Chapter 5
Remote work as a new dimension of polarisation: Individual and contextual determinants of the relationship between working from home and job quality

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1. Introduction

Working from home made it on to everyone's radar with the Covid-19 pandemic and the onsets of lockdowns. Before that it was relatively rare, albeit slowly rising. This changed with the pandemic, making it all the more relevant to investigate the link between working from home and inequalities in the labour market.

This chapter focuses on the drivers and labour market effects of 'working from home'. While there are various reasons for and types of work done at home, one of them is the use of remote work where tasks as an employee are carried out from other locations than the corporate office (Rupietta and Beckmann 2016; Bolisani et al. 2020; Eurofound 2022). In this chapter I mainly focus conceptually on the type of remote work carried out at home.

Working from home, where it entails remote work otherwise done in an office, differs in its compatibility with the tasks that need to be carried out in a job: as with other digital technologies, access to remote work and its effect on the workers using it is essentially heterogenous. Increased flexibility generally benefits disproportionately the higher skilled and those whose jobs could more easily move to a remote location, while the lower-skilled and those in jobs requiring personal contact are at risk of being left behind (Autor et al. 2003; Michaels et al. 2013; Autor et al. 2020).

Working from home is on the increase and is unlikely to return to pre-pandemic levels, so it is important to consider its effects on the world of work. This type of remote work can exacerbate inequality by forming a new cleavage between workers. Those who are able to work from home are, in general, those who were already better off while access to working from home can be linked not only with better work-life balance but also higher wellbeing and even productivity which can, in time, be associated with higher wages. This stands in contrast to those workers, often in client-facing tasks, who are paid less, have less secure conditions and who cannot access different types of remote work or carry out the core of their work tasks from home.

This chapter sets out to describe the situation of working from home in Europe, focusing on three main points. First, to what extent do changes in telework during the pandemic follow existing inequalities where the more advantaged are also more likely to end up in telework? Second, while some aspects of the jobs of home workers are expected to be better, there are also downsides for instance in terms of work intensity. This points to the need to consider the wider dimensions of job quality and go beyond only

studying income (Muñoz de Bustillo 2011; Piasna 2017). Third, while teleworking has increased overall and is likely to have followed traditional lines of disadvantage, there is no inevitability about this. Teleworking is still partly determined by the level of digital technology within the company and may not be equally accessible overall. As more technologically intensive sectors can be expected to differentiate more between their workers in access to telework, I expect greater inequality of access between workers in those sectors (Zwysen 2022). There may also be differences in how telework is arranged depending on the presence of trade unions and appropriate worker representation, as with other aspects of inequality (Zwysen 2022).

This chapter uses representative data from across European countries to address these three points. Section 2 provides an overview of the rapidly increasing literature on working from home and telework, with a focus on the situation prior to the Covid-19 pandemic and its estimated impact, although this is still unfolding. Then I describe the EU Labour Force Survey (LFS) – a cross-nationally representative European data set – which is used in this chapter. I go on finally to discuss the main findings.

First, indeed, the growth in working from home is mainly accruing to those who are more advantaged on the labour market. Second, working from home itself is associated with, on average, better working conditions and higher wages, although also with generally higher working hours. Finally, there is substantial variation in how unequally telework is growing between sectors and countries. Access to telework is more unequally divided between workers depending on their qualifications, demographics or work status in more technologically intensive sectors, while there is less difference in this access in countries and sectors with stronger worker representation through greater union density which, therefore, has the potential to curtail some of this inequality.

2. Background: working from home before and during the pandemic

2.1 Who is teleworking?

Prior to the Covid-19 pandemic, working from home was still relatively rare. In 2010 around 5.4 per cent of workers in the EU usually worked from home and 5.2 per cent did so occasionally. By 2019, there had been no real change in the percentage usually working from home, although the share of occasional teleworkers had increased to 9 per cent (Milasi et al. 2020). These relatively low shares, however, hid enormous variation between countries, sectors, occupations and even within occupations (Milasi et al. 2020; Zwysen et al. 2021). These variations reflect differences in the types of tasks carried out and the ease with which they can be done remotely (Adams-Prassl et al. 2022), differences in infrastructure such as broadband coverage, and differences in digitalisation and digital skills (Sostero et al. 2020). However, the differences between sectors, occupations and countries were mainly due to differences in willingness to allow telework.

Working from home was more common among autonomous knowledge workers, such as in IT, or in those jobs where productivity could easily be monitored, such as call centres. It was mainly used as a benefit or perk to attract more highly skilled workers and tie them to the company and, in that sense, it most often accrued to full-time and established workers, the more highly educated and those doing higher skilled tasks (Rupietta and Beckmann 2016; Holgersen et al. 2021; Adams-Prassl et al. 2022).

Clearly, the share of workers actually working from home was substantially lower than the share of jobs that could, relatively easily, be moved remotely. Several studies have estimated the total amount of jobs that could be performed remotely based on their task content (e.g. Adams-Prassl et al. 2022; Baker 2020; Dingel and Neiman 2020; Holgersen et al. 2021). These estimates indicate that between 33 per cent and 44 per cent of employment in Europe is suitable for telework (Sostero et al. 2020). There are vast differences between jobs, however, and these fall on traditional lines with nearly three quarters of the 20 per cent of highest earners potentially able to telework compared to only 5 per cent of those with wages in the bottom 20 per cent (Sostero et al. 2020). Tasks that can be teleworked are more often done by men, the university educated and those with a permanent contract (Adams-Prassl et al. 2022).

There is a clear link between those tasks that can more easily be done remotely, as they require less interaction or manual work, and the extent to which these tasks are valued. The result is that teleworking links to labour market inequalities and polarisation more widely (Dingel and Neiman 2020; Sostero et al. 2020; Holgersen et al. 2021; Adams-Prassl et al. 2022). This echoes the polarising nature of technological innovation overall, which is generally complementary to higher skilled jobs and to those tasks that are more valued, such as cognitive and abstract tasks (Menon et al. 2019; Autor et al. 2020).

During the pandemic many governments initiated shutdowns or limited mobility and telework often became all but obligatory where possible (Samek Lodovici et al. 2021; Zwysen et al. 2021). This shift was quickest and easiest for those jobs that already had some experience with teleworking and those tasks that could readily be done remotely (Adams-Prassl et al. 2022). Often the more productive firms had already adopted some telework and were quickest to extend this (Criscuolo et al. 2021). The pandemic pushed ahead technological innovation that was already happening and sped up this process with new technologies, capabilities and management practices. These investments were mainly made by firms with higher skilled workforces and those that were already more technologically advanced (Valero et al. 2021). The pandemic thus widened this polarisation but also added a problematic dimension as those workers in jobs that could not be done from home – more often the lower paid, the lower educated, women and those in smaller and less productive firms – were either at greater risk of losing their jobs or otherwise of contracting Covid-19 (Criscuolo et al. 2021; Adams-Prassl et al. 2022; Felstead and Reuschke 2020).

There is a high likelihood that working from home will remain, in some form at least, after the pandemic. Surveys show that both employees and employers report wanting to retain some working from home, with probably a hybrid system as the most favoured option (Barrero et al. 2021; Bloom et al. 2021; Criscuolo et al. 2021). In one interesting

study, Adrjan et al. (2021) monitored references to telework from job postings online across the OECD following the pandemic. These show a sharp increase when there are mobility restrictions but no similar decline when these are lifted, which they take to mean that telework will stay.

This chapter uses cross-national European data to analyse the growth in working from home over time due to the Covid-19 pandemic and the extent to which this varies by worker characteristics. I anticipate sizeable increases in working from home, with this increase mainly accruing to higher educated workers and those working in higher skilled occupations. Besides these differences by education and job type, I also expect differences by gender, age and employment contract. Such differences would then widen the gap between those that are more protected and advantaged on the labour market and those that are not.

2.2 How does working from home affect the job?

A lingering question in the literature concerns the link between working from home on the one hand and productivity and worker wellbeing on the other. Several studies have addressed this question. The main takeaway is that the relationship differs between tasks: some types of work benefit from working undisturbed and autonomously while other tasks can be done more effectively with face-to-face contact and the quicker communication that this entails. The opportunity for workers to do some work from home does, overall, seem conducive to greater productivity and wellbeing. One possible downside, however, can be that time spent working from home is not as visible and can jeopardise promotions or training opportunities (Criscuolo et al. 2021; Harrington and Emanuel 2021). Productivity is generally important when considering the business case for working from home but, through links with worker wages, unequal access to telework combined with productivity differences may lead to greater differences in earnings.

Kazekami (2020) shows in Japan that workers who telework reported higher labour productivity – based on their annual income per hour worked – and generally greater life satisfaction. This was especially the case for those with long commutes and those who experienced substantial interruption at work. The benefits were mainly present with more limited telework, however, as more intensive working from home brought problems in combining home life and work. In a German study, Rupietta and Beckmann (2016) find a positive relationship between employees' work effort and working from home which then had a positive effect on productivity. In an interesting study of one Fortune 500 firm, Harrington and Emanuel (2021) find that the productivity of call centre workers improved substantially when working from home rather than in the office, but there was a decline in promotion opportunities regardless as teleworkers were more often overlooked. This resulted in a general negative selection of workers into telework. In their survey of voluntary teleworkers, Golden and Gajendran (2019) conclude that the effects on job performance ranged from slightly benign to overall positive, with variation due to job type and the required interdependence and social support.

On the other hand, Battiston et al. (2017) report the results from a natural experiment on the speed of handling emergency 999 calls in the Greater Manchester region which required cooperation between a handler and an operator. They find that productivity was higher when teammates were assigned desks in the same room rather than when the assignments, which were done at random, put them in different rooms. This is because there was no need to communicate electronically when desks are close together. In another interesting study, Künn et al. (2020) use the natural opportunity provided by the pandemic to study changes in the quality of game that chess grandmasters play when moving from in-person tournaments to an online setting, finding that the quality of a grandmaster's game declined when done online.

The mass use of telework following the Covid-19 pandemic has allowed for more studies on the associations between hours worked and the productivity effects of working from home. Generally, the move to a home office is associated with workers reporting getting at least as much done as before, if not more, but also in spending more time working (Bolisani et al. 2020; Bloom et al. 2021; Giovanis and Ozdamar 2021; Lewis et al. 2021; Weitzer et al. 2021). Using data on emails and online meetings in 16 metropolitan areas in North America, Europe and the middle east, DeFilippis et al. (2020) find that teleworkers spent on average 11.5 per cent less time in meetings per day, despite doing more of them, and that they worked almost 50 minutes longer. When surveyed, most employees as well as managers reported an increase in work done and in productivity (Etheridge et al. 2020; Criscuolo et al. 2021; Escudero and Kleinman 2022). There are some studies that also report declines (Weitzer et al. 2021), however, and some variation between groups with possibly worse outcomes for women (Del Boca et al. 2020) and the lower educated (Morikawa 2020).

The quick shift to telework following the pandemic posed problems for workers as supporting measures were often not taken and workplaces were not prepared. This brought stress and also some health and safety risks as home workspaces were not properly adjusted (Bolisani et al. 2020). Studies carried out in the initial phases of the pandemic find some increased psychosocial risks and stress for people working from home, stemming from the difficult combination of work and family life and through increased isolation from colleagues (Bolisani et al. 2020; Giovanis and Ozdamar 2021; Felstead and Reuschke 2020).

Despite problems with the urgent roll-out and the mixed experiences, most studies indicate that working from home was generally a positive experience for employees. This average response hides a possible polarisation in which most workers reported greater perceived productivity and quality of life while another, but on average smaller, group reported adverse effects (Bolisani et al. 2020; Weitzer et al. 2021; Troll et al. 2022). The reason for different experiences can lie in workers' attributes, such as their self-control and support strategies (Troll et al. 2022), as well as in the material conditions and level of support from management. Importantly, one UK study finds that 76 per cent of workers in the UK in 2021 reported that the stigma related to working from home had been reduced (Bloom et al. 2021) (see also Arabadjieva and Franklin, this volume).

However, there does seem to be a mismatch between employers and employees in the value placed on working from home, according to a vignette experiment in Poland where workers and employers responded to different scenarios indicating what amount of income they were willing to forego or pay for the right to telework. Workers saw working from home as a benefit for them but also as a positive for their work and were prepared to give up only a small percentage of earnings (around 5 per cent) for the right to telework. Employers, however, saw telework mainly as a negative and valued the right to telework at a cut in pay of 40 per cent (Lewandowski et al. 2022).

This chapter studies the association between working from home and different aspects of the quality of jobs over time. Based on these studies, the relationship between working from home and productivity on the one hand and job quality on the other is not so straightforward and will differ between workers and employers. While some studies establish greater productivity and an association with higher incomes of those doing telework (Eurofound and ILO 2017; Abrams 2019; Kazekami 2020; Harrington and Emanuel 2021), working from home can also bring the risk of a blurring of the boundary between work and time off, which shows itself in less predictable or long working hours (Eurofound and ILO 2017; Abrams 2019; DeFilippis et al. 2020). Overall, there is some indication that workers are generally able to be at least as productive and do their work when working from home. There is also a largely positive association with work-life balance. On the downside, many workers report that they work more hours. This could mean that indeed labour productivity – and possibly, in the longer term, earnings – might increase when working from home but at the cost of more hours and longer work weeks.

2.3 What is the role of structural and institutional factors?

This overview has highlighted that telework itself can be complementary to specific types of tasks and jobs where those who do this type of work benefit from doing some work from home. In this way differences in wages and job quality on the labour market may form along this divide of having access to the opportunity of working remotely. Those that benefit can, to some extent, be more productive and present a possible cost saving for employers as opposed to those who cannot work from home. While some jobs do not allow it, this difference in access can also be due to less relevant factors such as type of employment contract or demographic characteristics (Behrens et al. 2021; Davis et al. 2022). Similar to routine- or skill-biased technological change in general (Autor et al. 2003), the spread of telework could see a widening gap between these two groups.

There is, however, also substantial variation between countries and sectors not only in the adoption of working from home but also in who specifically can access it and its potential link with inequality. Remote working requires technological capabilities within the workplace as well as digital skills on behalf of the worker (Criscuolo et al. 2021). It is then to be expected that those sectors and countries that invest more heavily in new technologies will see a more rapid increase in the share of workers working from home. This technology is likely to increase gaps between the higher skilled and the lower skilled in which it is disproportionately the former who are accessing remote work.

While technological factors and economic imperatives may lead to greater inequality and division between workers within firms and sectors as to who works remotely, there is also a role to be played by collective agreements and worker representation (Samek Lodovici et al. 2021; Eurofound 2022). Such agreements can formalise the right to work from home and make it more equally available within a firm and sector.

I expect, first, that countries and sectors with greater technological innovation have seen a larger and more unequal increase in workers working from home. Second, I expect that countries and sectors with stronger worker representation or collective agreements have seen a more equal spread between profiles of workers.

3. Data and methods

This chapter uses data from the EU Labour Force Survey, 2018 to 2021, and covers EU Member States as well as Norway with cross-nationally comparable questions. The data are restricted to those aged 15-69.

The main question of interest concerns the location of work. Here, the data differentiates between a person usually working at home, doing so sometimes or never doing so. This question therefore only captures working at home, which is conceptually different from remote work or telework – which are the focus of the literature review and conceptual framework – as it can also contain other forms of work for an employer and which are remunerated, such as domestic industrial production or platform-mediated gig work (ILO 2021). However, within the context of the wealthier European countries, and given that the focus is on the change over time in working from home, most of those workers who report working from home, especially the increase therein since 2020, are likely to be teleworkers.

I distinguish the data on the basis of four characteristics: gender (men and women); highest obtained qualification (low: at most lower secondary; intermediate: upper secondary or post-secondary non-tertiary; or high: tertiary); level of occupational skill (low skilled: elementary occupations; medium skilled: clerical support, services and sales, skilled workers and plant operators; and high skilled: professional, managerial and associate technical); and working time (full-time or part-time) and type of contract (indefinite or temporary).

The first research question concerns the change and the gaps between groups occasioned by the pandemic. To describe this, I analyse whether people never, sometimes or usually worked from home in the year of the survey and allow for trends over time to differ by education, gender, occupational skill and working time or type of contract. The model is estimated through a multinomial logistic regression with weights to be representative of the working age population, including separately entered interaction terms and including country fixed effects as well as control variables.

The second question concerns the relationship between working from home and various dimensions of job quality. While wages are of course a crucial aspect of work,

it is also important to consider this concept more widely, particularly focusing on job security and working conditions. While there is discussion about how to measure job quality, there is consensus on the importance of working time and the intensity of work, the security of a job and its contractual arrangements, all of which capture a worker's conditions and prospects. Based on the available data, this chapter encapsulates job quality through five separate variables in order to go beyond only looking at the wage but to consider the wider dimensions of job quality (Muñoz de Bustillo 2011).

The intensity and reliability of work is measured as (1) whether or not hours vary substantially from week-to-week; and (2) whether someone works 40 hours per week or more. Income (3) is measured through the relative wage (in country-specific income deciles). Under-employment and thereby job security is captured through (4) whether the respondent works under a part-time contract because they could not find a full-time position; or (5) under a temporary contract because they could not find a position with an indefinite contract (Piasna 2017). I model whether each of these aspects of job quality differs by whether workers work never, occasionally or usually from home. To test variation over time I allow this relationship to differ over time.

Finally, the third research question concerns the drivers of the rise in telework and its unequal distribution. To capture variation between sectors I include two key aspects that varied between groups of sectors and countries prior to the pandemic (2018). First, I study the variation between countries and sectors in their level of technological investment. This is captured here through industry-specific investment in ICT equipment, including software and databases, expressed as a share of non-residential gross fixed capital formation (Michaels et al. 2013; Kristal and Cohen 2017; Calvino et al. 2018). This measures investment in new technologies which can then be used for production. Where possible, data are obtained from national accounts provided through the OECD. Where this is not available, I obtain data through the 2018 update of the 2017 EUKLEMS data. Second, the extent to which worker representation, captured by union density at sectoral level within a country, can play a role in the regulation of telework and the division of it provides an important and original dimension. Union density is taken from the Database on Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts (ICTWSS version 6.1) by country, sector (12 large groups) and year (Visser 2019).

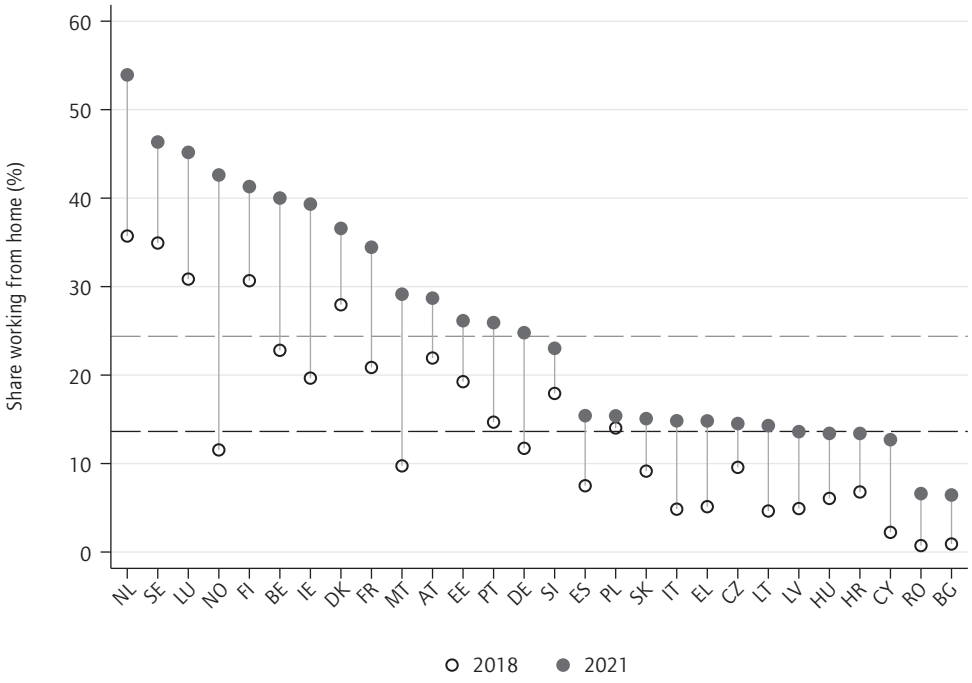
I estimate a model where the difference in the growth of working from home at least occasionally over time, found between workers based on their characteristics (high qualifications, high skilled occupations, young workers, gender, non-standard work), is allowed to differ by technological investment and trade union density. As in all other analyses it is weighted and controls for other aspects of the worker and the work.

4. Findings

4.1 Who is working from home?

The first key question addressed in this chapter is the extent to which the increase in working from home differs between types of worker; specifically, whether inequality of access is on the rise.

Figure 1 **Share of workers occasionally working from home**

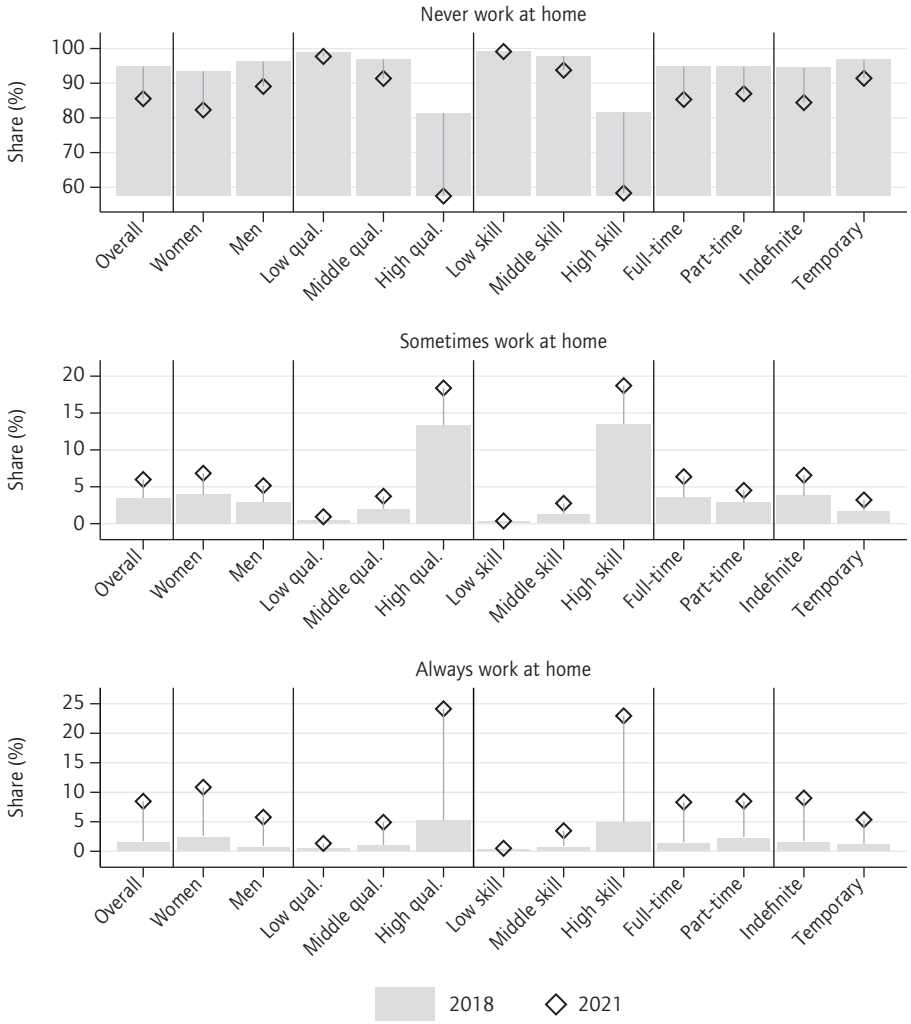


Note: Share of workers occasionally working from home in 2018 and 2021. Lines indicate the weighted average across included countries for 2019 (black) and 2021 (gray).
Source: LFS 2018-2021.

Figure 1 shows the share of workers who work at least sometimes from home. The first major takeaway is that there are massive differences between countries (Sostero et al. 2020; Zwysen et al. 2021). While over a fifth of workers in Sweden, Finland, Denmark, Netherlands, Luxembourg, Belgium, Austria, France, the UK and Ireland – primarily richer, northern and western European countries – already had some experience with working from home in 2018; this was the case for fewer than 5 per cent in Romania, Bulgaria and Cyprus, and was generally very low in the southern and eastern European Union Member States. These country differences partly reflect differences in the tasks carried out and the infrastructure (Sostero et al. 2020), but very much also the extent to which working from home is accepted and generally offered, as well as its regulation (Eurofound 2022). From the onset of the pandemic, there was an increase of around 10 percentage points on average. Up to 2020 there was a particularly stark increase in

Italy, Malta, Luxembourg and Ireland. With the hesitant opening up of the economy in 2021, there was an overall large change in Norway, Ireland, Malta, Netherlands, Belgium, Luxembourg, France and Germany. This suggests that the already existing regional disparity within Europe in the proportion of workers occasionally working from home worsened with time.

Figure 2 **Change in working from home by different regularities, 2018 to 2021**



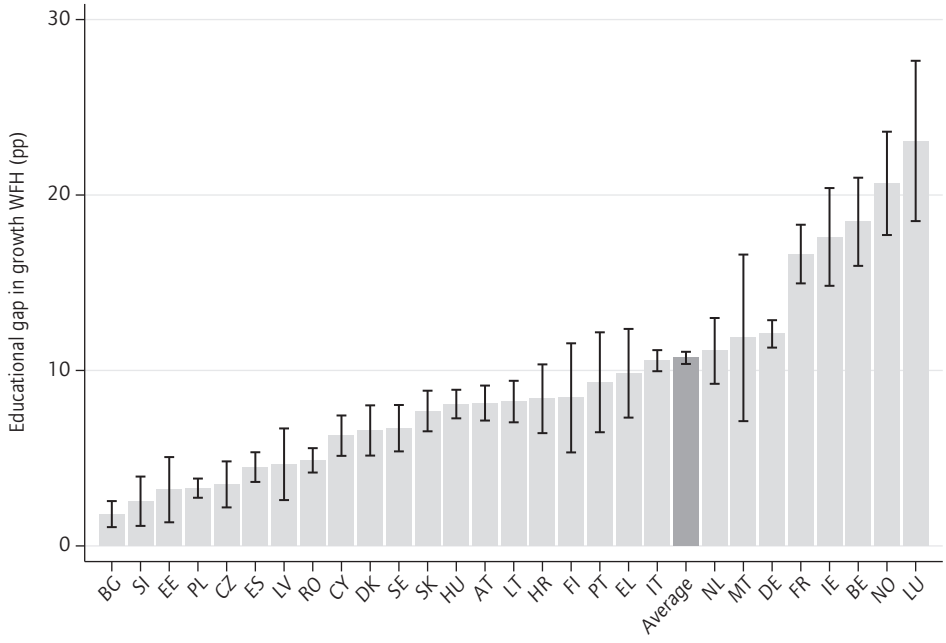
Note: Probability of never, sometimes or always working from home in 2018 and 2021 estimated through multinomial logistic regression controlling for temporary contract, part-time work, gender interacted with age and age squared, education, occupational skill level, being married, presence in the household of a child aged 12 or lower, and country fixed effects, weighted. Analyses are done separately for the full sample for subcategories.
Source: LFS 2018-2021.

However, this increase was not the case for all workers. Figure 2 shows the variation in the increase in working from home between 2018 and 2021. The share of workers who never worked at home declined similarly for those on full-time or part-time work, while it decreased somewhat less for men than women and somewhat less for workers on temporary contracts than those on indefinite contracts.

Strikingly, there was hardly any change for workers with low qualifications or who were carrying out low skilled jobs as close to all of them still never worked from home. There is a slight change for those with intermediate qualifications and medium skilled jobs. The overall increase in working from home is clearly driven by workers with university qualifications and those doing high skilled work. While the rates of such workers who sometimes worked at home increased, there was a massive shift in the number who always worked at home. Again, this shift was largest for the high skilled and for women, and somewhat so for those on contracts of indefinite duration.

Overall, the disparities that already existed in terms of who could work from home in pre-Covid times widened considerably (Milasi et al. 2020).

Figure 3 **Difference between workers with university degrees vs. others in the change in working occasionally from home, 2018 to 2021**



Note: estimated difference (and 95% C.I.) in the change from 2018 to 2021 in working occasionally from home (at least) for tertiary educated workers compared to less highly qualified workers, by country, estimated from marginal effect of logistic regression of working from home on year by qualification dummy, controlling for gender, age, part-time work, temporary contract, job skill level and presence of child under 12, weighted. Analysis overall (the Average column) includes country fixed effects; others are done separately by country.
Source: LFS 2018-2021.

Figure 3 highlights this difference over time by level of qualification separately for each country. It shows the difference in the change over time in working at least sometimes from home for university educated workers compared to others. On average across EU Member States, those with a university degree saw their rate of (occasional) telework increase by 10 percentage points more than lesser skilled workers in 2021 compared to 2018.

These descriptive findings show clearly that those workers with already more advantaged positions in the labour market are also disproportionately able to work at least somewhat from home, and that the sharp rise in response to the pandemic accentuated these disparities even further. If working from home is associated with better job quality, including wages, this could then be a catalyst for greater inequality and polarisation.

4.2 Association between working from home and job quality

Subsection 4.1 showed that the gaps in access to remote work widened substantially with the Covid-19 pandemic. As the literature suggests, working from home may have a complicated association both with worker productivity, which may increase depending on the tasks, and with job quality where there may be better work-life balance and generally increased wellbeing, but possibly also more time spent on work.

Figure 4 shows the association between several job characteristics related to different aspects for workers who never, sometimes or always work at home; and the extent to which this varies over time.

First of all, teleworkers in general are likely to report having their hours vary too much week-in week-out to give an accurate indication of their usual working time. This is particularly the case for those who always work from home, but this difference related to the frequency of telework reduced substantially in 2020 and, even more so, in 2021. This is likely to mean that, with the greater use of working from home, it has also become somewhat more regulated on average and more in line with working on the employers' premises.

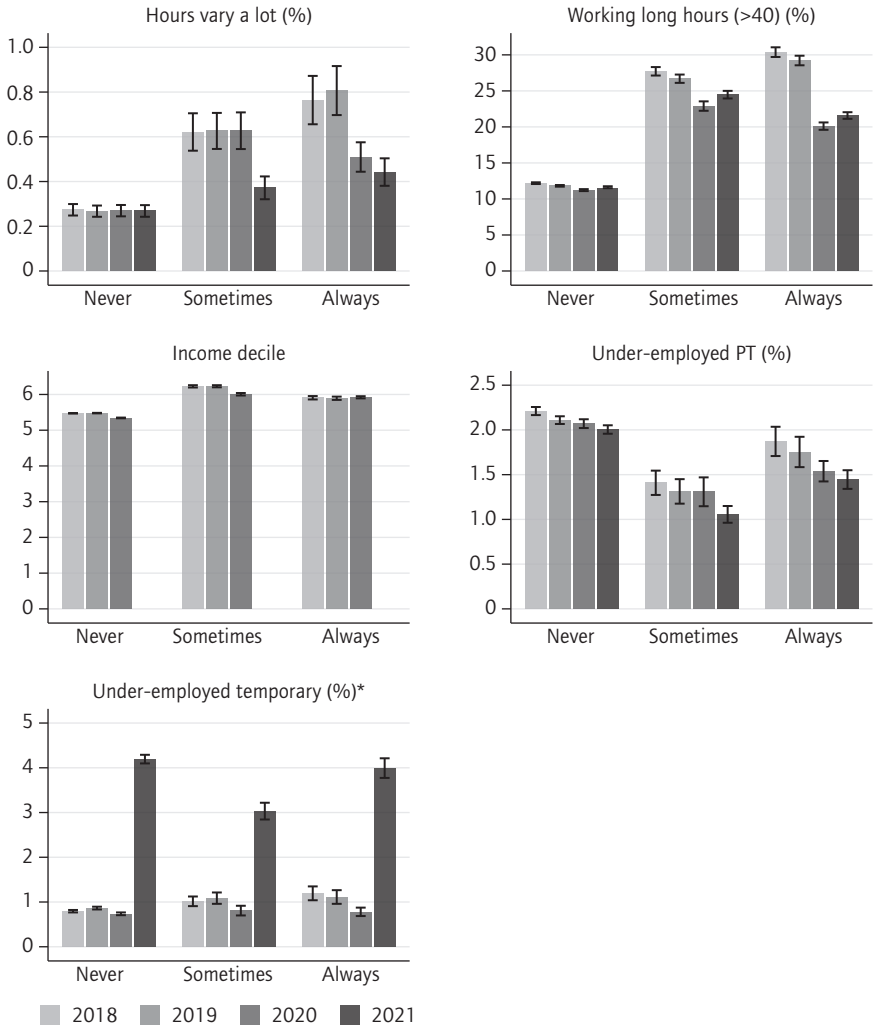
One worry coming out of the literature is the risk of more time spent at work when working from home, possibly as the boundary between work and leisure time weakens. Indeed, I show that workers who sometimes or always work at home are more than twice as likely to work at least 40 hours per week than those who did not do so prior to Covid-19. As with unpredictable hours, this difference has been somewhat reduced with the pandemic, possibly because there is a much more varied group of people working from home.

Workers who work sometimes or always from home do tend to have higher earnings than those who never work from home, even when comparing them to similarly qualified colleagues in the same sector or occupation. There was, however, little change between 2018 and 2021, despite the sizeable inflow into this type of work arrangement.

Those who work from home – particularly on an occasional basis – are much less likely than those never doing so to be on involuntary part-time contracts. Across Europe as a whole there was a decline in involuntary part-time work, on the basis of working from

home at some level, and the gap in this measure of job quality thus increased. Under-employment in terms of working on an involuntary temporary contract was somewhat higher among those working from home at least occasionally than those who never did so in both 2018 and 2019. However, this reversed in 2020 and 2021 as the risk of working on a temporary contract since no permanent contract was available became relatively lower for those who at least occasionally worked from home.

Figure 4 **Job quality by working from home and change over time**



Note: Estimated probability of having varying hours, working long hours, being under-employed on a part-time or involuntarily temporary basis, and average income decile of earnings (all computed to percentages), over time and by regularity of working from home. Estimated through logistic regression with binary and linear OLS for income, with interaction of working from home and year, controlling for gender interacted with age squared, education, marital status, presence of a child under 12, country fixed effects, industry and occupation fixed effects, all weighted.

* The LFS reworked several questions in the 2021 wave, including the question on reasons for temporary work which now includes two response categories (job only allows temporary contracts; and no permanent contract was available) rather than only the latter.

Source: LFS 2018-2021.

4.3 Is unequal access to remote work inevitable?

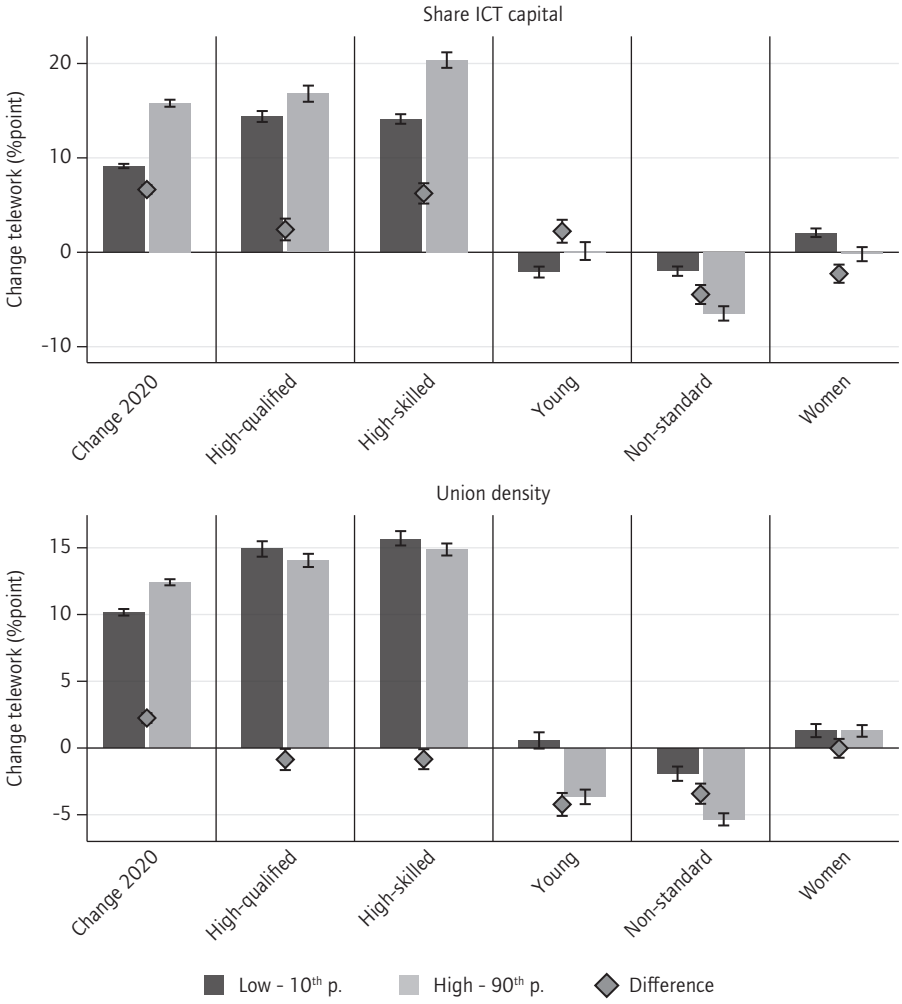
Subsections 4.1 and 4.2 indicated, first, that working from home has risen substantially since 2018 and mainly for those in more advantaged labour market positions: the higher educated; those doing high skilled professional work; and those on indefinite contracts. Second, this may have repercussions for equality as, in general, the pay and job security of those working from home is greater than those who do not have such a possibility. If anything, the conditions of working from home have improved somewhat since the Covid-19 pandemic as the downsides of unreliable hours and a long work week have declined, income has remained stable at a higher level than those who do not work from home and the risk of underemployment has reduced.

Finally, this chapter considers how universal are the disparities between workers in terms of access to working from home. I consider two main factors. First the extent to which people work in a digitally technology intensive sector, which can increase both the ease of working remotely and the inequalities between workers, depending on their type of job, as they are complemented or substituted by technology (Autor et al. 2003; Menon et al. 2019; Zwysen 2022). Second, the relative strength of trade unions within a country and sector which indicates the impact of worker representation. Worker representation can be important in putting forward equitable solutions for the shift to telework.

Figure 5 shows the estimated change in telework in 2021 compared to 2018 for different types of worker in different contexts.

The top panel contrasts the increase in the incidence of working from home for workers who were in a country and sector with relatively low ICT capital investment (10^{th} percentile) in 2018 with workers who were in a sector with relatively high ICT capital investment (90^{th} percentile) that year, keeping other characteristics similar. First, the increase in remote work was around 8 percentage points larger in the context of high ICT capital investment, supporting the literature in that working from home increased most in those contexts where investments have been made and new technologies used (Criscuolo et al. 2021). However, in this context the increase was even more unequally divided between workers – workers with a higher level of education and those in professional and managerial occupations (the high skilled) saw their rates of working (at least occasionally) at home increase at a greater rate than other workers. Similarly, young workers moved relatively more to telework, as did those on standard employment contracts and men. The move to working from home was thus even more divided along traditional labour market lines in those countries and sectors with stronger technological capital investments prior to the pandemic. This is in line with research reporting that digital technologies widen inequality and the gaps between workers (Autor et al. 2003; Zwysen 2022).

Figure 5 **Changes in working from home by characteristic, depending on technological and union density context in country and sector**



Note: Estimated difference in the change from 2018 to 2021 overall for high educated, high skilled, young, those on non-standard employment contracts and women at low (10th percentile) or high (90th percentile) levels of digital capital intensity or union density, controlling for gender, age, non-standard contract, education, skill, marital status, presence of child under 12, weighted, with fixed effects for country and industry.
Source: LFS 2018-2021; OECD stats and EUKLEMS; ICTWSS.

The bottom panel of Figure 5 contrasts how much and how unequally working from home grew in countries and sectors with very low union density or very high union density. This is taken to indicate the involvement and representation of workers in decisions to work from home. First, again, working from home increased generally somewhat more in countries and sectors with higher rather than lower union density (see also Vandaele and Piasna, this volume) which indicates that areas of high union density are not dissimilar to those with high technological innovation. Second, there is,

in general, the opposite pattern to that of technological innovation – in countries and sectors with higher union density in 2018, the rise in working from home was somewhat less unequally divided on the basis of workers' education or skill level, their age (the difference between young and old was reduced) or their gender. At the same time, similarly to ICT investment, those on standard contracts were relatively more likely to experience an increase in telework where there was higher union density.

This analysis shows that there are differences in how unequally working from home is distributed. This also shows an important way forward: namely that of representation and a strong role for the social partners in limiting potential polarisation in the labour market.

5. Conclusion

This chapter provides an overview of the experience of working from home and the shift induced by the Covid-19 pandemic. Working from home can provide benefits to workers, such as greater flexibility. It may also increase productivity, at least in some tasks. However, there are also risks in terms of a blurring of the boundaries between work and home, invasive surveillance and long hours of work. Importantly, from the perspective of this contribution, the option to work from home is unequally divided – both in respect of those given the right to work from home and those jobs which allow for it: it accrues more to those with already better positions – such as the higher educated and those on standard contracts.

The chapter delivers an overview of the literature and original analysis on the basis of representative data on European labour markets in order to address three key questions. First, how big has the shift to working from home been under the pressure of the Covid-19 pandemic, and how equally has this been divided? I show that there was, on average, a 10 percentage point increase in the share of people occasionally working from home between 2018 and 2021. This increase is driven by 'insiders' on the labour market: the more highly educated, those in high skilled occupations and those on non-temporary contracts.

Second, is working from home linked to job quality? I show that working from home is associated with relatively higher income and more secure contracts, but also a longer work week and greater insecurity through substantial variations in hours. However, the association between working from home and job quality became relatively better after the Covid-19 pandemic as the benefits remained (wage) or even improved (job security) compared to those not working from home whereas the pressure in terms of hours decreased somewhat.

Third, I explore the variation between countries and industries in this unequal growth of working from home. These analyses indicate that there is variation in the growth of working from home and, importantly, in its distribution. Digital technologies are associated with a greater increase in working from home, especially driven by those already more advantaged, thereby increasing inequality. On the other hand, union

density and worker representation is associated with a more equitable increase in working from home which does not exclude the lower educated or the less advantaged to the same extent.

This chapter therefore identifies working from home as a dimension along which the labour market may polarise further, with sharp differences between those who can access it and those who cannot. However, at least some of these inequalities are not inevitable. Through social dialogue and collective agreement there is a possibility to regulate access to telework within countries and sectors and to ensure that those workers who want to work remotely, and whose tasks can be done so, have access to this flexibility regardless of their gender, age or contract status.

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