on leveraging opportunities for women and building the business case for this.

2. Improving workplace productivity should be recognised as the key route to increasing pay and prosperity – good job design is becoming increasingly recognised as essential for building stronger productivity. Job design and world-class management is required to utilise workforce skills effectively but challenging the norms of working patterns can also offer a route to more productive work especially for those who need to combine paid work with out of work responsibilities and still progress. UKCES recently launched its UK Futures Programme competition on Workplace Solutions to the Gender Pay and Opportunity Gap to invite employers to propose innovative ways of designing work to raise both pay and productivity for women workers in key sectors. The learning from this work will help reveal ideas that work for women and their employers and that can be drawn on for best practice and policy-making.

3. Earning and Learning should be the gold standard in vocational education – the evidence presented in Section 2 of this report revealed that women are not only successful in formal education but are committed participants in vocational routes to work. Working towards equal participation of men and women in different framework and subject areas will be important in bringing the best through vocational career paths as well as academic ones. Ensuring that apprenticeships are of high quality with good prospects will help encourage young women as well as men especially where apprenticeship routes can effectively recognise female talents by making them visible and visibly rewarded. Breaking down barriers in occupational segregation needs to be part of this, as the Women and Work Commission recommended in 2006, with high quality careers advice helping to expand mind-sets for girls about their options.

4. Education and employers should be better connected to prepare people for work – this is where a step change in careers advice and support for women and girls to consider a broader range of options can happen. Exposure to employers, and understanding seamless connections between learning and work through school and college can help break down stereotyping. For example, building relationships with employers, understanding their perspectives and experiencing the support they can offer could potentially encourage talented female scientists to stay on in science for their career and undertake technical training through new opportunities.

5. Success should be measured by a wider set of outcomes not just educational attainment – a clear opportunity in thinking about a wider set of outcomes is to think about incorporating measures to account for the record on tackling gender imbalances. As we have described elsewhere in this report there is strong evidence that sustained growth through people will be boosted by concerted progress on tackling the gender pay and opportunity gap. We recognise that getting the measures right is not an easy task but as to the relevance of tackling gender inequality for growth through people we can be certain.

Appendix A: Apprenticeships by subject

Table 1: Male and female shares of apprenticeships by (top 20) Framework area, England

	2004/05			2008/09			2012/13	
	Male	Female		Male	Female		Male	Female
Business Administration	20.5	79.5	Construction Skills	98.5	1.5	Health and Social	17.0	83.0
Hospitality and Catering	41.8	58.0	Customer Service	31.0	69.0	Customer Service	34.5	65.5
Hairdressing	6.0	94.0	Business Administration	19.0	81.0	Business	23.6	76.4
Customer Service	25.8	74.0	Hairdressing	7.6	92.4	Management	41.0	58.9
Construction Skills	98.9	0.9	Children's Care Learn and	2.2	97.8	Hospitality and	45.1	54.9
Engineering	96.6	3.4	Hospitality and Catering	43.3	56.7	Children's Care	5.5	94.5
Automotive Industry	99.0	1.0	Engineering	97.5	2.5	Retail	37.6	62.4
Retail	30.3	69.7	Health and Social Care	13.2	86.9	Industrial	88.6	11.4
Children's Care Learn and Develop	2.5	97.5	Vehicle Maintenance/Repair	98.7	1.5	Hairdressing	7.7	92.3
Accountancy	38.3	62.1	Retail	31.3	68.7	Active Leisure and	68.0	31.8
Electrotechnical	99.5	0.5	MES Plumbing	97.8	1.9	Engineering	96.8	3.2
Health and Social Care	8.4	91.6	Active Leisure and Learning	61.2	38.8	Construction Skills	98.4	1.6
IT Services and Development	82.8	17.2	Electrotechnical	99.1	0.6	Vehicle Maintenance	98.8	1.2
Active Leisure and Learning	56.1	43.9	Management	31.5	68.2	IT and Telecoms	91.1	8.7
Communications Technologies (Telecoms)	87.3	12.7	Accountancy	37.1	63.2	Accountancy	37.5	62.5
MES Plumbing	99.0	1.0	IT User	73.5	26.5	Driving Goods	96.9	3.3
Industrial Applications	91.5	8.5	Sales and Telesales	61.0	39.5	Warehousing and	90.3	9.7
Equine Industry	25.0	75.0	IT and Telecoms Professionals	91.2	8.8	Supporting Teaching	10.9	89.1
Textiles	83.7	16.3	Industrial Applications	94.8	4.5	Electrotechnical	99.0	1.0
Driving Goods Vehicles	89.6	10.4	Driving Goods Vehicles	90.1	9.9	IT User	52.8	47.2
Total	52.1	47.9	Total	52.5	47.5	Total	46.0	53.9

Table 2: Framework area as a proportion of all apprenticeships, males and females, England

	2004/05			2008/09			2012/13	
	Male	Female		Male	Female		Male	Female
Business Administration	4.7	19.7	Construction Skills	18.6	0.3	Health and Social	4.8	19.9
Hospitality and Catering	8.0	12.1	Customer Service	5.6	13.7	Customer Service	7.4	12.0
Hairdressing	1.0	17.1	Business Administration	3.3	15.7	Business	4.8	13.2
Customer Service	4.3	13.4	Hairdressing	1.0	13.8	Management	7.6	9.3
Construction Skills	16.1	0.2	Children's Care Learn and	0.3	13.8	Hospitality and	6.1	6.3
Engineering	15.7	0.6	Hospitality and Catering	5.2	7.5	Children's Care	0.7	10.1
Automotive Industry	11.7	0.1	Engineering	11.0	0.3	Retail	4.6	6.5
Retail	2.9	7.1	Health and Social Care	1.2	8.6	Industrial	7.7	0.8
Children's Care Learn and Develop	0.2	9.5	Vehicle Maintenance/Repair	8.1	0.1	Hairdressing	0.7	6.8
Accountancy	2.3	4.1	Retail	2.4	5.9	Active Leisure and	4.4	1.8
Electrotechnical	5.7	0.0	MES Plumbing	4.8	0.1	Engineering	6.2	0.2
Health and Social Care	0.5	5.4	Active Leisure and Learning	2.9	2.0	Construction Skills	6.2	0.1
IT Services and Development	4.3	1.0	Electrotechnical	4.4	0.0	Vehicle	4.3	0.0
Active Leisure and Learning	2.2	1.9	Management	1.4	3.3	IT and Telecoms	3.7	0.3
Communications Technologies (Telecoms)	2.5	0.4	Accountancy	1.6	3.0	Accountancy	1.3	1.9
MES Plumbing	2.7	0.0	IT User	2.5	1.0	Driving Goods	3.2	0.1
Industrial Applications	1.5	0.2	Sales and Telesales	1.4	1.0	Warehousing and	2.5	0.2
Equine Industry	0.4	1.3	IT and Telecoms Professionals	2.1	0.2	Supporting	0.3	2.0
Textiles	1.2	0.2	Industrial Applications	1.9	0.1	Electrotechnical	2.4	0.0
Driving Goods Vehicles	1.2	0.2	Driving Goods Vehicles	1.8	0.2	IT User	1.3	1.0
Total	100.0	100.0	Total	100.	100.0	Total	100.	100.0

Table 3: All participants on ApprenticeshipsNI by (top 20) framework areas, July 2014

Ranked by male per cent	Male	Female	Ranked by female per cent	Male	Female
Engineering	21.3	1.0	Health and Social Care	1.6	19.2
Electrotechnical	9.1	0.0	Hospitality	7.3	14.6
Vehicle Maintenance and Repair	9.1	0.1	Hairdressing	0.6	11.3
Hospitality	7.3	14.6	Retail	4.3	9.6
Construction Crafts	5.1	0.1	Child Care, Learning and Development	0.1	8.2
Mechanical Engineering Services*	4.8	0.0	Catering and Hospitality	3.1	6.6
Retail	4.3	9.6	Customer Service	3.0	6.2
Food Manufacture	4.0	3.0	Insurance	2.3	3.1
Agriculture	3.4	0.1	Food Manufacture	4.0	3.0
Catering and Hospitality	3.1	6.6	Catering and Professional Chefs	2.2	2.8
Customer Service	3.0	6.2	Team Leading	0.9	2.7
Construction	2.7	0.0	Business and Administration	0.6	2.4
Insurance	2.3	3.1	Management	1.0	2.3
Catering and Professional Chefs	2.2	2.8	Call Handling	0.9	1.5
Distribution and Warehousing	1.6	0.2	Beauty Therapy	0.0	1.3
Health and Social Care	1.6	19.2	Engineering	21.3	1.0
Land Based Service Engineering	1.4	0.0	IT User	0.5	0.8

Motor Vehicle Industry	1.1	0.0	Pharmacy Services	0.0	0.6
Management	1.0	2.3	Youth Work	0.2	0.5
Electrical Distr. and Trans. Engineering	1.0	0.0	Accountancy	0.3	0.4
Total	100.0	100.0	Total	100.0	100.0

* Plumbing.

Table 4: All participants on Scottish Modern Apprenticeships by (top 20) framework areas, in training as of 31-03-2014

Framework areas	Male	Female	Framework areas	Male	Female
Engineering	16.7	1.3	Hospitality	6.4	14.7
Automotive	9.7	0.3	Business & Administration	2.5	13.5
Hospitality	6.4	14.7	Hairdressing & Barbering	0.5	13.2
Construction	5.9	0.1	Children's Care, Learning & Development	0.2	10.3
Electrical Installation	4.8	0.2	Health and Social Care	0.7	9.8
Construction: Building	4.7	0.2	Retail	2.7	7.7
Construction (Craft Operations)	4.0	0.1	Customer Service	2.0	5.5
Freight Logistics	3.9	0.7	Management	2.5	5.0
Plumbing	3.4	0.1	Food and Drink Operations	1.5	2.3
Electrotechnical Services	2.9	0.1	Dental Nursing	0.0	1.8
Retail	2.7	7.7	Social Services and Healthcare	0.1	1.7
Business & Administration	2.5	13.5	Social Services (Children and Young People)	0.0	1.7
Management	2.5	5.0	Providing Financial Services	0.6	1.5
Customer Service	2.0	5.5	Engineering	16.7	1.3
Construction: Civil Engineering	1.9	0.0	Travel Services	0.1	0.8
Oil and Gas Extraction	1.5	0.3	Accounting	0.2	0.8
Food and Drink Operations	1.5	2.3	Equine	0.0	0.8
IT and Telecommunications	1.5	0.5	Active Leisure, Learning and Wellbeing	0.8	0.8
Construction (Technical Operations)	1.3	0.2	Freight Logistics	3.9	0.7
Horticulture	1.3	0.1	IT and Telecommunications	1.5	0.5

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