Gender and Productivity

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Abstract

This paper makes the case that integrating equality into the productivity agenda is essential for a medium to long term strategy for raising productivity that aims at improving well-being for all. Not doing so risks the development of an increasingly polarised and dysfunctional society. Over recent decades, OECD countries have relied on women's investments in education and steadily rising higher employment participation to boost growth, but now further growth requires attention to raising productivity.

This is the hard part of the transition to a more gender equal society as it requires action on three fronts; changes to the way work is organised in the workplace and the home to enable women to make full use of their talents, changes to pay structures to ensure women's work is appropriately valued and rewarded and greater investment in support for working parents. These changes are needed across the spectrum of women's work to address the different challenges faced by women in different social, employment and demographic contexts. Institutional change has not kept pace with the major changes in women's engagement in education and employment and indeed in gender relations and behaviour in the wider society. Low productivity problems stem in part from a mismatch between this major social change and the organisation of our society and economy.

1. Introduction

1.1 Why the productivity debate requires a gender perspective.

The potential role that the pursuit of gender equality could and should play in promoting a more productive economy and society has received limited attention over recent years. This is despite the long-term observable changes in both women's employment activities and aspirations and the wider changes in gender relations- termed the incomplete revolution by Esping-Anderson (2009). This revolution has macro-economic consequences: the rapid increase in female employment has been a major contributor to growth in GDP per capita over recent decades in OECD and EU countries. Indeed, in the late 1990s the EU as it shaped its employment strategy adopted raising women's employment rates as a major policy objective. Later in 2014 the G20 adopted an OECD-led target to reduce the gender employment rate gap by 25% by 2025 (OECD 2019a). Higher employment rates were recognised as key contributions to improving the tax base to pay for ageing societies. Although there are still gender gaps in labour market participation and employment rates, the main gains for growth stemming from higher employment have largely already been realised, at least in northern EU countries (OECD 2018). What is now required for adding to growth is for women to work longer hours and for female labour to be more productively deployed (assuming current measurement systems correctly value women's productivity).

This next stage of the gender role transformation to create productive economies, however, is much harder as it involves more severe challenges to the current ways in which economies and societies are organised and operate. Changes to institutions and practices are lagging behind changes in gendered norms and behaviours. Taking action to reduce the barriers to women working both longer and also more productively almost certainly requires changes in employer beliefs and practices and in the behaviour of men more generally. It also requires family support to be considered an essential component of state-provided infrastructure, if the current investment in women's education is to generate a significant productivity boost for the economy and society.

However, if the focus of change is mainly on more educated women, there is a real danger of further widening of inequality by social class not only among women but also among households, for higher educated women tend to have partners who are in relatively high paid jobs. To guard against this, and importantly to remedy the long-standing undervaluation of many traditional areas of women's work, attention also needs to be focused on improving both the valuation and the organisation and productivity of the work of lower social class/lower-educated women. Much of this work is essential service work, as became evident in the Covid pandemic, and also provides support for those in high paid careers required to work long hours. This service work suffers from low valuation and low recognition of the skills involved, in part because of its association with domestic labour (England et al. 2002).

A successful transition to a dual earner society that provides productive employment for all that is not damaging either to worker well-being or to the prospects for the next generation must of course also involve changes in men's behaviour at work and in the home. These changes require both policy initiatives to support and incentivise changes at the individual and family level but also change to the organisation of work and employment arrangements within organisations.

Bringing more women into the labour market was the easy bit from a growth perspective. Ensuring that they can realise their productive potential is both harder and more disruptive to established ways of working and living but not acting, we will argue, is not a sustainable option if the aim is to increase productivity into the medium term rather than only seeking quick fixes that apply to only a small share of the population. The issue of making the productivity agenda more inclusive of course also applies to other groups facing inequality in opportunity, including by social class, race and ethnicity, disability and by region or area. There are indeed parallels to the well-recognised problems that there are institutional and geographical factors holding back productivity growth across the economy including, for example, poor intermediate skills development in the UK and restricted job opportunities by locality. As with the constraints on opportunities by social class and locality, failure to provide progression and skill development opportunities for women consigns the UK to low aggregate productivity growth and inequality over the medium term. However, in the case of gender this issue is often regarded more as a social than an economic or organisational problem (Padavic et al. 2020), reflecting patterns of human behaviour that are regarded as 'inevitable', despite the evidence of major changes in gender relations, family patterns, educational investments and work attachment over recent decades. Indeed, the potential for women to assist in filling some of the skills gaps much talked about as a constraint on productivity has been noticeable mainly by its absence [1].

Moreover, addressing issues in relation to women's employment and productivity can have positive repercussions for other groups whose talents are not fully utilised or who are not rewarded appropriately for their efforts. Women still account for the majority of workers in low paid jobs that are presumed to be low productivity jobs. Therefore, efforts to either revalue this work where appropriate or to invest in skills and raise productivity in female-dominated sectors could improve the quality of work available to other groups (for example young workers, men from ethnic minority groups and migrants) who may face similar poor conditions and prospects.

1.2 Organisation of the working paper

In section 2, the next main section of this paper, we develop the case for why a focus on gender equality is essential for the development of a medium- and long-term strategy for improving the UK's and other advanced countries' productivity trends. This is followed in section 3 by a discussion of what the application of a gender lens on the productivity debate might mean for policy agendas to promote higher productivity. Before turning to these key issues, we take a moment to consider what is or should be meant by productivity and by productive economies as the approach taken necessarily underpins the subsequent discussions.

1.3 Defining what we mean by productivity

Krugman (1994) in his now famous statement that 'productivity isn't everything, but in the long run it is almost everything' recognised that the 'everything' amounted to 'a country's ability to improve its standard of living over time'. (Krugman 1994). In current popular parlance we may link standard of living to well-being and suggest that whether the goods and services produced add to well-being matters. Krugman also states that improving standards of life depended 'almost entirely on its [a country's] ability to raise its output per worker'. This statement assumes, in line with standard economic arguments, that there is full employment with no latent supply of productive labour. However, other ways to contribute to growth in GDP per capita include increasing participation in the labour market – for example by providing childcare to support both parents in work or, as has been a major theme of recent years, by raising retirement ages. Some of these policies such as raising retirement ages for manual as well as non-manual workers may of course lead to deteriorations in well-being. Adopting a gender lens necessarily leads to a greater focus on participation rates and hours of work for women as a source of growth that adds to living standards (or helps in preventing

[1] For example, the most recent (2019) Employers' Skills Survey report which is used to gauge skill shortages makes no mention of women or gender at any stage in the report and issues such as whether women and women returners in particular are overlooked for internal training and promotion are not explored.
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/925744/Employer_Skills_Survey_2019_research_report.pdf

falls); this is evident in the OECD's decomposition of achieved growth between changes in labour utilisation and changes in productivity[2].

Productivity must be understood as the efficient use of resources for the production of goods and services that contribute to improved wellbeing and do not cause harm[3]. Mobilising resources that are not currently being used for the production of goods and services can also be considered to be improving efficiency by reducing the waste of potential productivity. This mobilisation is not necessarily costless and may, for example, result in externalities related to the environment. Particularly pertinent in the case of gender, mobilisation could leave children or adults without essential care or effectively require the mobilised resource- women- to undertake double shifts of labour. While these potential mobilisation costs need to be recognised and measures taken to protect those adversely affected, this is not an argument against mobilisation as the allocation of labour between wage work and unpaid care work is not based on skill, attributes and talents (contrary to Becker (1985)) but on custom and practice, assigned roles, inflexible employment practices and gender discrimination in employment opportunities and pay.

Gender inequality may be associated with productivity being below potential due to the underutilisation of women's potential in the labour market, whether due to exclusion or restrictions on participation or factors that limit their ability to realise their full potential (including barriers to skills development within the labour market). *Measured* productivity may also rely on indicators that reflect current patterns of discrimination and gender inequality in the labour market, thereby potentially undervaluing the work performed by women and the goods and services produced and possibly overvaluing the work performed by men and the associated goods and services. A key question is in fact whether segmentation in the labour market calls into question the aggregate unified measures of the value of output, labour input and indeed productivity across the whole economy on which the productivity debate is based.

2. Putting gender equality at the heart of productivity policies.

2.1 Gender, growth and productivity

The current concerns over low rates of productivity growth are due to the role played by productivity in both national competitiveness (or at least as an indicator of sustainable competitiveness) and in supporting expectations of customary and rising living standards. In the 1990s, the key policy focus for addressing this second function was that of raising employment levels among underemployed groups- mainly women and older workers- as societies adjusted to both delayed entry to employment due to mass higher education and trends to early retirement. The EU deemed such an adjustment essential in order to support a rising share of the elderly in the population in the context of increased life expectancy and declining birth rates. Relying only on gains in productivity per person employed to meet these fiscal needs was deemed too risky. Hence, for example, the EU's 2000 Lisbon employment strategy set goals for higher employment rates for both men and women combined and women separately by 2010 and at the same time recommended raising retirement ages, alongside policies to promote employment among the unemployed or inactive. The OECD (2019a) took up the baton of promoting higher female employment in later decades by initiating a proposal agreed to by the G20 in 2014 to set a target of reducing the gender gap in employment rates by a quarter in all countries by 2025. It has also undertaken a number of studies demonstrating the contribution of female employment to growth rates in, for example, the Nordic countries (2018) and the Netherlands

[2] https://www.oecd-ilibrary.org/sites/f25cdb25-en/1/3/2/index.html?itemId=/content/publication/f25cdb25-en&_csp_=f3624e8b770eac8d5dc12a37d86e806e&itemIGO=oecd&itemContentType=issue#section-d1e716

[3] Economists may wish to distinguish between productivity gains from reducing x-inefficiency (i.e., the degree to which firms are working below their potential productivity frontier) and productivity gains from extending the potential through innovation that pushes out the productivity frontier- but given the wide variations in realised productivity within and between sectors, this distinction may not be readily operationalised.

(2019b), that recognise that the scope for further growth from higher participation is now limited, though in the Netherlands case the short hours worked by women still provide some scope for growth through longer hours of work. The UK has also been shown to have benefitted from growing employment rates for women, including among older workers, though, as in the Netherlands, relatively short hours of work limited this contribution.

Table 1 shows the OECD's estimates of the contributions to GDP growth from changes in female employment in selected OECD countries over recent years; this contribution involves both changes in the female employment rate and changes in female working hours. Women's employment made at least a 20% or higher contributions to annual overall growth up to 2016 (from variable start dates between 1975 and 1991 so comparisons may be somewhat distorted) in six countries (Canada, France, Germany, Italy, the UK and Norway). The contributions were much lower in most of the Nordic countries (Norway the exception) and the US, all countries with already high female employment rates. In these cases, the contributions were closer to 10% of the growth rate in Denmark, Iceland and the US and even negative in Finland and Sweden. In contrast changes in women's working hours made more modest contributions to growth, even turning negative in Finland, Canada, Germany and the US. Italy and the UK experienced the most positive contribution at around 10% in the UK and closer to 20% in Italy, such that higher employment and working hours for women accounted for around two thirds of the aggregate growth rate in Italy and for 30% in the case of the UK. In projections for which countries would both gain most out of actions to close the gender gap in both employment rates and working hours for 2013-2040 (see OECD 2018, table AA7) the OECD found most potential for gains in Italy and the UK, closely followed by Germany.

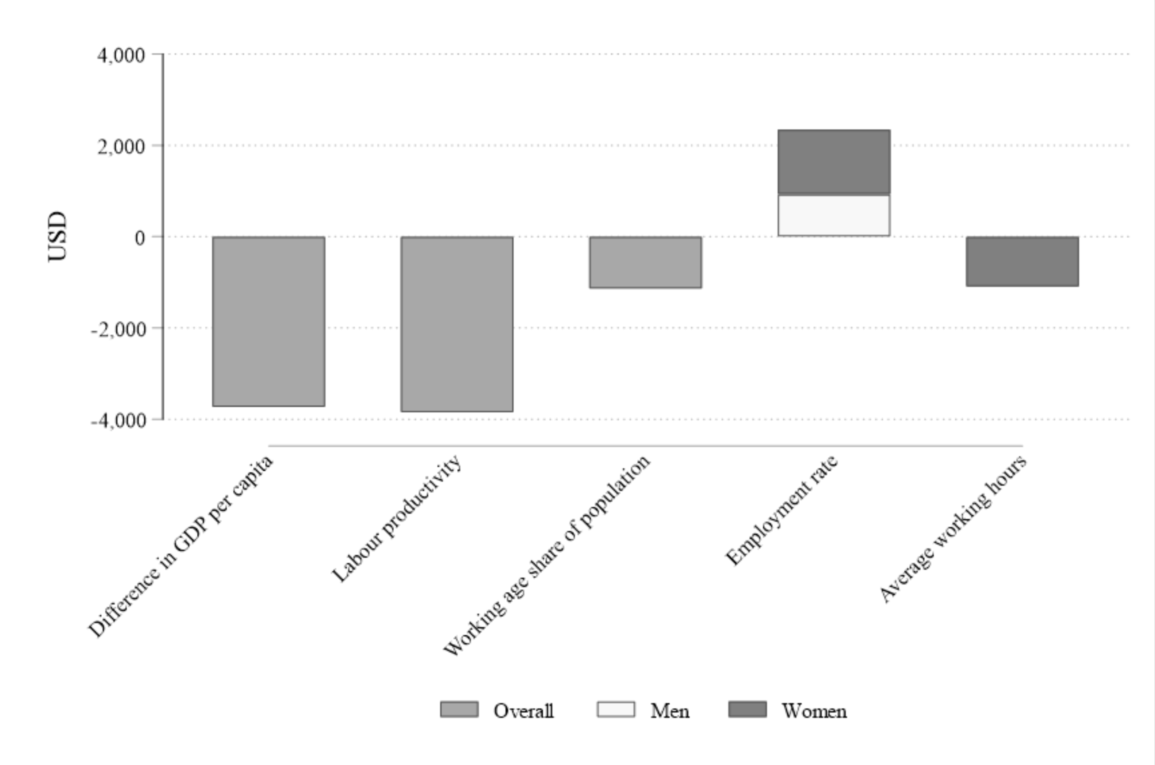
Table 1 The contribution of women’s employment and working hours to GDP growth per capita over recent decades in Nordic and selected OECD countries.

Country	**Time period**	**GDP per capital, average annual growth rate (%)**		**Percentage point contribution of main components**					**Decomposition of the contribution of the employment rate, by gender**			**Decomposition of the contribution of working hours, by gender**	
				Labour Productivity (p.p.)	Working age share of population (p.p.)	Employment rate (p.p.)	Working hours (p.p.)		Men's Employment (p.p.)	Women's employment (p.p.)		Men's working hours (p.p.)	Women's working hours (p.p.)
Denmark	1983 - 2016	1.39		1.58	-0.07	0.17	-0.29		0.03	0.14		-0.33	0.04
Finland	1990 - 2016	1.21		1.85	-0.26	-0.07	-0.31		-0.06	-0.01		-0.22	-0.09
Iceland	1991 - 2016	1.82		1.82	-0.05	0.31	-0.26		0.11	0.20		-0.41	0.15
Norway	1975 - 2016	1.86		1.85	0.13	0.38	-0.50		-0.03	0.41		-0.66	0.16
Sweden	1987 - 2016	1.56		1.66	-0.03	-0.21	0.15		-0.12	-0.10		0.11	0.04
Canada	1976 - 2016	1.37		2.08	0.04	0.47	-1.22		-0.02	0.49		-1.08	-0.14
France	1983 - 2016	1.25		1.52	-0.19	0.25	-0.33		-0.11	0.36		-0.44	0.10
Germany	1991 - 2016	1.24		1.43	-0.23	0.58	-0.55		0.11	0.47		-0.47	-0.08
Italy	1983 - 2016	0.97		1.00	-0.19	0.41	-0.25		-0.05	0.46		-0.44	0.19
United Kingdom	1984 - 2016	1.82		1.70	-0.05	0.43	-0.26		0.06	0.37		-0.44	0.19
United States	1979 - 2016	1.60		2.39	0.04	0.10	-0.93		-0.09	0.20		-0.73	-0.20

Source: OECD (2018 table A.A 5)

Figure 1 draws on the same report to illustrate how in the UK most of the UK's $3,733 gap[4] with the OECD-30 average GDP per capita is more than accounted for by lower per capita productivity. Although higher employment rates than the OECD-30 average, particularly for women, provides the largest boost to GDP by $1,420, this is in fact largely offset by the costs of lower-than-average working hours for women at $1,092. However, although there is scope for growth through longer working hours for women, the overall calculation highlights the overarching need to address the UK's lower labour productivity.

Figure 1. Decomposing the factors accounting for the UK's lower GDP per capita relative to the average for the OECD-30 2015



Source: OECD (2018) Table. A.A6

Though not directly taken into account in these estimates, the growth in employment of the higher educated in OECD countries, as the same OECD (2018) report notes, has been estimated to account 'for roughly half of all economic growth in OECD countries over the 1960-2007 period – much of which can be traced back to increased educational attainment among girls and young women and the associated benefits for employment and productivity. Put simply, gender equality is good not only for women, but also for men and for families, for growth, and for society as a whole' (p.13). The European Institute for Gender Equality (EIGE) makes the case that many estimates of the impact of further gender equality predict greater growth gains than those for, for example, more educational investments[5].

What is significant in these studies, however, is how the discussion of the potential contribution of women to growth tends to stop at the remedying of low employment rates and hours of work,

[4] 2015 data but 2010 PPP in USD
[5] https://eige.europa.eu/gender-mainstreaming/policy-areas/economic-and-financial-affairs/economic-benefits-gender-equality

particularly if this can be attributed to low availability or high costs of childcare. As the OECD's (2018) investigation of women's contributions to the Nordic countries' growth over recent decades put it:

> 'For data reasons, it [this report] concentrates on the quantitative aspects of labour market equality – how much do women work, and how does this compare to men? – leaving aspects like potential productivity gains aside (p.13).'

This means that the ways in which there could be better utilisation and better rewards for women's efforts, talents and contributions without the labour market has received a lot less attention. This is problematic, not only because future growth may increasingly depend upon progress in this dimension but also because the existing exercises to calculate women's contribution to growth have tended to treat all workers and all labour hours as contributing equal amounts to growth, due to lack of data to make alternative assumptions. However, we know that women's employment is often much lower paid and that in key areas where women are employed such as part-time work there may be an underutilisation and underdevelopment of skills. Indeed, in exploring the impact of gender equality in the Nordic countries in relation only to the impact of employment rates and working hours, the OECD may have missed an important part of the story. What may distinguish and amplify equality effects in these countries is the integration of women's work, even when part-time, in the standard wage structures and working practices applicable to full-time and male workforces. For example, in Sweden, mothers do not have to take jobs designed for part-time work but instead can exercise rights to reduce their hours in their current jobs up until a child is 8 years-old (and receive some parental allowance to compensate for reduced hours for some of that time). The outcome is that the part-time to full-time wage gap is much smaller than this gap in the UK (Rubery 2015) where part-time work is still mainly concentrated in specific service firms and sectors that are low paid and according to current measurements low productivity[6].

Consequently, comparison of women's contributions across countries should take into account factors that may promote lower productivity and lower pay in women's employment in some countries than in others. If gender equality is to be part of the dialogue on the current agenda to address the low rate of overall growth, and productivity growth in particular, in advanced countries in general and the UK in particular, more systematic efforts are needed to address the ways in which women's talents and opportunities are currently underutilised or undervalued in the economy.

2.2. Indicators that women are not realising their full productive potential.

Before exploring policy options to raise women's (measured) productivity, we first need to review what evidence there is that women are not realising their full potential in the labour market. Gender gaps in employment and pay can no longer be attributed to women falling behind men in educational achievement; women have been surpassing men measured by years of education or by share with first degrees for some time so closing educational gaps no longer provide another 'easy win' for productivity through raising labour quality. However, there are strong indications that women's educational investments are not leading to the same returns in the form of earnings as men's investments.

Gender differences in returns to education

In the UK, research by the IFS for the Department of Education (Britton et al. 2020) found that the profile of women's graduate earnings is closer to those of non-graduate men with at least five good GCSEs than to male graduate earnings profiles- for example the peak median for these three groups

[6] The 2003 right to request flexible working has helped some women work reduced hours and the proposed change to the rights to request to apply from day one rather than after six months of employment should help further.

are women graduates at around £35k, male non graduates at around £31k but male graduates at around £50k (2018 prices). However, if the traditional comparison is made to non-graduate women's earnings there is still a positive return to education just because of the very low pay of the female non-graduate group (Britton et al. 2020).

As women have overtaken men in educational levels, there has been an increasing focus on their underrepresentation in STEM subjects. While women have not only broken-down barriers but also stormed the fields of many traditionally male-dominated occupations from lawyers to university lecturers to medical doctors and biologists, their relatively low representation in physical sciences tends to be interpreted as linked to a lack of capacity. While more women studying STEM subjects would clearly be desirable (and choice of degree may account for around a 5% gender gap between graduates in the first years after graduating (Britton et al. 2020)), there is also evidence that the UK is not good at keeping the female STEM graduates we do have in STEM-related careers, suggesting that there may be problems in the organisation of these STEM-related careers. Indeed, a recent study (White and Smith 2022) has found not only that women with STEM degrees are less likely to work in high-skilled STEM jobs and more likely to leave such jobs than men but also those with STEM degrees tend to have lower shares of managerial and professional jobs than those with non-STEM degrees.

A key cause of the gender pay gap has been found to be a cumulative divergence in earnings between men and women from the point at which they have children. There is a much lower gender pay gap before this point indicating, in line with educational achievement, limited apparent productivity differences at younger age ranges (Andrew et al. 2021). This suggests that the divergence is due to interactions between workplace and home factors, not differences in capacities by gender. The home factors- namely women taking the lion's share of responsibility for childcare – are well recognised but their impact depends on how the need for time to care is accommodated in the labour market. Even in the later decades of the twentieth century, women were still having to quit their jobs after childbirth to find work on reduced hours but the 2003 right to request flexible working has enabled many women to stay in their same job with the same employer after returning from maternity leave and to work reduced hours. This has reduced the extent of career displacement with all the productivity implications of wasted skills and talent. Nevertheless, those in reduced hours jobs may still find themselves excluded from opportunities to develop their skills and experience further and to move up career ladders to higher level, more productive work, as indicated by the flat earnings profiles for women, even those who are graduates, post childbirth (Britton et al. 2020). They may also be unable to change jobs to seek more productive work as they would need to work six months for the next employer before being able to request flexible working, a problem that has now been recognised and the government is planning to accept a private member's bill to provide a right to request flexible working from day one of employment[7].

Thus, the role of workplace factors in the lower earnings for women after childbirth may be downplayed. Research on motherhood pay gaps, for example, reveals evidence that employers may both underpay those in part-time work and limit their productivity growth by excluding them from advanced training and challenging work opportunities for those working part-time (see Grimshaw and Rubery 2015 for a review). Furthermore, this tendency towards stagnation or slow growth in women's lifetime earnings is not treated by employers or policymakers as an indication of underutilisation of talent but as a life choice.

[7] https://www.gov.uk/government/news/new-law-gives-tens-of-millions-more-say-over-their-working-hours

Gender and skill gaps

Nor are women often considered as a potential pool of labour to fill skills gaps; this rarely appears in discussion by employers of their efforts to overcome skill shortages. This myopia has been identified by CEDFOP (2018), the training organisation for the European Union, that comments:

> Tackling skill shortages in European economies depends critically on firms adopting a long-term approach to hiring and managing talent via the offer of good-quality jobs. The HRM strategies of firms could better target individuals on the basis of their potential rather than on accumulated prior work experience, also sourcing relatively unexploited talent (females, older workers, migrants), which tends to be largely overseen... (p.18)

Policymakers are also prone to a gender-blind approach. For example the OECD (2015), despite its focus on gender equality as a source of growth, in its Future of Productivity report has a chapter on making better use of human resources that focuses on easing relocation to reduce skill mismatch with no reference to the relocation issues raised by the dominance now of dual earning households, nor the potential for skill shortages to be eased by reducing underutilisation of female talent.

Gender, flexible working and segmentation

While rights to request reduced hours may reduce occupational downgrading for those in career jobs, the opportunities for the high share of women who work in low paid jobs with limited career progression- such as hospitality, retail, social care- are more restricted. Moreover, increasingly these jobs expect staff to work flexibly but according to the cost-reducing, productivity-increasing demands of the employer and not to facilitate work life balance (Fleetwood 2007, ILO 2022). By adopting flexible scheduling and low or no guaranteed hours contracts, employers use part-time work in these sectors to raise productivity per hour of work by targeting staffing levels to minimise the wage bill and maximise required work effort. This type of working arrangement is often justified by employers as fitting the lifestyles and desire for flexibility and choice of the workforce, particularly younger workers (see for example the Taylor Review (2017)). However, the impact on those with care responsibilities is overlooked and those who have to manage care commitments with these 'flexible jobs' face high uncertainty in their income and in their time schedules.

In these sectors employers may rely on strategies to increase work effort as a consequence of perceived limited opportunities to increase productivity by other means. This approach may be considered to reflect Baumol's cost disease problem (Baumol and Bowen 1965), whereby many service sector jobs may not provide significant opportunities for productivity growth through investments in technology or through innovative organisational or technological change; consequently, reliance on strategies to increase work effort or reduce pay levels relative to the average wage rates may come to the fore. The extent to which wage levels can be used to offset problems of low productivity opportunities depends in part on institutional arrangements, including the level of legally mandated minimum wages. Furthermore in some societies- for example the Nordic countries, wage setting systems are designed to share out productivity gains across the labour market; the annual rate of wage rise is set in the export-led high productivity sectors and this increase is then generalised to other sectors through coordinated collective bargaining with the public and service sectors following the rate set in the high productivity sectors, and the wage rises in the lower productivity sectors paid for by taxes or higher service prices. These apparently elaborate mechanisms to ensure equality may be seen as substituting for the lack of the assumed perfectly competitive labour market in economics textbook where labour of a given quality should command the same wage across the whole labour market reinforced by labour market mobility mechanisms. If these conditions prevailed, the resolution of differential productivity rates would have to be found in various ways including closure of low productivity firms or sectors, employer actions to raise productivity or in rising prices, where these could be validated by consumer demand (or mixtures of all three responses). In practice a perfect labour market does not exist and wages tend to be influenced by product market and productivity conditions (economic rents) and by segmentation between different labour market groups, for example by gender or by migrant/non migrant divisions. Consequently, another strategy for firms in low productivity sectors may be to turn to labour force groups that are relatively disadvantaged and who may be willing to accept low wages and/or high work intensity. Where segmentation in the labour market is strong, it may be difficult to identify if employers may find it easier to rely on low labour costs to remain competitive rather than exploring other routes to competitiveness through investments in capital, skills and innovation. Recourse to segmentation or divides that challenge the notion of a unified, measurable productivity of labour, firms, sectors and economies suggest the need to investigate in more detail how segmentation by gender may affect measurement and perceptions of productivity.

2.3. How gender inequality may be embedded in the measurement of value and productivity

In discussing the case for how gender equality issues to be put at the centre of productivity debates and strategies, the possibility has been raised that how labour is paid and valued may not be reflective of either the value of the work performed or the value or capacities of the workers (see Grimshaw and Rubery 2007 for a review). This is both a general issue- wages may not be the same for the same quality of labour but instead are influenced by sector and firm characteristics – and a gender issue where discrimination, monopsony power and the social undervaluation of women's work may all influence pay rates by gender. Yet the wages paid to labour have an impact on how productivity is measured, assessed and debated.

Unravelling how gender inequalities may be embedded within current structures of wages and prices and in the measurement of productivity is a major task. Despite equal pay laws for 50 years or more and countless investigations of gender pay gaps, the jury is still out on the factors that shape the gender pay gap. A common feature of such studies, however, is agreement that a significant if variable share of the gap is unexplained and is likely to be associated with discrimination. This is despite a tendency for studies to potentially underestimate discrimination if it is embedded in wage norms and wage structures as many studies control for, for example, occupations and sectors and even in some cases for part-time status. This is despite Oaxaca (1973:699) himself arguing that occupational controls may lead to underestimation of discrimination as occupational status may be an outcome in part of discrimination. Furthermore, relative wages may be affected by the gender composition of the occupation, sector or employment type (Grimshaw and Rubery 2007). However, even in studies that control for occupation, sector or contract, significant unexplained gaps are still found. A common assumption is that the persistence of an aggregate gender pay gap and continued evidence of discrimination implies stagnation and limited change. However, there may be offsetting processes both reducing and increasing gender pay differentials and processes that benefit some groups of women but hinder others (and likewise for men). Thus far from stagnation there may be significant changes but moving in opposing directions, thereby giving rise to a relatively unchanging aggregate gap (Rubery and Grimshaw 2015).

The complexities encountered in exploring how gender is embedded in the wage distribution also applies to issues of productivity. How women's labour is valued has implications for i) how the goods and service produced are valued, thereby affecting the productivity per hour of labour measures ii) how labour quality and composition is valued iii) how unpaid labour is treated iv) how organisations are incentivised to invest in productivity enhancing technological and organisational change. Below we present some examples of these effects to illustrate how gender inequalities and productivity measures are intertwined.

2.4 How gender may impact the value attributed to the goods and service produced.

If gender inequality has direct or indirect effects on the value of goods and services, there will be effects on measures of the productivity per hour of labour. These effects are likely to vary between and within private sector goods, private sector services and public sector services, so examples are given in relation to each.

Private sector goods

International markets may limit the extent to which the local wage structure impacts on prices of private sector goods (although the law of one price is certainly one economic assumption that does not hold). However, it is only where female labour is generally used to produce a type of goods globally -for example clothing and textiles- where gender is a major cause of low prices and value (exacerbating already low wages in the global south) (Seguino 2000). Consequently, these sectors only survive in advanced economies such as the UK either when they operate at the top-quality end of the market or if they draw on highly exploited groups (for example the ethnic minority women found to be grossly underpaid in Leicester during the Covid pandemic[8]). Furthermore, the global value chain literature has pointed to the importance of power imbalances in reflecting the distribution of the total value of the chain by stage in the production process with women being located in the lower valued rungs of the chain. Thus, GVA per hour may be inflated in the UK where the organisations -for example powerful retailers- exercise power to reduce the value attached to, for example, food or clothing supplies. These reflections call into question what is meant by and what is measured by productivity statistics but also highlight the role of inequalities in power- including by gender- in shaping international trade and relative values of final product (raised for example by brands so that much of the rent in luxury goods may rest with brand owner and not with the stage where goods are produced) and the component stages of producing the final product.

Private sector services

In private services, the prices or value attached to some private services may be closely linked to wage levels due to high labour input and limited scope for technological/ organisational innovation but in other areas there is much greater scope for quality inputs from labour, capital and organisational factors to either raise value per unit of service or reduce inputs of resources per unit of value.

These variations are also found within a service area: for example in hospitality wages make up a high share of total costs in some hospitality areas while in others rents may be generated from innovative cooking and or innovations linked to standardisation, technology and marketing such as in large restaurant chains etc such as McDonalds[9] or large hotel chains which may use systematic policies of cutting costs through zero hours contracts (Grimshaw et al. 2019, Lopez-Andreu et al. 2019). The rents are not necessarily widely shared with labour and prevailing wages at the bottom of the market will impact on the price for a high share of hospitality services. In countries where minimum wages are, for example, set below living wages and part-time work in particular is low paid, then the price /value of hospitality services will also be relatively low, leading to lower measured productivity per hour compared to countries where the wage floor is higher.

In areas such as financial services the rents may be more shared, particularly among the high skilled staff but research has revealed that although women in these jobs do receive bonuses, the level of

[8] https://www.ft.com/content/cf1aa6f7-6413-4211-8363-cc9cdb77cbc1

[9] There has been UK and international action to improve pay and conditions over recent years that has led to some improvements indicating the presence of 'rent income' but a lack of voluntary rent sharing in the fast-food sector.

bonus is reduced due to gender discrimination (EHRC 2009), a practice also confirmed by legal cases[10]. Women's contributions may therefore be underestimated even when they are in the high-end jobs.

Public sector services

There are major differences across countries in how work in public services is valued: for example, within Europe the ex-Eastern bloc countries typically have a highly feminised public sector and have traditionally attached a very low value to jobs such as nursing, although several countries such as Slovakia and the Czech Republic[11] have raised pay significantly over recent years in response to strikes or mass resignations etc. In contrast southern Europe, until the recent austerity period at least, tended to have relatively high pay (Rubery 2013). The UK has held a mid-level position, with a modest premium reflecting traditions of being a 'good employer' coupled with still relatively high rates of unionisation although this has disguised processes of outsourcing many jobs to lower paying private sector employers. However, not only has pay growth in the public sector been constrained since the financial crisis but the gap between private sector pay growth and public sector pay growth is now reported to have reached its largest ever level.[12]

How labour is valued in the public sector matters for gender equality and the gender and productivity debate as a very high share of women tend to work in the public sector, particularly higher educated women. Around three in five of all women in employment with degrees work in public administration, health and education sectors in the UK (see Rubery 2013). Some public services jobs have always been highly feminised but others such as teaching have become more feminised as pay has eroded and the share of women increased. Pay for those employed in the public sector can be considered a matter of social choice. Not only is there wide variation across countries in the status and pay attached to these jobs but also there is often no pretence that the setting of public sector pay levels is mainly driven by the value of the jobs to society or even by the need to recruit and retain skilled staff. Instead, particularly since the financial crisis in the UK the dialogue has been about fiscal affordability, not about evidence of high vacancies and inability to recruit and retain, despite many jobs in the public sector requiring specific skills so that the nurse or teachers or paramedics that quit are doing so even without readily transferable skills. The state can be considered to be exercising its monopsonistic power as the main employer so that it trades off tolerating high vacancies against the costs of wage rises for the whole workforce but is protected by the lack of alternative employers, except for temporary agencies, who might offer higher wages to its semi-captive labour force. The public sector has in fact recorded higher productivity growth than the private sector alongside suppression of wage costs since the financial crisis, but TPI research (van Ark 2022a) suggests that this model is not sustainable, particularly growing vacancies in the public sector and widespread strikes indicate the limits of monopsony power.

The approach taken to pay in the public sector matters for the gender and productivity debate in two main ways. First the possibility or likelihood that women in the public sector are undervalued will impact on the interpretation of women's lifetime earnings trajectories and the growing gender pay

[10] See for example https://www.shoosmiths.co.uk/insights/comment/case-law-employment-in-the-financial-sector-stacey-macken-v-bnp-paribas

[11] Czechia and Slovakia recorded significant rises in nominal pay for nurses at 33% for Czechia and 43% for Slovakia between 2010 and 2017 while over the same period wages in Spain and the UK for nurses stagnated and fell in Portugal by 4%, all countries with strong austerity policies applied to public sector pay (OECD Health Statistics 2019).

[12] https://www.resolutionfoundation.org/press-releases/gap-in-public-private-sector-pay-growth-hits-widest-level-ever-as-public-sector-job-vacancies-hit-record-high/

gap post childbirth. Here the problem may be both underutilisation of potential but also undervaluation of the work being performed. The flat earnings profiles in later years for women graduates in particular may reflect both this undervaluation and the tendency in the public sector to provide reasonably high entry wages and some early career progression but to provide rather flat earnings potential beyond that for groups such as nurses and teachers. This reinterpretation could lead to different policy responses; do women need to change jobs to realise their potential or do their jobs need to be better valued? The second way in which it matters is that the measurement of the productivity of public sector work has traditionally been influenced by the costs of services including the costs of labour. While approaches to productivity in the public sector have become more output and less input oriented following the 2005 Atkinson report, costs of services are still used to weight the various activities; thus, if an area within public services receives higher wages than another then the weighting of their activities will lead to a higher estimate of productivity.

> For most service areas, output is measured in direct volume terms by the number of activities performed by that service area. Activities are weighted together into a cost-weighted activity index (CWAI). ONS, 2022

If feminised professions in particular are undervalued within the public sector this could reduce the apparent productivity of that area within the public sector. Moreover, this move towards more output or activity related measures still mainly applies at the individual public sector service area; for the public sector as a whole there is still more reliance on input measures and here again the public sector wage costs continue to play an important role in the value attached to the whole activity.

i) How labour quality inputs are estimated

Productivity measures need to take into account changes in the composition of the labour force to understand the role of labour supply quality in contributing to productivity growth. For example, the EUKLEMS research on productivity adjusts for quality changes in labour composition through an index to measure changes over time in labour quality. As mentioned earlier, bringing women into the labour market was the easy bit and we know that over time, women's relative wages have increased as women's human capital has increased though increased participation in education. The reality remains though that there is no easy way to aggregate heterogenous labour and consequently the index weights different labour force groups according to their average wages based on the assumption that all receive their marginal product of labour[13]. This may be considered problematic for many groups: for example, wage differentials by age are highly variable across countries and reflect social norms as to how to reward age and seniority. It is also problematic for women as their average wages reflect not only their skills and education but also any undervaluation of the work they do and underutilisation of their talents through barriers to progression. Also, a high share of women with high human capital work in public services where skills are often sector-specific so there can be no real presumption that wages reflect market competition and marginal productivity but instead are fixed by political processes. If the aim is to measure the changing real potential of the current workforce, given their human capital investments, it might be interesting to seek a measure going forward that is more independent of how women's potential is actually utilised and rewarded. One possibility could be to use male wages to weight all aggregate labour force groups by educational level for both genders as men's wages may be more reflective of full potential utilisation. There is no strong evidence that women's potential labour quality for each educational group falls below that of men's. Even if this was used alongside the current index it could focus more attention on how labour quality may be being underutilised and under rewarded within many parts of the economy.

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[13] see p. Timmer et al. (2007) p.76 http://www.csls.ca/ipm/14/IPM-14-timmer-e.pdf https://web.archive.org/web/20211102095341/http://euklems.net/TCB/2018/Metholology_EUKLEMS_2017_revised.pdf

ii) How productivity measures fail to take into account unpaid work within households

One area of activity that does not appear in the national accounts or productivity estimates at all is that of unpaid work within the household, and this gap was acknowledged by Atkinson (2005). Yet this work is essential to the production and maintenance of the labour force, akin to regular maintenance on capital stock that does appear in the accounts. This issue has been much discussed but with limited impact on how productivity is in fact measured.

iii) How lower wages for women may affect incentives for productivity-enhancing investments in capital and technology

Economists would expect that any process that keeps down wage costs – including discrimination - should bias the choice of technique towards a high labour utilisation. This issue has been looked at, although from the reverse direction, over recent years in research for the Low Pay Commission designed to explore the impact of higher minimum wages on firms, particularly since the 2016 move towards a higher National Living Wage (NLW). The key issue is how they react to higher hourly wage costs. This can be by raising prices, lowering profits or reducing labour input. In the case of the latter, this could be in response to lower demand or a response that leads to either greater work intensity (that is fewer workers or fewer hours to service the same or increasing activity) or labour displacement due to new investments in technologies or new ways of working. Research found that higher investment was relatively rare and that most of the impact was absorbed through higher prices, lower profits or higher work intensity, through some decreases in staffing, hours and increases in allocated tasks (LPC 2022). The lack of response through investment suggests either that these sectors may be suffering from the Baumol cost disease and that new technologies do not offer major opportunities for productivity improvements. Alternatively, employers may prefer the control offered by strategies to minimise guaranteed paid hours as they believe workers on flexible contracts can be more readily scaled up or down according to demand than new work arrangements based around new and higher capital investments. Whatever the reason, it seems that employers that said they would try to absorb the NLW through raising productivity were often unsuccessful, except through the work intensity route that must have its limits.

2.4. The productivity case for investing in gender equality

There are potential major benefits for both the productivity agenda and the gender equality cause to link these two issues. Too often gender equality is seen as a luxury, only to be pursued in the good times when there are sufficient funds to make the investments required.

Even if gender equality is treated as a consumption good and thus in competition with other areas of consumption, we can see in table 2 that there are many ways in which this can improve the quality of life and contribute to the objective of promoting human thriving. However, in cell A we see the main arguments against gender equality namely that the changes required to achieve these benefits will impose costs on firms and constraints on growth. However, this is in part because the current inequalities and consequent foregone growth and productivity opportunities are not considered as these may be incurred at the level of the wider society and economy, not by the individual firm.

If we can move from viewing equality as a consumption good and thus a competing claim on current consumption and instead view it as an investment in both growth and the quality of life (see cells C and D, Table 2), then the case for taking action to reduce gender equality can be seen as delivering benefits of both growth and productivity- for example by ensuring better utilisation of talent and of investments in education that are already taking place but fail to deliver their full potential. This may be due to stumbling blocks such as lack of support for childcare or employment practices that do not support dual earning households (for example long and variable working hours). Moreover, investing in institutions to align them with current patterns of behaviour and aspirations with respect to gender roles will also lead to a more coherent system of social and economic life, compatible with better well-being. The European Commission (EU 2013) in its recommendation for social investment in fact recommended policies to support women's employment not for gender equality reason but because mothers' employment has been found to have a positive impact on children, thereby helping to secure the labour quality of the next generation. However, these externalities arising from investing in women's employment should not substitute for the social justice arguments for gender equality.

The case for widening the approach to investment to include investments to foster gender equality has been further articulated by Heintz (2019) in a publication of UN WOMEN.

> An approach to investment policy that is consistent with gender-equitable inclusive growth would broaden the definition of investment to include intangible investments in human capacities, investments in capital goods used in non-market production and forms of infrastructure that raise the productivity of unpaid labour. The mix of public investment would be evaluated with regard to the long-run social returns on those investments, taking into account non-market production, and the distribution of benefits between women and men (Heintz 2019: 119).

Importantly this approach recognises that investments that reduce women's unpaid work burdens through improved infrastructure and childcare would reduce the time burden on women and enable more and more productive work in the wage economy.

> ……Women's burden of unpaid work should be reduced by investing in appropriate infrastructure. Along similar lines, with regard to forms of investment in human capacities that rely on unpaid care work, such as early childhood development, public provisioning of services such as childcare would reduce the time burden on women (Heintz 2019:119).

Furthermore, the OECD's lead for the G20 (OECD 2016) has also called for productivity and inequality policies to be looked at together with the aim of identifying complementarities to avoid both policy silos and perpetuating problems of cumulative disadvantage. Women may be considered particularly susceptible to problems of cumulative disadvantage that limit their realisation of productive potential. This cumulative disadvantage arises out of three main causes i) discrimination in employment and wages, ii) unequal burdens of care within family and iii) lack of supportive infrastructure for working parents. The problem for the productivity agenda is that policy that focuses on the currently most productive places and people limits the likely productivity improvements and is also likely to have consequences in the form of rising inequalities. Just as the levelling up agenda is stressing the need to spread investment by geographical area, so too there is a need to devise policies to promote greater development and realisation of potential across the full labour force, that is including women as well as men but recognising that different groups of women face different types of constraints and challenges so that policy needs to be sensitive to, for example, social class, age and location as well as gender. It is to what that means as a policy agenda that we now turn.

Table 2. Comparing a consumption versus an investment approach to equal opportunities policy.

	Productivity seen as	
	Growth	Quality of life
Equal opportunities policy seen as:		
Consumption	A. Imposes costs on organisations by raising wages, restricting working time flexibility, raising training bill etc. Raises social protection expenditure by expanding family support and services and individualising rights.	B Potential for positive quality of life effects as expands personal choice; redistributes resources to reduce poverty among women and children; enhances quality of working life by reducing stress and increasing reward from working.
Investment	C Ensures more effective utilisation of human resources and of investment in women's education; avoids depreciation of investment due to reduced career opportunities after childcare leave.	D Investment in development of new gender contract compatible with new patterns of work life and home life should enhance long term quality of life for men, women and children and for all varieties of families.

Source: Rubery et al. (2003)

3. Gender and productivity: the policy agenda.

This review of the interrelationships between gender and the productivity problem has sought first to establish the need to include the productivity of women's labour in any medium to long term strategy to improve productivity, similar to the recognition that any strategy for productivity in the UK has to include an agenda of 'levelling up' by region or place. The sustained increase in female employment has been shown to have made a major contribution to GDP growth over recent decades, compensating in part for low productivity growth in sustaining living standards but the scope for increased employment, particularly without better care support, has now diminished and the harder objective of raising the value and productivity of female labour and moving towards more equal male and female working hours has yet to be effectively tackled. If the overall goal of higher productivity is to enhance wellbeing for the whole society, then it is time to address these issues.

Yet a second key argument developed throughout this review is that there is no simple fix to the problem of an apparent deficit in the productivity of women's employment. Simple prescriptions such as women moving into male-dominated occupations- as proposed for example by the 2006 Women and Work Commission- will not work as the jobs that women currently do are often in key services. These are the jobs that had to be kept open during the pandemic so if women were to move out not only would men need to take over, often unwillingly, but also the low measured productivity problem would continue. The measured low productivity in many areas of women's work reflects both low investment in these sectors and occupations and undervaluation of these jobs relative to their importance to the functioning of our society. Furthermore, although there is much that can be done at the level of the firm to change both labour allocation and work organisation practices to reduce discrimination and facilitate the employment of working parents with childcare responsibilities, the momentum behind such a change requires a commitment at government policy level to provide the necessary investment in social infrastructure plus the mandated changes in employment practices that enable the incomplete gender revolution to be completed. The experience during COVID in relation to remote working should cast doubt on the argument that if a practice is something that works then we can rely on employers to adopt it. Before COVID employers were convinced that remote working was not possible at acceptable levels of productivity; there now needs to be a similar push to encourage employers to provide both opportunities for more flexible working but also more skill development and progression for those opting for flexible working.

If women's employment is to contribute both to measured productivity and to enhanced societal well-being there is a need to act on a range of fronts. The aim should be not only to improve women's access to the current jobs structure to ensure full and equal development of their skills and potential but also to change the organisation of jobs and the values attached to jobs to remedy undervaluation and improve combinations of work and care for both men and women.

This Identified need for more holistic change is not, however, an argument against policies that may provide only incremental advances. The first stage of women's increased independence and integration in the labour market has proceeded by small incremental steps and more significant larger changes, supported by new policy and legislative initiatives. Ultimately moving towards a new social settlement or contract (Shafik 2022) is only likely to come through both incremental policy changes and through observed changes in social attitudes and in both men and women's behaviour and aspirations. The more holistic vision of what a more productive and gender equal society would look like provides an indication of the direction we may need to move in rather than an obstacle to continuing to seek incremental change. The current cost of living crisis and the new round of austerity measures may not provide an ideal climate for making the argument for rethinking growth, investment and productivity strategy to be more inclusive – by gender, social class and location- as research suggests that gender initiatives are easier to place on the political agenda in the good times (Annersley et al. 2014). However, the not so good times have now lasted since the financial crisis and the consequences of not investing in both the social as well as the physical infrastructure to ensure an adequate labour supply to meet societal needs is becoming more evident in the 2022/23 'winter of discontent' and rising labour shortages particularly in public services.

Policies are therefore needed both to support both improved access for women to employment that also provides for skill development and progression to higher paid jobs and to assess and address revealed issues of undervaluation of women's current employment. In table 3 we distinguish between policies that need to be enacted through public expenditure choices at societal level and those that would need to be enacted through changes to practices at the sector, occupation, firm or work group level, while recognising that government policy initiatives may still be needed to kick start the latter through incentives or indeed to mandate change within organisations.

Table 3: A policy agenda for gender equality and productivity.

	Improving women's access to employment and skill development	**Revaluing women's work**
Societal level	• Investing in care infrastructure- childcare and social care (also in levelling up policies). • Investing in gender-friendly transport systems (buses not only cars/trains). • Paid parental leave for both parents. • Support for skill development/retraining. • Policies to promote the spread of high-quality work across all geographical areas, as women tend to be less mobile between areas.	• Revaluing public sector employment and public sector professions. • Ensuring funding for outsourced public services is compatible with fair value of the work.
Sector, occupation, firm or work group level	• Flexible working as a right from day one. • Ensure all who work flexibly have access to training/ promotion. • Strengthen implementation of age discrimination legislation to enable women returners to restart careers. • Move towards shorter full-time working hours to enable women to work full-time and facilitate shared parental responsibility for childcare. • Right to hybrid working where remote working is possible. • 'Right to disconnect'.	• Raising wage floors (wages and guaranteed hours). • Extend gender pay gap reporting regulations – in line with EU pay. transparency directive (burden of proof on employers that pay reflects equal value).

This policy agenda for improved access requires social investment to be identified as positive for the development of a productive economy that promotes well-being for the whole society. There is a strong need for policy to be sensitive to geographical variations in access to good quality jobs is particularly important for women as they are less likely to be mobile between areas and regions as men rarely act as trailing spouses and women's commuting range is often restricted by childcare responsibilities. There is further a need for a push on social investment stems in part from a failure to adapt institutions to meet the changing patterns of gender relations and women's increased participation in both education and employment. The country has benefitted from the increases in economic growth stemming from higher female participation but without laying the foundations for full development and utilisation of women's talents nor for developing a sustainable approach to meeting the society's care needs.

The change in gender relations is also likely to stall without further support for changes in men's behaviour and involvement in care, including paid parental leaves for men on a use it or lose it basis (Akgunduz and Plantenga 2013)) plus strengthened rights within sectors and firms to limit working hours and adjust them to meet care needs. Both men and women need the right to request flexible working from the point of hire to meet their own family needs but individualised solutions, while necessary, are unlikely to be sufficient to reduce inequalities without moves towards more sustainable working hours for all, involving possibilities of shorter full-time working weeks and rights to disconnect outside of working hours.

Stronger rights for employee-driven flexibility also need to be combined with greater opportunities for training and development for all working flexibly and including those returning to work after a period of childcare. To overcome employer resistance this may need public policies to fund for example individual learning accounts but alongside new funding there needs to be enhanced enforcement of existing protections by age and gender for those applying for jobs at non-standard ages and/or in non-standard employment to guard against those working flexibly being denied progression opportunities. These changes to meet employee needs ought to be reinforced by new limits on employer-driven flexibility policies – for example by withdrawing the opt out on long working hours, introducing notice of changes to schedules and higher guarantees of working hours. Such policies are found in some EU countries: for example, in France and Germany there is no general provision for opt outs from long hours and both require notices of changes to schedules and upgrading of contracted hours (only in some collective bargaining agreements in Germany (Rubery et al. 2022)).

The policy agenda for raising the value of women's work also needs to operate along multiple strands as there are different undervaluation issues that affect different groups of women workers. The need for action to revalue public sector work has become very evident in the 2022/23 'winter of discontent' where strikes are associated not just with the cost-of-living crisis but also with the long term erosion of public sector pay since the financial crisis and with the consequent record vacancy levels. However, even restoring pre crisis wage levels will not fully resolve issues of value; it is women in public sector professional jobs that are likely to be particularly affected by the 2022 decision to extend the loan payback period on graduate loans from 30 to 40 years, adding a significant tax of 9% of earnings above a threshold to the tax rate faced by women from their 50s into their 60s if they still have outstanding loans due to time out or part-time work periods for childcare.

There also needs to be a policy of ensuring that the price paid for outsourced work by the government is sufficient to pay decent wages; underfunding is a key problem for female-dominated sectors such as social care, early years education, cleaning and catering. A key defence against undervaluation is a relatively high minimum wage; significant progress has been made in raising the relative value of the minimum wage since 2016 but there is still a gap between the legal mandated rate and the 'voluntary' real living wage recommended by the Living Wage Foundation NGO. Closing this gap would help pay in these sectors – but not necessarily improve pay progression opportunities. Even more urgent is to prioritise the development of rights to guaranteed hours (or alternatively disincentives for employers' use of casual working by, for example, through adding a premium to the minimum wage as applies in Australian awards for casual workers) since the incidence of low *weekly* pay among women is still very high in the UK compared to other countries.

While all these policies could help there is no easy solution to eradicating the embedded practices of discrimination by gender in pay structures and pay practices. In a world of largely management-determined pay system, the notion of equal pay for equal value has largely disappeared as a key principle in pay setting. There could therefore be some benefit in introducing a version of the new EU pay transparency directive into UK law, despite Brexit. The advantage over our current gender pay gap reporting practices is the emphasis on it being the employer's responsibility to explain and account for any large gender pay gap with refence to the principles behind pay setting and to make the case that the wage system is compatible with the principles of equal pay for work of equal value. This could at least start a debate on what principles should underpin pay setting and open up possibilities for a fairer system in the future.

4. Summary and conclusions.

Integrating the productivity and equality agenda is essential for a medium to long term strategy for raising productivity that aims at improving well-being for all and doing no harm. The alternative is to accept an increasingly polarised society as the debate on levelling up and productivity has recognised (van Ark 2022b). This means also aiming to address gender inequality that affects half the population within the productivity agenda and to do so from an intersectional approach that identifies different problems and different policy solutions for different groups of women.

Women's investments in education and steadily rising higher employment participation have constituted important sources of growth in OECD countries over recent decades but these represent relatively easy 'wins' for growth compared to the changes that now need to be made to make full use of women's talents and potential in employment while guarding against both requirements on women to undertake a double shift of paid and unpaid work and any harm to the well-being of the nation's children though support for working parents of both genders. In short institutional change requiring public investment and changes to employment arrangements and practices has not kept pace with the major changes in women's engagement in education and employment and indeed in gender relations and behaviour in the wider society. The 'incomplete' revolution cannot, however, be reversed and the low productivity problems stem in part from a mismatch between this major social change and institutional arrangements, both publicly funded infrastructure and policies and employment practices, that continue to treat women as contingent labour market participants and economic dependants whose primary concerns are with their care responsibilities, while men continue to be regarded as unencumbered by commitments outside of work.

Looking at productivity with a gender lens reveals not only problems of underutilisation of women's potential talents and skills within the current jobs and pay structures, but also the undervaluation of women's current contributions to growth and the productivity within those jobs and pay structures. Remedying both problems require a medium to long term agenda, stemming from political commitments to a more equal society by gender and social class. In the meantime, there are many incremental changes that could still begin to make a difference, from ending the erosion of public sector pay to strengthening rights not only for opportunities to work flexibly but also to ensure that those working flexibly enjoy better employment security and better opportunities for skill development and progression than under current arrangements.

References

Akgunduz Y. E: and Plantenga J. (2013) Labour market effects of parental leave in Europe, *Cambridge Journal of Economics* 37 (4): 845-862

Andrew, A., Bandiera, O., Costa-Dias, M. and Landais, C. (2021) *Women and men at work*, IFS Deaton Review of Inequalities

Annesley, C. Engeli, I., Gains, F., and Resodihardjo, S.L. (2014) Policy Advocacy in Hard Times: The Impact of Economic Performance on Gendering Executive Attention, West European Politics, 37:5, 886-902,

Becker, G. (1985) Human Capital, Effort, and the Sexual Division of Labor *Journal of Labor Economics* 3 (1) Part 2:. S33-S58

Britton, J., Dearden, L., van der Erve, L. and Waltmann, B. (2020)*The impact of undergraduate degrees on lifetime earnings* IFS, ESRC, DoE https://ifs.org.uk/sites/default/files/output_url_files/R167-The-impact-of-undergraduate-degrees-on-lifetime-earnings.pdf

EHRC (2009) *Financial Services Inquiry*, EHRC Manchester https://www.equalityhumanrights.com/sites/default/files/financial_services_inquiry_report_0.pdf

England P., Budig M., Folbre N. (2002). Wages of virtue: The relative pay of care work. *Social Problems*, 49, 455-473.

Esping-Anderson, G. (2009) The Incomplete Revolution: Adapting to Women's New Roles, *Polity Press:* Cambridge

EU (European Commission) (2013) *Communication: Towards Social Investment for Growth and Cohesion – including implementing the European Social Fund 2014-2020* COM (2013) 83

Fleetwood, S. (2007) Why Work-Life Balance Now? *The International Journal of Human Resource Management* 18(3):387-400

Grimshaw D, Cartwright J, Keizer A and Rubery J (2019) Market exposure and the labour process: The contradictory dynamics in managing subcontracted services work. *Work, Employment and Society* 33(1): 76–95.

ILO (2022) *Working Time and Work-Life Balance Around the World* ILO Geneva

Krugman, P. (1994) The age of diminishing expectations, MIT Press: Boston

López-Andreu M, Papadopolous O, Jamalian M (2019) How has the UK hotels sector been affected by the fissuring of the worker–employer relationship in the last 10 years? Director of Labour Market Enforcement https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/814594/UK_Hotels_Sector_Director_of_labour_market_enforcement_July_2019.pdf

LPC 2022 The National Living Wage Review (2015-2020) Low Pay Commission

Oaxaca, R. (1973) Male -female wage differentials in urban labour markets, *International Economic Review*, 14 (3): 693-709

OECD (2015) The *Future of Productivity* OECD Paris https://www.oecd.org/economy/growth/OECD-2015-The-future-of-productivity-book.pdf

OECD (2016) *The Productivity and Equality Nexus* OECD Paris https://www.oecd.org/social/productivity-equality-nexus.htm

OECD (2018) *Is the Last Mile the Longest? Economic Gains from Gender Equality in Nordic Countries* OECD Paris https://www.oecd.org/els/is-the-last-mile-the-longest-economic-gains-from-gender-equality-in-nordic-countries-9789264300040-en.htm

OECD (2019a) Women at Work in G20 countries: Progress and policy action OECD Paris https://www.oecd.org/g20/summits/osaka/G20-Women-at-Work.pdf

OECD (2019b) *Part-time and Partly Equal: Gender and Work in the Netherlands* OECD Paris https://www.oecd-ilibrary.org/social-issues-migration-health/part-time-and-partly-equal-gender-and-work-in-the-netherlands_204235cf-en

OECD (2019c) *Governance at a Glance* OECD Paris

OECD Health Statistics (2019) *Remuneration of nurses* OECD Paris https://www.oecd-ilibrary.org/sites/a44d2e24-en/index.html?itemId=/content/component/a44d2e24-en

ONS (2022) Public Service Productivity: Total UK QMI https://www.ons.gov.uk/economy/economicoutputandproductivity/publicservicesproductivity/articles/publicservicesproductivityestimatestotalpublicservices/2019

Padavic, I., Ely, R. J., & Reid, E. M. (2020). Explaining the Persistence of Gender Inequality: The Work–family Narrative as a Social Defense against the 24/7 Work Culture. *Administrative Science Quarterly*, *65*(1), 61–111. https://doi.org/10.1177/0001839219832310

Rubery, J. (2013) 2013. Public sector adjustment and the threat to gender equality. In Daniel Vaughan- Whitehead (ed.), *The Public Sector Shock. The Impact of Policy Retrenchment in Europe*, pp. 23–43. Geneva, Switzerland: International labour Office.

Rubery, J. (2015) Austerity, the Public Sector and the Threat to Gender Equality Geary Lecture 2014 The *Economic and Social Review, Vol. 46, No. 1, pp. 1–27*

Rubery, Jill, and Damian Grimshaw (2015) The 40-year pursuit of equal pay: A case of constantly moving goalposts. *Cambridge Journal of Economics* 39(2): 319–43.

Rubery, J., Smith, M J., Grimshaw, D., Humphries J, Fagan C (2003) Equal Opportunities as a Productive Factor In: B Burchell, S Deakin and J Michie, editor(s). *Systems of Production: Markets, Organizations and Performance*. Routledge; 2003.

Seguino S. (2000). Gender Inequality and Economic Growth: A Cross-Country Analysis. World Development, Vol. 28, No. 7, pp. 1211-1230.

Shafik, M. (2021) *What We Owe Each Other: A New Social Contract* London, Penguin

Taylor, M. 2017 Matthew Taylor, 2017, Good Work: the Taylor review of modern working practices

Timmer, M., O'Mahony, M. and van Ark, B. (2007) EU KLEMS Growth and Productivity Accounts: An Overview *International Productivity Monitor* pp 71-85

Van Ark, B. (2022a) Can public services improve their productivity without new funding? https://www.productivity.ac.uk/news/can-public-services-improve-their-productivity-without-new-funding/

Van Ark, B. (2022b) Levelling up productivity: How long termism and decentralisation could lift all boats https://www.capita.com/our-thinking/levelling-productivity-how-long-termism-and-decentralisation-public-policy-could-lift-all

White, P. and Smith, E. (2022) From subject choice to career path: Female STEM graduates in the UK labour market *Oxford Review of Education*, 48 (6): 693-709