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Teleworking through the gender looking glass: facts and gaps

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Table of contents

Acknowledgements	3
Abstract	4
Résumé	5
1 Introduction and main findings	6
1. Analysing gender disparities in the use of teleworking	8
1.1 Existing data sources involve different and often ill-adapted concepts ...	8
1.2 ...that nonetheless reveal gender disparities which should be monitored	9
2. The effect of teleworking on gender inequalities: what do we know so far?	17
2.1 Teleworking mirrors pre-existing gender inequalities in work-life balance and job satisfaction	17
2.2 The teleworking wage premium boosts men's wages more systematically than women's – leading to mixed effects on the gender pay gap	19
2.3 The gender disaggregated impact of teleworking on career progression: the jury is still out, but biases in existing career advancement practices already need weeding out	21
3. Ways forward for data collection and research	23
3.1 Adopting a consistent definition across sources	23
3.2 Improving data collection	24
3.3 A roadmap for future research	24
References	26
Annex A. Main sources on the use of teleworking or most approaching concept in OECD countries	33

Tables

No table of figures entries found.

Figures

Figure 1. Understanding the difference between associated concepts	8
Figure 2. Long-term trends in the evolution of “work from home” by gender	11
Figure 3. Teleworking before the pandemic by gender	12
Figure 4. Teleworkability of occupations and incidence of work from home by gender	13
Figure 5. Work from home during the pandemic by gender	15
Figure 6. "Work from home" preference by gender in the European Union and the United States	16

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This publication further builds and complements past and ongoing OECD work on working time and teleworking, as well as work on gender and the labour market. Sébastien Martin provided statistical assistance, and several colleagues from the OECD provided helpful comments and suggestions, including Willem Adema, Stéphane Carcillo, Sandrine Cazes, Clara Krämer, and Valentina Patrini, from the ELS Directorate, and anonymous reviewers in the Centre for Entrepreneurship, SMEs, Regions and Cities, and the Directorate for Science, Technology and Innovation of the OECD.

Abstract

This paper takes stock of existing data and research on the gendered dimension of teleworking, to foster efficient data collection and evidence-based monitoring of the phenomenon in the future. Analysing existing data on work from home, teleworking, *teleworkability* and preferences for work from home highlights the need for a consistently defined teleworking concept to be used across sources. A literature review of existing results finds mixed effects of teleworking on work-life balance inequalities, on the gender wage gap, and on gender disparities in career progression. Prevailing gender norms are likely to mediate the effect of teleworking on all three outcomes and should be a focus of future research.

Résumé

Ce document fait le point sur les connaissances existantes en matière de dimension genrée du télétravail, afin de favoriser une collecte de données efficace et un suivi du phénomène scientifiquement informé à l'avenir. L'analyse des données existantes sur le travail à domicile, le télétravail, la *télétravaillabilité* et les préférences en matière de travail à domicile démontre la nécessité d'utiliser une définition cohérente du concept de télétravail dans les différentes sources. Une revue de la littérature des résultats existants trouve des effets mitigés du télétravail sur les inégalités d'équilibre entre vie professionnelle et vie privée, sur l'écart salarial entre les sexes, et sur les disparités entre les sexes dans la progression de carrière. Les normes de genre dominantes sont susceptibles d'influencer l'effet du télétravail sur ces trois résultats et devraient faire l'objet de recherches futures.

1 Introduction and main findings

COVID-19 has brought to the fore a practice that remained marginal on average in OECD countries before the pandemic, that of working from outside the office while connecting to it virtually, also known as teleworking. As this new arrangement of working lives settles in, policymakers are in need of accurate data to describe it, and of data-driven evidence about its effects on labour market indicators, including gender disparities on the labour market, to design well-informed policies. This paper aims to take stock of the available knowledge regarding the gendered dimension of teleworking and its effect on gender disparities in labour market outcomes; in doing so, it seeks to formulate advice for efficient data collection strategies in order to foster research and evidence-based monitoring of the phenomenon in the future.

Data gaps are concentrated in two main areas: comparable longitudinal gender-disaggregated data on the *use of*¹ teleworking and its evolution on the one hand, and datasets allowing to research the *effect* of teleworking on gender inequalities on the other. Existing gender-disaggregated data on the use of teleworking notably suffers from issues of comparability (since the definition of teleworking varies between data sources) and a lack of longitudinal perspective. Datasets also suffer from a lack of connection between gender-disaggregated data on teleworking use and relevant gender-disaggregated labour market indicators of pay, career progression, job quality, and work-life balance. Since current trends suggest that teleworking is not going back to its pre-pandemic levels, remedying these issues today is key to efficiently research tomorrow the implications of changes in work patterns for gender equality.

The following main findings are highlighted in the paper:

Concepts and data:

- Existing data sources use partly overlapping but different concepts, with inconsistent definitions. There is a need for a common concept consistently defined across sources.
- Teleworking, defined as “*work carried out in a physical location that is different from the default place of work, during normal hours, using information and communications technology*” accurately captures the transformation of working practices unfolding in the aftermath of the pandemic. Using this definition, surveys systematically asking respondents about *intensity* (e.g., the number of days spent teleworking per week on average) and *frequency* (e.g., whether this pattern is regular or more ad hoc / occasional) would allow to accurately track the contemporary development of *hybrid work*.
- The concept of “work from home” is more loosely defined and less adapted than that of teleworking to describe contemporary developments in working practices. Unfortunately, most of the data available focuses on the former rather than on the latter.
- Gaps in knowledge are largest when it comes to career progression and objective measures of job quality and work-life balance; therefore, future surveys should be designed to allow linking gender disaggregated data on these outcomes – as well as other key labour market outcomes such as pay and job satisfaction - with gender-disaggregated data on teleworking use.

Discernible patterns in the available data:

- Gendered patterns vary between concepts: before the pandemic, patterns in *work from home* differed across countries, but on average more women than men *worked from home*. By contrast, men regularly *teleworked* more than women in the majority of OECD countries.
- The pre-existing gender gap in work from home has increased since 2020, as the number of both men and women usually working from home increased dramatically, but at a higher rate among women than among men. There are no gender-disaggregated data on *teleworking* covering the period since the pandemic.
- Although they teleworked less than men before the pandemic, women were more often in *teleworkable* occupations, i.e. jobs that could theoretically be done remotely.
- The gender gap in preferences for frequent work from home increased during the pandemic: women already favoured frequent work from home more than men before, and preferences for working from home increased faster among women than men during the pandemic.

Findings in the literature on teleworking and labour market outcomes:

- Most research on the effect of teleworking on gendered labour market outcomes to date is correlational with results clouded by unresolved selection issues. Available evidence suggests that:
 - The effect of teleworking on gendered work-life balance inequalities reflects prevailing gender norms and managerial culture. Teleworking increases work-life balance inequalities between men and women in some cases and reduces them in other cases. Combining teleworking with other policies such as childcare, eldercare, flexible hours, and any other policies challenging traditional gendered roles might help to reduce gendered work-life balance inequalities.
 - The teleworking wage premium boosts men's wages more systematically than women's, generating different effects on the gender pay gap depending on women's education level. Women and mothers' higher "willingness to pay" for teleworking suggests that policies strengthening female bargaining power might help to avoid adverse consequences on the gender pay gap owing to differentials in mothers and other workers' bargaining position when taking up teleworking.
 - Results on the effect of teleworking on career progression are scarce and mixed. Gender-differentiated effects are likely to be mediated by the strength of the stigma attached to take-up in each context - since some results suggest that perceived threats to salary and career advancement lead more men than women to renounce teleworking. The modalities of performance evaluation systems (i.e., whether career advancement hinges on face time and input measurement, or on output measurement) are also likely to matter.
- Future research should aim to deal with selection issues to produce more robust results; it should strive to ensure better conceptual clarity by using the adequately defined concept of teleworking; and it should aim to measure the mediating impact of prevailing gender norms. Further research on gender-differentiated effects on career progression would be particularly welcome.

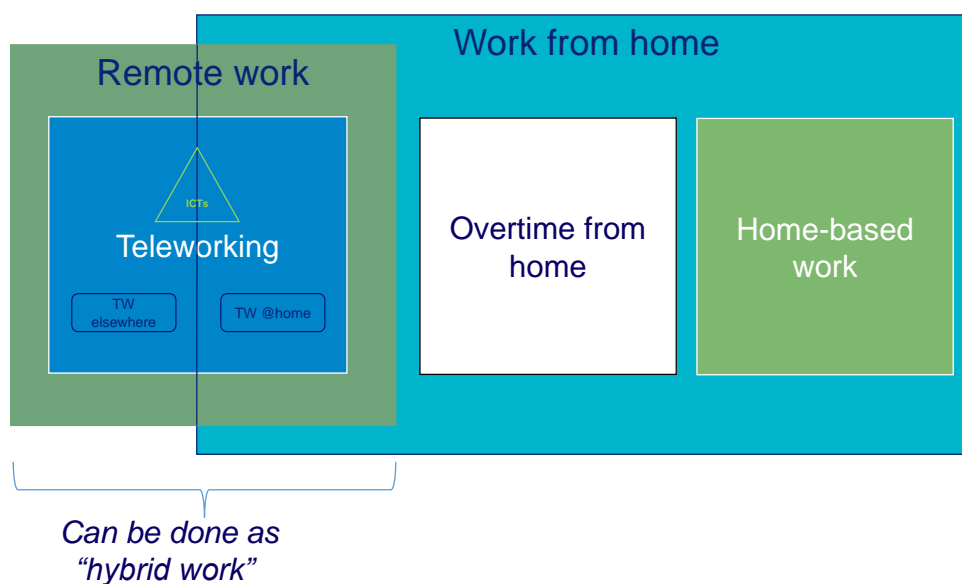
This paper starts by looking at gender disparities in the use of teleworking, illustrating the landscape of data currently available in OECD countries, and discussing ways to enhance data collection efforts in the future. The paper then turns to the issue of how teleworking might affect gender-based inequalities in the labour market, reviewing findings from the existing literature and sketching an agenda for future research based on identified gaps.

1. Analysing gender disparities in the use of teleworking

1.1 Existing data sources involve different and often ill-adapted concepts ...

Since March 2020, as a result of the COVID-19 pandemic, concepts like “teleworking”, “remote work”, “work from home”, or “hybrid work” have progressively become mainstream. In public media, these terms are used often, and interchangeably.² This is also the case in academic research, where limitations in the available data sometimes leads to approximation and reduced conceptual clarity. Yet, as shown in Figure 1 these different concepts cover slightly different if overlapping concepts. The ILO proposes to differentiate between these concepts by looking at how they relate to the notions of “default place of work” and “physical location where the work is actually carried out” (ILO, 2020^[1]). Following that logic, **remote work** is work carried out in a physical location that is different from the default place of work. **Teleworking** is a subcategory of that broader concept, which uses “information and communications technology (ICT) [and/or] telephones” to carry out remote work. By contrast, **work from home** is defined independently of the default place of work: it comprises instances of **remote work from home** where paid work is carried at home while home is not the default place of work, but also instances of **home-based work**, where home is, in fact, the default place of paid work. In some studies and data sources, “work from home” even includes **overtime from home**, capturing instances when employees bring work home from the office outside of their normal hours of work³. To complicate matters, teleworking can be done at home, and a home-based worker / an employee working overtime from home could also use ICTs to carry out her work. Finally, the term **hybrid work** refers to “a combination of telework and work on the employer’s premises” (ILO, 2021^[2]), and is therefore related to issues of *intensity* (e.g. the percentage of time spent teleworking per week) and *regularity* (e.g. occasional or regular teleworking) which do not enter in the definition of the other concepts discussed above. Therefore, hybrid work is not another type of work arrangement that could be compared to remote work, work from home or teleworking but is rather used to describe a particular *mode* of teleworking (the other possible mode being full teleworking).

Figure 1. Understanding the difference between associated concepts



Source: OECD.

The large-scale change in work practices observed in the last few years in the aftermath of the COVID-19 crisis is characterised by the fact that many workers whose default place of work is still the office now regularly work outside of the office. Yet these workers do not always necessarily work *from home*: as health-related restrictions of movement that characterised the first months of the pandemic were lifted, increasing numbers of workers kept working outside of the office but also outside of home, i.e., from libraries, co-working spaces, etc. Both “teleworking” and the broader concept of “remote work” allow encompassing these cases. Since the large majority of workers now working outside of their office are using ICT solutions to connect virtually with their colleagues and access company resources and information, the concept of teleworking is particularly well-suited to describe this contemporary phenomenon. In contrast, the “work from home” concept, by definition, does not accommodate the possibility of other work locations. As explained above, it also assimilates workers who work from home regularly while their default place of work is still the office (whose ranks have grown dramatically in the last few years) with long existing home-based workers and with workers bringing work home as overtime. Overall, the “work from home” concept is therefore less adapted to describe the phenomenon unfolding in the aftermath of the pandemic.

These conceptual differences complicate the analysis of existing data. Many available data sources used to trace the current change in working practices use the concept of work from home, although it is imprecise. The lack of a longitudinal perspective is also an important issue limiting the analysis of trends. The non-exhaustive but comprehensive repository of sources with data on teleworking use in OECD and accession countries, displayed in annex to this paper (Table A.1) shows that only a limited number of sources collect regular data on remote work or teleworking with a pre-pandemic longitudinal perspective, and only a small subset of those allows for gender disaggregation.

Pre-pandemic data sources that allow for gender disaggregation include Working Conditions Surveys (available for European countries, for the United States and for Korea) and Labour Force Surveys (available in most OECD countries) - see Box 5.4 in OECD (2021^[3]). The European, American and Korean Working Conditions Surveys use a precise definition of teleworking as “regularly using ICTs and working in at least one other location than the employer’s premises several times a month”. Information is collected since the mid-2010s, but these sources only have a limited number of data points so far (two for the Korean survey, one for the American and European ones), which does not yet allow for precise tracking of the phenomenon over time.⁴ By contrast, many Labour Force Surveys in OECD countries provide annual data going back to the 2000s; there however, the focus is on “employees working from home”.

Similarly, many of the new surveys launched since the spring of 2020 to track the growth of teleworking in the aftermath of the pandemic focus on work from home. For instance, the Representations, Perceptions and Attitudes on the COVID-19 crisis (RePeAt) survey data has information on employees “working from home” during the first lockdowns (Galasso and Foucault, 2020^[4]). The Survey of Workplace Arrangements and Attitudes launched in May 2020 in the United States collects monthly data on use of and preferences for “work from home” (Barrero, Bloom and Davis, 2021^[5]); this is also the case of the “global working from home survey”, launched in 2021 by the same group of researchers, with a reduced frequency but higher country coverage. While some sources do refer to the concept of teleworking, these data are often collected at the firm-level and do not allow for gender disaggregation - see e.g., Criscuolo et al. (2021^[6]).

1.2 ...that nonetheless reveal gender disparities which should be monitored

Despite the limitations discussed above, the data available on teleworking and associated concepts allows establishing some stylised facts, which the following subsections discuss in more detail:

1. Before the pandemic, patterns in *work from home* differed across countries, but on average more women than men *worked from home*, in particular when work from home was *usual* (Figure 2). By contrast, men regularly *teleworked* more than women in the majority of OECD countries in 2015 (Figure 3). Differences observed between sources

using neighbouring concepts point to the importance of conceptual clarity: the concept of “work from home” is larger and more imprecise than that of teleworking.

2. Although they teleworked less than men, women were more often in teleworkable occupations (Figure 4). In 2018 in European Union countries and in the United States, the gap between theoretical *ability to telework* based on job characteristics and *actual use of work for home* was in fact larger for women.
3. Starting in 2020, the number of both men and women usually working from home increased dramatically (Figure 2), but at a higher rate among women than among men (Figure 5) - leading to an increase in the pre-existing gender gap in work from home. There are no gender-disaggregated data on *teleworking* covering the period since the pandemic that would allow to comment on the evolution of the teleworking gap between men and women. As the gender gap in the use of work from home increased, so did the gender gap in preferences for frequent work from home (Figure 6): women already favoured frequent work from home more than men in the beginning of the pandemic, and preferences for working from home increased faster among women than men during the pandemic.

1.2.1 Before the pandemic, gender gaps in work from home varied across countries, but men teleworked more than women in most countries

As available data do not allow reconstructing long-term trends in the use of teleworking in the pre-COVID-19 era, Figure 2. looks at the evolution of the neighbouring concept of “work from home” between 2003 and 2021, using labour force surveys.

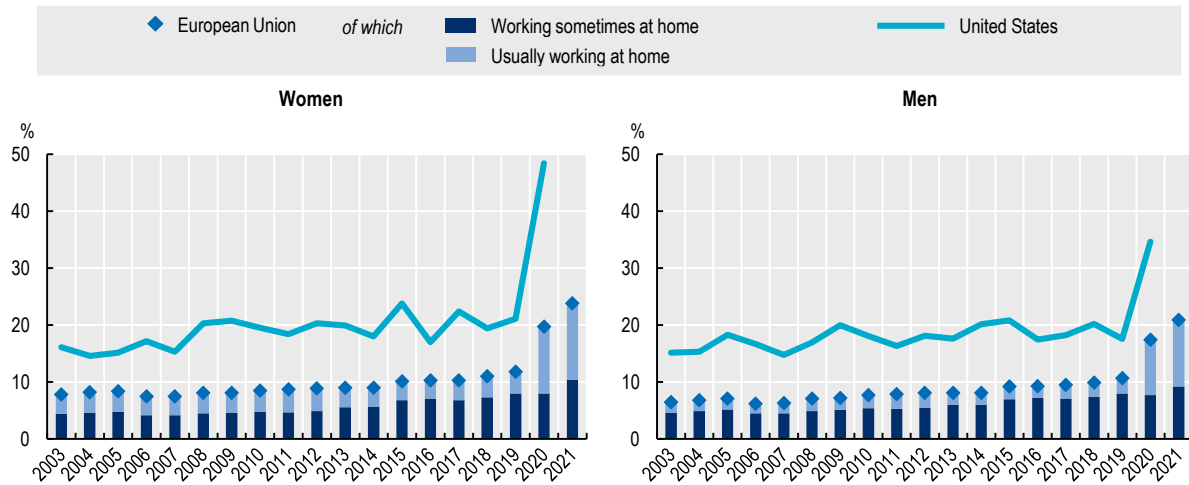
In European Union countries, between 2003 and 2019, trends in 20 to 64 years old men and women working from home were largely parallel. Shares of employees working from home (usually or sometimes) increased slowly between 2003 and 2012, going from 6.5 to 8.1% of men, and from 7.8 to 8.9% of women. Trends increased a bit faster between 2012 and 2019 reaching 10.7% of men and 11.8% of women. This was mostly driven by increasing numbers of employees occasionally working from home (8% of both men and women in 2019, up from 5.5 and 4.9% respectively in 2012) while the number of men and women usually working from home stayed relatively stable. Throughout the period, occasional work from home was more prevalent than regular work from home among both men and women.

On average, a slightly higher proportion of women than men worked from home (usually or occasionally), which was driven by the higher proportion of women *usually* working from home⁵, while more men than women *sometimes* worked from home. However, in close to half of the countries, more men than women worked from home sometimes *or* usually.⁶ In 2019, gender gaps in *occasional* work from home among employees aged 20 to 64 were highest in Latvia, Lithuania, and Poland, where between 65 and 70% as many men as women sometimes worked from home, and in Luxembourg and Sweden, where the incidence among men was 1.3 times that registered among women. Gender gaps in *usual* work from home were highest in Romania, France, Poland, and Slovenia, where only about 45-50% as many men as women usually worked from home, and in Norway, where the incidence of usual work from home among men was 1.4 times that among women.

Data available for the United States does not allow distinguishing between occasional and regular work from home. The overall prevalence of working from home among both men and women was higher than that observed in the European Union throughout the period, oscillating between 15 and 20% of men, and 15 and 23% of women. Like in European countries, the use of work from home evolved in a similar fashion among both men and women and increased only slowly. Over the 2003-2019 period, women employees were more likely to work from home than men in most years, but in some years, it was the other way around: in any case until 2019 differences were small.

Figure 2. Long-term trends in the evolution of “work from home” by gender

Percentage of employees aged 20-64 by gender, 2003-21



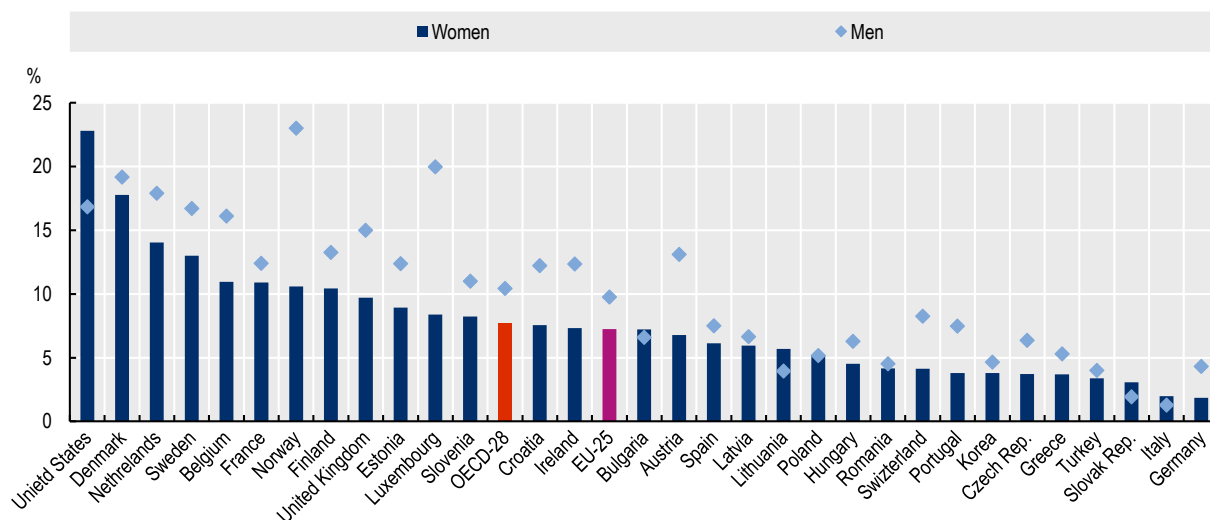
Note: For the United States, figures refer to the 10th of May to the 31st of December each year as published in the 2020 ATUS news release. This is because on March 19, 2020, the U.S. Census Bureau temporarily closed all of its call and processing centres for the safety of the staff due to the coronavirus (COVID-19) pandemic and the ATUS data collection was temporarily suspended.

Source: Eurostat, Employed persons working from home as a percentage of the total employment, by sex, age and professional status (%) (lfsa_ehomp) and OECD estimates based on the American Time Use Survey (ATUS).

Comparing sources using the “work from home” concept to sources on teleworking show that the two concepts do not perfectly overlap. Using data on teleworking available for 28 OECD countries in the mid-2010s, Figure 3 indeed shows that more men than women regularly teleworked in 2015 in the large majority of countries covered (OECD, 2021^[3]). On average, 10.4% of men worked outside of their employer’s premises several times a month using ICTs, against 7.7% of women. While this gap was relatively small on average, it was observed in all but four of the 28 OECD countries represented on the graph (Italy, Lithuania, the Slovak Republic and the United States). In some countries, the teleworking gap was substantial: for instance, in Norway, 23% of men regularly teleworked in 2015, while only 11% of women did so; in Luxembourg, 20% of men regularly teleworked vs. 8% of women. This contrasts with the patterns discussed above regarding regular work from home, which varied across countries and on average showed more women than men regularly working from home. These discrepancies highlight again the importance of conceptual clarity and standardisation of definitions across sources.

Figure 3. Teleworking before the pandemic by gender

Incidence of regular teleworking, percentage of employees aged 15-64, 2015



Note: Statistics shown in this Chart refer to all employees using always or almost of all the time ICT and working in at least one other location than the employer's premises several times a month (either from home at least several times a month and in all other locations (except employer's premises) less often than several times a month or at least several times a week in at least two locations other than the employer's premises or working daily in at least one other location). 2017 for Korea. OECD-28 refers to the 28 OECD countries shown in this Chart (not including Australia, Canada, Chile, Colombia, Costa Rica, Iceland, Israel, Japan, Mexico and New Zealand) and EU-25 to the 25 EU countries shown in this Chart (not including Cyprus¹ and Malta).

Source: OECD calculations based on the American Working Conditions Survey 2015, the European Working Conditions Survey 2015 and the Korean Working Conditions Survey 2017. This is a partial reproduction of Figure 5.15 in (OECD, 2021^[3]).

1.2.2 On average in OECD countries before the pandemic, the gap between worker's ability to telework and use of teleworking was much larger for women than for men

Interestingly, the fact that more men than women regularly teleworked before the pandemic in most OECD countries cannot be explained by a difference in the *technical feasibility* of teleworking in predominantly male and female occupations. On the contrary, in 2018 women were more often in occupations technically compatible with teleworking than men (Figure 4)⁷.

In the wake of the pandemic, several researchers across OECD countries attempted to come up with a measure of the number of jobs that could materially be conducted away from the office. Using a methodology gauging ability to work remotely at the occupational level, Dingel and Neiman (2020^[7]) concluded that 37% of jobs in the United States could be conducted remotely in 2018 – see also OECD

¹ Note by the Republic of Türkiye

The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Türkiye recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Türkiye shall preserve its position concerning the "Cyprus issue".

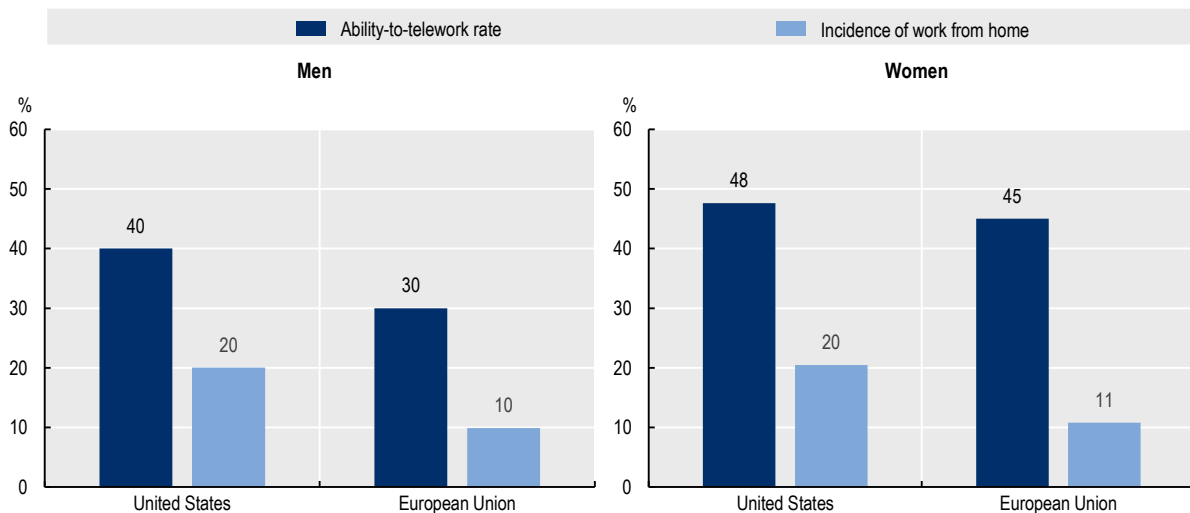
Note by all the European Union Member States of the OECD and the European Union

The Republic of Cyprus is recognised by all members of the United Nations with the exception of Türkiye. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

(2020^[8]) for an application of the same methodology to estimate the remote work potential of cities and regions in OECD countries. Using a slightly different but comparable approach on European data, Sostero et al (2020^[9]) also concluded that 37% of jobs could be done remotely on average across European Union countries in 2018. Estimates varied from 27% in Romania to 54% in Luxembourg, yet in all but five countries the share of teleworkable jobs varied between 33 and 44% of total employment. Sostero et al's estimates rely on the authors' calculation of occupational teleworkability scores which are then matched onto individual level data about occupation (namely to 2018 EU-LFS data). The use of individual level data allows looking at gender disparities in occupational teleworkability. In the United States, Dey et al (2020^[10]) also replicated Dingel and Neiman's results using individual level data (the 2018 American Time Use Survey) and published gender disaggregated data on teleworkability. Figure 4 below reproduces gender disaggregated data from these two studies. cyp

Figure 4. Teleworkability of occupations and incidence of work from home by gender

Percentage of employees aged 15 or more, 2018



Source: Dey M. et al. (2020), "Ability to work from home: evidence from two surveys and implications for the labour market in the COVID-19 pandemic," Monthly Labor Review, U.S. Bureau of Labor Statistics, June 2020, <https://doi.org/10.21916/mlr.2020.14> for the ability-to-work rate in the United States and OECD estimates based on ATUS for the incidence of teleworkers in 2018; Sostero M. et al. (2020), Teleworkability and the COVID-19 crisis: a new digital divide?, Seville: European Commission, 2020, JRC121193 for the ability-to-work rate in the European Union and Eurostat, Employed persons working from home as a percentage of the total employment, by sex, age and professional status (%) (lfsa_ehomp) for the incidence of teleworkers in the European Union.

Results in both studies are aligned: they show an important gap between ability to telework and actual incidence of work from home before the pandemic for all employees, and that this gap was much larger for women than for men. According to the authors' calculations, in the United States, about 20% of men and women spent any day working only at home in 2018. However, while about 40% of men could have technically teleworked, this was the case of 48% of women. In the European Union, the gap between potential teleworking and actual work from home was again much larger for women: 10% of men and 11% of women worked from home (occasionally or usually) in 2018, while 30% of men, and 45% of women could technically telework.

The two papers also provide information on the ability to telework and the actual use of work from home in various occupations, which is indicative of which occupations might be driving the larger gap between ability to telework and actual use of telework for women. In both the European Union and the United States, the biggest gap between ability to telework and actual use is observed for administrative and clerical

support occupations – which are predominantly female. In the United States, the highest rates of ability to telework are observed among the “Management, business, and financial” occupations (87% feasibility rate), the “Professional and related” occupations (64% feasibility rate) and the “Office and administrative support” occupations (59% feasibility rate). While the first two categories, which are respectively made of 48 and 57% of women, have teleworking take-up rates of around 30%, the third category, which is 71% female has a much lower teleworking take-up rate (around 10%). Similarly in the European Union, the highest ability to telework are observed for “Managers” (about 75% feasibility rate), “Professionals (about 70% feasibility rate)” and “Clerical support workers” (85% feasibility rate). Yet while about 20% of managers (37% of whom are women) and 25% of professionals (56% of whom are women) were actually working from home in 2018, less than 5% of clerical support workers (67% of whom are female) did so, despite having the highest feasibility rate. This is aligned with findings by Fana et al. (2020^[11]) showing that the highest gap between potential and actual teleworking was observed for lower-level white-collar occupations and public administration employees⁸.

Thus, the larger gap between ability in use observed for women might be driven in part by their higher concentration in administrative and clerical support occupations. Further research should look into the role of hierarchical position as a potential confounder and of a top-down management culture as a potential mediating factor in that relationship, however. Other potential explanations include e.g. outright gender discrimination in access to teleworking, pre-existing differences in the use of other flexible working arrangements, such as part-time, or differences in preferences for teleworking between men and women, which is explored in the next section.

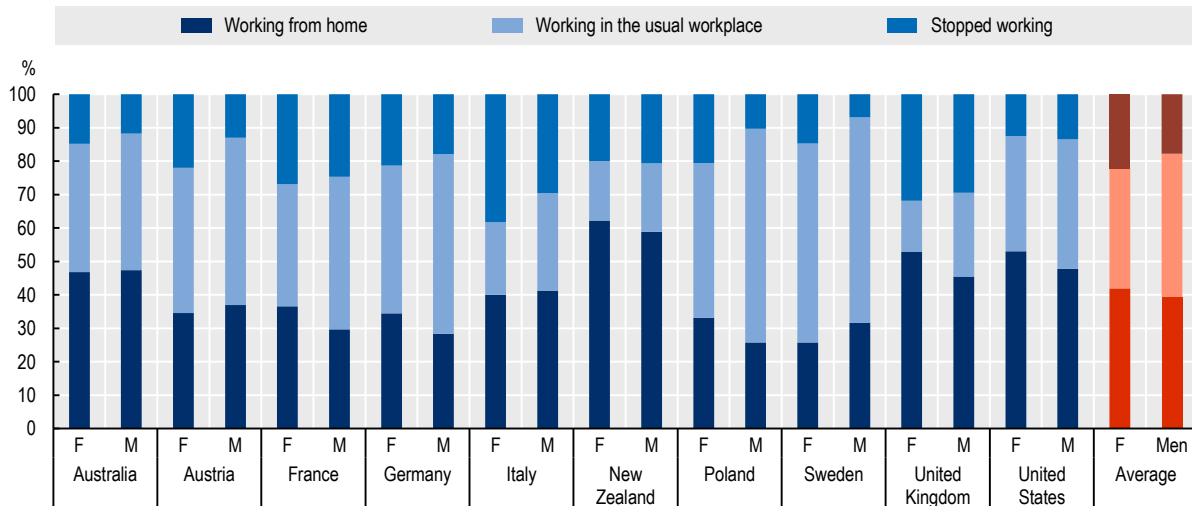
1.2.3 Since the pandemic, the gender gap in work from home has widened, as has the gender gap in preference for frequent work for home, women favouring it more than men

Predictably, the most dramatic change in Figure 2. can be observed in the 2019-2021 period. In the United States, the number of men working from home doubled between 2019 and 2020, jumping from 17.5 to 34.6%, while that of women increased even more sharply, from 21.1 to 48.4% - leading the gender gap in work from home to increase. In European Union countries, the number of men working from home (occasionally or regularly) also doubled, from 10.7 to 20.9%, and that of women also more than doubled, from 11.8 to 23.8% of female employees. While more employees worked from home *sometimes* before the pandemic, because of it the share of employees working *usually* from home outgrew that of employees *sometimes* working from home: in 2021, 13.4% of female employees regularly worked from home while 10.4% occasionally worked from home, and 11.7% of male employees regularly worked from home while 9.2% occasionally worked from home. As in the United States, gender disparities grew on average during the pandemic, as the increase in women usually and sometimes working from home was steeper than that of men: while the same proportion of male and female workers occasionally worked from home in 2019, more women than men did in 2021; and the pre-existing gap in usual work from home widened even more.⁹

Trends measured in the EU-LFS and American Time Use Survey shown in Figure 2. are coherent with trends emerging from high-frequency data collected during the pandemic. For instance, Figure 5 shows data collected among employed individuals during the first lockdowns between March and May 2020. On average, in the 10 OECD countries for which data are available, 39% of the men worked from home in March 2020, vs. 42 % of women. Out of the countries represented in Figure 5, the gender gap in work from home in favour of women was highest in Poland, France and Germany, where 20 to 30% more women than men worked from home during the pandemic. By contrast, more men than women worked from home during the first lockdown episodes in Australia, Austria, Italy, and Sweden.¹⁰

Figure 5. Work from home during the pandemic by gender

Access to telework during the first lockdown by gender as a percentage of total workers usually employed before the onset of the crisis, selected OECD countries (March-May 2020).



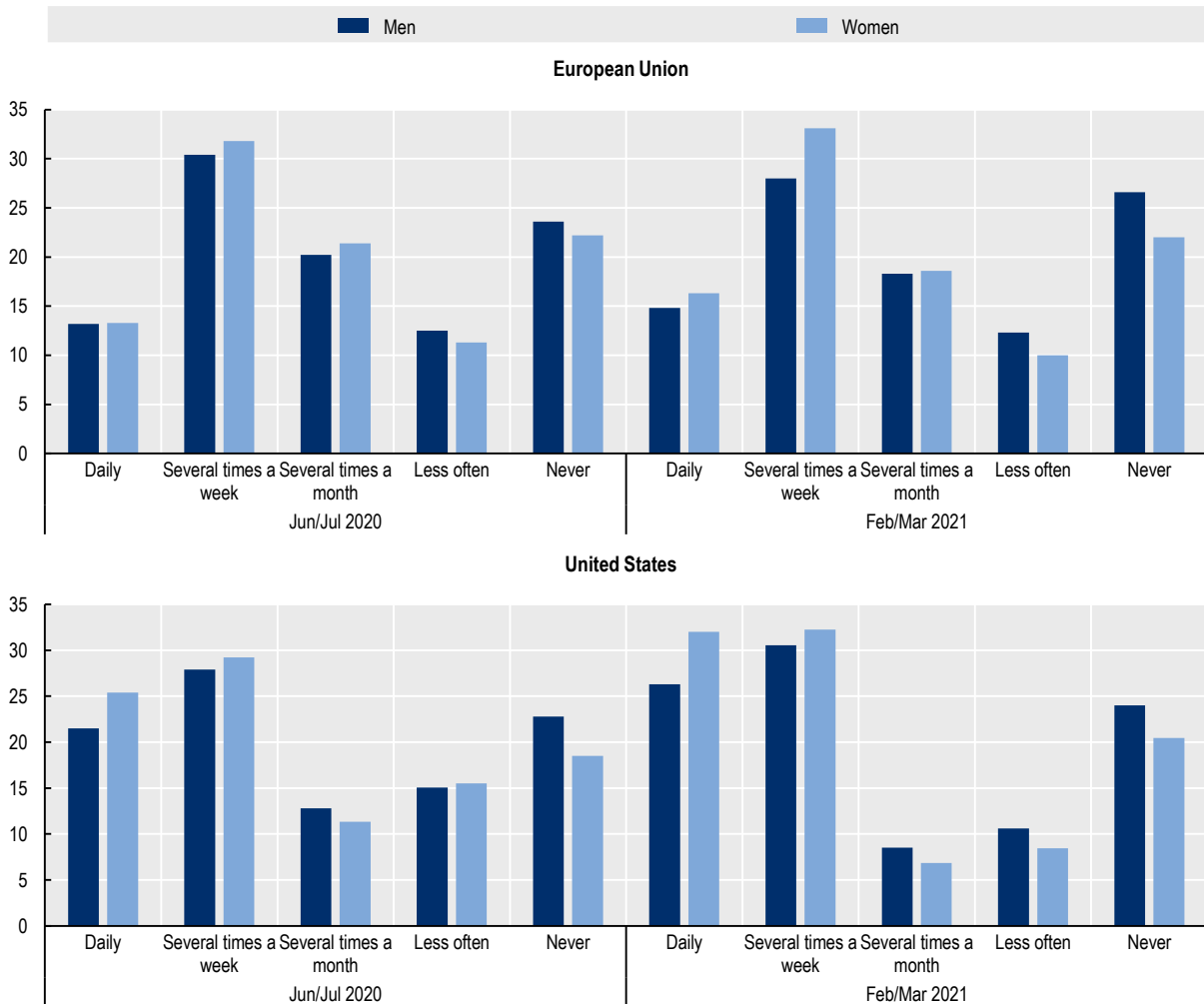
Note: F: females; M: males. "Average" is the unweighted average of the OECD countries shown.

Source: (Galasso and Foucault, 2020^[4]) *Working during COVID-19: Cross-country evidence from real-time survey data*, (available at: <https://dx.doi.org/10.1787/34a2c306-en>) based on the REPEAT (REpresentations, PErceptions and ATtitudes on the COVID-19) survey. This is a partial reproduction of Figure 5.16 in (OECD, 2021^[3]).

Recent gender-disaggregated data on preferences for teleworking is not available. However, data on preference for *work from home* suggest that the gap between ability to telework and actual take-up, which, as discussed above, is larger for women than men, is unlikely to be attributable to different preferences between men and women. Indeed, while women already expressed a stronger preference than men for frequent work from home in the beginning of the pandemic (June/July 2020) in the United States and European Union countries, this gender gap was even larger a few months later (February/March 2021). Throughout the period observed, more women than men wanted to work from home daily or several times a week in the United States and European Union countries. By contrast, more men than women supported "never" working from home at the beginning of the pandemic and this gender gap widened as the pandemic progressed.

Figure 6. "Work from home" preference by gender in the European Union and the United States

Percentage of employed persons



Note: Employees aged 18 or more in the EU-27 when asked: "If you had the choice, how often would you like to work from home if there were no restrictions due to COVID-19?" and employed aged 20-64 in the United States when asked: "After COVID, how often would you like to have paid workdays at home?". For the United States, "Daily" refers to 5 days per week; "Several times a week" to 2, 3 and 4 days per week; "Several times a month" to 1 day per week and "Less often" to rarely (e.g. monthly).
 Source: Eurofound (2020), Living, working and COVID-19 dataset, Dublin, <http://eurofound.link/covid19data> and OECD calculations based on the Survey of Working Arrangements and Attitudes (SWAA) from Barrero, Jose Maria, Nicholas Bloom, and Steven J. Davis, 2021. "Why working from home will stick," National Bureau of Economic Research Working Paper 28731.

Researchers who collected the data on preferences for the United States (Barrero, Bloom and Davis, 2021^[5]), also collected survey data aiming to estimate the value of working from home for employees, post-COVID, by asking them how much extra pay would compensate coming back to the office full-time. They concluded that firms would need to pay the average worker 9% more to get him/her to prefer full-time onsite work over hybrid work. They also showed that in the aftermath of the pandemic, women had a 50% larger gap than men between their preferred number of days working from home and what they were offered by their employers.

2. The effect of teleworking on gender inequalities: what do we know so far?

Understanding how current transformations in work practices related to the use of teleworking might affect gender-based labour market disparities implies not only measuring and monitoring gender-disaggregated trends in the *use of* teleworking, but also understanding how teleworking might *affect* gender disparities in labour market, as its use becomes more prevalent. Therefore, the paper next turns to reviewing findings in the literature on the effect of teleworking on: gender disparities in work-life balance; job satisfaction; pay; and career progression. While scholars researching these issues have paid renewed attention to teleworking in the context of the pandemic, this literature review mostly concentrates on studies based on pre-pandemic data to avoid many of the confounding factors that characterised the extra-ordinary period of the pandemic, when many different factors potentially affecting gender disparities moved all at once.

2.1 Teleworking mirrors pre-existing gender inequalities in work-life balance and job satisfaction

The issue of how teleworking affects work-life balance and job satisfaction has been frequently researched (Cazes et al., 2022^[12]) – yet most results to date are correlational rather than causal, with unresolved selection issues often clouding interpretation. For both men and women, studies point to teleworking's potential to help reconcile work with private life and to increase job satisfaction, notably through increased autonomy and reduced commuting time. Yet, they also point to risks related to increased work intensity and (unpaid) overtime hours (Chung, 2022^[13]), or social and professional isolation – see e.g. reviews by Charalampous et al. (2019^[14]) and Tavares (2017^[15]).

When it comes to *gender disparities in* how teleworking affects work-life balance and job satisfaction, only a limited number of studies measure effects on objective well-being measures. Using 2017-18 time use data on full-time American workers, Pabilonia and Vernon (2022^[16]) find that women who telework get more sleep than their counterparts in the office. Yet Künn-Nelen (2016^[17]) find that diagnosed health problems are barely affected by commuting time among British workers.

In terms of self-reported well-being, results are mixed. The meta-analysis conducted by Allen et al (2013^[18]) finds only small effects of teleworking on work-life balance, and no gender variation. Irrespective of gender, Song and Gao (2020^[19]) find that the subjective well-being of childless individuals is not significantly influenced by the location of work during the week in the United States. Results in Rodríguez-Modroño and López-Igual (2021^[20])'s study of European Working Conditions Survey data also show little difference by gender, with negative effects of occasional, highly mobile and regular home-based teleworking on work intensity¹¹ and working time quality¹² and positive effects of regular home-based teleworking on the propensity to report a good fit between family, social and work commitments for both men and women. Using British panel data, Wheatley (2016^[21]) find evidence that working from home has a positive effect on job and leisure satisfaction for both men and women.

By contrast, other studies find positive effect for women in particular: for instance, Künn-Nelen (2016^[17]) finds that women commuting less report higher levels of self-perceived health satisfaction. This is aligned with findings from Roberts et al. (2011^[22]) showing that commuting is detrimental to women's (but not men's) psychological health, probably due to their larger share of daily housework and childcare - see also Gutierrez (2018^[23]). Accordingly, Troup and Rose (2012^[24]) find that formal teleworking arrangements boost women's job satisfaction more than men's.

Yet other papers report negative effects on women and parents: Kim et al. (2020^[25]) find higher self-reported levels of work/family conflicts and higher fatigue among women than among men working from home. Song and Gao (2020^[19]) find negative effects of working from home on weekdays on parents' (particularly fathers') subjective well-being. Yucel and Chung (2021^[26]) find a stronger positive effect of working from home one work to family conflicts for women than for men.

Some results point to positive effects only for men, or for men and childless women (but not for mothers). Giménez-Nadal et al. (2019^[27]) find that only male teleworkers report lower levels of stress, tiredness and pain compared to male commuters in the United States, while there are no significant differences for women. Arntz et al. (2019^[28]) find positive teleworking effects on life satisfaction only for men and women without children in Germany.

Giménez-Nadal et al (2019^[27]) offer three potential explanations for these results. First, the absence of significant effect for women on job satisfaction could be due to the (already documented) fact that women tend to have lower job expectations and hence higher and more stable job satisfaction in general. Second, teleworking might also make less of a difference to women, as their commute is on average shorter and the gain in time when teleworking is relatedly lower than that of men.

The third potential explanation has to do with what men and women do with the time freed up from commuting and grooming. Indeed, Pabilonia and Vernon (2021^[29]) find that while leisure time increases for all teleworkers, during the week teleworking men spend most of the time saved on leisure activities, while women spend some of that time on increased household production – although importantly, their household production over the entire week does not increase, meaning that this corresponds to a shift of housework from weekend to weekdays when teleworking, rather than to additional housework.

All of the evidence quoted above is correlational rather than causal. This means that the results above are limited by unaddressed selection effects potentially biasing the results. For instance, negative effects could be explained by the fact that women who already experience higher levels of work/life conflicts opt for teleworking, while positive effects on, e.g. job satisfaction could be due to the fact that women in occupations in which teleworking is an enforceable option already have a higher job satisfaction to start with. More robust, causal evidence from Angelici and Profeta (2020^[30]), based on a randomised controlled experiment with Italian workers, shows that “smart workers”, who can autonomously define both their place of work and their schedule, see improvement in their work-life balance and in particular their satisfaction with free time, with stronger effects for women. In contrast to previous results, the study found that both male and female smart workers end up spending more time in housework and care activities. Authors conclude that fully flexible arrangements (combining teleworking and flexible hours) might help to reduce the gender care and housework gap.

Overall, available pre-pandemic evidence suggests that teleworking does not increase gender inequalities in work-life balance but mirrors pre-existing ones. Despite its potential to reduce work-life conflicts in general – which does materialise in some cases - teleworking cannot simply erase pre-existing gender inequalities in the division of household work (of which women shoulder the bigger part). In many already unequal contexts, teleworking, alongside other family-friendly flexibility measures, tend to be used primarily by mothers as a way to balance work and family commitments, while fathers might use it for other reasons, such as productivity enhancement (Craig and Powell, 2012^[31]). In that sense, the effect of teleworking on gender disparities in work-life balance and job satisfaction is likely to hinge on prevailing contextual gender norms (Chung and van der Lippe, 2020^[32]; Chung and van der Horst, 2018^[33]). Expectations about fathers’ and mothers’ roles are likely to affect the way in which teleworking might reduce or heighten gender inequalities in housework (Kurowska, 2018^[34]). Similarly, firms’ managerial and organisational cultures are likely to matter (Gálvez, Martínez and Pérez, 2011^[35]): teleworking leads to less work-life conflicts in firms where it is normalised, as indicated by the number of workers using the option (van der Lippe and Lippényi, 2018^[36]). Importantly, while teleworking might be reproducing pre-existing inequalities in work-life balance, there is no evidence that gender inequalities in housework are worsened by it. In fact, according to Pabilonia and Vernon (2022^[16]), an increase in the number of men teleworking might still help to reduce the gender care gap, since teleworking fathers (especially those who do it regularly) spend more time on primary care than their counterparts in the office – while teleworking mothers’ time on primary care does not increase (see also the evidence by Lyttelton et al. (2021^[37]) on smaller gaps in childcare among teleworking couples). Similarly, Chung and van der Horst (2018^[33]) argue that encouraging men to take up

teleworking as a family-friendly arrangement (rather than as a productivity-enhancing arrangement) might help to foster a more equal sharing of the household work burden. Dockery and Bawa (2018_[38]) also found small but positive effects of teleworking on the sharing of childcare responsibilities in Australian families.

Existing results also point to the fact that teleworking might yield better results in terms of reducing gender inequalities in work-life balance when combined with other family-friendly policies such as childcare and eldercare (Song and Gao, 2020_[19]) or flexible hours (Angelici and Profeta, 2020_[30]), and/or with measures challenging traditional expectations around gender roles in the household and fostering more equal norms and values, for instance policies supporting a more equal use of parental leave between mothers and fathers (Wanger and Zapf, 2021_[39]).

Although this aspect of teleworking's effect on gender disparities has perhaps been scrutinised the most so far, this review of the literature demonstrates that additional research is still needed. In particular, causal research allowing to solve the selection issues mentioned above would be particularly helpful. In addition, the lack of conceptual clarity in the data, discussed above, leads to many approximations and biases in the studies reviewed here. In addition to the frequent use of "work from home" instead of teleworking, many studies do not disentangle between teleworking and flexible hours, the latter being often assumed to be included in the former – while this is not always the case. This is important to the extent that some of the positive effects measured might owe to the combination of flexibility in the location *and timing* of work. Another element missing from most of the studies discussed above is the effect of variation in the frequency and intensity of teleworking. Finally, future research should also focus on identifying the mediating impact of prevailing gender norms. This would be a necessary first step in designing efficient policy interventions aimed at changing these norms so that teleworking can actually help closing the gender care and housework gaps.

2.2 The teleworking wage premium boosts men's wages more systematically than women's – leading to mixed effects on the gender pay gap

In theory, the effect of teleworking on the gender pay gap is unclear. Teleworking can be a means of increasing female labour force attachment and may thus lead to higher earnings for women (Arntz, Sarra and Berlingieri, 2019_[28]; Cazes et al., 2022_[12]). Several authors do find that teleworking is associated with a wage premium in various contexts – e.g. Pabilonia and Vernon (2022_[16]) in the United States, or Bonacini et al. (2020_[40]) in Italy. But if the positive wage effect is similar between men and women the gender pay gap will be unaffected; if the wage premium is higher for men, or if women face a wage penalty when taking up teleworking, the gender gap will actually increase.

Using labour force data from the United States, Weeden (2005_[41]) identifies a teleworking wage premium that does not substantially vary by gender – hence leaving the gender pay gap unaffected. Bonacini et al. (2020_[40]) however, find that a long-lasting jump in the take-up of teleworking risks increasing the gender wage gap. Considering levels of teleworking feasibility among Italian employees in 2018 (which were low compared to other European countries) as a counterfactual scenario, Bonacini et al. explore the potential consequences of a long-lasting increase in teleworking feasibility on the wage distribution in the future. Extrapolating from relationships observed in the 2018 data, they estimate the potential future effect on the average wage and on the wage distribution of a 10 percentage point decrease in the number of employees with low feasibility combined with a 10 percentage point increase in the number of employees with high teleworking feasibility. They find that such a "swap" in the distribution of teleworking feasibility would be associated with an average wage boost of up to €259 (or about 1% of the mean labour income). However, inequalities, and in particular the gender wage gap, would also increase, as this wage boost would primarily benefit male (as well as older, high-educated, and high-paid employees); the Gini index would increase for other groups, notably women.¹³

Accordingly, using time use data from the United States, Pabilonia and Vernon (2022_[16]) find that while teleworking fathers earn a wage premium compared with fathers in the office, some mothers who work

from home most of the time actually pay a wage penalty compared to those working in the office, in industries and occupations where telework is particularly prevalent. Authors argue that since teleworking mothers experience more interruptions in their workdays than other workers, that wage penalty could be a consequence of a negative effect of teleworking on their productivity. However, it is worth noting that they also find that while men benefit from a teleworking wage premium regardless of how often they telework, this is only true for women without children who *occasionally* telework – which points to the fact that other drivers, outside of objective productivity measures, are likely to be at play behind observed differences in wage responses.

Other empirical studies find that teleworking can in fact help reducing the gender pay gap in some cases. Analysing in particular the wage gap faced by mothers using Canadian linked employer-employee data, Fuller and Hirsch (2018^[42]) found that teleworking on average reduces the gender pay gap in general, and the motherhood wage gap in particular. However, results vary with mothers' education levels. Teleworking significantly increases the motherhood wage gap among the most educated women who face within-firm wage penalties: the authors argue that highly-educated mothers are stigmatised when working from home because face time is still used as a crucial indicator of productivity, "whether real or perceived", in high status jobs. By contrast, the gender gap is reduced among mothers with bachelor's degrees, who sort into lower paying firms in exchange for the opportunity to telework, but benefit from a positive within-firm wage effect (that authors attribute to the productivity enhancing effect of teleworking and the absence of stigma for women in this group) which more than compensates the negative sorting effect. Least educated women benefit both from within establishment dynamics and from teleworking reducing hiring barriers and allowing them to select into higher paying firms.

Using panel data from Germany, Arntz et al. (2019^[28]) also find that teleworking can help reduce the gender gap in some cases, albeit not always. Among parents, working from home can help to close the gender gap in hours and monthly earnings: while it does not affect the wages of childless workers, working from home comes with increased contractual hours and higher hourly wages among parents. The increase in contractual hours is particularly important among mothers, which helps reducing the gender pay gap among parents overall. However, effects on the gender *hourly* wage gap are less straightforward. Indeed, while the take up of working from home is associated with an increase in hourly wage among fathers irrespective of whether they stay in the same firm or change employers, this is only the case for mothers who *change employers*. When staying in the same firm, working from home increases fathers' hourly wage, but not mothers' – thereby increasing the gender pay gap.

Authors hypothesise that the differential in the wage impact of work from home between men and women staying in the same firm might be due to manager's gendered preconceptions regarding employees' motives for working from home (childcare for mothers, productivity enhancement for fathers) and related productivity effects (teleworking would make fathers more productive and mothers less so – see e.g. Chung (2020^[43]) on the gendered aspects of the flexibility stigma). This hypothesis is aligned with evidence by Leslie et al. (2012^[44]) that the impact of flexible working practices, including teleworking, on wages is mediated by managers' perceptions of *why* employees telework, rather than purely driven by objective measures of productivity. Controlling for employees' performance, Leslie et al. found that flexible working practices result in wage increases when managers attribute workers' request to work from home to a desire to increase work productivity, and consequently interpret it as a signal of high work commitment. By contrast, they find some evidence that working from home can result in a wage penalty when managers attribute workers' desire to telework to a personal life choice, which is interpreted as signalling low work commitment.

Arntz et al. (2019^[28]) formulate another theory to explain the differentiated wage effect of teleworking by gender among workers staying in the same firm. They argue that it could also reflect father's higher bargaining power when re-negotiating their wage as they take up work from home, leading them to ask for a wage increase while mothers do not. This is coherent with findings in Mas and Pallais (2017^[45])'s

experiment designed to estimate workers' "willingness to pay" for particular work arrangements, including work from home, in the United States. They find that the average worker in their experiment is willing to give up 8% of wages for the option to telework. Importantly, women are willing to pay substantially more than men to be able to work from home and for combined place and schedule flexibility (about twice as much). This is particularly true for mothers, who are willing to pay even more than other women to be able to work from home. The fact that mothers "need" teleworking more than fathers – quite likely to accommodate the disproportionate share of the caring and housework burden that they are shouldering – could indeed affect their bargaining position when requesting teleworking.

To sum up, existing studies find that teleworking can in fact be associated with a wage boost; however, this wage boost appears to have so far benefited men more systematically than women. Some authors posit that this might reflect real gendered productivity effects, as women experience more interruptions in their work when teleworking; however, the fact that this penalty also concerns childless women who regularly telework, and concentrates on highly-educated teleworking mothers while it actually helps close the wage gap for other mothers, suggests that gendered stigma, social norms, and firms' managerial culture might in fact be important explanatory factors behind this unequal effect of teleworking by gender (Chung, 2020^[43]). Evidence on women and mothers' higher propensity to select into jobs offering work from home and their higher "willingness to pay" for that option suggests that counter-acting measures (e.g. pay transparency policies) strengthening female bargaining power (Arntz, Sarra and Berlingieri, 2019^[28]; Cazes et al., 2022^[12]; OECD, 2021^[46]) might be necessary to avoid adverse consequences on the gender pay gap owing to differentials in mothers and fathers' bargaining position when adopting teleworking.

Additional research on the productivity effect of teleworking by gender and parental status, as well as more research aiming to identify the role of gendered social expectations and stereotypes notably affecting men and women's bargaining position would be very helpful to disentangle the effect on the gender pay gap of teleworking itself from the effect of the environment in which teleworking is used. As with research on work-life balance, potential selection effects are also complicating the interpretation of results in this field; causal analysis of the effect of teleworking on wages by gender, parental status and education levels would therefore also help to shed more light on the issue in the future.

2.3 The gender disaggregated impact of teleworking on career progression: the jury is still out, but biases in existing career advancement practices already need weeding out

Available evidence on how teleworking respectively affects men and women's career progression is the thinnest to date. To the extent that it appears to be a successful means of fostering women's labour force attachment, there are some evidence that teleworking can help women's career progression. This is especially true after childbirth: using data for the United Kingdom, Chung and van der Host (2018^[47]) find suggestive evidence that teleworking helps women to stay in employment after the birth of their first child. Mothers with access to teleworking appear less likely to cut their hours. According to Chung (2020^[43]), this could help close a career ladder gap, since teleworking is less stigmatised than part-time, and therefore much less likely to lead to negative career outcomes. More generally, Arntz et al. argue that promoting teleworking might be a helpful policy to strengthen women's careers since it has a positive effect on the number of monthly hours that mothers work (Arntz, Sarra and Berlingieri, 2019^[28]).

However, if teleworking is used primarily by women as a means of coping with the unequal sharing of housework and caring responsibilities, it carries a risk of penalising women's career advancement more than men's, by diminishing their relative visibility to managers still using face time rather than outputs as a key element of performance appraisal (Tomei, 2021^[48]), or by fostering preconceptions about women's diminished work investment when teleworking among managers granting career advancement opportunities (Leslie et al., 2012^[44]; Chung and van der Lippe, 2020^[32]). Several studies document the fact that teleworkers in general, and teleworking women in particular, do in fact fear that their teleworking poses

a threat to their career progression (Charalampous et al., 2019^[14]) and their training opportunities (Redman, Snape and Ashurst, 2009^[49]). Tomei (2021^[48]) discusses the culture of presentism penalising women's career progression before the pandemic and argues that although the assumption that "out of sight" workers are less performant has been partially challenged by the experience of the COVID-19 crisis, it remains rather entrenched in practice. Rodríguez-Modroño and López-Igual (2021^[20]) show that men are more positive about their career prospects when teleworking than women: 19% of teleworking women in their data perceive job insecurity, versus 14.6% of men. Interestingly though, these statistics reveal that men also worry about teleworking negatively affecting their career progression. In fact, Smithson et al. (2004^[50]) find that although flexible work practices such as teleworking improve workers' self-perceived productivity and organisational commitment, perceived threats to salary and career advancement lead more men than women to renounce the option to telework. This is due to their stronger adherence to the breadwinner identity according to the authors – and/or perhaps, one might hypothesise, to the fact that the pressure of work-life conciliation is less strong on men than on women. In that sense, fears regarding teleworking's impact on career progression might turn into self-fulfilling prophecies if the take-up of teleworking is concentrated among mothers requesting it *in spite of* the perceived detrimental effect on career progression, thereby reinforcing the negative stereotype about teleworking to accommodate private life engagements signalling low work commitment.

Moving away from perceptions, empirical results on measurable effects of teleworking on career progression are scarce and mixed. McCloskey and Igbaria (2003^[51]) find no effect of teleworking on workers' career prospects (although the limited sample size and focus on managers' perspective used in this study should be noted). Richardson and McKenna (2013^[52])'s qualitative study of Canadian employees shows that employees not physically present in the office experience greater management control, suggestive of the existence of trust issues between workers and management that could have repercussions on teleworkers' career advancement – although the study does not look into this and does not signal a gender difference in that regard. The field analysis and laboratory experiments conducted by Leslie et al. (2012^[44]), already quoted above, show that teleworking's effect on career progression is likely to hinge on managers' perception about the motivation behind teleworking take-up – which tend to be gendered, with teleworking interpreted as a signal of high commitment among men, and of low commitment among women (see above). This is consistent with Chung and van der Host (2018^[33])'s conclusion that teleworking might help men to increase their work intensity and further their career advancement, while it might help women to alleviate work-life conflicts - with no positive effects on their career.

Overall, though, robust empirical evidence on the differential impact of teleworking on men and women's career progression is still missing. What emerges from the studies quoted above is that, rather than teleworking itself, several contextual elements surrounding the use of teleworking might negatively affect the career prospects of teleworkers, namely the fact that men use it less than women (meaning that reduced face time concerns more women than men), the fact that men use teleworking for different reasons (or are assumed to use it for different reasons) than women (meaning that reduced face time affects men differently than women), and the fact that performance evaluation and career advancement hinges on visibility and input measurement, rather than output evaluation (i.e. the fact that face time matters at all in career progression).

These insights lead some authors to argue that several additional measures should be implemented alongside teleworking to avoid potential career costs for women, including managerial training, notably on output evaluation and on the limits and biases of performance appraisal and career advancement mechanisms based on visibility measurement. Leslie et al. (2012^[44]) argue that managers should also be trained to challenge the assumption that personal life investments is detrimental to work related investments, to reduce the bias against employees using teleworking for (or presumed to telework for) personal life reasons, who are automatically assumed to lack work commitment. Human resources policies promoting equal career opportunities between teleworkers and office workers, as well as trust and cooperation between teleworkers and their managers, are also listed among the policies that would help

reduce the potential negative impact on career progression for all teleworkers (Tomei, 2021^[48]). Authors also call for policies aimed at mainstreaming teleworking by increasing its take-up among men and non-parents, and for the provision of high-quality child and elderly care services which would, by effectively relieving women of some of their caring work, help getting rid of the suspicion that women workers perform less when teleworking (Tomei, 2021^[48]; Chung, 2020^[43]).

A key take-away from this review of the literature is that more robust studies are needed and should be a primary focus of future research. In doing this, paying attention to within-household dynamics – such as that identified by Langner (2017^[53]), who shows that within couples, men’s use of flexible hours is beneficial to their female partner’s career perspectives - might also be worthwhile.

3. Ways forward for data collection and research

3.1 Adopting a consistent definition across sources

This paper has shown that the multiplicity of sometimes overlapping but different concepts currently used in various sources complicates comparisons, limits the possibility of longitudinal analyses, and leads to a problematic lack of conceptual clarity. Data on teleworking and on work from home capture different phenomena, with different gendered patterns. Therefore, a straightforward way to improve future data collection efforts would be to focus as much as possible on a single concept and consistent definition across sources.

Among those discussed in section 1, the concept of teleworking best describes the reality unfolding in the aftermath of the COVID crisis. The ILO definition (i.e. teleworking as “*carrying out work in a physical location that is different from the default place of work using information and communications technology (ICT) [and/or] telephones*”), by relying on the notions of “default place of work” and “physical location where the work is carried out” has the merit to be conceptually precise. The definition used in Working Conditions Surveys (i.e. teleworking as “*regularly using ICTs and working in at least one other location than the employer’s premises several times a month*”) in addition contains information about frequency (it focuses on *regular*, rather than occasional teleworking) and mobility (it specifies that teleworking can be done from various places, not limited to home).

Building on these two definitions, a definition of teleworking fit for impactful data collection would retain the conceptual clarity of the ILO definition and add information about frequency contained in the WCS definition. It would also add information about intensity (i.e. the number of days spent teleworking a week) to allow deriving information about hybrid work. In order to make sure that workers bringing overtime work back home but otherwise working in the office are not counted as teleworkers, the definition should also include precisions regarding the timing of teleworking (i.e. it should be clear that teleworking is work away from the default place of work taking place *during* normal hours, not exclusively outside of them).

Of lesser importance but still potentially useful, information on whether teleworking is conducted in a high mobility or low mobility fashion (i.e. whether workers mainly work from the same place - potentially their home - when they are not in the office, or whether they telework from a lot of different places) could also be included. In firm-level surveys, efforts should be made to measure the proportion of workers concerned rather than a simple dummy signalling that teleworking exist in that firm, as well as tabulations about the characteristics of those teleworking, including the proportion of women and men teleworking.

To achieve conceptual clarity, one possibility would be to use the ILO definition as a main question to identify teleworkers, and to complement it with questions about frequency and intensity. Adopting such a definition consistently across OECD Member States in regular individual and/or firm-level surveys would go a long way in understanding the gendered reality of teleworking since the pandemic-induced boom and in the future.

3.2 Improving data collection

Beyond adopting a consistent definition, future data collection efforts should be designed to allow linking gender-disaggregated data on teleworking use with key gender-disaggregated labour market outcomes such as pay, career progression, job satisfaction, and work-life balance. Ultimately the aim of collecting data on the gender-disaggregated use of teleworking is to understand whether the development of teleworking aggravates, improves, or does not affect pre-existing gender gaps, which calls for indicators of these gaps to be regularly produced. In that regard, the literature review has shown that the biggest gaps in knowledge concern career progression and objective measure of job quality and work-life balance, so it will be of particular importance to collect data on these issues.

Existing research also highlights the role of important mediating factors, such as parental status, workers' autonomy, managerial attitudes, prevailing gender norms as well as interaction with other policies, such as flexible hours. Data collection should ideally be designed to allow for the possibility of these mediating factors and interaction effects to be teased out in the future.

3.3 A roadmap for future research

As discussed above, research on how teleworking affects gender disparities in labour market outcomes is fraught with selection issues. In that regard, a primary objective of future research efforts should be to address these issues as much as possible, aiming for causality. This concerns all outcomes discussed in this paper, e.g. job satisfaction, work-life balance, pay, and career progression. Before this, adopting a conceptually consistent and single definition would be important: future research would particularly benefit from focusing on well-defined teleworking data rather than vaguer “work from home” data.

In terms of control variables and interaction effects to consider, future research endeavours should as much as possible aim to include variables capturing the presence of and interaction with other policies (e.g. flexible hours, child and elder care, parental leave, etc.); proxies measuring the prevailing degree of gender neutrality or gender segregation in a given cultural context; and, for firm-level analyses, proxies capturing management culture, notably in terms of trust and strength of hierarchical structures. Where possible (i.e., where household panel data are available), within-household dynamics should also be considered.

Several research questions on which to focus emerge from the above analysis of available data and literature. Before looking at effects on various labour market outcomes, it might be useful for researchers to focus on understanding the determinants of gender differences in the *use of* teleworking. One issue to investigate notably is the origin of the larger gap between ability to telework and incidence of teleworking for women. Future research could aim to measure how much of that gap owes to the higher concentration of women in particular occupations and industries versus other factors, such as hierarchical position or gender discrimination in access to teleworking.

When it comes to analysing the effect of teleworking on gender disparities in labour market outcomes, two research questions appear as particularly relevant in the post-pandemic context. First, gender-differentiated effects on career progression should be a research priority since they have been under-researched so far. The growth in the incidence of regular teleworking following the pandemic, and the transformation in management practices that potentially accompanied it, might offer a fertile ground to tease out the “pure” effect of teleworking on career progression, in contexts where teleworking use is mainstreamed among workers, irrespective of their gender and parental status, and where output-based (rather than face-time based) performance evaluation systems are generalised. Second, the productivity effect of teleworking by gender and parental status should also be investigated more closely, to help pinning down the cause of the observed gender gaps in teleworking wage premia.

Finally, it will be important to evaluate the effectiveness of the policy interventions discussed throughout this paper as means of addressing the potentially negative side-effects of teleworking on gender disparities. One area to focus on would be the effect of the increasing take-up of teleworking among men and non-parents teleworking (and of gender-mainstreaming policies encouraging them to take up teleworking) on the gender care and housework gaps, and on wage premia and career progression. Other policies to look at include pay transparency policies and other measures aimed at strengthening female bargaining power, and their effect on the gender gap in teleworking wage boost. Finally, analyses of policies mentioned as capable of mitigating the (perceived or real) detrimental effect of teleworking on women's career progression (including dedicated managerial training and human resources policies) would also be a welcome focus of future research.

References

- Allen, T. et al. (2013), “Work-family conflict and flexible work arrangements: deconstructing flexibility?”, *Personnel psychology*, Vol. 66, pp. 345-376, <https://doi.org/10.1111/peps.12012>. [18]
- Angelici, M. and P. Profeta (2020), “Smart-Working: Work Flexibility Without Constraints”, *SSRN Electronic Journal*, <https://doi.org/10.2139/ssrn.3556304>. [30]
- Arntz, M., B. Sarra and F. Berlingieri (2019), “Working from Home: Heterogeneous Effects on Hours Worked and Wages”, *SSRN Electronic Journal*, <https://doi.org/10.2139/ssrn.3383408>. [28]
- Barrero, J., N. Bloom and S. Davis (2021), *Why Working from Home Will Stick*, National Bureau of Economic Research, Cambridge, MA, <https://doi.org/10.3386/w28731>. [5]
- Bonacini, L., G. Gallo and S. Scicchitano (2020), “Working from home and income inequality: risks of a ‘new normal’ with COVID-19”, *Journal of Population Economics*, Vol. 34/1, pp. 303-360, <https://doi.org/10.1007/s00148-020-00800-7>. [40]
- Cazes, S. et al. (2022), “Well-being, productivity and employment: Squaring the working time policy circle”, in *OECD Employment Outlook 2022: Building Back More Inclusive Labour Markets*, OECD Publishing, Paris, <https://doi.org/10.1787/608c59f1-en>. [12]
- Charalampous, M. et al. (2019), “Systematically reviewing remote e-workers’ well-being at work: a multidimensional approach”, *European Journal of Work and Organizational Psychology*, Vol. 28/1, pp. 51-73, <https://doi.org/10.1080/1359432X.2018.1541886>. [14]
- Chung, H. (2022), *The flexibility paradox : why flexible working leads to (self-)exploitation*, Policy Press. [13]
- Chung, H. (2020), “Gender, Flexibility Stigma and the Perceived Negative Consequences of Flexible Working in the UK”, *Social Indicators Research*, Vol. 151/2, pp. 521-545, <https://doi.org/10.1007/S11205-018-2036-7/TABLES/5>. [43]
- Chung, H. et al. (2021), “Covid-19, Flexible Working, and Implications for Gender Equality in the United Kingdom”, *Gender and Society*, Vol. 35/2, pp. 218-232, https://doi.org/10.1177/08912432211001304/ASSET/IMAGES/LARGE/10.1177_08912432211001304-FIG2.JPEG. [55]
- Chung, H. and M. van der Horst (2018), “Flexible Working and Unpaid Overtime in the UK: The Role of Gender, Parental and Occupational Status”, *Social Indicators Research*, Vol. 151/2, pp. 495-520, <https://doi.org/10.1007/s11205-018-2028-7>. [33]

- Chung, H. and M. van der Horst (2018), “Women’s employment patterns after childbirth and the perceived access to and use of flexitime and teleworking”, *Human Relations*, Vol. 71/1, pp. 47-72, <https://doi.org/10.1177/0018726717713828>. [47]
- Chung, H. and T. van der Lippe (2020), “Flexible Working, Work–Life Balance, and Gender Equality: Introduction”, *Social Indicators Research*, Vol. 151/2, pp. 365-381, <https://doi.org/10.1007/S11205-018-2025-X/FIGURES/2>. [32]
- Craig, L. and A. Powell (2012), “Dual-earner parents’ work-family time: the effects of atypical work patterns and non-parental childcare”, *Journal of Population Research*, Vol. 29/3, pp. 229-247, <https://doi.org/10.1007/s12546-012-9086-5>. [31]
- Criscuolo, C. et al. (2021), “The role of telework for productivity during and post-COVID-19: Results from an OECD survey among managers and workers”, *OECD Productivity Working Papers*, No. 31, OECD Publishing, Paris, <https://doi.org/10.1787/7fe47de2-en>. [6]
- Dey, M. et al. (2020), “Ability to work from home: evidence from two surveys and implications for the labor market in the COVID-19 pandemic”, *Monthly Labor Review*, Vol. 2020, pp. 1-21, <https://doi.org/10.21916/MLR.2020.14>. [10]
- Dingel, J. and B. Neiman (2020), “How many jobs can be done at home?”, *Journal of Public Economics*, Vol. 189, p. 104235, <https://doi.org/10.1016/j.jpubeco.2020.104235>. [7]
- Dockery, A. and S. Bawa (2018), “When two worlds collude: Working from home and family functioning in Australia”, *International Labour Review*, Vol. 157/4, pp. 609-630, <https://doi.org/10.1111/ilr.12119>. [38]
- Fana, M., S. Torrejón Pérez and E. Fernández-Macías (2020), “Employment impact of Covid-19 crisis: from short term effects to long terms prospects”, *Journal of Industrial and Business Economics*, Vol. 47/3, pp. 391-410, <https://doi.org/10.1007/s40812-020-00168-5>. [11]
- Frecassetti, P. et al. (2021), *The impact of teleworking and digital work on workers and society : special focus on surveillance and monitoring, as well as on mental health of workers*, <https://data.europa.eu/doi/10.2861/691994>. [54]
- Fuller, S. and C. Hirsh (2018), ““Family-Friendly” Jobs and Motherhood Pay Penalties: The Impact of Flexible Work Arrangements Across the Educational Spectrum”, *Work and Occupations*, Vol. 46/1, pp. 3-44, <https://doi.org/10.1177/0730888418771116>. [42]
- Galasso, V. and M. Foucault (2020), “Working during COVID-19: Cross-country evidence from real-time survey data”, *OECD Social, Employment and Migration Working Papers*, No. 246, OECD Publishing, Paris, <https://doi.org/10.1787/34a2c306-en>. [4]
- Gálvez, A., M. Martínez and C. Pérez (2011), “Telework and Work-Life Balance: Some Dimensions for Organisational Change”, *Journal of Workplace Rights*, Vol. 16/3-4, pp. 273-297, <https://doi.org/10.2190/wr.16.3-4.b>. [35]
- Giménez-Nadal, J., J. Molina and J. Velilla (2019), “Work time and well-being for workers at home: evidence from the American Time Use Survey”, *International Journal of Manpower*, Vol. 41/2, pp. 184-206, <https://doi.org/10.1108/IJM-04-2018-0134>. [27]
- Gutierrez, F. (2018), “Commuting Patterns, the Spatial Distribution of Jobs and the Gender Pay Gap in the U.S.”, *SSRN Electronic Journal*, <https://doi.org/10.2139/ssrn.3290650>. [23]

- ILO (2021), *Healthy and safe telework - technical brief*, International Labour Organisation, Geneva, https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---lab_admin/documents/publication/wcms_836250.pdf (accessed on 12 May 2022). [2]
- ILO (2020), *Defining and measuring remote work, telework, work at home and home-based work*, International Labour Organisation, Geneva, https://www.ilo.org/global/statistics-and-databases/publications/WCMS_747075/lang--en/index.htm (accessed on 11 May 2022). [1]
- Ker, D., P. Montagnier and V. Spiezia (2021), “Measuring telework in the COVID-19 pandemic”, *OECD Digital Economy Papers*, No. 314, OECD, <https://doi.org/10.1787/0a76109f-en> (accessed on 31 May 2022). [58]
- Kim, J. et al. (2020), “Workplace Flexibility and Worker Well-Being by Gender”, *Journal of Marriage and Family*, Vol. 82/3, pp. 892-910, <https://doi.org/10.1111/jomf.12633>. [25]
- Künn-Nelen, A. (2016), “Does Commuting Affect Health?”, *Health Economics*, Vol. 25/8, pp. 984-1004, <https://doi.org/10.1002/hec.3199>. [17]
- Kurowska, A. (2018), “Gendered Effects of Home-Based Work on Parents’ Capability to Balance Work with Non-work: Two Countries with Different Models of Division of Labour Compared”, *Social Indicators Research*, Vol. 151/2, pp. 405-425, <https://doi.org/10.1007/s11205-018-2034-9>. [34]
- Langner, L. (2017), “Flexible men and Successful Women: The Effects of Flexible Working Hours on German Couples’ Wages”, *Work, Employment and Society*, Vol. 32/4, pp. 687-706, <https://doi.org/10.1177/0950017017708161>. [53]
- Leslie, L. et al. (2012), “Flexible Work Practices: A Source of Career Premiums or Penalties?”, *Academy of Management Journal*, Vol. 55/6, pp. 1407-1428, <https://doi.org/10.5465/amj.2010.0651>. [44]
- Luca, D., C. Özgüzel and Z. Wei (2023), *What factors enabled individuals to work remotely during the pandemic?*, OECD Publishing. [56]
- Lyttelton, T., E. Zang and K. Musick (2021), “Telecommuting and gender inequalities in parents’ paid and unpaid work before and during the COVID-19 pandemic”, *Journal of Marriage and Family*, Vol. 84/1, pp. 230-249, <https://doi.org/10.1111/jomf.12810>. [37]
- Mas, A. and A. Pallais (2017), “Valuing Alternative Work Arrangements”, *American Economic Review*, Vol. 107/12, pp. 3722-3759, <https://doi.org/10.1257/aer.20161500>. [45]
- McCloskey, D. and M. Igbaria (2003), “Does “Out of Sight” Mean “Out of Mind”? An Empirical Investigation of the Career Advancement Prospects of Telecommuters”, *Information Resources Management Journal*, Vol. 16/2, pp. 19-34, <https://doi.org/10.4018/irmj.2003040102>. [51]
- OECD (2021), *Pay Transparency Tools to Close the Gender Wage Gap*, Gender Equality at Work, OECD Publishing, Paris, <https://doi.org/10.1787/e5a5b91d-en>. [46]
- OECD (2021), *Strengthening Economic Resilience Following the COVID-19 Crisis: A Firm and Industry Perspective*, OECD Publishing, Paris, <https://doi.org/10.1787/2a7081d8-en>. [57]

- OECD (2021), "Working time and its regulation in OECD countries: How much do we work and how?", in *OECD Employment Outlook 2021: Navigating the COVID-19 Crisis and Recovery*, OECD Publishing, Paris, <https://doi.org/10.1787/c18a4378-en>. [3]
- OECD (2020), *OECD Regions and Cities at a Glance 2020*, OECD Publishing, Paris, <https://doi.org/10.1787/959d5ba0-en>. [8]
- Pabilonia, S. and V. Vernon (2022), "Telework, Wages, and Time Use in the United States", *Review of Economics of the Household*, <https://doi.org/10.1007/s11150-022-09601-1>. [16]
- Pabilonia, S. and V. Vernon (2021), "Telework and Time Use", in Zimmerman, K. (ed.), *Handbook of Labor, Human Resources and Population Economics*, Springer, <https://www.iza.org/publications/dp/14827/telework-and-time-use> (accessed on 27 May 2022). [29]
- Redman, T., E. Snape and C. Ashurst (2009), "Location, Location, Location: Does Place of Work Really Matter?", *British Journal of Management*, Vol. 20, pp. S171-S181, <https://doi.org/10.1111/j.1467-8551.2008.00640.x>. [49]
- Richardson, J. and S. McKenna (2013), "Reordering Spatial and Social Relations: A Case Study of Professional and Managerial Flexworkers", *British Journal of Management*, Vol. 25/4, pp. 724-736, <https://doi.org/10.1111/1467-8551.12017>. [52]
- Roberts, J., R. Hodgson and P. Dolan (2011), "'It's driving her mad': Gender differences in the effects of commuting on psychological health", *Journal of Health Economics*, Vol. 30/5, pp. 1064-1076, <https://doi.org/10.1016/j.jhealeco.2011.07.006>. [22]
- Rodríguez-Modroño, P. and P. López-Igual (2021), "Job Quality and Work—Life Balance of Teleworkers", *International Journal of Environmental Research and Public Health*, Vol. 18/6, p. 3239, <https://doi.org/10.3390/ijerph18063239>. [20]
- Smithson, J. et al. (2004), "Flexible Working and the Gender Pay Gap in the Accountancy Profession", *Work, Employment and Society*, Vol. 18/1, pp. 115-135, <https://doi.org/10.1177/0950017004040765>. [50]
- Song, Y. and J. Gao (2020), "Does Telework Stress Employees Out? A Study on Working at Home and Subjective Well-Being for Wage/Salary Workers", *Journal of Happiness Studies*, Vol. 21/7, pp. 2649-2668, <https://doi.org/10.1007/s10902-019-00196-6>. [19]
- Sostero, M. et al. (2020), "Teleworkability and the COVID-19 crisis: a new digital divide? A Joint European Commission-Eurofound Report", https://joint-research-centre.ec.europa.eu/publications/teleworkability-and-covid-19-crisis-new-digital-divide_en (accessed on 31 May 2022). [9]
- Tavares, A. (2017), "Telework and health effects review", *International Journal of Healthcare*, Vol. 3/2, p. 30, <https://doi.org/10.5430/ijh.v3n2p30>. [15]
- Tomei, M. (2021), "Teleworking: A Curse or a Blessing for Gender Equality and Work-Life Balance?", *Intereconomics*, Vol. 56/5, pp. 260-264, <https://doi.org/10.1007/s10272-021-0995-4>. [48]
- Troup, C. and J. Rose (2012), "Working from home: do formal or informal telework arrangements provide better work–family outcomes?", *Community, Work & Family*, Vol. 15/4, pp. 471-486, <https://doi.org/10.1080/13668803.2012.724220>. [24]

- van der Lippe, T. and Z. Lippényi (2018), “Beyond Formal Access: Organizational Context, Working From Home, and Work–Family Conflict of Men and Women in European Workplaces”, *Social Indicators Research*, Vol. 151/2, pp. 383-402, <https://doi.org/10.1007/s11205-018-1993-1>. [36]
- Wanger, S. and I. Zapf (2021), “For better or worse: How more flexibility in working time arrangements and parental leave experiences affect fathers’ working and childcare hours in Germany”, *Journal of Family Research*, <https://doi.org/10.20377/jfr-644>. [39]
- Weeden, K. (2005), “Is there a flexiglass ceiling? Flexible work arrangements and wages in the United States”, *Social Science Research*, Vol. 34/2, pp. 454-482, <https://doi.org/10.1016/j.ssresearch.2004.04.006>. [41]
- Wheatley, D. (2016), “Employee satisfaction and use of flexible working arrangements”, *Work, Employment and Society*, Vol. 31/4, pp. 567-585, <https://doi.org/10.1177/0950017016631447>. [21]
- Yucel, D. and H. Chung (2021), “Working from home, work–family conflict, and the role of gender and gender role attitudes”, <https://doi.org/10.1080/13668803.2021.1993138>, <https://doi.org/10.1080/13668803.2021.1993138>. [26]

Notes

¹ Data on the observed use of teleworking is different from information on the possibility to access teleworking (although the two are likely to be related), which largely depends on the regulatory framework in place in a given country. See OECD (2021^[3]) for information on access and a classification of countries based on the existence of a right to telework and the relative enforceability of that right.

² This list comprises the most common concepts, but is not exhaustive. Some country-specific concepts have also been developed: for instance, in Italy, the concept of smart working refers to a fully flexible way of organising work whereby for a given period, workers are free to define their time schedule and to choose their physical location of work without any constraints. Other publications include other concepts such as “distanced work”, “telecommuting”, or “e-work”.

³ For instance, the definition used in the German socio-economic panel (SOEP) is “employees sometimes doing their job at home”, which could mean occasional remote workers from home, or employees working overtime from home.

⁴ The European Working Conditions Survey is in theory collected every five years but there was no data collection in 2020. A new wave has been announced but has not yet been released at the time of writing this paper. The American Working Conditions Survey was first collected in 2015, and no further waves have been announced so far. The 5th and 6th waves of the Korean workplace conditions surveys (respectively collected in 2017 and 2020) both contain information on teleworking.

⁵ This higher use of *regular* teleworking among women could be linked to the fact that women shoulder a larger part of the caring and housework workload and therefore use the time saved (e.g. on commuting) when working from home as a regular coping mechanism to balance life and work duties. It could also be linked to a higher proportion of women bringing work home from the office if as discussed above the variable “work from home” also captures this phenomenon. Finally, women’s higher rate of regular work

from home might also be due to their over-representation in occupations with relatively high teleworkability (e.g. office-based, teaching, secretarial or administrative jobs, see section 1.2.3) (Frecassetti et al., 2021^[54]).

⁶ The average pattern, with more women than men working from home overall, characterises 15 out of 27 countries. Out of these 15 countries, the overall difference was indeed, in line with the average pattern, driven by the fact that more women than men worked *usually* from home - while more men than women worked from home *sometimes* in Belgium, the Czech Republic, Germany, France, Italy, Romania, and Spain. In Estonia, Greece, Hungary, Lithuania, Latvia, Poland, Slovakia and Slovenia, more women than men worked from home usually *and* sometimes. By contrast, in the 12 other countries, more men than women worked from home overall. In Ireland, Iceland and Norway, men worked more from home regardless of frequency. In Austria, Finland, Luxembourg, Portugal, Switzerland and the United Kingdom, usual work from home was still predominantly used by women but less prevalent than occasional work from home, which was predominantly used by men. There were no clear-cut gendered trends linked to the frequency of work from home in Denmark and Sweden, although more men than women worked from home overall over the period in both countries. Finally, usual work from home was more prevalent among men, and occasional work from home more prevalent among women in the Netherlands (possibly owing to the important proportion of women already working part-time in this country (Frecassetti et al., 2021^[54])). Source: EU-LFS. Data not shown here but available on request, see Figure A.1 for data on a selection of individual countries).

⁷ See also OECD (2021^[57]) on the fact that *during* the pandemic, more men than women were in non-essential non-teleworkable *industries*, while more women than men were either in non-essential but teleworkable industries, or in essential industries.

⁸ This is also aligned with OECD research on the individual and local drivers of remote work uptake during the pandemic across cities and regions in 29 European countries, which suggests that gender differences in take-up might be driven by e.g., occupational differences between men and women (Luca, Özgüzel and Wei, 2023^[56]).

⁹ According to OECD (2021^[58]), one possible explanation for the fact that the proportion of women working from home increased more than that of men during the pandemic is that women might have been more likely to be the ones faced with the childcare challenges imposed by school closures at that time, and hence to have taken up working from home as a solution. Another potential explanation is that the percentage of women in teleworkable jobs that were not actually teleworking (in other words, the reserve of potential female teleworkers) was higher than that of men in teleworkable jobs who did not telework (see section 1.2.2).

¹⁰ These differences between countries could, among other things, possibly be due to different patterns of occupational disparities (and hence of gender disparities in teleworkability) between countries, see section 1.2.2.

¹¹ Work intensity is measured by the authors as an index aggregating e.g. time pressure, frequency of disruptive interruptions, pace determinants, or emotional demands.

¹² Working time quality is measured by aggregating e.g. the incidence of long hours, the possibility to take a break, atypical working times, working time arrangements, and flexibility.

¹³ Importantly, this empirical strategy relies on the assumption that the relationships between teleworking feasibility and wages by gender estimated on the 2018 data (when teleworking use in Italy was among the lowest in Europe, and probably reserved to a small elite) would still hold in the future.

Annex A. Main sources on the use of teleworking or most approaching concept in OECD countries

Table A.1. Main sources on the use of teleworking or most approaching concept in OECD and accession countries

Country	Source name	Data provider	Period covered (for the relevant item)	Frequency (for the relevant item)	Type of data	Concept used	Information on intensity and regularity	Pre-Covid data	Gender disaggregation
Australia	Business impacts of COVID-19 survey	Australian Bureau of Statistics	September 2020	Ad hoc	Firm-level	Teleworking	No information	Yes	No
Australia	Global WFH dataset	WFH Research	July 2021; February 2022	Ad hoc	Individual level	Work from home	Number of full paid teleworking days per week	No	Yes
Australia	HILDA	The Melbourne Institute	2001 - present	Yearly	Individual level	Work from home	Number of normal working hours usually worked at home per week as a result of a formal arrangement with employer	Yes	Yes
Australia	Household Impacts of COVID-19 Survey	Australian Bureau of Statistics	September 2020 - March 2022 (8 waves)	Ad hoc	Individual level	Work from home	Frequency of work from home in the last four weeks - never, at least once, more than once (at least once a week; all or most days)	No	Yes
Australia	REPEAT	Galasso et al.	Mars 2020; May 2020	Ad hoc - survey ended	Individual level	Work from home	No information	No	Yes
Australia	Telework survey of the OECD Global Forum on Productivity	Criscuolo et al.	October 2020	Ad hoc	Firm-level	Remote work	No information	Yes	No
Austria	Global WFH dataset	WFH Research	July 2021; February 2022	Ad hoc	Individual level	Work from home	Number of full paid teleworking days per week	No	Yes

Austria	REPEAT	Galasso et al.	Mars 2020; May 2020	Ad hoc - survey ended	Individual level	Work from home	No information	No	Yes
Austria	Telemwork survey of the OECD Global Forum on Productivity	Criscuolo et al.	October 2020	Ad hoc	Firm-level	Remote work	No information	Yes	No
Belgium	Telemwork survey of the OECD Global Forum on Productivity	Criscuolo et al.	October 2020	Ad hoc	Firm-level	Remote work	No information	Yes	No
Brazil	Global WFH dataset	WFH Research	July 2021; February 2022	Ad hoc	Individual level	Work from home	Number of full paid teleworking days per week	No	Yes
Brazil	Pesquisa Pulso Empresa: Impacto da Covid-19 nas empresas	IBGE	June 2020 - August 2020	Bi-weekly - survey ended	Firm-level	Teleworking	No information	No	No
Brazil	PNAD COVID19	IBGE	May-November 2020 (21 waves)	Weekly- survey ended	Individual level	Remote work	No information	Yes	Yes
Brazil	REPEAT	Galasso et al.	Mars 2020; May 2020	Ad hoc - survey ended	Individual level	Work from home	No information	No	Yes
Brazil	Telemwork survey of the OECD Global Forum on Productivity	Criscuolo et al.	October 2020	Ad hoc	Firm-level	Remote work	No information	Yes	No
Colombia	Telemwork survey of the OECD Global Forum on Productivity	Criscuolo et al.	October 2020	Ad hoc	Firm-level	Remote work	No information	Yes	No
Costa Rica	Telemwork survey of the OECD Global Forum on Productivity	Criscuolo et al.	October 2020	Ad hoc	Firm-level	Remote work	No information	Yes	No
Canada	Canadian survey on business conditions	Statistics Canada	April 2020 - November 2020 (3 waves)	Ad hoc	Firm-level	Teleworking or remote work	No information	Yes	No
Canada	Global WFH dataset	WFH Research	July 2021; February 2022	Ad hoc	Individual level	Work from home	Number of full paid teleworking days per week	No	Yes
Canada	REPEAT	Galasso et al.	Mars 2020; May 2020	Ad hoc - survey ended	Individual level	Work from home	No information	No	Yes
Denmark	Telemwork survey of the OECD Global Forum on Productivity	Criscuolo et al.	October 2020	Ad hoc	Firm-level	Remote work	No information	Yes	No

EU countries	EU LFS	Eurostat	1992 - present	Yearly	Individual level	Work from home	Sometimes / usually	Yes	Yes
EU countries	EWCS	Eurofound	1995 - present	Every 5 years (except 2020)	Individual level	Teleworking	Several times a month	Yes	Yes
EU countries	Living, working and COVID-19	Eurofound	April 2020 - March 2021 (3 waves)	Ad hoc	Individual level	Work from home	Number of hours worked from home in the last month	Yes	Yes
European countries	ESENER	EU-OSHA	Since 2009	Every 5 years	Firm-level	Work from home	Regularly	Yes	No
Finland	Telework survey of the OECD Global Forum on Productivity	Criscuolo et al.	October 2020	Ad hoc	Firm-level	Remote work	No information	Yes	No
France	ACEMO Flash Covid	DARES	April 2020 - January 2021	Ad hoc	Firm-level	Teleworking	Detailed info on frequency: all days/ 2 to 4 days a week / once a week / a few days per month	No	No
France	SUMER	DARES	2016-2017	Ad hoc	Individual level	Teleworking	Detailed info on frequency: some days per month / 1 day pw/ 2 day pw/ 3 or more days pw / never	Yes	Yes
France	Global WFH dataset	WFH Research	July 2021; February 2022	Ad hoc	Individual level	Work from home	Number of full paid teleworking days per week	No	Yes
France	REPEAT	Galasso et al.	Mars 2020; May 2020	Ad hoc - survey ended	Individual level	Work from home	No information	No	Yes
France	REPOSE	INSEE	Since 2017	Every 6 years	Individual level	Remote work	One or several times a week	Yes	No
France	Telework survey of the OECD Global Forum on Productivity	Criscuolo et al.	October 2020	Ad hoc	Firm-level	Remote work	No information	Yes	No
Germany	Global WFH dataset	WFH Research	July 2021; February 2022	Ad hoc	Individual level	Work from home	Number of full paid teleworking days per week	No	Yes
Germany	REPEAT	Galasso et al.	Mars 2020; May 2020	Ad hoc - survey ended	Individual level	Work from home	No information	No	Yes
Germany	SOEP	DIW	?	Yearly	Individual level	Work from home	Detailed info on frequency: daily/ several times a week/ once every 2 to 4 weeks/ rarely	Yes	Yes
Germany	Telework survey of the OECD Global Forum on Productivity	Criscuolo et al.	October 2020	Ad hoc	Firm-level	Remote work	No information	Yes	No

Greece	Global WFH dataset	WFH Research	July 2021; February 2022	Ad hoc	Individual level	Work from home	Number of full paid teleworking days per week	No	Yes
Greece	Telework survey of the OECD Global Forum on Productivity	Criscuolo et al.	October 2020	Ad hoc	Firm-level	Remote work	No information	Yes	No
Hungary	Global WFH dataset	WFH Research	July 2021; February 2022	Ad hoc	Individual level	Work from home	Number of full paid teleworking days per week	No	Yes
Hungary	Telework survey of the OECD Global Forum on Productivity	Criscuolo et al.	October 2020	Ad hoc	Firm-level	Remote work	No information	Yes	No
Ireland	Telework survey of the OECD Global Forum on Productivity	Criscuolo et al.	October 2020	Ad hoc	Firm-level	Remote work	No information	Yes	No
Italy	Global WFH dataset	WFH Research	July 2021; February 2022	Ad hoc	Individual level	Work from home	Number of full paid teleworking days per week	No	Yes
Italy	REPEAT	Galasso et al.	Mars 2020; May 2020	Ad hoc - survey ended	Individual level	Work from home	No information	No	Yes
Italy	Situation and perspectives of enterprises during the health emergency COVID-19	ISTAT	May 2020	Ad hoc - survey ended	Firm-level	Remote work	No information	No	No
Italy	Telework survey of the OECD Global Forum on Productivity	Criscuolo et al.	October 2020	Ad hoc	Firm-level	Remote work	No information	Yes	No
Japan	Global WFH dataset	WFH Research	July 2021; February 2022	Ad hoc	Individual level	Work from home	Number of full paid teleworking days per week	No	Yes
Japan	(Teleworking) Population Status Survey	Ministry of Land, Infrastructure, Transport and Tourism	Since 2013	Yearly	Individual level	Teleworking	No information	Yes	Yes
Japan	Telework survey of the OECD Global Forum on Productivity	Criscuolo et al.	October 2020	Ad hoc	Firm-level	Remote work	No information	Yes	No
Korea	Global WFH dataset	WFH Research	July 2021; February 2022	Ad hoc	Individual level	Work from home	Number of full paid teleworking days per week	No	Yes
Luxembourg	Telework survey of the OECD Global Forum on	Criscuolo et al.	October 2020	Ad hoc	Firm-level	Remote work	No information	Yes	No

	Productivity								
Netherlands	Global WFH dataset	WFH Research	July 2021; February 2022	Ad hoc	Individual level	Work from home	Number of full paid teleworking days per week	No	Yes
Netherlands	Telework survey of the OECD Global Forum on Productivity	Criscuolo et al.	October 2020	Ad hoc	Firm-level	Remote work	No information	Yes	No
New Zealand	REPEAT	Galasso et al.	Mars 2020; May 2020	Ad hoc - survey ended	Individual level	Work from home	No information	No	Yes
New Zealand	Telework survey of the OECD Global Forum on Productivity	Criscuolo et al.	October 2020	Ad hoc	Firm-level	Remote work	No information	Yes	No
Poland	Global WFH dataset	WFH Research	July 2021; February 2022	Ad hoc	Individual level	Work from home	Number of full paid teleworking days per week	No	Yes
Poland	REPEAT	Galasso et al.	Mars 2020; May 2020	Ad hoc - survey ended	Individual level	Work from home	No information	No	Yes
Portugal	Telework survey of the OECD Global Forum on Productivity	Criscuolo et al.	October 2020	Ad hoc	Firm-level	Remote work	No information	Yes	No
Spain	Global WFH dataset	WFH Research	July 2021; February 2022	Ad hoc	Individual level	Work from home	Number of full paid teleworking days per week	No	Yes
Spain	Telework survey of the OECD Global Forum on Productivity	Criscuolo et al.	October 2020	Ad hoc	Firm-level	Remote work	No information	Yes	No
Sweden	Global WFH dataset	WFH Research	July 2021; February 2022	Ad hoc	Individual level	Work from home	Number of full paid teleworking days per week	No	Yes
Sweden	REPEAT	Galasso et al.	Mars 2020; May 2020	Ad hoc - survey ended	Individual level	Work from home	No information	No	Yes
Sweden	Telework survey of the OECD Global Forum on Productivity	Criscuolo et al.	October 2020	Ad hoc	Firm-level	Remote work	No information	Yes	No
Switzerland	SHP	FORS	Since 1999	Yearly	Individual level	Work from home	Occasionally or always	Yes	Yes
Switzerland	Telework survey of the OECD Global Forum on Productivity	Criscuolo et al.	October 2020	Ad hoc	Firm-level	Remote work	No information	Yes	No
Türkiye	Global WFH dataset	WFH Research	July 2021; February 2022	Ad hoc	Individual level	Work from home	Number of full paid teleworking days per week	No	Yes

United Kingdom	Business impacts of COVID survey	ONS	March - November 2020 (17 waves)	Ad hoc - survey ended	Firm-level	Remote work	No information	No	No
United Kingdom	Global WFH dataset	WFH Research	July 2021; February 2022	Ad hoc	Individual level	Work from home	Number of full paid teleworking days per week	No	Yes
United Kingdom	REPEAT	Galasso et al.	Mars 2020; May 2020	Ad hoc - survey ended	Individual level	Work from home	No information	No	Yes
United Kingdom	UKHLS (Understanding society)	ISER	Since 2009	Yearly	Individual level	Work from home	Regularly	Yes	Yes
United Kingdom	Telework survey of the OECD Global Forum on Productivity	Criscuolo et al.	October 2020	Ad hoc	Firm-level	Remote work	No information	Yes	No
United States	American Community Survey	Census Bureau	Since 1998	Yearly	Individual level	Work from home	Usually	Yes	Yes
United States	American Time Use Survey	Bureau of Labor Statistics	Since 2003	Yearly	Individual level	Work from home	Detailed number of hours worked from home last week	Yes	Yes
United States	CPS Covid supplement	Bureau of Labor Statistics	May 2020 to February 2022	Ad hoc	Individual level	Teleworking ¹	No information	No	Yes
United States	Global WFH dataset	WFH Research	July 2021; February 2022	Ad hoc	Individual level	Work from home	Number of full paid teleworking days per week	No	Yes
United States	Remote Life Survey	Brynjolfsson et al.	April - December 2020 (4 waves)	Ad hoc - survey ended	Individual level	Remote work	No information	No	Yes
United States	REPEAT	Galasso et al.	Mars 2020; May 2020	Ad hoc - survey ended	Individual level	Work from home	No information	No	Yes
United States	Telework survey of the OECD Global Forum on Productivity	Criscuolo et al.	October 2020	Ad hoc	Firm-level	Remote work	No information	Yes	No

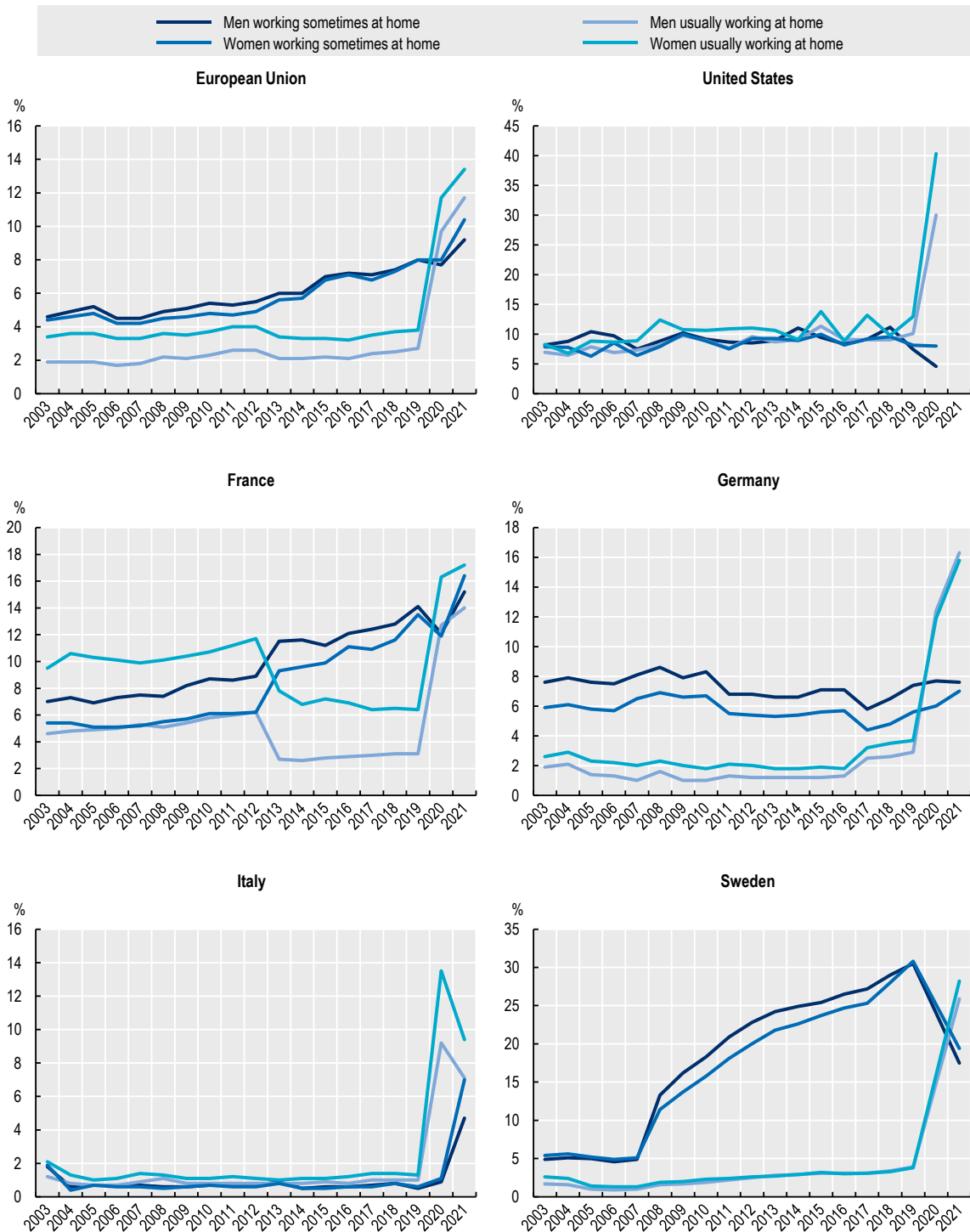
Note: Other sources not reported here include firm-level sources on whether teleworking is offered as a possibility at the firm-level, which does not allow deriving accurate estimates about whether and how much teleworking is actually used. Private surveys conducted by companies selling their data to firms looking for evidence to inform the transformation of their working organisation have also been increasingly developed since the COVID-19 crisis in many OECD countries.

¹: Although it refers to “teleworking”, the definition used in the CPS Covid supplement does not allow correctly identifying the development of the phenomenon following the pandemic, since the variable is related to those teleworking “because of the coronavirus pandemic” – thus excluding those who might still be teleworking for other reasons / despite the risks related to the pandemic having subsided.

Source: OECD

Figure A.1. Long-term trends in the evolution of “work from home” by gender

Percentage of employees aged 20-64 by gender, 2003-21



Note: For the United States, figures refer to the 10th of May to the 31st of December each year as published in the 2020 ATUS news release. Indeed, on March 19, 2020, the U.S. Census Bureau temporarily closed all of its call and processing centers for the safety of the staff due to the coronavirus (COVID-19) pandemic and the ATUS data collection was temporarily suspended.

Source: Eurostat, Employed persons working from home as a percentage of the total employment, by sex, age and professional status (%) (Ifsa_ehomp) and OECD estimates based on the American Time Use Survey (ATUS).