

MEASURING TELEWORK IN THE COVID-19 PANDEMIC

OECD DIGITAL ECONOMY
PAPERS

July 2021 No. 314

This paper was approved and declassified by written procedure by the Committee on Digital Economy Policy (CDEP) on 7 May 2021 and prepared for publication by the OECD Secretariat.

Note to Delegations:

This document is also available on O.N.E under the reference code:

DSTI/CDEP/MADE(2021)4/FINAL

This document, as well as any data and map included herein, are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

© OECD 2021

The use of this work, whether digital or print, is governed by the Terms and Conditions to be found at: <http://www.oecd.org/termsandconditions>.

Table of contents

Summary	4
Introduction	5
Telework during the COVID-19 pandemic	10
Teleworking by industry and firm size	24
Teleworking by occupation and workers' characteristics	30
Outlook for teleworking	38
Conclusions	42
Endnotes	44
References	45

FIGURES

Figure 1. Business activity and teleworking, services industries in France, April 2020	6
Figure 2. Working from home by frequency, 2020	10
Figure 3. Change in working from home, 2019 to 2020	11
Figure 4. Telework during the COVID-19 pandemic, 2020	12
Figure 5. Increase in teleworking, during the COVID-19 pandemic compared to before	14
Figure 6. Teleworking due to the COVID-19 pandemic, 2020	15
Figure 7. Teleworking – total and due to the COVID-19 pandemic, United Kingdom, April 2020	16
Figure 8. Teleworking – total and due to the COVID-19 pandemic, Sweden, 2020	17
Figure 9. Frequency of teleworking, by gender, Australia, 2020	18
Figure 10. Frequency of teleworking, Sweden, 2020	19
Figure 11. Intensity of teleworking in firms, Canada, 2020	20
Figure 12. Intensity of teleworking in firms, Australia, 2020	20
Figure 13. Teleworking in the COVID-19 pandemic, percentage of potential, 2020	22
Figure 14. Teleworking before and during the COVID-19 crisis in Italy, by industry, 2020	23
Figure 15. Teleworking peaks during the COVID-19 pandemic, by industry	24
Figure 16. Share of employees teleworking by industry, Canada, 2020	25
Figure 17. Teleworking in the COVID-19 pandemic, by firm size, 2020	26
Figure 18. Share of employees teleworking by organisation size, type, and age, Canada, August 2020	27
Figure 19. Businesses with teleworking, by firm size	28
Figure 20. Businesses with teleworking, selected industries	29
Figure 21. Telework in the COVID-19 pandemic, by occupation	31
Figure 22. Teleworking due to the COVID-19 pandemic, by occupation, United States	31
Figure 23. Teleworking during the COVID-19 pandemic, by educational attainment	32
Figure 24. Teleworking during the COVID-19 pandemic, men and women	33
Figure 25. Teleworking during the COVID-19 pandemic, by age group	35
Figure 26. Teleworking in France, by workers' characteristics, 2019 and 2020 first lockdown	36
Figure 27. Teleworking in Australia, by workers' characteristics, December 2020	37
Figure 28. Employers' expected share of employees teleworking after the pandemic, Canada, 2020	40

Summary

The COVID-19 crisis created a sudden need for businesses and their employees to take up or increase working from home. By facilitating teleworking from home, Information and Communication Technologies (ICTs) have been crucial in allowing economic activities to endure and to enabling a significant portion of individuals to continue earning incomes.

This paper brings together information on how teleworking evolved during the COVID-19 pandemic. In particular, it looks at which businesses and individuals have been able to leverage it to keep working. The definitions and survey vehicles underlying the statistics presented are also examined.

All countries experienced increased rates of teleworking during the COVID-19 pandemic, though the extent of the increases varies widely between countries and evolved over time - likely in response to changing government guidelines and perceptions of the severity of the health risk. Australia, France, and the United Kingdom saw around 47% of employed persons report teleworking at points in 2020. In France, teleworking more than doubled, increasing by 25 percentage points compared to pre-pandemic levels, while a 20-percentage point increase in the UK led to teleworking rates in April 2020 that were 1.8 times those seen before the pandemic. In Australia teleworking in December 2020 was 1.5 times the rate “before March” 2020, a 15 percentage point increase. The evidence available suggests that the share of working hours spent teleworking also increased.

In many countries, peak rates have been close to the maximum potential for telework as estimated based on the characteristics of jobs (Dingel and Neiman, 2020^[1]). Nevertheless, the increases were not sustained throughout 2020 as teleworking rates evolved over time - likely in response to changing government guidelines and perceptions of the severity of health risks.

Differences in teleworking arise among industries and occupations due to their differing degrees of digitalisation. ICT, scientific, professional, technical and financial services industries, as well as public administrations, achieved higher rates of teleworking during the pandemic; so did management and professional occupations.

Personal characteristics may also affect the incidence of teleworking. During the pandemic, teleworking increased more among young workers than older ones and for women more than for men.

A key question is whether these teleworking trends will persist after the pandemic. The evidence available in a few countries suggests that both employees and employers would intend to make greater use of teleworking than before the pandemic. The OECD brief “Productivity gains from teleworking in the post COVID-19 era: How can public policies make it happen?” (OECD, 2020^[2]) looks in detail at policies for teleworking in the aftermath of the COVID-19 pandemic.

Introduction

As the COVID-19 pandemic swept across the globe and social distancing was necessary to reduce contagion, many governments mandated the closure of many types of workplaces, or strongly encouraged minimising physical presence at work as much as possible.

In response, a large number of businesses turned to digital technology to continue operating, with personnel working from home and using tools such as videoconferencing, cloud services, and virtual private networks to communicate and work together. Businesses that could leverage pre-existing telework capabilities, or rapidly adapt, were best equipped to make a relatively seamless switch to working from home and were best able to maintain production levels (Figure 1).

However, not all jobs can make the switch to teleworking. Indeed, some estimates suggest that only a minority can be done from home (Dingel and Neiman, 2020^[1]). In Australia, 89% of employees not teleworking cited the job itself as the main reason. Secondary reasons included: 1) employer not offering the option of working from home; 2) their home situation not being conducive for work; or 3) their home lacking access to the Internet or other proper equipment (Australian Bureau of Statistics, 2020^[3]).

This paper brings together information on how teleworking progressed during the COVID-19 pandemic to-date and examines which businesses and individuals benefit from it. There is a particular focus on timely and high frequency (e.g. monthly) data published by National Statistical Organisations. While the data presented here do not claim to exhaustively represent the situation across all OECD countries, they do provide useful and relatively detailed insights. Box 1 examines the definitions and survey vehicles underlying the statistics presented.

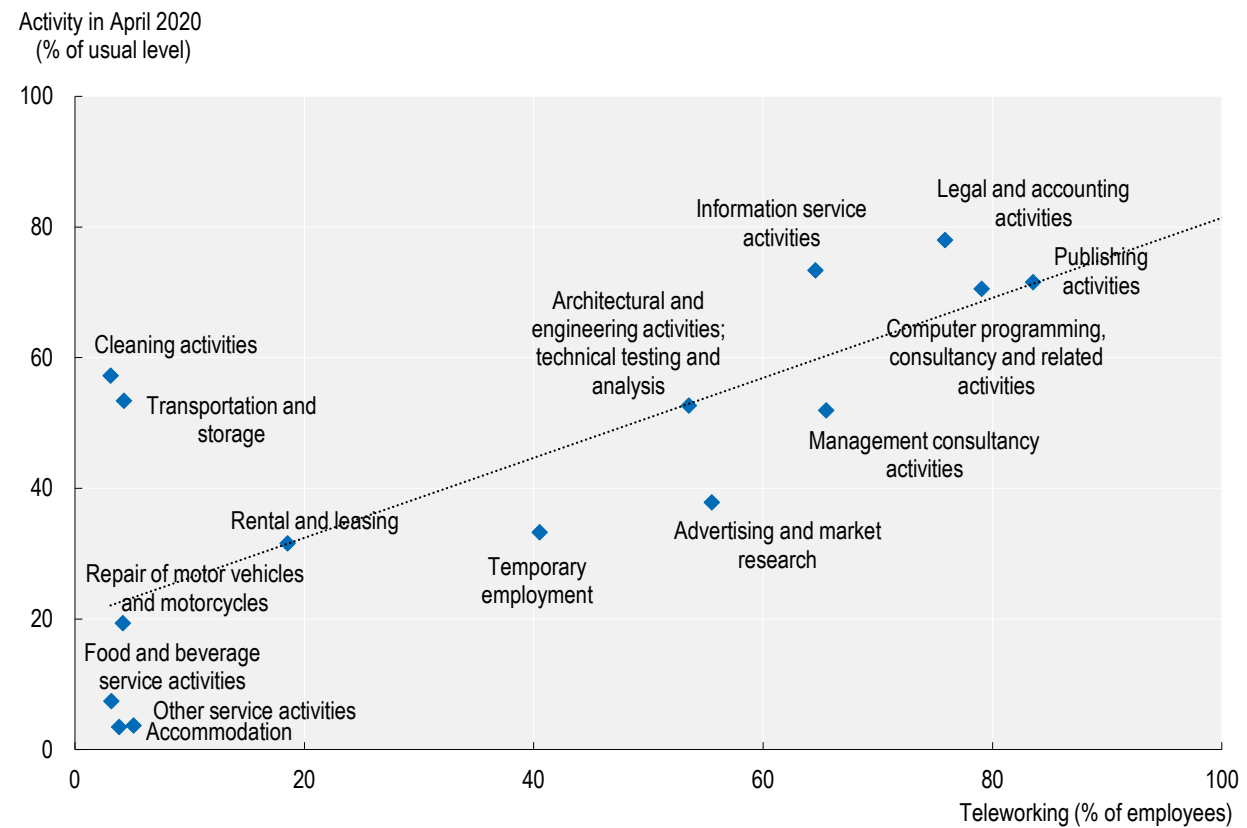
For the purposes of this paper, “teleworking” and “working from home” are treated as referring to broadly the same phenomena. The reasons for this are three-fold. Firstly, social distancing rules have pushed those who can work from outside their normal place of work to do so from home (rather than from other places). Additionally, it is likely that any increase in working from home during the COVID-19 pandemic is primarily fuelled by those whose jobs are facilitated by Information and Communication Technologies (ICTs) and can therefore relatively easily take up teleworking (from home) in response to workplace closures or other drivers (such as school closures). These jobs moving to take-up teleworking may be different from those in which people usually worked from home prior to the pandemic. Finally, there are differences in the data available for different countries and from different sources: some use the term “teleworking”, some “working from home”, and others several related terms as discussed in Box 1 and in the notes to the various figures.

Also noted in Box 1 is that surveys of individuals generally reflect employed persons while employer surveys tend to focus on employees. In addition to “employees”, who work for an employer for pay (i.e. wages, salaries, fees, and the like), “employed persons” includes those working for profit (e.g. business owner-directors) and family gain (i.e. those working in family-owned enterprises without receiving their own specific pay). The latter is therefore a broader population and this should also be considered when comparing teleworking measures from different sources (Eurostat, 2020^[4]) (Eurostat, 2020^[5]).

As a result, it should be borne in mind that some of the comparisons of teleworking rates across countries presented may be impacted by differences in the precise concepts being measured (e.g. working from home vs. teleworking; employees vs employed persons), sources (e.g. surveys of individuals vs surveys of businesses), and other “routine” variations in aspects of survey methodology such as sample designs and sizes, question wording, and the precise guidance given to respondents to help them understand and fill in the questions. Nevertheless, such differences are unlikely to greatly affect our central examination of how “teleworking” rates evolved over time in during the COVID-19 pandemic and of trends across different types of employers and workers.

Figure 1. Business activity and teleworking, services industries in France, April 2020

Percentage of workers teleworking and activity as a share of usual level



Note: Data are from a survey of business managers' perceptions (e.g. of how the level of activity of their business in April 2020 compared to a typical recent period before the COVID-19 crisis).

Source: OECD based on Banque de France (2020), "Point de Conjoncture", <https://www.banque-france.fr> (accessed on 14 May 2020).

Box 1. Measuring telework during the COVID-19 pandemic

Key concepts

The International Labour Organisation (ILO, 2020^[6]) set out the concepts needed to understand telework. While there is no internationally agreed definition of “telework”, it is framed as:

“... a subcategory of the broader concept of remote work. It includes workers who use information and communications technology (ICT) [and/or] telephones to carry out work remotely. [As a form of] remote work, telework can be carried out in different locations outside the default place of work. What makes telework a unique category is that the work carried out remotely includes the use of electronic devices.”

The *default place of work* is defined as “the place or location where work would typically be carried out taking into account profession and status in employment”. For many of the jobs impacted by the move toward teleworking during the COVID-19 pandemic, this will refer to the employer’s offices, factories, shops and vehicles where the employee would typically work. For some roles – such as street vendors, bus drivers, and patrolling police officers – the default place of work is in public space. Often the COVID-19 pandemic has restricted access to these default places of work.

While, in principle, telework can occur in any location other than the default place of work, the additional restrictions imposed by social distancing guidelines will have left working from home as the only option available for many. This is important because many countries with data available do not focus specifically on “telework” (see below). Indeed, “work at home” covers a variety of additional circumstances, from dwellings that incorporate “integral” retail shops or workshops (without a separate entrance) to those with adjacent outside areas used to grow crops or produce honey for sale (for example). Nevertheless, it is likely that the bulk of increases in “working from home” seen during the pandemic relates to people taking up “teleworking from home” precisely because jobs which routinely use ICTs (such as laptop computers and digital devices) are likely to be among those which can most easily be moved from workplaces (e.g. offices) to homes.

Data collection

Almost all OECD countries undertake regular surveys of ICT usage by households and individuals, and by businesses. The surveys are usually performed annually with results being published within 12 months of the survey. Many countries use these surveys to ask respondents about telework using recurring or ad-hoc questions. However, these ICT surveys are not timely or frequent enough to give detailed insights into how teleworking has evolved during the COVID-19 pandemic. As a result, other surveys have been used to gather data, including:

- **Surveys of individuals** - including Labour Force Surveys and specific surveys on the impact of COVID-19 on households. Respondents are generally asked if they worked from home during in a given recall period (usually the 4 weeks prior to being surveyed). In general it appears that any level of working from home (i.e. once or more) is sufficient for inclusion in the published figures. Several countries gather additional information on the frequency of work from home. It is usual statistical practice that such sample survey responses are weighted together in such a way as to be representative of the population at large (i.e. all employed persons). The result is an estimate of the share of employed persons who teleworked in the relevant period.
- **Surveys of businesses** (and other employers) – including regular surveys of business conditions or surveys set up to measure the impacts of the pandemic on businesses. There are two approaches used here:
 1. Responding employers are asked to indicate if they have any personnel teleworking (or offer the possibility of teleworking). It is usual statistical practice that sample survey responses are weighted together to be representative of the population at large (businesses). The result is an estimate of the share of businesses with people teleworking.

2. Responding employers are asked to indicate the (average) share of their personnel teleworking during the reporting period. It is usual statistical practice that sample survey responses are weighted together to be representative of the population at large. In this case the population is employers, but being representative of all employers (including those of different employment sizes) should also result in a reasonably representative estimate of the share of personnel (i.e. employees) who teleworked in the relevant period.

It should be noted that surveys of individuals generally reflect *employed persons* while employer surveys tend to focus on *employees*. “Employees” work for an employer for compensation (i.e. wages, salaries, fees, and the like). In addition to those working for pay, “Employed persons” includes those working for profit (e.g. business owner-directors) and family gain (i.e. those working in family-owned enterprises without receiving their own specific pay). Labour force survey data from Italy suggest the latter had a greater propensity to telework both before and during the pandemic (ISTAT, 2021^[71]).

Differences can therefore arise in “teleworking” figures coming from different sources. For example, in the United Kingdom the share of employed persons reporting working from home in April 2020 is very close to the share of employees businesses reported as “working remotely instead of at their normal place of work” (46.6% compared to 45.6%), but figures for France vary widely at 47% compared to 24% in March-May 2020. Table 1 presents key information on the different data sources used in this paper.

Table 1. Data sources used in this paper

Country	Survey type	Concept	Reporting	Represents	Notes
Australia	Individuals (covid survey)	“Working from home” (in some periods “as a precaution taken due to COVID-19”)	At least once in last 4 weeks.	“Employed persons aged 18+”	Household impacts of COVID-19 survey.
	Business (covid survey)	“Teleworking”	Average during reference week	Businesses	Business impacts of COVID-19 survey. Covers all (ANZIC) industries except: Agriculture, forestry, and fishing; Public administration & safety.
Brazil	Individuals (LFS/covid survey)	“Telework”/ “work from home”		“Workers”	PNAD-Covid questionnaire (May 2020) specifically asks about teleworking whereas the continuous PNAD survey (2019) asks only about work from home. This may also contribute to the difference measured. The PNAD is a national household sample survey. The May 2020 PNAD COVID surveyed almost 193 000 households.
	Business (covid survey)	“Remote work”		“Companies”	Pesquisa Pulso Empresa – IBGE, second half of June 2020
Canada	Business (routine survey)	“Teleworking or working remotely” (not separated)	On specific date	Businesses (“Business’ workforce”)	Canadian Survey on Business Conditions. The overall share of employees teleworking is not available. Instead teleworking bands are used (e.g. 50-60% of employees teleworking) and the share of businesses with that portion of workforce teleworking is published. Covers all (NAICS) industries except: Utilities; “All other financial investment activities”; Management of companies and enterprises; Education services; Out-patient care centres; Medical and diagnostic laboratories; Other ambulatory health care services; Hospitals; Private households; Public administration.
Denmark	Individuals (LFS)	“Work at home”	At least once in last 4 weeks	“Employed people”	Based on Labour Force Survey (LFS).

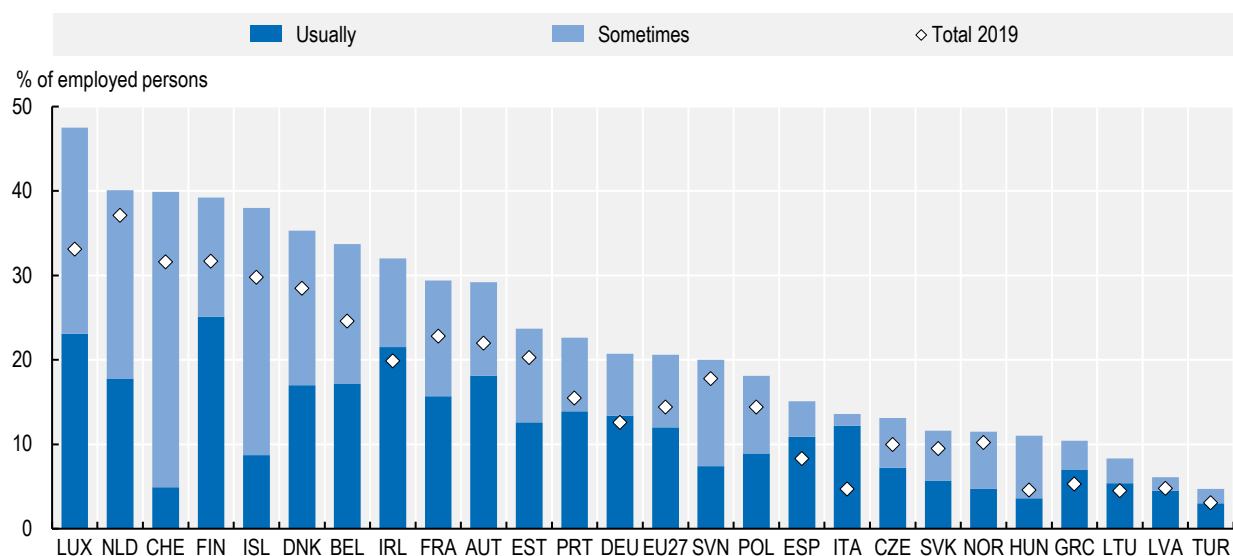
France	Business (covid survey)	"Telework or remote working" (not separated)	Average during reference week	Business' "employees"	Survey: Activité et conditions d'emploi de la main-d'œuvre pendant la crise sanitaire Covid-19 (acemo-covid). Covers private sector employees excluding agriculture, individual employers and extraterritorial activities.
	Individuals (LFS)	"Work at home"	At least once in last 4 weeks	Employed persons	Survey: INSEE enquêtes Emploi (employment surveys)
Italy	Business (covid survey)	"Remote or smart working"	Average during reference period (2 months)	"Company personnel"	Survey: "Situazione e prospettive delle imprese nell'emergenza sanitaria Covid-19". Covers all (NACE) industries except: Agriculture, forestry, and fishing; Public administration and defence; Activities of households as employers; Activities of extraterritorial organisations and bodies
	Individuals (LFS)	"Working from home"	At least once in last 4 weeks	Employees/ employed persons	Survey: "Rilevazione sulle forze di lavoro"
Japan	Individuals (covid survey)	"Telework"	Month	"Workers"	"Survey on changes in life consciousness and behaviour".
Korea	Business (regular survey)	"Telework"	First half of 2020	Businesses	Survey on the Information Society
Sweden	Individuals (LFS)	"Working from home"	At least once in last 4 weeks	"Employed persons" aged 15-74 years	Based on Labour Force Survey (LFS). Work from home frequency available including delineation of people who "usually" work from home.
United Kingdom	Business (covid survey)	Employees "Working remotely instead of at their normal place of work"	Average during reference fortnight	"Enterprise's workforce"	Business impacts of COVID-19 survey. Covers all (ISIC) industries except Agriculture, forestry, and fishing; Electricity; gas, steam and air conditioning supply; Financial and insurance activities; Public administration and defence; Activities of households as employers; Activities of extraterritorial organisations and bodies.
	Individuals (LFS)	"Work at home"	At least once in ref. week	"Persons in employment"	Estimates are calculated from experimental Labour Market Survey datasets.
United States	Individuals (CPS)	"Persons who teleworked because of the coronavirus pandemic"	At least once in last 4 weeks	"Employed persons"	Current Population Survey (US equivalent to LFS). Includes others working from home.

Source: OECD based on national sources.

Telework during the COVID-19 pandemic

The COVID-19 pandemic created strong economic and social reasons for employers and employed persons to take-up working from home. Figure 2 shows that working from home increased markedly – by around one-third or six percentage points on average - between 2019 and 2020 in the OECD countries shown. Much of this shift will have been facilitated by ICTs enabling workers to connect to employers’ systems and to communicate and collaborate with colleagues, customers, and suppliers. Where working from home involves the use of ICTs it constitutes *teleworking* (from home).

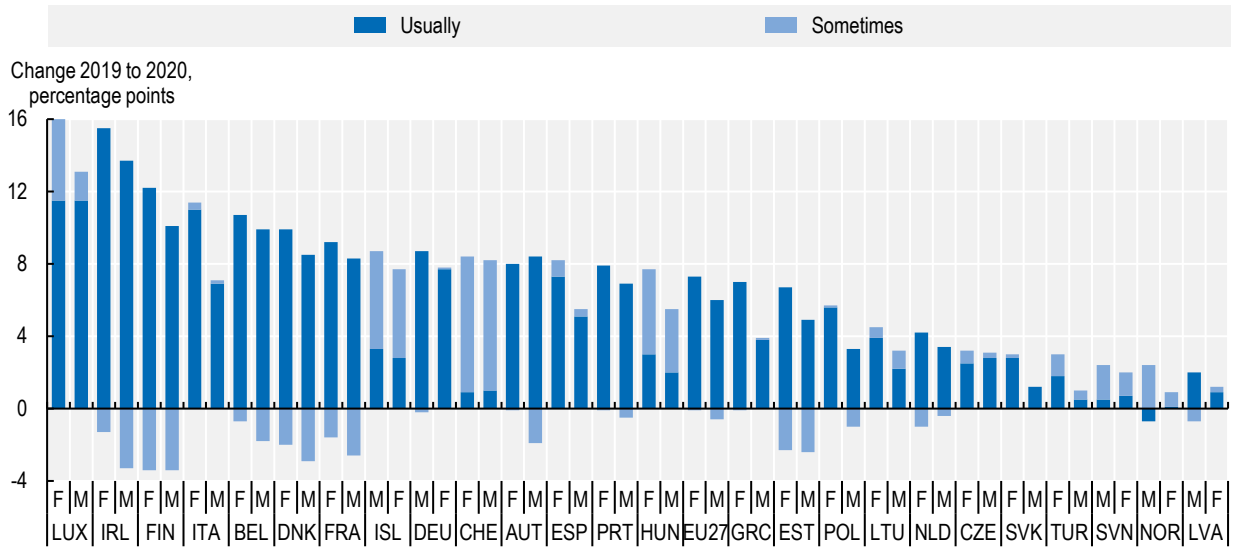
Figure 2. Working from home by frequency, 2020



Source: OECD based on European Labour Force Survey data (Eurostat, 2021^[8])

Breaking down the change between 2019 and 2020, in Figure 3 it can be seen that in almost all countries the greatest increase was in people “usually” working from home. Furthermore, in a significant minority of countries this was accompanied by decreases in the share of people “sometimes” working from home, as these people increased the frequency with which they do so. In a majority of countries, the greatest increases in working from home occurred amongst women.

Figure 3. Change in working from home, 2019 to 2020



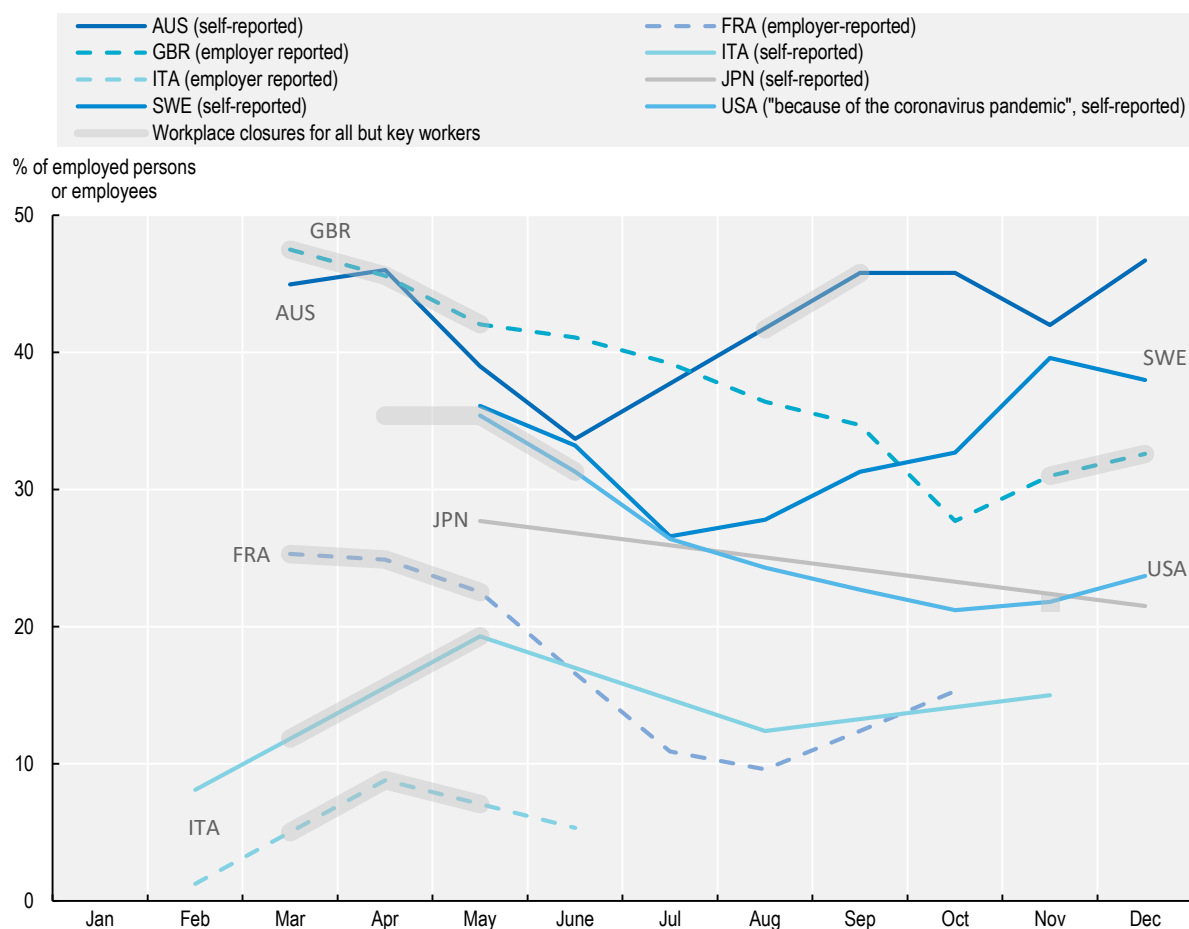
Source: OECD based on European Labour Force Survey data (Eurostat, 2021^[8])

While the above figures are useful, they only provide a general picture of how rates of working at home in 2020 compared to 2019. The COVID-19 pandemic, and policy responses to it, evolved rapidly over 2020. Furthermore, people and business' understanding of the health risks and tolerance for sanitary measures such as social distancing and working from home has also varied. This could be expected to lead to variations in the extent of teleworking throughout the crisis. Therefore, higher-frequency data are needed to measure the evolution of telework during the pandemic.

The routine ICT surveys conducted in most OECD countries have also been used to measure telework. However, while these are relatively timely in comparison to similar surveys of business innovation and the like, they do not generally report quickly enough, or with high enough frequency, to provide a detailed account of very rapidly evolving phenomena. Many countries have therefore drawn on more-frequent surveys to gain insights into teleworking. These essentially take two different approaches to measuring roughly the same thing: the share of employed persons that are teleworking. In one approach surveys of individuals, such as Labour Force Surveys or specific COVID-19 impact surveys, are used to ask people about their working conditions, including if they have teleworked (usually these ask about the last 4 weeks prior to survey). By contrast, business surveys can be used to ask firms what share of their personnel have been teleworking. In several countries, business surveys are also used to ask more general questions about whether a business has implemented teleworking at all (or not), Box 2 presents some of the resulting data.

Figure 4 brings together the available detailed time-series data and superposes information on periods of *workplace closures applied to all but key workers*. School closures were also common around these times. In general, the share of employees teleworking increased around times when workplace closures were mandated, though it should be noted that the areas and industries affected by these restrictions varied between countries and over time. This may help to explain why several countries saw falling teleworking rates even during periods with workplace closures.

Figure 4. Telework during the COVID-19 pandemic, 2020



Note:

AUS: share of employed persons working at home at least once in the last 4 weeks (self-reported). The March figure was collected on 1-6 April 2020 and the April figure collected on 29 April-4th May, both with reference to the previous 4 weeks. March-June figures relate to “persons who have worked at home in the last four weeks *due to the spread of COVID-19*”. Data relate to persons aged 18 years and over.

FRA: share of employees teleworking in reporting week (firm-reported).

GBR: share of “enterprise workforce” working remotely instead of at their normal place of work in the last 2 weeks (firm-reported).

ITA: share of employed persons working at home at least once in the last 4 weeks (self-reported); data points represent each calendar quarter e.g. the November data point represents the Oct-Dec period. Share of personnel remote or smart working in reporting period (firm-reported); the data points shown represent the pre-lockdown (Jan-Feb), lockdown (Mar-Apr), and easing lockdown (May-Jun) periods.

JPN: data relate to “Telework” collected through an ad-hoc “survey on changes in life consciousness and behaviour”.

SWE: share of employed persons working at home at least once in the last 4 weeks (self-reported). Data refer to persons aged 15-74.

USA: share of employed persons who teleworked or worked at home at least once in the last 4 weeks *because of the coronavirus pandemic* (self-reported).

See Box 1 for more information on data sources.

Data on workplace closures from <https://ourworldindata.org/covid-school-workplace-closures>. There may be sub-national or regional differences in policies on workplace closures. A country is coded as ‘required closures’ if at least some sub-national regions have required closures.

Source: OECD based on (Australian Bureau of Statistics, 2020_[9]), (DARES, 2020-21_[10]), (ISTAT, 2020_[11]), (ISTAT, 2021_[7]), (Statistics Sweden, 2020_[12]), (Office for National Statistics, 2020_[13]), (U.S. Bureau of Labor Statistics, 2020_[14]) and <https://ourworldindata.org/covid-school-workplace-closures>.

In the United Kingdom, teleworking peaked in March 2020, coinciding with the first national lockdown being introduced. At that time, almost half of employees worked from home. Another rise can be seen coinciding with lockdown measures being re-introduced toward the end of the year. Similarly, businesses in France and Italy reported the highest rates of teleworking during their first lockdown period around March-May 2020, with rates falling as restrictions were eased.

The United States also experienced the highest measured rates of teleworking due to the COVID-19 pandemic in May 2020, coinciding with lockdown measures (also including school closures) being at their most widespread.

In Australia, the share of employed persons teleworking reached 46% in April, coinciding with the introduction of school closures and some workplace closures (Our World in Data, 2021^[15]), and went on to match this level towards the end of the year before reaching 47% of employees in December 2020 (which coincides with the start of the summer holiday period, which may have provided an extra incentive for employees to telework).

Sweden did not institute a full lockdown in 2020 but had school and workplace closures in some areas. Teleworking was around 36% in April 2020 and declined into the summer (although this is likely to be at least partly related to survey respondents taking annual leave rather than working). Teleworking rates resurged later on and peaked at around 40% in November as COVID-19 case numbers rose (Johns Hopkins University, 2020^[16]). Japan likewise did not institute a full lockdown in 2020 but saw 27.7% of workers teleworking in May 2020, declining to 21.5% in December.

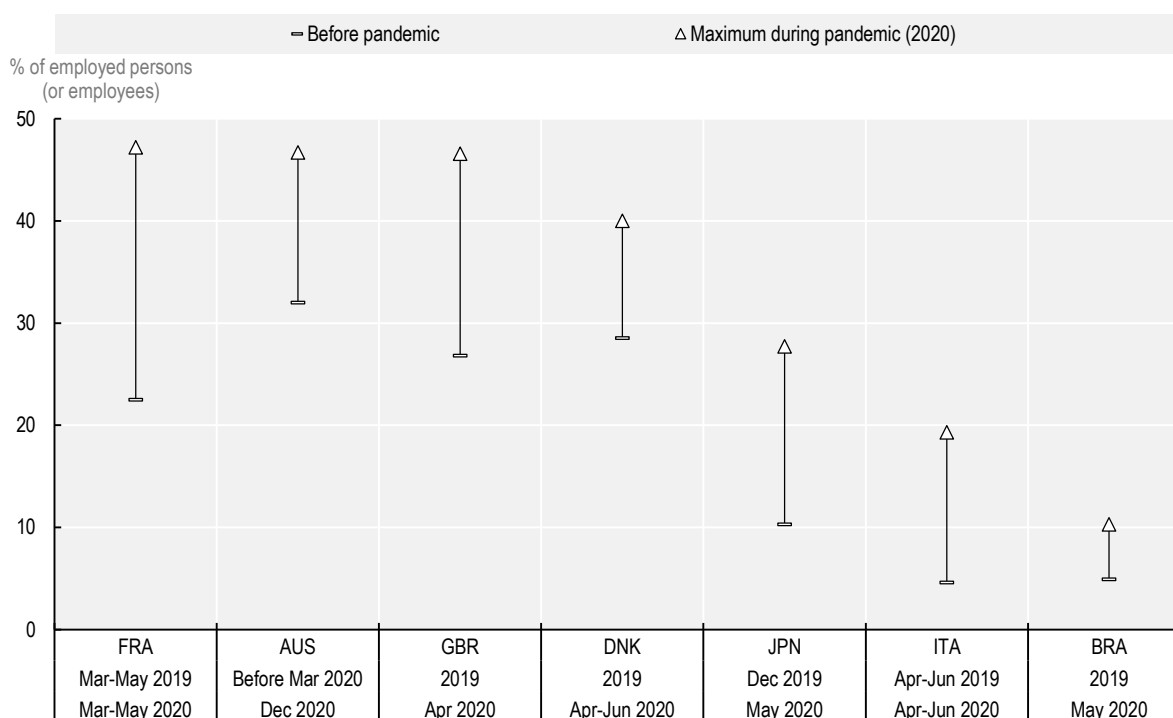
All countries for which comparable observations prior to the pandemic are available experienced increased rates of teleworking during the COVID-19 pandemic, though the extent of the increases varies widely (Figure 5). Based on self-reported data points (rather than the firm-reported series shown in Figure 4), which can be compared to data available from before the pandemic, France and the United Kingdom saw 47% of employees teleworking during their first lockdown periods (March-May 2020). Australia also reached this rate by December 2020. In France, teleworking more than doubled, increasing by 25 percentage points, while a 20 percentage point increase in the UK meant teleworking was 1.8 times the level seen before the pandemic. In Australia teleworking in December 2020 was 1.5 times the level “before March” 2020, a 15 percentage point increase.

Japan did not institute a nationwide lockdown applying to all except key workers in 2020, which may provide a partial explanation for the relatively lower rate reached than in the aforementioned countries. Nevertheless, telework increased markedly from 10% of workers in December 2019 to almost 28% in May 2020.

In Italy teleworking rates appear to be lower again, peaking at almost 20% of employed persons in the April – June quarter of 2020 – 15 percentage points more than in the same period of 2019. Finally, Teleworking in Brazil doubled from 5% in 2019 to over 10% in May 2020.

Although all of these figures are self-reported, there can be differences in the nature of the survey methods used. Box 1 provides more information on the different data sources analysed in this paper.

Figure 5. Increase in teleworking, during the COVID-19 pandemic compared to before



Note:

AUS: share of employed persons working at home at least once in the last 4 weeks (self-reported). Before pandemic figure relates to "Before March 1st 2020", as reported in December 2020. Data relate to persons aged 18 years and over and come from the "Household impacts of COVID-19 survey".

BRA: 2019 - percentage of (employed) people who usually worked from their homes. 2020 - percentage of (employed) people who worked from home in May 2020. It is important to mention that in the PNAD-Covid questionnaire, the question that measures work at home explicitly asks about "teleworking" - whereas in the Continuous PNAD it is not. So, in part, the difference between the results can also be due to changes in the collection strategy.

DNK: share of employed persons working at home at least once in the last 4 weeks (self-reported). Data relate to quarter 2 (March-June) and come from Labour Force Surveys. 2019 figure comes from the EU LFS dataset and relates to those teleworking "sometimes" or "usually".

FRA: share of employed persons working at home in the period (self-reported). Data from INSEE enquêtes Emploi (employment surveys).

GBR: share of employed persons "who did any working from home in the reference week". Estimated by the ONS using experimental Labour Market Survey datasets.

ITA: share of employed persons working at home at least once in the last 4 weeks (self-reported). Data from the Labour Force Survey.

JPN: data relate to "Telework" collected through an ad-hoc "survey on changes in life consciousness and behaviour".

See Box 1 for more information on data sources.

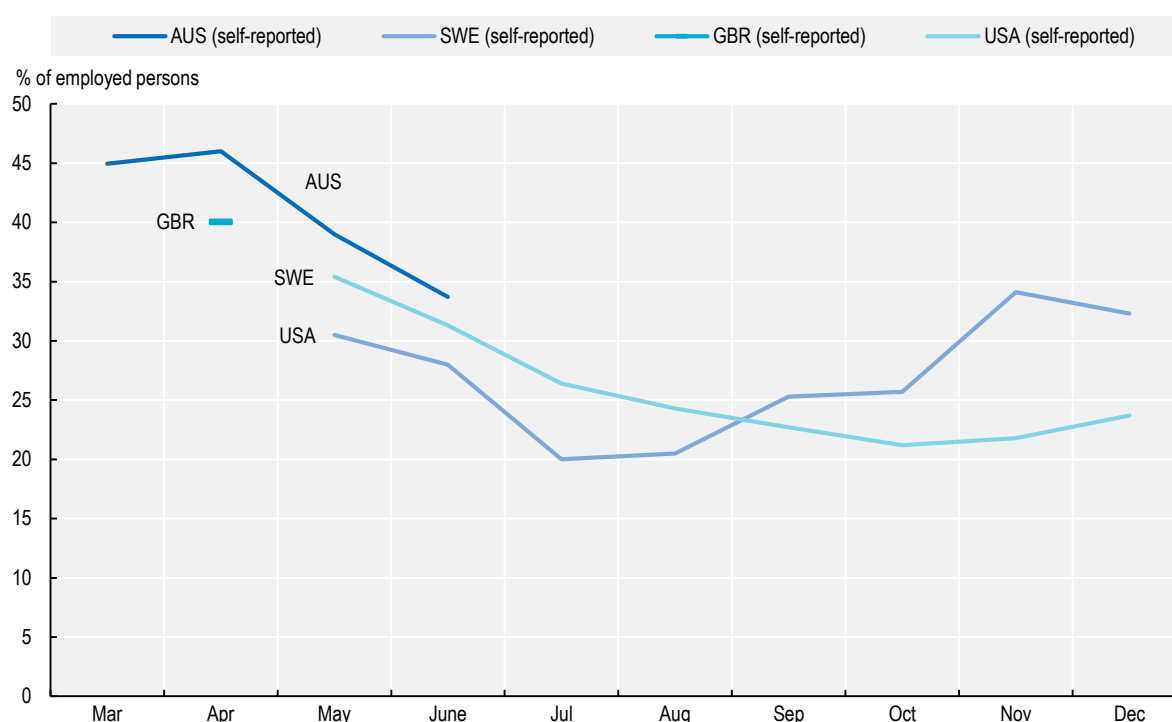
Source: OECD based on (Australian Bureau of Statistics, 2020^[17]), (Statistics Denmark, 2020^[18]), (INSEE, 2020^[19]), (ISTAT, 2021^[7]), (Japan Cabinet Office, 2021^[20]), (Office for National Statistics, 2020^[21]), (Solidarity Research Network, 2020^[22]), (Eurostat, 2021^[8]).

At least some of the variation in the relative rates of teleworking seen across countries is likely to be driven by differences in the precise concepts being measured (e.g. working from home vs. teleworking; employees vs employed persons), sources (e.g. surveys of individuals vs surveys of businesses), and other "routine" variations in aspects of survey methodology such as sample designs and sizes, question wording, the precise guidance given to respondents to help them understand and fill in the questions, and weights used to derive representative estimates. Nevertheless, real-world factors will also contribute to variations across countries. One important factor is likely to be what legal basis employees have for requesting teleworking. For example, in the United Kingdom, employees have a statutory right to request teleworking (though such a request does not have to be granted). In many other countries there is no such right (or an unenforceable right) (OECD, 2021 (forthcoming)^[23]). The United States is one such country at this opposite end of the spectrum. It is interesting, then, that the United Kingdom and United States were

found to have the joint highest rates of teleworking during 2020 (50%) in a cross-country academic study (Galasso and Foucault, 2020^[24]).

The data shown in Figure 4 represent all teleworking in countries except the United States, for which the series refers to people reporting teleworking “because of the coronavirus pandemic”, and Australia, for which the March-June figures refer to the share of employed persons reporting working at home as a precaution in response to the pandemic. Some other countries also provide data about the portion of teleworking that can be attributed specifically to the COVID-19 pandemic (Figure 6). For example, 5-7% of employees in Sweden “usually work from home” and would likely have done so regardless of the pandemic. This suggests that the vast majority of people reporting working from home were doing so in response to the health situation, amounting to around 30% of employees on average. Furthermore, it is likely that the bulk of these people were enabled to do so by using ICTs to carry out their work i.e. Teleworking from home.

Figure 6. Teleworking due to the COVID-19 pandemic, 2020



Note:

AUS: share of employed persons working at home at least once in the last 4 weeks (self-reported). The March figure was collected on 1-6 April 2020 and the April figure collected on 29 April-4th May, both with reference to the previous 4 weeks. March-June figures relate to “persons who have worked at home in the last four weeks due to the spread of COVID-19”. Data relate to employees aged 18 years and over.

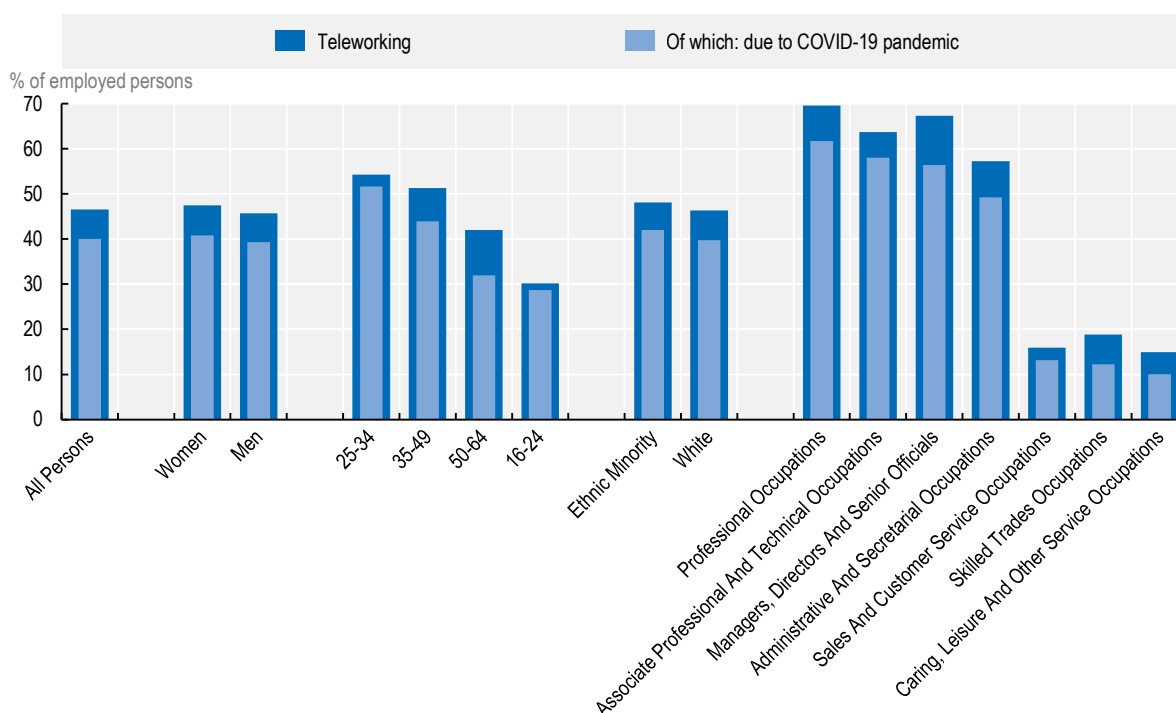
GBR: Estimated by the ONS using experimental Labour Market Survey datasets. Homeworking due to Covid-19 rates are calculated by the ONS as follows: $100 \times (\text{number stating their main reason for working from home was a reason related to Covid-19}) / (\text{number doing any work from home in the reference week})$. The resulting factor was then applied to adjust the percentage of employed people working at home.

SWE: share of employed persons working at home at least once in the last 4 weeks (self-reported) *excluding* those who “usually work from home” (and likely would have done so regardless of the pandemic). Data refer to employees aged 15-74 come from Labour Force Surveys.

USA: share of employed persons who teleworked or worked from home in the last 4 weeks *because of the coronavirus pandemic* (self-reported). Source: OECD based on (Australian Bureau of Statistics, 2020^[9]), (Statistics Sweden, 2020^[12]), (Office for National Statistics, 2020^[13]), (U.S. Bureau of Labor Statistics, 2020^[14])

In the United Kingdom, a special module in the Labour Force Survey was used to discover that around nine-in-ten people working from home in April 2020 were doing so because of the pandemic – equivalent to around 40% of employed persons. Further detail (Figure 7) shows that the COVID-19 pandemic was the main reason for teleworking across both men and women, as well as the various age groups, ethnicities, and occupations. The pandemic was an especially important reason for working from home for those in the 16-24 and 25-34 age groups and the Sales and Customer Service occupations – explaining almost all the home working recorded for these groups.

Figure 7. Teleworking – total and due to the COVID-19 pandemic, United Kingdom, April 2020

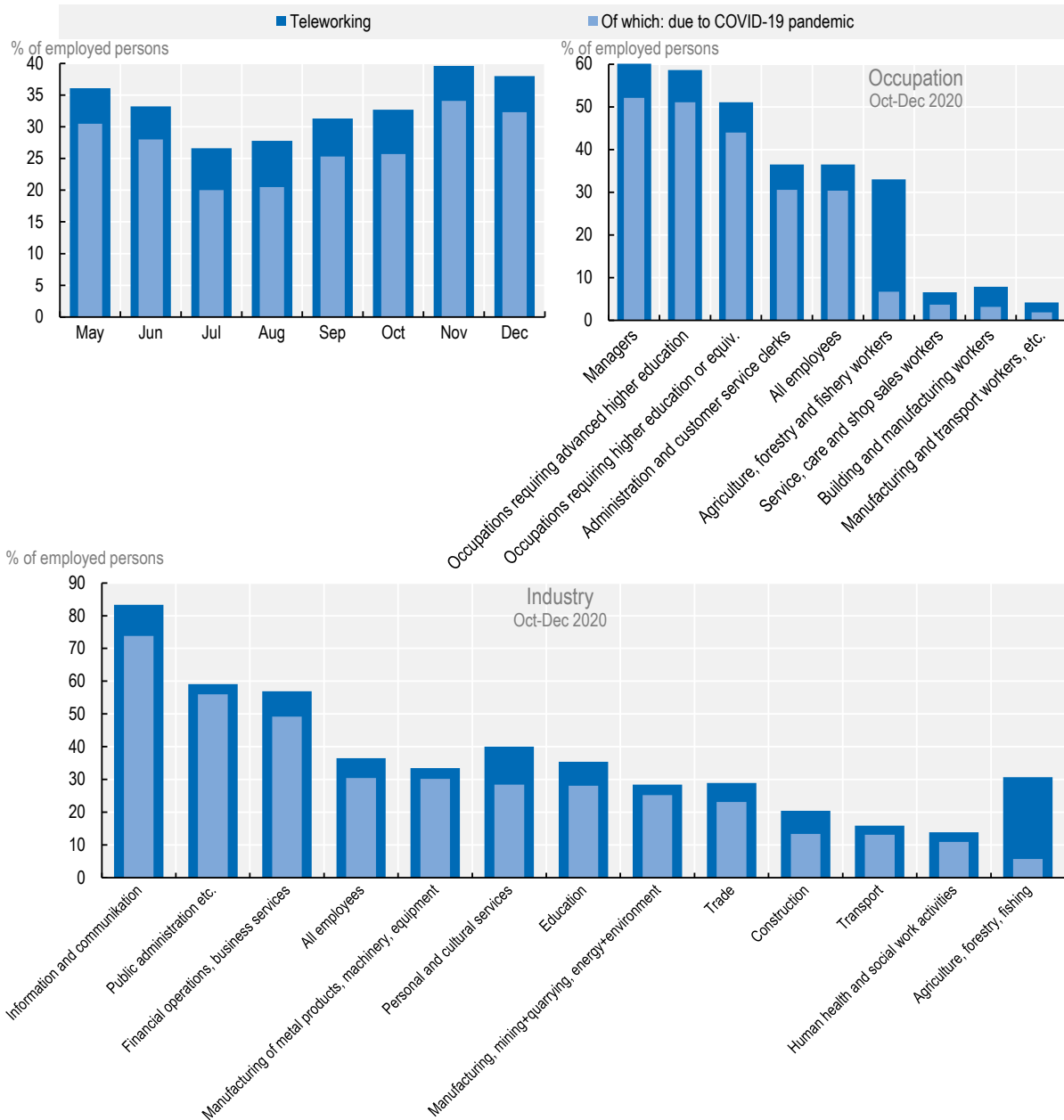


Note: Estimated by the ONS using experimental Labour Market Survey datasets. A homeworker refers to a person who did any working from home in the reference week. Homeworking due to Covid-19 rates are calculated by the ONS as follows: $100 \times (\text{number stating their main reason for working from home was a reason related to Covid-19}) / (\text{number doing any work from home in the reference week})$. Ethnic Minority includes all people stating their ethnicity as 'Mixed', 'Indian', 'Pakistani', 'Bangladeshi', 'Chinese', 'Black/African/Caribbean' or 'Other'.

Source: OECD, based on (Office for National Statistics, 2020^[21]).

Additional detail is also available for Sweden (Figure 8), where those who usually work from home - and likely would have done so regardless of the pandemic - are delineated from others. The COVID-19 pandemic appears to have been a key driver of teleworking from home across almost all occupations and industries. The exception is jobs in Agriculture, Forestry, and Fishing - in which around one-in-four employees usually work at home.

Figure 8. Teleworking – total and due to the COVID-19 pandemic, Sweden, 2020



Note: Share of employed persons working at home at least once in the last 4 weeks (self-reported) *excluding* those who “usually work from home” (and likely would have done so regardless of the pandemic). Data refer to employees aged 15-74 and come from Labour Force Surveys. Source: OECD based on (Statistics Sweden, 2020_[12]).

In addition to understanding how much of the teleworking measured is attributable to the COVID-19 pandemic, it is also relevant to gain insights into how frequently people are engaging in telework. Government guidelines have generally sought to maximise teleworking in order to reduce contact between people. Nevertheless, and importantly, many of the statistics presented adopt a low threshold of having teleworked *at least once* in the reporting period (often the 4 weeks prior to being surveyed), See Box 1. As well as encouraging all who can telework to take up doing so, it is highly likely that the COVID-19 pandemic

has led to those who previously worked at home occasionally (e.g. once every four weeks) to greatly increase the number of days that they telework (rather than go to their usual workplace).

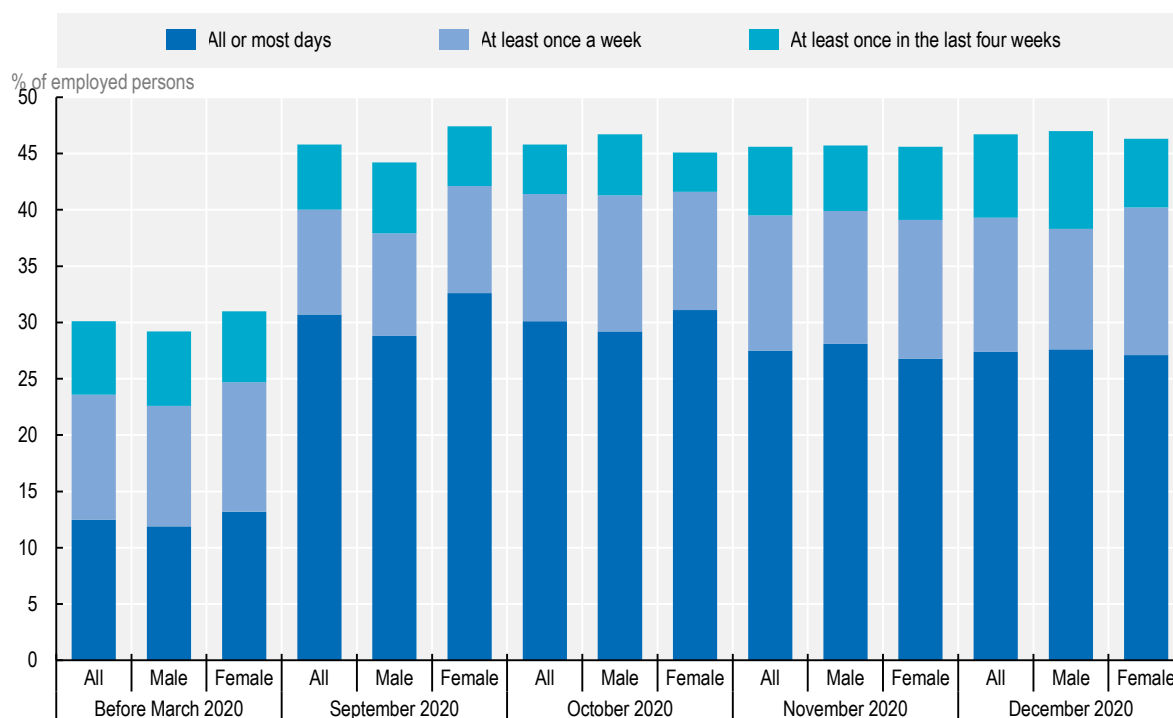
Information on the intensity of teleworking is limited. However, data for Australia (Figure 9) show a large increase in working from home between the first part of the year (“before March 2020”) and the last few months of 2020. Around 12% of adults worked from home on all or most days before March 2020 and almost 25% did so at least once a week. By September, around 30% were teleworking on all or most days while 40% did so once or more a week. These categories declined a little towards December, with a larger portion reporting teleworking in the last four weeks.

Less-frequent teleworking (less than once a week), was in a minority both before and during the COVID-19 pandemic. Most of the increase comes from people working from home “all or most days”, which is the frequency most likely to help significantly reduce the extent to which people mix together and therefore help to lower transmission of COVID-19.

In May 2020, around two-fifths of households with children reported working from home in order to care for children who had to stay home from school or childcare (Australian Bureau of Statistics, 2020^[25]). Women were more likely than men to report spending more time caring for children than they did before the pandemic (46%, compared to 39% of men) (Australian Bureau of Statistics, 2020^[26]).

Figure 9. Frequency of teleworking, by gender, Australia, 2020

People teleworking in the 4 weeks prior to survey

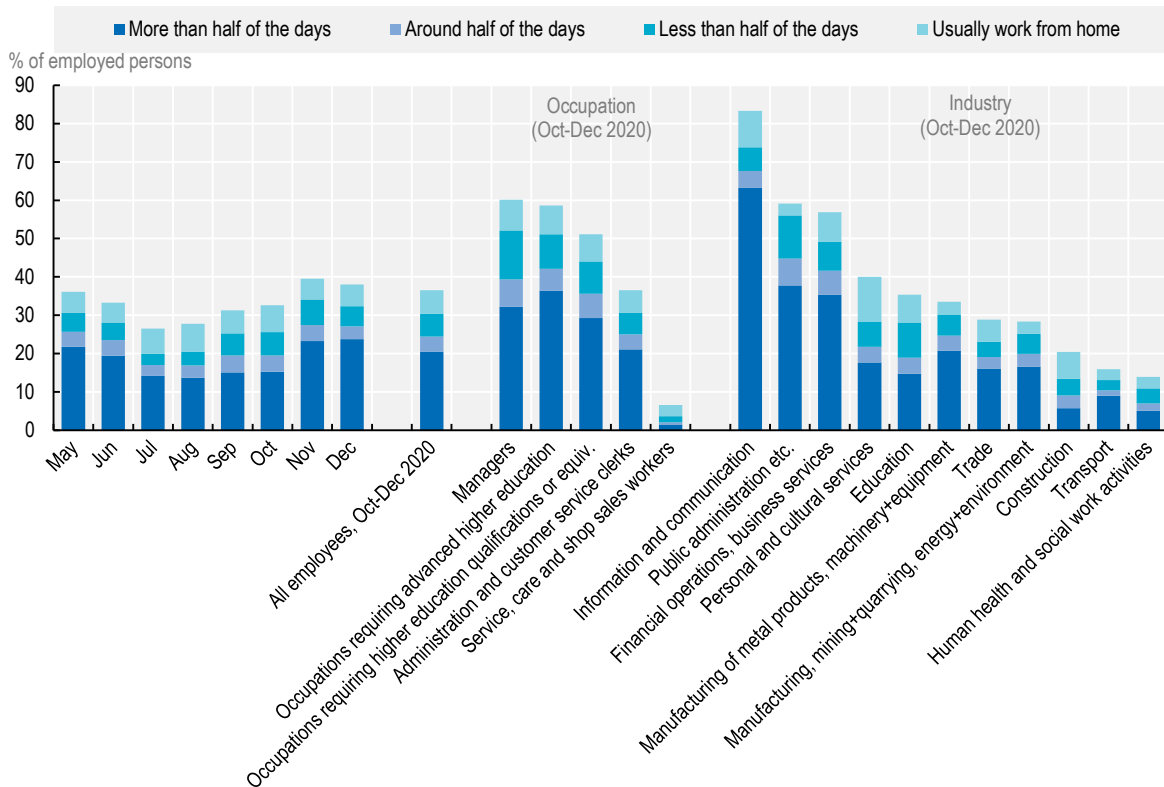


Note: share of employees working at home at least once in the four weeks before interview in mid-September/October/November/December. Does not include respondents who were retired or not working before 1 March 2020.

Source: OECD based on (Australian Bureau of Statistics, 2020^[9]).

A similar trend toward greater frequencies of working from home during the pandemic can be seen in Sweden (Figure 10), where a clear majority of employees who teleworked did so “usually” or on “more than half of the days” during the reporting period. This is consistent across the periods, occupations, and industries for which data are available. The group of employees working on “more than half of the days” showed the biggest variability, falling more than other frequencies in July and August 2020 and increasing markedly – by around one third – into November and December 2020, to reach 25% of employees at the end of the year.

Figure 10. Frequency of teleworking, Sweden, 2020

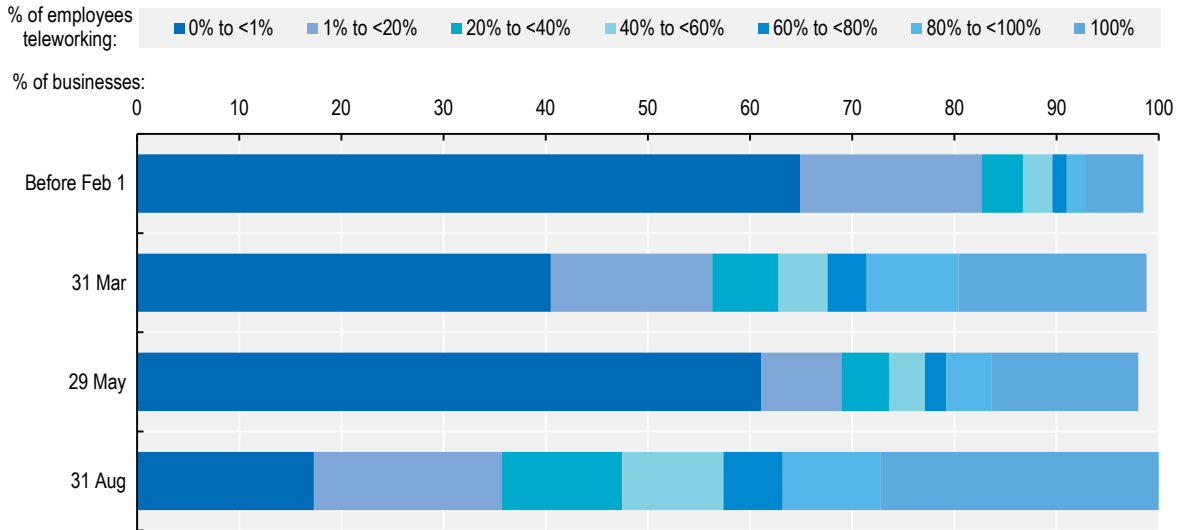


Note: Share of employees working at home at least once in the reporting month (self-reported). Data refer to employees aged 15-74 and come from Labour Force Surveys. Some occupations and industries are not shown due to missing breakdown data.
 Source: OECD based on (Statistics Sweden, 2020_[12]).

Statistics Canada provide a breakdown of businesses with employees “teleworking or working remotely” on the reporting day, disaggregated into bands based on the percentage of “workforce” (i.e. employees) teleworking (Figure 11). Over the four observations available, there is a clear movement towards greater teleworking. Before the pandemic (i.e. before February 2020), only 8% of businesses had 80% or more of their personnel teleworking. By August, this increased to around one-third of firms.

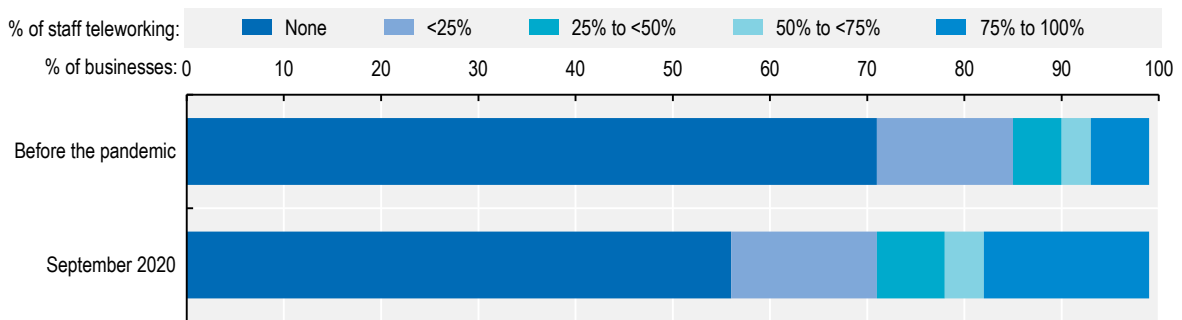
Similar patterns are seen in Australia (Figure 12) where the share of businesses with staff teleworking increased from 28% before the pandemic to 43% in September 2020. Almost all of the increase occurred in firms with higher rates of teleworking; the share of businesses with over three-quarters of staff teleworking almost tripled from 6% to 17%.

Figure 11. Intensity of teleworking in firms, Canada, 2020



Note: Bars do not sum to 100% due to some businesses reporting teleworking but not giving the share of employees teleworking.
 Source: OECD based on (Statistics Canada, 2020^[27]).

Figure 12. Intensity of teleworking in firms, Australia, 2020



Note: Bars do not sum to 100% due to some businesses responding, "don't know".
 Source: OECD based on (Australian Bureau of Statistics, 2020^[28]).

Having investigated the prevalence of teleworking in 2020, the extent to which it was driven by the COVID-19 pandemic, and its frequency, it is relevant to consider whether countries came close to achieving their “teleworking potential”. That is, given the important role of working from home in minimising contact between individuals to limit transmission (while allowing economic activity to continue to some degree), did everyone who could potentially work from home do so?

This is a challenging question to answer and any estimate is likely to be somewhat subjective. Dingel and Nieman (2020^[1]), develop a methodology for estimating the proportion of jobs that can be “done at home”¹ by using US O*NET data to analyse the task-content of occupations. Jobs with characteristics that clearly rule out the possibility of working entirely from home - such as requiring daily outdoor work - are then excluded. By contrast, the many characteristics that would merely make working from home difficult rather than impossible do not lead to exclusion. The result is a list of occupations that can be performed from home. Many of these will be jobs requiring the use of ICTs and as such would constitute teleworking.

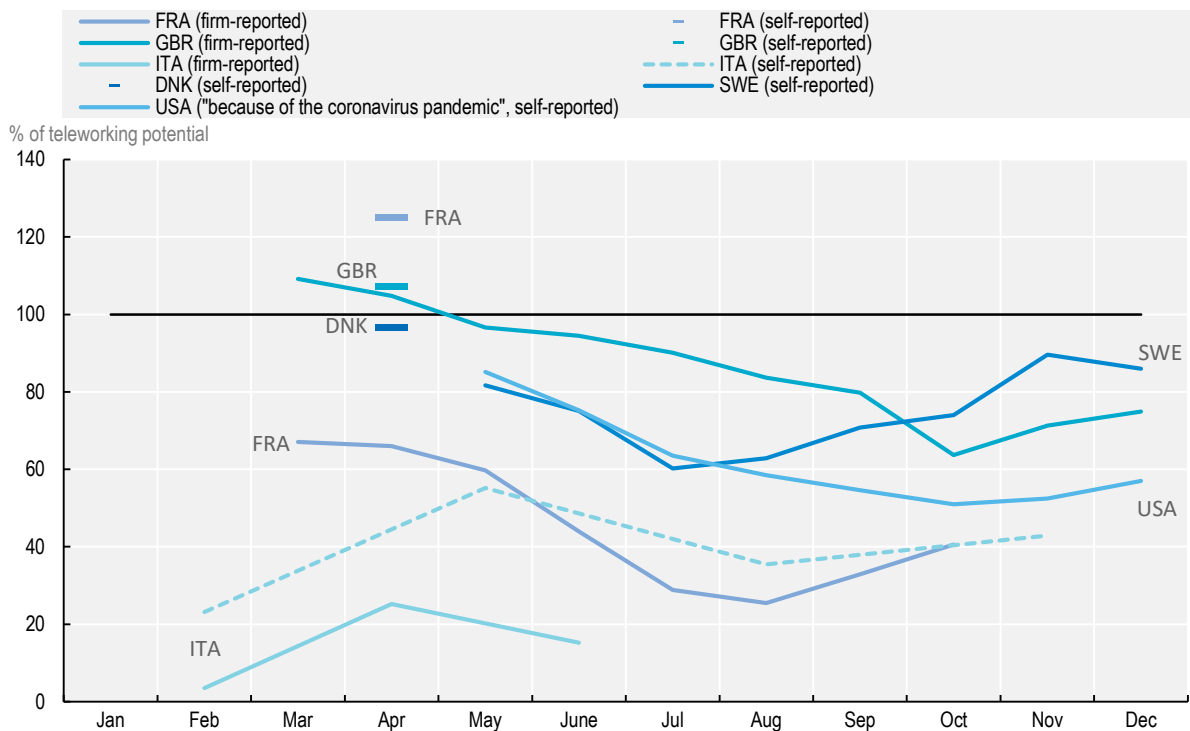
This classification can be applied to data on the prevalence of these occupations in different economies to gain a country-level estimate for the share of total jobs likely to be suitable for working from home. Using data from the International Labour Organisation (ILO) Dingel and Nieman estimate that the following proportion of jobs can be done from home: DNK 41% (2018), FRA 38% (2018), ITA 35% (2018), SWE 44% (2018), GBR 44% (2018) and USA 42% (2019)².

By comparing the figures presented above to the estimated share of jobs that can be performed at home, a view of how close countries came to matching their “teleworking potential” is obtained (Figure 13). Perhaps one of the most striking observations is that several countries exceeded their estimated potential in some periods. This “excess teleworking” both illustrates the challenges of estimating the share of jobs that can be done from home and additionally encourages us to bear in mind that measuring telework rates is also not without methodological and practical challenges. Nevertheless, this comparison suggests that those employers and employees who could adopt teleworking during the strict lockdown measures imposed at that time made a strong effort to do so.

The United Kingdom exceeded its estimated teleworking potential in the first two periods shown – which coincide with the first national lockdown (according to both firm-reported and self-reported teleworking figures). The same is true of the share of employed persons reporting teleworking in France in March-May 2020. In contrast, according to firm-reported estimates, France achieved around 70% of its estimated teleworking potential during the first national lockdown (March-May) when the strictest confinement measures were in place. See Box 1 for some discussion on the differences between these measurement approaches.

The observation for Denmark is also very close to the estimated teleworking potential and Sweden reached around 90% of estimated potential in November and December, despite the absence of national lockdown measures. Even the United States figures, which are restricted to working from home “*due to the coronavirus pandemic*” (i.e. excluding people working at home for other reasons) reached around 80% of total teleworking potential (for all reasons) in several periods.

Figure 13. Teleworking in the COVID-19 pandemic, percentage of potential, 2020



Note: Teleworking potential is defined as the estimated share of jobs that can be performed at home. Teleworking rates from Figure 4 and Figure 5 expressed as a proportion of the share of jobs that can be “done at home”, as estimated by Dingel and Neiman (2020_[11]) using US O*NET data to analyse the task-content of occupations. Jobs with characteristics that clearly rule out the possibility of working entirely from home, such as requiring daily outdoor work, are excluded. By contrast, the many characteristics that would merely make working from home difficult rather than impossible do not lead to exclusion. Dingel and Neiman applied the resulting classification to data from the ILO on the prevalence of the occupations in different economies. The following proportions of jobs were thereby estimated to be possible to perform from home: DNK 41% (2018); FRA 38% (2018); ITA 35% (2018); SWE 44% (2018); GBR 44% (2018); USA 42% (2019). AUS is unavailable. For Italy, an additional estimate of teleworking potential based on the 2020 “Percentage of company personnel who carry out work that can be performed in remote or Smart Working” declared by firms is used for comparison. This estimate was first presented in OECD (2020_[29]) and finds that 9% of employee jobs in Italy could be performed via “distance or smart working”.

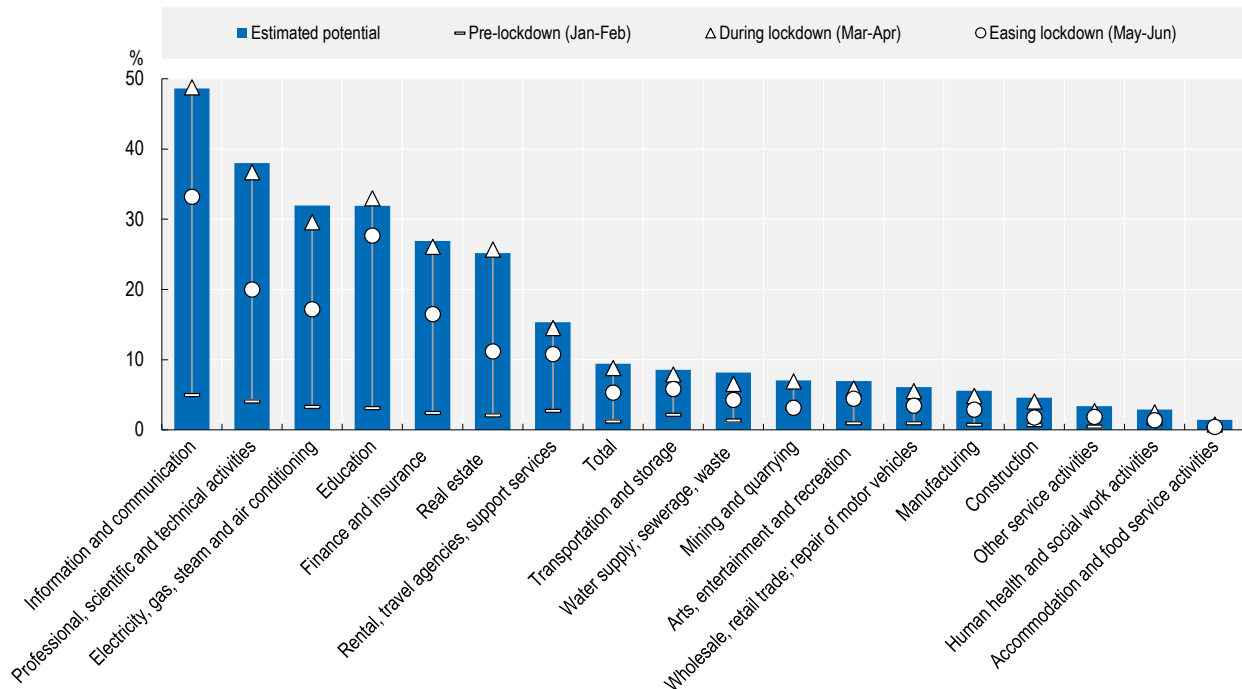
Source: OECD based on (Dingel and Neiman, 2020_[11]), (Statistics Denmark, 2020_[18]), (DARES, 2020-21_[10]), (ISTAT, 2020_[11]), (Statistics Sweden, 2020_[12]), (Office for National Statistics, 2020_[13]), (U.S. Bureau of Labor Statistics, 2020_[14]).

Italy stands out for not getting as close to its teleworking potential - estimated based on job tasks – achieving just over half of the potential based on the peak in the self-reported series and a quarter based on the peak in the business-reported series (during the first national lockdown).

Nevertheless, the business teleworking figures for Italy are accompanied by responses to a question asking businesses to estimate the percentage of company staff *performing jobs that can be carried out in remote or smart working* (ISTAT, 2020_[11]). This provides an alternative estimate of the teleworking potential in Italy, - 9% of employees across all firms. During the first national lockdown, Italy came close to achieving this level of teleworking.

Figure 14 breaks this down by industry, showing that all industries came close to achieving their reported teleworking potential in March-April 2020 but most eased back closer to half of the teleworking potential as lockdown restrictions were reduced in May-June.

Figure 14. Teleworking before and during the COVID-19 crisis in Italy, by industry, 2020



Note: Teleworking potential is defined as the estimated share of jobs that can be performed at home. Italy introduced lockdown measures in early March with attractions, schools, universities, hair salons, restaurants and bars closed nationwide by 11 March 2020. Factories were closed and all nonessential production halted by 22 March 2020. Restrictions were eased progressively from 4 May and into June 2020, although teleworking continued to be encouraged where possible.

Estimated teleworking potential is a weighted average of the number of firms in each industry reporting that the percentage of company staff performing jobs that can be carried out in remote or smart working lies in the following bands: none or almost none (treated as 0% to 1%), less than 25%, 25% to 50%, 51% to 75%, 75%, and 75% and over. The mid-point of each band is used for the calculation.

Source: OECD Digital Economy Outlook (2020_[29]) based on (ISTAT, 2020_[11]).

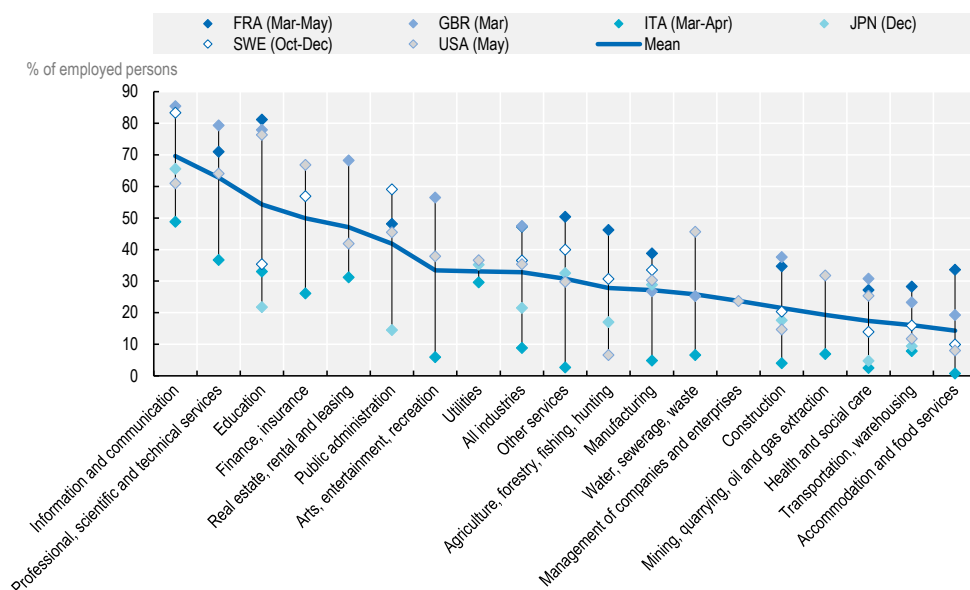
The data presented confirm that the COVID-19 pandemic had considerable effects on both the prevalence of telework, and the frequency with which people telework. Indeed, several countries came close to matching the estimated share of jobs that can be performed from home. The next section looks in further detail at the firms employing teleworkers, while the following one examines information on the characteristics of those who work from home.

Teleworking by industry and firm size

Different industries are characterised by varying products and productive processes. These influence the extent to which individual businesses and whole industries can implement working from home. For instance, it is not easy to enable access to the heavy machinery on a factory floor from home, nor is teleworking a realistic prospect for most of those working in supermarkets, restaurants, and hotels. Meanwhile, “a laptop” is already the main equipment needed for many jobs, and these can be undertaken away from “the office” with relatively low friction.

Figure 15 takes the highest available teleworking figure for each country and disaggregates it across industries. While the share of employees teleworking in each industry varies widely across countries, the trends are generally similar. Industries associated with physical production such as health and social care, construction, transport and warehousing, and accommodation and food services have relatively low rates of teleworking. By contrast, industries that are already highly digitalised (OECD, 2019^[30]) including Information and communication services; Professional, scientific and technical services, and financial services achieve much higher rates of working from home – over 50% on average. Public administration, which would be expected to “lead by example” in an environment where private sector employers are being encouraged to let employees work from home, also reaches 50% teleworking on average.

Figure 15. Teleworking peaks during the COVID-19 pandemic, by industry



Note: The industry breakdown available varies and the alignment of industries across countries is approximate in some cases. Where some countries have more detail than others – for example, several countries separate retail trade and wholesale trade – the simple average is taken.

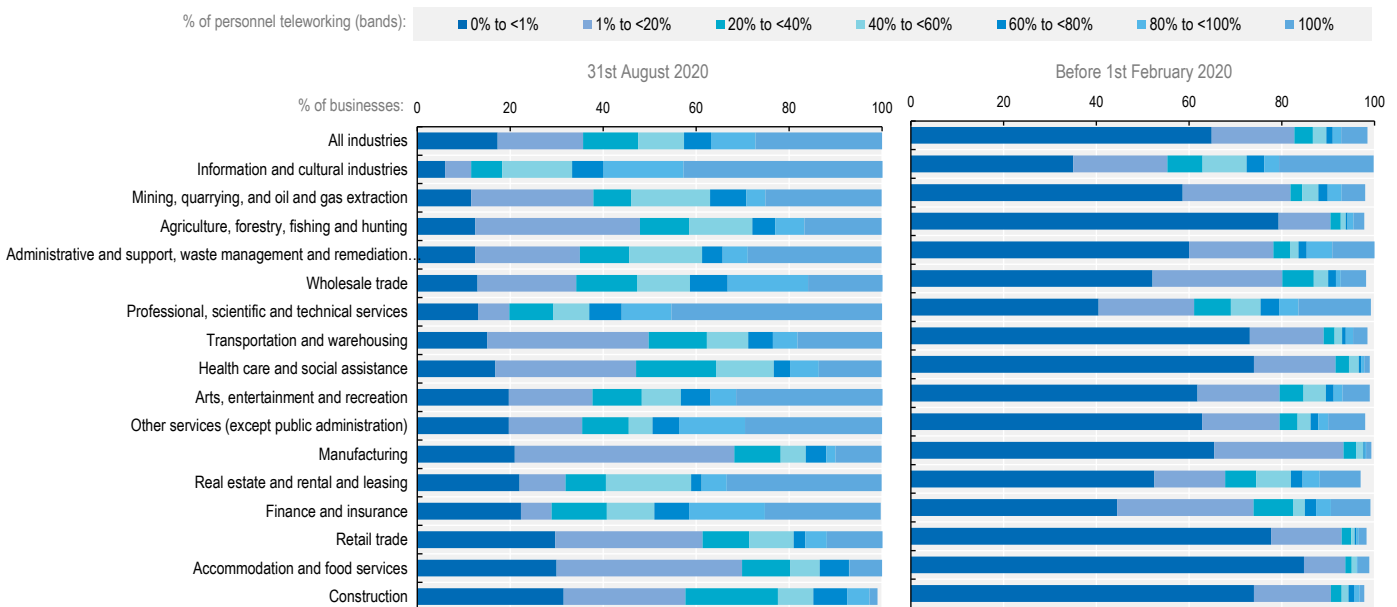
FRA: share of employees teleworking or remote working in reporting week (firm-reported).
 GBR: share of employees working remotely instead of at their normal place of work in the last 2 weeks (firm-reported).
 ITA: share of employees remote or smart working in reporting period (firm-reported).
 JPN: data relate to “Telework” collected through an ad-hoc “survey on changes in life consciousness and behaviour”.
 SWE: share of employed persons (aged 15-74) working at home at least once in the last 4 weeks (self-reported).
 USA: share of employed persons who teleworked or worked from home in the last 4 weeks *because of the coronavirus pandemic* (self-reported).
 Source: OECD based on (DARES, 2020-21^[10]), (Office for National Statistics, 2020^[13]), (ISTAT, 2020^[11]), (Japan Cabinet Office, 2021^[20]), (Statistics Sweden, 2020^[12]), (U.S. Bureau of Labor Statistics, 2020^[14]).

Statistics available for Canada (Figure 16) offer an alternative business perspective showing the distribution of businesses in different industries based on the share of their employees who were “teleworking or working remotely” on the reporting date. In August 2020, the Information and cultural industries, extractive industries (mining, quarrying, etc.), and firms in Agriculture, forestry, and fishing had the lowest incidence of firms with no teleworking (or very low, less than 1% of employees). Nevertheless, Agriculture, forestry, and fishing firms skew toward a relatively low share of personnel teleworking, according with the intuition that only a relatively small minority of jobs in this sector would be suitable for telework/work from home (e.g. sales roles). Meanwhile, Retail trade, Accommodation and food services, and Construction had the most firms with no (or very low) teleworking.

There has been a pronounced shift toward adopting teleworking for at least some personnel: before February 2020, two thirds of businesses had no (or very low) teleworking; by August 2020, this had fallen to less than one-in-four businesses overall.

About half of businesses in professional, scientific, and technical services had all personnel teleworking in August 2020, as did two-fifths of firms in Information and cultural industries. By contrast, almost no firms in Construction reported 100% teleworking. Two thirds of the firms in this sector with teleworking (i.e. excluding firms with low or no teleworking) had teleworking rates in the relatively low range of 1-40% of personnel.

Figure 16. Share of employees teleworking by industry, Canada, 2020

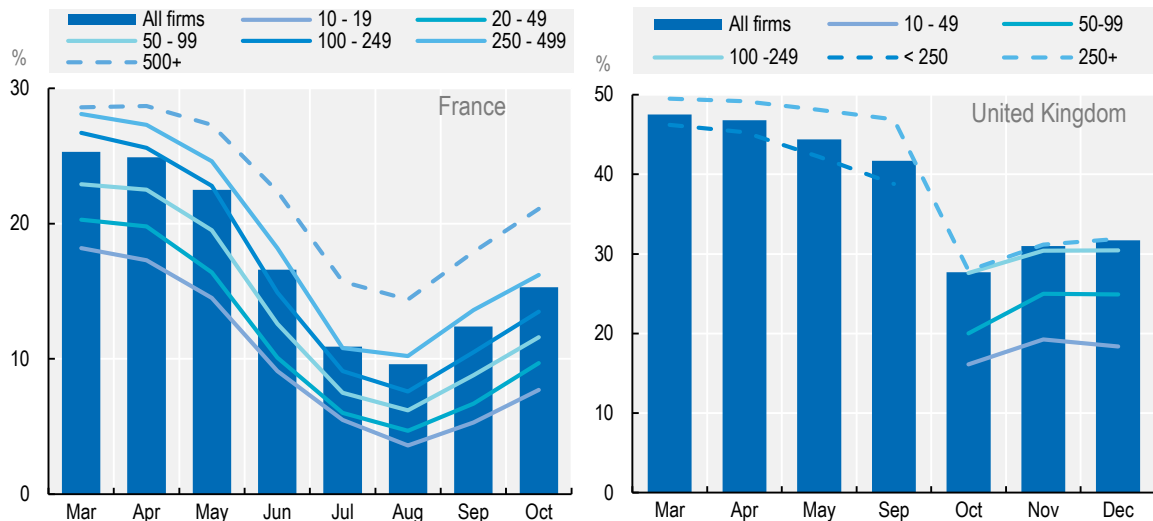


Note: Some bars do not sum to 100% due to some businesses reporting teleworking but not giving the share of employees teleworking.
 Source: OECD based on (Statistics Canada, 2020^[27]) (Statistics Canada, 2020^[31]).

Several countries also have information available by firm size (number of employees). In general, the uptake of digital technologies tends to be greatest amongst larger firms (OECD, 2019^[30]) and as such it might be expected that they would also have higher rates of teleworking. This is precisely what is seen in France and the United Kingdom (Figure 17).

Figure 17. Teleworking in the COVID-19 pandemic, by firm size, 2020

Percentage of employees, 2020



Note:

FRA: (average) share of employees teleworking or working remotely in reporting week (firm-reported).

GBR: (average) share of employees working remotely instead of at their normal place of work, last 2 weeks (firm-reported).

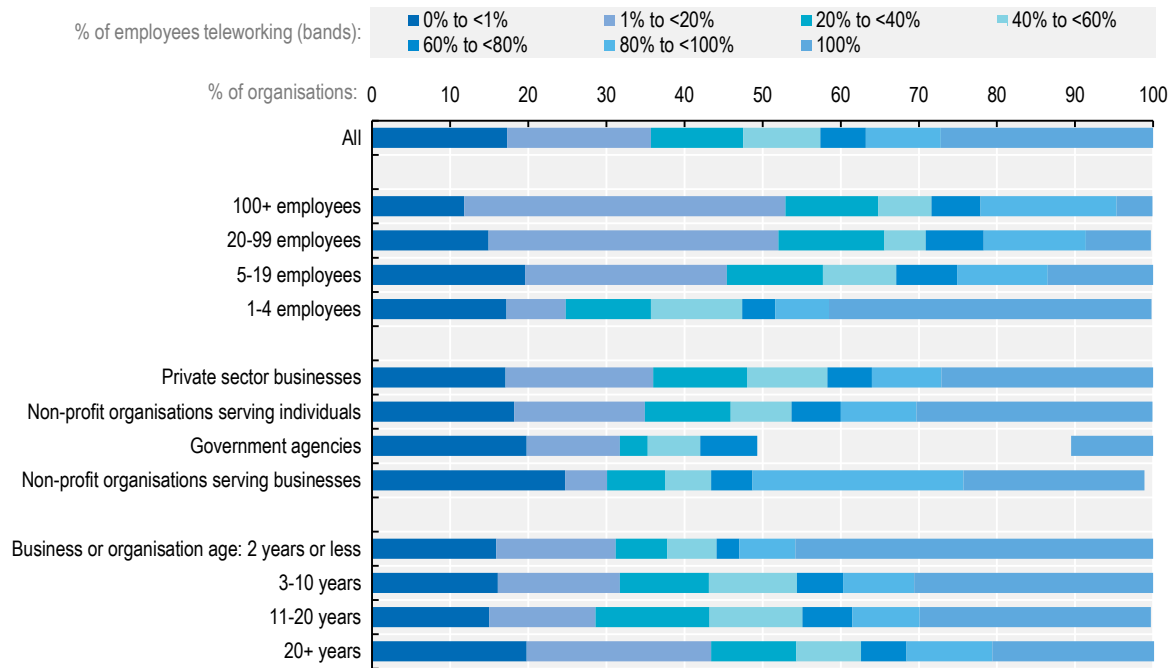
Source: OECD based on (DARES, 2020-21^[10]), (Office for National Statistics, 2020^[13]).

In addition, the data for Canada in August 2020 (Figure 18) show the lowest rates of no (or very low, less than 1% of personnel) teleworking occurring amongst organisations with 100 or more employees, followed by those with 20-99 employees. It is striking that, in Canada, organisations with 1-4 employees have by far the greatest rate of total teleworking – with over 40% of these having all employees working from home. This is likely to be a result of the very small size of such businesses: with only four employees, managers/owners only have a small number of personnel and roles to enable to be performed from home. By contrast, in larger firms the organisational structure and nature of roles is likely to be more heterogeneous – creating a much greater challenge in attaining 100% telework.

Statistics Canada also provide the same distributional information for different types of organisations and organisations of different ages (also shown in Figure 16). The overall share of organisations teleworking appears to be relatively similar across different organisation types. Around 20% of each organisation type have no (or very low, below 1%) shares of personnel working. Around 25-30% of businesses and non-profits achieve total teleworking (i.e. all personnel were teleworking on the reporting date). This share is markedly lower for government agencies, with only 10% having all personnel working from home.

Younger businesses aged up to two years in August 2020 appear to be especially able to achieve full-time teleworking – with almost half of them doing so. It is likely, though, that younger firms will have relatively lower numbers of employees thereby making total telework easier to attain. By contrast, organisations aged 20 years and over not only have the lowest rates of total teleworking but also the largest share of businesses with no (or very low) telework.

Figure 18. Share of employees teleworking by organisation size, type, and age, Canada, August 2020



Note: Government agencies 80% to <100% band suppressed by Statistics Canada due to data quality issues. Some bars do not sum to 100% due to some respondents reporting teleworking but not giving the share of employees teleworking.
 Source: OECD based on (Statistics Canada, 2020_[31]).

This section has explored the characteristics of the businesses and other organisations with employees teleworking during the COVID-19 pandemic. Businesses in some industries are more highly digitalised than others (OECD, 2019_[30]). Indeed, in some industries it is likely that work can carry on relatively well as long as most employees have the ICT equipment and remote access to work systems.

By contrast, some industries are characterised by the physical provision of services, which cannot be provided from home – such as accommodation, food, transport and storage services. Similarly, industries such as manufacturing and construction are mainly associated with the production, in a given place, of physical products. While the COVID-19 pandemic appears to have incentivised more firms in these industries to offer teleworking, and the share of employees working from home has increased markedly, many roles simply cannot be performed from home. Box 2 provides complementary data on the share of firms that have adopted teleworking.

This alludes towards the important fact that industries are primarily defined by their products. Nevertheless, businesses draw on employees with differing skills and expertise in their productive processes. Business surveys do not usually provide information on these employees' *occupations*. However, information on this, and several other employee characteristics, is available through surveys of individuals. The following section looks at the characteristics of those teleworking during the COVID-19 pandemic.

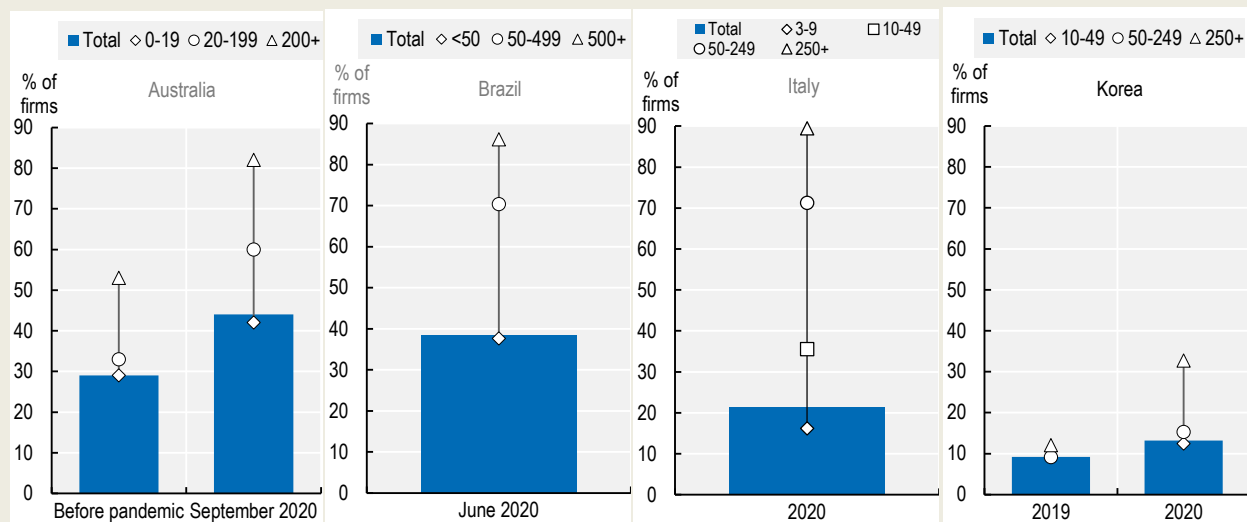
Box 2. Business adoption of teleworking during the COVID-19 pandemic

The data presented elsewhere in this document are focused on the share of employed persons teleworking. An alternative or complementary approach that has been adopted in some countries involves asking businesses if they offer teleworking at all or/and if they have any personnel teleworking (Figure 19).

Overall, this indicator shows similar trends. In the countries shown, the share of firms adopting teleworking increased markedly across all employment size bands when compared to before the pandemic. The likelihood of having teleworking in place is clearly correlated with the number of people a firm employs. Indeed, in Australia, Brazil, and Italy the vast majority of the largest firms have implemented teleworking.

In contrast, teleworking adoption by businesses in Korea is much lower, even among the largest firms and during the pandemic. One factor may be that Korea only instituted a very brief period of workplace closures required for all but key workers (in April 2020) so the push to take-up teleworking may have been relatively less strong than in some other countries (Our World in Data, 2021^[15]).

Figure 19. Businesses with teleworking, by firm size



Note:

AUS: "businesses with employees teleworking prior to covid-19 / in September 2020"; as surveyed 10-16 September 2020.

BRA: Percentage of companies that adopted remote work during the pandemic.

ITA: Introduction of remote work or Smart Working or extension of the personnel.

KOR: Did your business/organisation adopt telework?

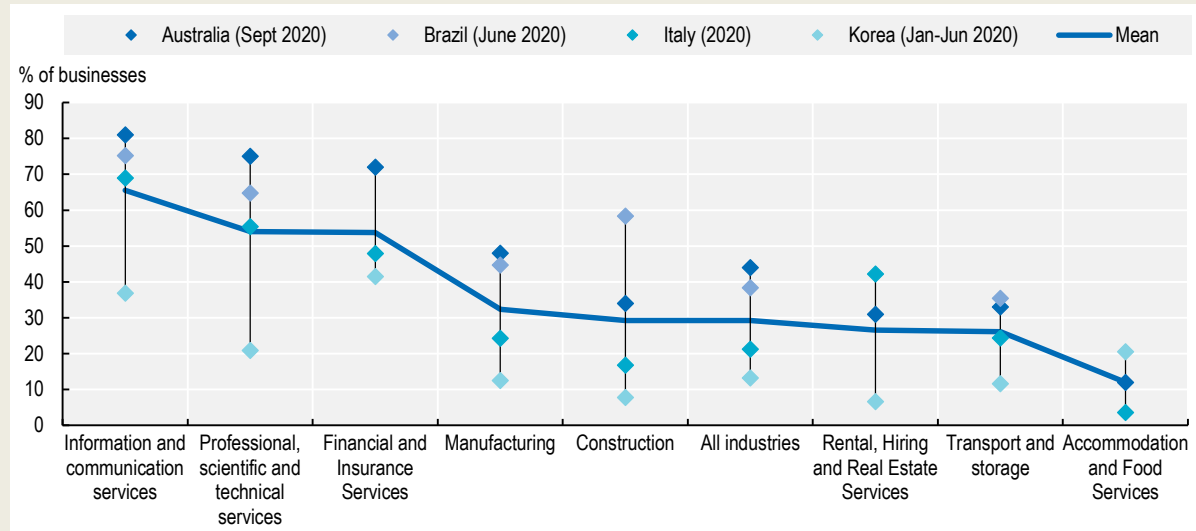
Source: OECD based on (Australian Bureau of Statistics, 2020^[26]), (Solidarity Research Network, 2020^[22]), (ISTAT, 2020^[11]), (Korea Source: Ministry of Science & ICT(2020), 2020^[32]).

Most businesses have different roles that vary in the extent to which working from home is possible. For example, manufacturing products may be impossible without access to immobile machinery but personnel ordering the supplies needed to make them or managing customer accounts may be able to work from home relatively easily provided they have access to the necessary ICT equipment. As a result, businesses and industries vary in their ability to adopt teleworking.

Figure 20 gives an idea of the extent to which businesses in different industries have been able to adopt teleworking to at least some degree. On this measure, industries such as manufacturing and construction, which come relatively low down in terms of the share of employees working from home (Figure 15) come

higher up in terms of the share of businesses adopting teleworking for at least some employees during the COVID-19 pandemic – which suggests that such businesses have made efforts to implement teleworking for the relatively small number of roles where it is possible.

Figure 20. Businesses with teleworking, selected industries



Note:

AUS: “businesses with employees teleworking prior to covid-19 / in September 2020”; as surveyed 10-16 September 2020.

BRA: Percentage of companies that adopted remote work during the pandemic.

ITA: Introduction of remote work or Smart Working or extension of the personnel.

KOR: Did your business/organisation adopt telework?

Source: OECD based on (Australian Bureau of Statistics, 2020^[28]), (Solidarity Research Network, 2020^[22]), (ISTAT, 2020^[11]), (Korea Source: Ministry of Science & ICT(2020), 2020^[32]).

Teleworking by occupation and workers' characteristics

As well as understanding what kinds of businesses have been most able to implement teleworking, it is also important to find out how different groups of individuals have been able to benefit from it. While teleworking full-time over extended periods is unlikely to be unambiguously good (or bad), it is an important way in which many people have been able to continue working and earning incomes during the COVID-19 pandemic. However, if certain groups within society (e.g. age groups, ethnicities) have a greater propensity to be in jobs that offer (or do not offer) the potential for teleworking then the benefits of it will not be shared around equally.

Occupations group people based on the types of role they work in (regardless of industry). It is the tasks involved in a person's job, rather than the industry they work in, that is most likely to determine how well they can move to teleworking. It is for this reason that the estimated teleworking potential used in Figure 13 was derived based on occupation (Dingel and Neiman, 2020^[11]). Nevertheless, only a few countries publish detail on the shares of persons employed in different occupations working from home.

Figure 21 shows that in the United Kingdom, teleworking increased markedly across all occupations during the first national lockdown in comparison to 2019. Those occupations, which already had the highest rates of telework, experienced the greatest increases. For example, 20% of persons employed in "professional occupations" reported working from home in 2019 and this increased to almost 70% in April 2020. More "manual" occupations including skilled trades, customer services, and caring and leisure occupations also saw significant increases in teleworking but reached much lower levels, below 20%.

A similar pattern can be observed in Brazil with managers and professionals, as well as those in administrative and secretarial occupations having the highest rates of teleworking – though the overall rates reached during the pandemic were typically less than half those in the UK.

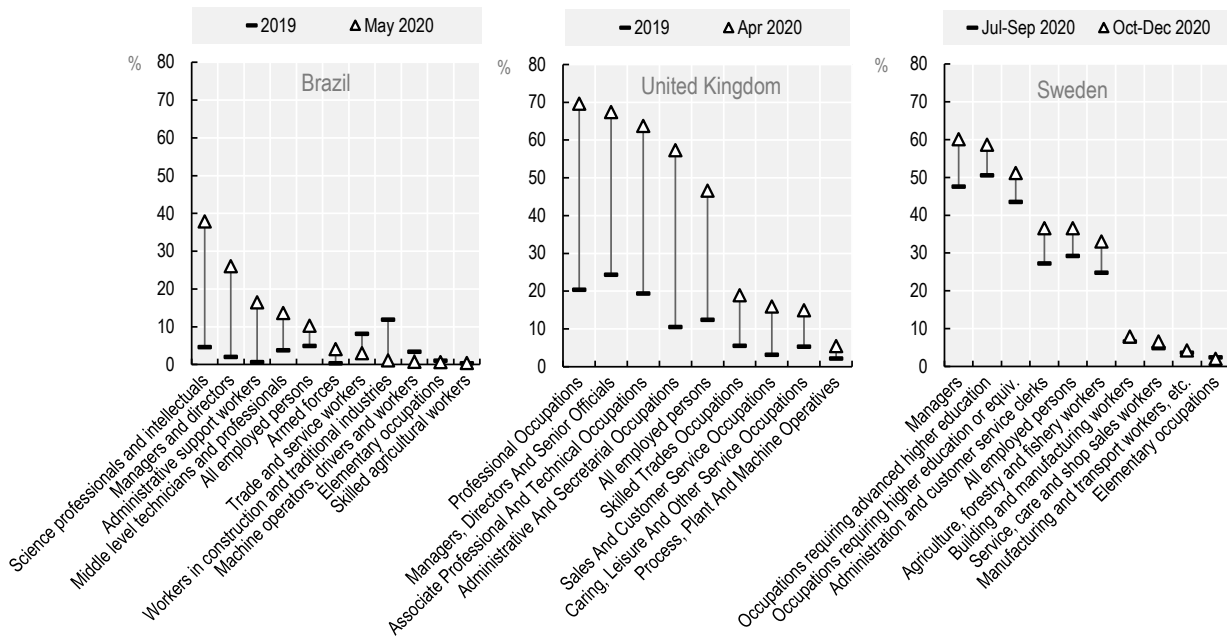
The same trend is also seen in Sweden, though the scale of the increases shown is less than in the UK as both observations for Sweden were taken during the pandemic (in the "summer" period when teleworking was relatively lower and during the uptick at the end of the year, as shown in Figure 4).

The United States publishes a more aggregated grouping of occupations, as shown in Figure 22. Nevertheless, the findings are generally consistent with the data for the United Kingdom and Sweden. "Management, professional, and related occupations" attain by far the highest rates of *working from home due to the coronavirus pandemic*.

Trends over time are consistent across the occupational groups shown in the United States. The teleworking rate of each declines by roughly the same degree as the lockdown measures instituted in many (but not all) states and localities were progressively relaxed as the year went on, and then increased in-step as the situation worsened in November-December.

Figure 21. Telework in the COVID-19 pandemic, by occupation

Percentage of employed persons



Note:

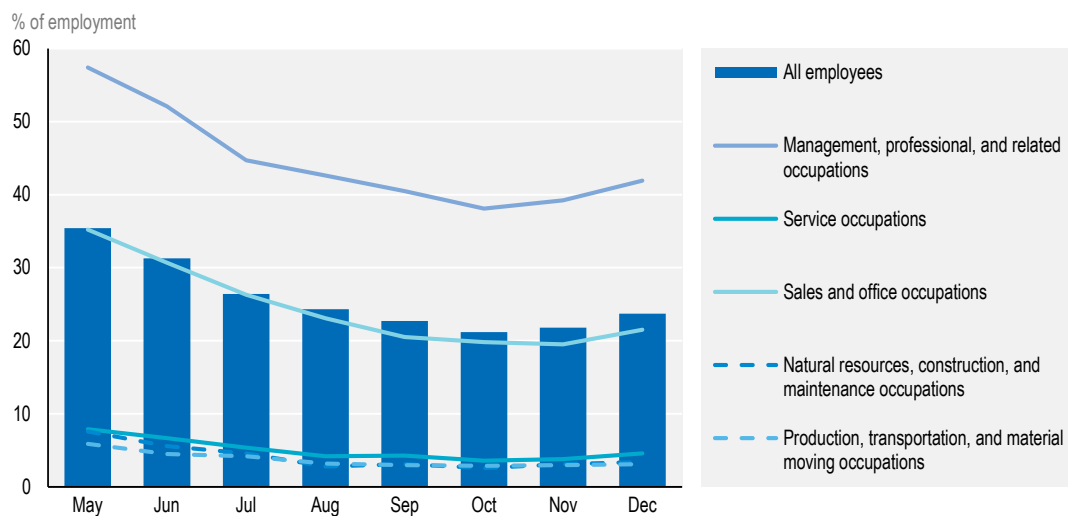
BRA: Percentage of people usually working at home (in 2019) and who started working at home (in May 2020), by occupational groups

GBR: Estimated by the ONS using experimental Labour Market Survey datasets. A homeworker refers to a person who did any working from home in the reference week.

SWE: Share of employees working at home at least once in the reporting month (self-reported). Data refer to employees aged 15-74 and come from Labour Market Surveys.

Source: OECD, based on (Office for National Statistics, 2020^[21]). (Statistics Sweden, 2020^[12]), (Solidarity Research Network, 2020^[22]).

Figure 22. Teleworking due to the COVID-19 pandemic, by occupation, United States



Note: Share of employees who teleworked or worked from home at least once in the last 4 weeks *because of the coronavirus pandemic* (self-reported).

Source: OECD based on (U.S. Bureau of Labor Statistics, 2020^[14]).

Often, different roles or occupations are associated with varying qualification requirements. Therefore, it is also likely that teleworking rates will vary between people with different qualification levels (Figure 23). In all countries shown, those with the highest levels of qualifications have much greater propensity to telework during the COVID-19 pandemic. Meanwhile, the lowest levels of qualifications appear to be associated with the lowest rates of teleworking.

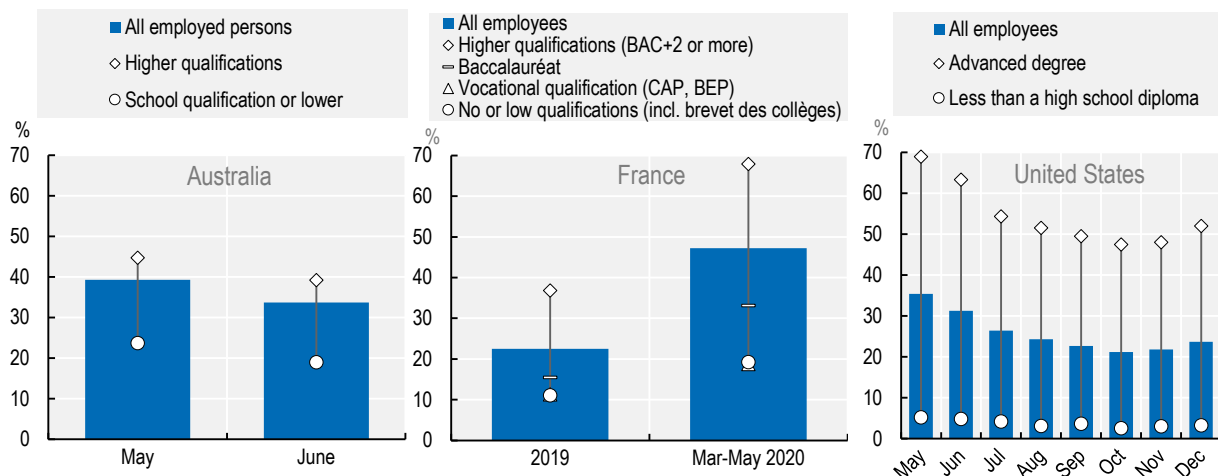
In Australia, having a “higher qualification” (i.e. from levels “beyond” school, such as professional qualifications or university degrees) was associated with having roughly double the propensity to report teleworking in May and June 2020, compared to those with routine school qualifications (or lower).

In France, those with qualifications beyond school level (BAC+2 or more) have at least twice the propensity to work from home compared to groups with lower qualifications. Almost 70% of these highly qualified individuals reported working from home during the first national lockdown (Mar-May 2020). The same was true in 2019, before the pandemic. Just one-in-five of employed persons with the lowest levels of qualifications reported working from home in 2020. Because ICT-enabled jobs are among the easiest to move from workplaces to working from home, it is likely that most of this increases seen from 2019-2020 relate to people teleworking from home (see Box 1).

Data from the Bureau of Labor Statistics present the extremes of the qualifications spectrum – people with advanced degrees (such as Master’s degrees and Doctorates) compared to those who did not achieve a high school diploma. On average, those with the highest qualifications have been fifteen times more likely to telework during the COVID-19 pandemic than the least qualified employees.

Figure 23. Teleworking during the COVID-19 pandemic, by educational attainment

Percentage of employed persons



Note:

AUS: share of employed persons working at home at least once in the last 4 weeks (self-reported). March-June figures relate to “persons who have worked at home in the last four weeks due to the spread of COVID-19”. Data relate to employees aged 18 years and over. “Higher qualifications” refers to those with “non-school qualifications” which includes professional qualifications and university degrees. “School qualification or less” refers to people whose highest qualification is at or below the level of routine school qualifications, such as the High School Certificate. Data from the Household Impacts of COVID-19 Survey.

FRA: share of employed persons working at home in the period (self-reported). Data from employment surveys.

USA: Share of employed persons who teleworked or worked at home at least once in the last 4 weeks *because of the coronavirus pandemic* (self-reported). Data from the Current Population Survey.

Source: OECD based on (Australian Bureau of Statistics, 2020^[9]), (INSEE, 2020^[19]), and (U.S. Bureau of Labor Statistics, 2020^[14]).

The extent to which both women and men are able to engage with and benefit from digital technologies is an area of increasing focus (see for instance OECD (2018^[33]), (2019^[34]), (2019^[30]), (2020^[35])). Most of the countries publishing data on teleworking in the pandemic collect information on this, as shown in Figure 24. In these countries, the gap between men and women in terms of teleworking is relatively small, though it is most common for a slightly higher share of women to telework.

In Australia, women were 6 percentage points more likely to report teleworking as a precaution due to the COVID-19 pandemic than men in April 2020; and 18 percentage points in May. However, this gap narrowed almost completely in the following months. In addition, the data available in Australia do not indicate a propensity for women to telework much more frequently than men (Figure 9).

In Italy, teleworking rates were fairly closely matched between women and men in 2019, but slightly higher for the latter. Come 2020, the rates for both increased markedly but the share of women teleworking clearly outstripped that of men. Similarly, in 2019, an equal share of men and women in France reported teleworking (22%). This jumped to 47% on average during the first national lockdown in March-May 2020 but the share of women teleworking increased by more, to 52% - compared to 43% for men. One possible explanation is that women may have been more likely to take up teleworking as a solution to the childcare challenges imposed by school closures at that time.

Figure 24. Teleworking during the COVID-19 pandemic, men and women



Note:

AUS: share of employed persons working at home at least once in the last 4 weeks (self-reported). The March figure was collected on 1-6 April 2020 and the April figure collected on 29 April-4th May, both with reference to the previous 4 weeks. March-June figures relate to “persons who have worked at home in the last four weeks due to the spread of COVID-19”. Data relate to employees aged 18 years and over.

DNK: share of employed persons working at home at least once in the last 4 weeks (self-reported). Data relate to quarter 2 (March-June) and come from Labour Force Surveys.

FRA: share of employed persons working at home in the reporting period (self-reported). Data come from employment surveys.

GBR: Estimated by ONS using experimental Labour Market Survey datasets. A homemaker refers to a person who did any working from home in the reference week.

ITA: share of employed persons working at home in the reporting period (self-reported). Data come from Labour Force Surveys.

SWE: share of employed persons working at home at least once in the reporting month (self-reported). Data refer to employees aged 15-74 and come from Labour Force Surveys.

Source: OECD, based on (Australian Bureau of Statistics, 2020^[9]), (Statistics Denmark, 2020^[18]), (INSEE, 2020^[19]), (Office for National Statistics, 2020^[21]), and (Statistics Sweden, 2020^[12]).

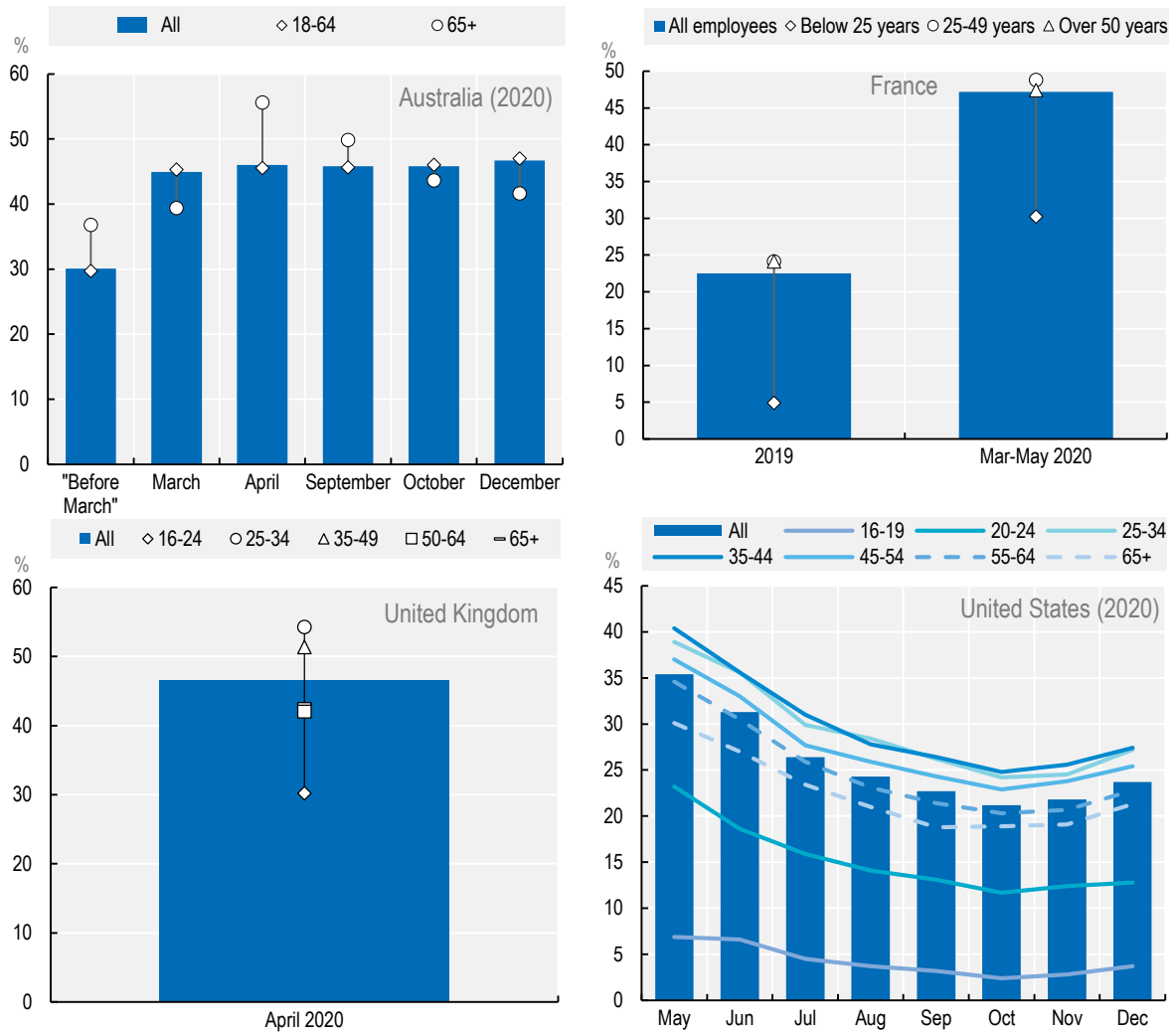
Teleworking rates also vary between age groups (Figure 25), with the youngest groups having the lowest incidence of teleworking. In France, employees aged below 25 years were around one third less likely to telework during the first national lockdown (March-May 2020) than other age groups. This is an increase compared to before the pandemic though, when the telework rate among under-25s was around one-fifth of that for older employees.

Similarly, in the United Kingdom teleworking rates were markedly lower for employees, aged 16-24 and likewise for employees aged 16-19 and 20-24 in the United States. In both the U.S. and UK, teleworking rates were highest amongst employees aged between roughly 25 and 50 – reaching above 50% in the UK in April 2020 and 40% in the United States in May 2020.

The time-series for the United States shows that teleworking rates among different age groups changed proportionately over time so that no one age group was clearly driving the overall fall in teleworking seen from May-June. In Australia, in some periods (e.g. April) those aged 65 years and over appear to have a higher propensity to telework than those aged 18-64 (i.e. prime working age), while it appears lower in other periods (e.g. December). This is likely to be at least partly down to sample sizes: a relatively small share of over-65s work and so the share of them reporting telework may be subject to relatively high levels of statistical uncertainty.

Figure 25. Teleworking during the COVID-19 pandemic, by age group

Percentage of employed persons



Note:

AUS: share of employed persons working at home at least once in the last 4 weeks (self-reported). The March figure was collected on 1-6 April 2020 and the April figure collected on 29 April-4th May, both with reference to the previous 4 weeks. March-June figures relate to "persons who have worked at home in the last four weeks due to the spread of COVID-19". Refers to employees aged 18 years and over.

FRA: share of employed persons working at home in reporting period (self-reported).

GBR: Estimated by ONS using experimental Labour Market Survey datasets. A homeworker refers to a person who did any working from home in the reference week.

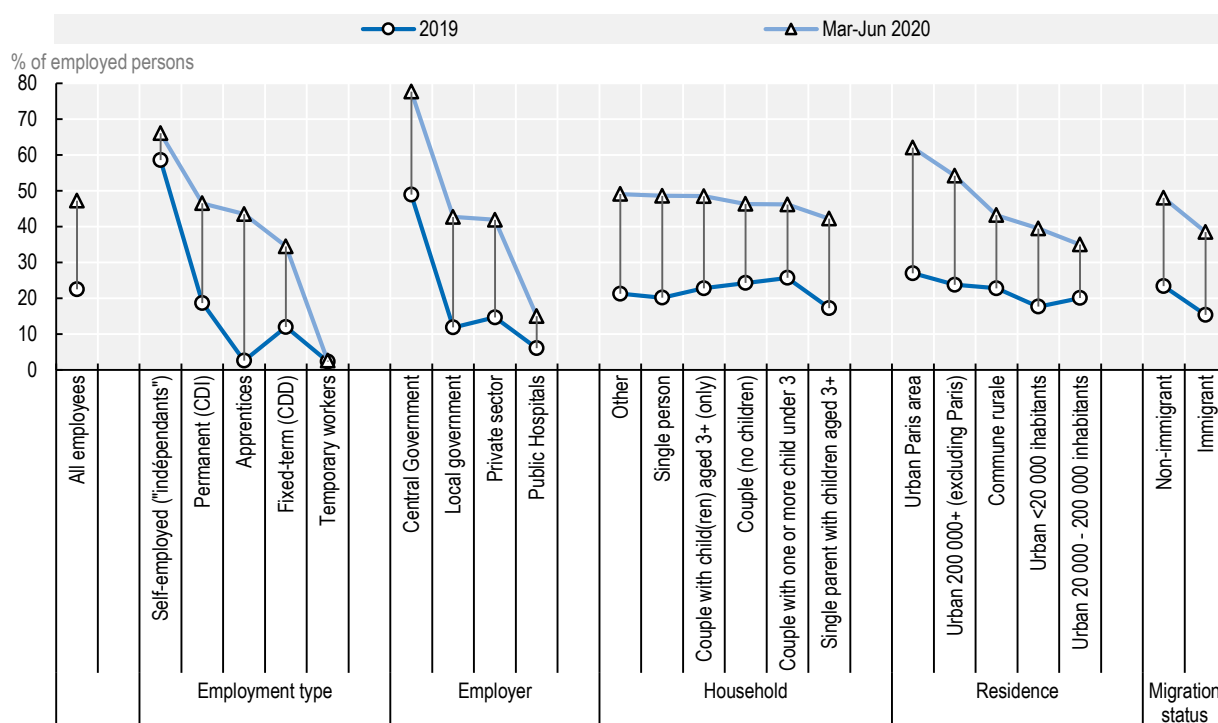
SWE: share of employed persons working at home at least once in the reporting month (self-reported). Refers to employees aged 15-74.

USA: Share of employed persons who teleworked or worked from home at least once in the last 4 weeks *because of the coronavirus pandemic* (self-reported).

Source: OECD, based on (Australian Bureau of Statistics, 2020^[9]), (INSEE, 2020^[19]), (Office for National Statistics, 2020^[21]) and (Statistics Sweden, 2020^[12]).

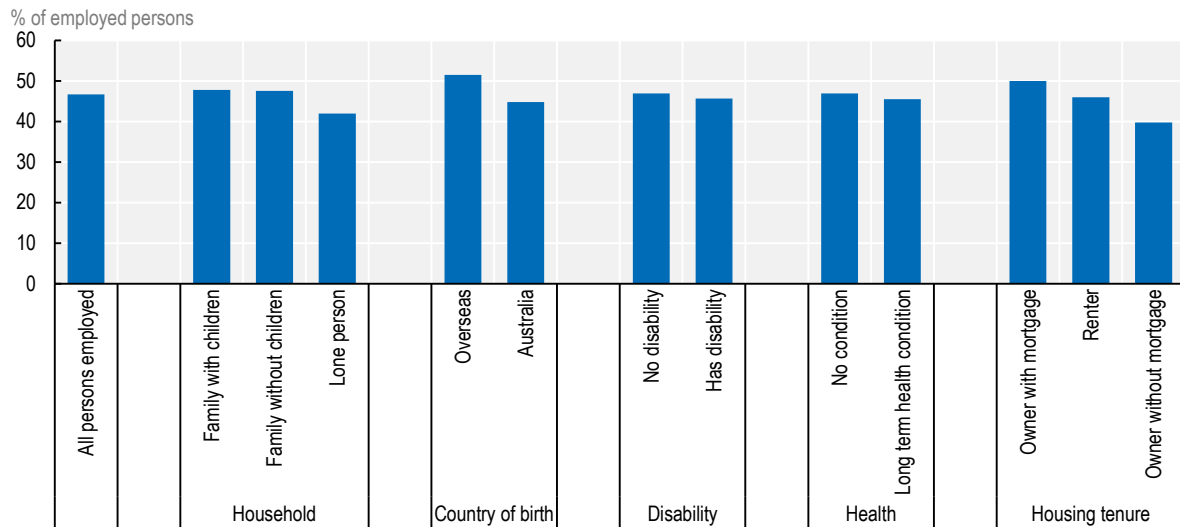
Several National Statistical Organisations publish information on teleworking broken down by various other personal characteristics. For example, Figure 26 shows teleworking in France broken down by employment type, employer type, household characteristics, the type of area the person lives in, and among people who have migrated to France. Across all these characteristics, teleworking rates were higher during the first national lockdown in 2020 than they were in 2019 before the COVID-19 pandemic. One disparity of potential note is that the highest rates of teleworking were achieved in big cities and in rural areas. Mid-sized urban areas, by contrast, attained lower levels of teleworking suggesting these could be potential area to focus communication and enforcement efforts in the future.

Figure 26. Teleworking in France, by workers' characteristics, 2019 and 2020 first lockdown



Note: share of employed persons working at home in reporting period (self-reported). Data from INSEE enquêtes emploi (employment surveys). Source: OECD based on (INSEE, 2020^[19]).

Australia have leveraged their bespoke survey on the impacts of COVID-19 on households (Australian Bureau of Statistics, 2020^[9]), which has taken place at least monthly since April 2020, to gather a wide range of information on the pandemic. This includes the additional details on the characteristics of people teleworking shown in Figure 27. These indicate, for example, that in Australia people with disabilities or long-term health conditions have been able to benefit from teleworking at around the same rates as other people, and that those born overseas have higher rates of teleworking than those born in Australia.

Figure 27. Teleworking in Australia, by workers' characteristics, December 2020

Note: share of employed persons working at home at least once in the last 4 weeks (self-reported). Data relate to employees aged 18 years and over.

Source: OECD based on (Australian Bureau of Statistics, 2020^[17]).

This section has presented data on teleworking during the COVID-19 pandemic, broken down according to various personal characteristics. While teleworking rates vary widely between employees in different age groups and occupations, and those with different levels of qualifications, it appears to have been relatively inclusive in terms of its availability to both men and women, and to some other groups often at risk of being disadvantaged in societies. The following section considers the outlook for teleworking going forward.

Outlook for teleworking

It is clear that the COVID-19 pandemic has led to a step change in the prevalence of teleworking across almost all of the business and employer characteristics presented. A key question is, “what will this mean for the future?”. In considering that, it will also be important to also gain an understanding of how teleworking relates to productivity.

It is likely that many employers – and many governments – are considering how the balance between working “on premises” and working at home might be optimised going forward. While more widespread telework in the longer-run has the potential to improve productivity and a range of other economic and social indicators (worker well-being, gender equality, regional inequalities, housing, emissions), its overall impact is ambiguous and carries risks especially for innovation and worker satisfaction (OECD, 2020^[2]). Indeed, information on employee and employer experiences and perceptions of teleworking is somewhat limited.

Gascoigne (2020^[36]) notes that, when considering support for teleworking a “starting point for many employers is whether homeworkers are more productive than office-based workers. Perhaps counter-intuitively, this may not actually be the most helpful place to start. Productivity is hard to measure and to compare across different types of work. Knowledge work in particular – the kind of work most often done from home – is complex and intangible, meaning that we have no objective evidence on the relative productivity of knowledge workers based at home or in the office.”. As such, it is necessary to rely on reported productivity impacts as perceived by employees and employers.

Statistics Canada (2021^[37]) found that over 90% of “new teleworkers” (i.e. employees who usually worked outside the home before the COVID-19 pandemic but who worked most of their hours at home during the week of February 14 to 20, 2021) reported being at least as productive at home as they were previously at their usual place of work. Over half (58%) reported accompanying about the same amount of work per hour while 32% reported accomplishing more work per hour. The remaining 10% reported accomplishing less work per hour while working at home than they did previously at their usual place of work.

Women and men each tended to report being at least as productive at home regardless of age, educational attainment, marital status, industry, occupation, and whether or not they have children. Productivity does vary by industry though, with the likelihood of accomplishing more work per hour (i.e. increased productivity) being greatest in health care and social assistance (45%) and public administration (41%) but lower in goods-producing industries (31%).

These findings are broadly in line with academic/industry studies in several other countries. Barrero, Bloom, and Davis (2020^[38]) found that 85% of those Teleworking in the United States were at least as efficient working at home during the COVID-19 pandemic as they had been working on employer premises before the pandemic. In the United Kingdom, 71% of businesses surveyed said that homeworking during the COVID-19 pandemic had no detrimental impact on productivity and within those 33% said productivity had improved (Gascoigne, 2020^[39]).

Employees in Canada who reported accomplishing less work per hour while working from home identified various barriers to productivity. About one-in-five reported a lack of interaction with co-workers as the main reason for accomplishing less work per hour. Close to 20% reported having to care for children or other

family members. The remainder faced challenges such as accessing work-related information or devices (11%), having to do additional work to get things done (13%), having an inadequate physical work space (10%), or experiencing difficulty with Internet speed (5%) (Statistics Canada, 2021^[37]). A survey of 1 125 managers conducted through the Business at OECD group found that related adaptive measures taken by managers including holding regular online meetings, supporting purchases of equipment, and providing training were judged to support firm performance (Gal et al., 2021 (forthcoming))^[40].

Employees in Japan reported a mixture of benefits and disadvantages of teleworking experienced during the pandemic, many of which are likely to impact productivity (Japan Cabinet Office, 2021^[20]). Four-out-of-five teleworkers highlighted not needing to commute as a key benefit. While around 40% stated that teleworking allows better concentration on work and reduces the stress of workplace relationships. However, only 14% of respondents felt that teleworking makes it easier to generate new ideas. One reason for this may be increased communication challenges associated with telework; around one-third of respondents reported difficulty in consulting and communicating within the company and with partners as key challenges of teleworking during the pandemic.

There is some evidence that teleworking can be associated with longer working hours and also with working more during the evenings and the weekends (Eurofound and ILO, 2017^[41]); (Messenger, 2019^[42]), which may negatively impact employees well-being (and potentially their productivity too). In Canada, large proportions of individuals teleworking during the COVID-19 pandemic who accomplish more work per hour (48%) and of individuals who do less work per hour (44%) reported working longer hours per day than they did in the past. Furthermore, virtually none of the workers who accomplish at least as much work per hour at home as they did previously now work shorter hours per day. Overall, 35% of all new teleworkers reported working longer hours, with managers doing so in greater proportions (51%). In contrast, only 3% of all new teleworkers reported working shorter hours (Statistics Canada, 2021^[37]). It is likely that working longer hours offsets at least some of the potential benefits of teleworking from home (for example, avoiding commuting is a major benefit for many (Gascoigne, 2020^[36])) and makes it challenging to achieve a good work-life balance. In Japan, 15% of respondents highlighted overwork due to the blurring of boundaries between work and life as a disadvantage of teleworking during the pandemic (Japan Cabinet Office, 2021^[20]).

Teleworking not only blurs the boundaries between labour and leisure time; in November 2020, around one-in-four of employees teleworking in Australia reported having felt unwell at least once in the last two weeks and choosing to work from home instead of taking an absence from work (Australian Bureau of Statistics, 2020^[43]). On one hand this may allow some people to optimise their overall well-being (e.g. by being able to work from the comfort of home while not falling behind on their work) but it may also become seen as a default rather than taking sick leave.

On several occasions, the Australian Bureau of Statistics asked respondents which features of life under COVID-19 they would most like to see continue afterwards. In July 2020, 25% wanted to continue working or studying from home. For comparison, the most popular response was “spending more time with family and friends” at 29%. Women were more likely than men to want to continue aspects of life under COVID-19 restrictions, such as teleworking, after the pandemic (Australian Bureau of Statistics, 2020^[44]). By November the share of people wanting to see working from home continue going forward had increased to 30%, suggesting that people are growing accustomed to telework. However, the survey did not ask about the desired frequency of telework (e.g. full-time, regular, or occasional teleworking) and women were much more strongly in favour at 36% compared to 26% of men (Australian Bureau of Statistics, 2020^[43]).

In December 2020, of those respondents who teleworked at the time (21.5% of workers), 20% reported the desire to telework full-time in the future and a further 33% wanted to be “telework-centred” going forward. Only 18% stated that they wish to use telework irregularly (Japan Cabinet Office, 2021^[20]).

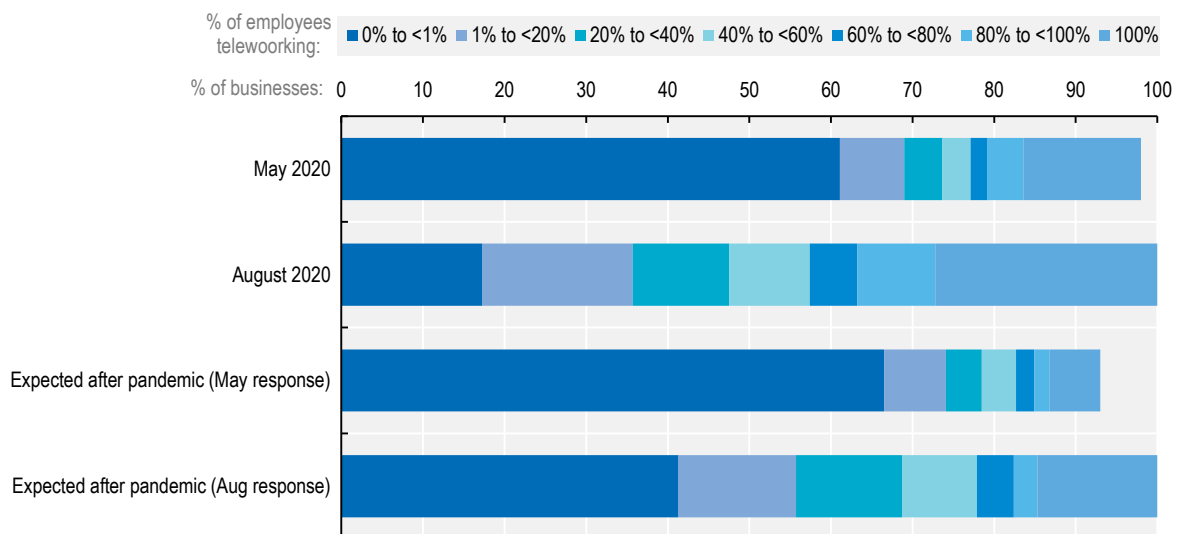
A survey undertaken by academics covering 15,000 people in the United States, also found interest in increased teleworking after the pandemic. Findings showed that 22 percent of all full work days will be

performed from home after the pandemic ends, compared with just 5 percent before. They identify five mechanisms behind this persistent shift toward working from home that have come about or been accelerated during the pandemic: diminished stigma, better-than-expected experiences of working from home, investments in physical and human capital enabling working from home, reluctance to return to pre-pandemic activities, and innovations supporting working from home (Barrero, Bloom and Davis, 2020^[38]).

Statistics Canada has also asked businesses about what level of teleworking they expect after the COVID-19 pandemic is over (Figure 28). A greater share of businesses in Canada expect to offer teleworking than did so before the pandemic (as indicated by smaller bars for “no or very low” telework, less than 1% of employees). This is echoed in Australia where less than 30% of businesses had staff teleworking before the pandemic but one-third of firms expected to have employees teleworking once restrictions are lifted and conditions stabilise (Australian Bureau of Statistics, 2020^[28]).

Furthermore, in Canada expectations appear to have evolved between May and August, when workplace closure measures were strengthened and the share of businesses with no or very low personnel teleworking declined to less than a fifth of employers. Following this considerable expansion in telework adoption, over half of employers expect to have personnel working from home after the pandemic, with around 15% of organisations expecting all personnel to be teleworking. This suggests that government actions in response to COVID-19 have played an important role in driving the rollout of teleworking capabilities and shaping employers’ expectations for the future.

Figure 28. Employers’ expected share of employees teleworking after the pandemic, Canada, 2020



Note: Some bars do not sum to 100% due to some respondents reporting teleworking but not giving the share of employees teleworking.
Source: OECD based on (Statistics Canada, 2020^[31]) and (Statistics Canada, 2020^[45]).

It is important to bear in mind that there are several key differences between COVID enforced homeworking and ‘standard’ homeworking: while the pandemic has provided a natural experiment in homeworking, it is far from being a controlled environment or ideal homeworking circumstances for many. In the United Kingdom, 43% of survey respondents said their employees had difficulty in working because they lacked space or privacy at home. Almost three in ten employers (29%) said their staff experienced reduced productivity as a result of poor internet connectivity, while 23% had difficulty conducting appropriate workplace risk assessments for people working from home (Gascoigne, 2020^[39]). Perhaps most importantly, the COVID-19 led to long periods of enforced (i.e. involuntary) 100% teleworking for a large group of people.

While it is likely that a great deal more employees and employers will consider at least some teleworking following the pandemic, it seems intuitive that relatively few employees will telework 100% of their work hours. In the United Kingdom, 63% of employers surveyed planned to introduce or expand “hybrid working” to some degree after the pandemic, with 45% planning to introduce or expand the use of total homeworking (i.e. with some employees spending 100% of work time at home) to some degree (Gascoigne, 2020^[39]).

In Canada, 80% of new teleworkers indicated that they would like to work *at least half* of their hours from home once the pandemic is over. Disaggregating this, 41% indicated that they would prefer working about half of their hours at home and the other half outside the home, while 24% would prefer working most of their hours at home. Only 15% would prefer to work all of their hours from home after the pandemic (Statistics Canada, 2021^[37]).

Importantly, perceived productivity at home was found to be strongly associated with the desire to work a greater share of hours at home. Workers who reported accomplishing more work per hour while working from home indicated that they would prefer working most or all of their hours at home much more often (57%) than all other workers (30%)³.

Conversely, 54% of teachers expressed a preference for working most or all of their hours outside the home. This is three times the percentage observed for other workers (18%).

In line with the notion that working longer hours might make telework less attractive, employees who reported working longer hours per day were, even after controlling for several personal and job characteristics, less likely than others to prefer working most or all of their hours at home (Statistics Canada, 2021^[37]).

Overall, it appears likely that, after the experience of the pandemic, a greater share of employees will telework from home to some degree. Employees, employers, and governments will need to adapt their policies and working practices to support this including “designing” work in ways adapted to a “hybrid working” context and including finding ways to mitigate some of the challenges associated with teleworking. These could include encouraging boundary-setting and routines to prevent overwork; ensuring managers have the skills and tools needed to effectively coordinate tasks and communication; paying special attention to creativity, brainstorming, problem-solving tasks, and informal learning; and facilitating networking, inter-team relationships, and cohesion regardless of work location (Gascoigne, 2020^[39]).

Conclusions

This paper has sought timely and high frequency information on how the incidence of teleworking has evolved in response to the unprecedented impetus created by the COVID-19 pandemic. Such information is only available for a small number of OECD countries. Nevertheless, these help to give a useful perspective.

All countries experienced increased rates of teleworking during the COVID-19 pandemic, though the extent of the increase varies widely between countries. Australia, France, and the United Kingdom saw 47% of employees report teleworking at points in 2020. In France, teleworking more than doubled, increasing by 25 percentage points compared to pre-pandemic levels, while a 20-percentage point increase in the UK led to teleworking rates in April 2020 that were 1.8 times those seen before the pandemic. In Australia teleworking in December 2020 was 1.5 times the level “before March” 2020, a 15 percentage point increase.

Teleworking rates, as reported by businesses, are lower in Italy, and peaked at 9% of employees in March-April 2020 – 8 percentage points more than before the pandemic (Jan-Feb 2020).

As has been noted repeatedly (e.g. in Box 1), at least some of the variation in the relative rates of teleworking seen across countries is likely to be driven by differences in the precise concepts being measured (e.g. working from home vs. teleworking; employees vs employed persons), sources (e.g. surveys of individuals vs surveys of businesses), and other “routine” variations in aspects of survey methodology such as sample designs and sizes, question wording, and the precise guidance given to respondents to help them understand and fill in the questions. Nevertheless, real-world factors will also contribute to varying rates of teleworking across countries. One important factor is likely to be what legal basis employees have for requesting teleworking. For example, in the United Kingdom, employees have a statutory right to request teleworking. In many other countries there is no such right (or an unenforceable right) (OECD, 2021 (forthcoming)^[23]).

In many countries, peak teleworking rates have been close to the maximum potential for telework, as estimated based on the characteristics of jobs. Nevertheless, these increases seen were not sustained throughout 2020 as teleworking rates evolved over time - likely in response to changing government guidelines and perceptions of the severity of the health risks.

Businesses in some industries are more highly digitalised than others (OECD, 2019^[30]). In some industries, it is likely that work can carry on relatively well as long as most employees have ICT equipment and remote access to work systems. In other words, a significant portion of jobs in some industries is already performed “on a laptop” and can therefore be undertaken at the workplace or elsewhere with relatively low difficulty. By contrast, some industries are characterised by the physical provision of services – such as accommodation, food, transport and storage services. Industries such as manufacturing and construction are mainly associated with the production, in a given place, of physical products. While the COVID-19 pandemic appears to have incentivised more firms in these industries to offer teleworking – and the share of employees working from home has increased markedly, many roles simply cannot be performed from home.

While teleworking rates vary widely between workers in different age groups and occupations, and those with different levels of qualifications, it appears to have been deployed relatively inclusively in terms of availability to both men and women.

A key question is whether (and how) the changes observed in the aftermath of the pandemic should be sustained afterwards. The limited evidence available suggests that around one-third of employed persons hope to continue to have the opportunity to telework and that a higher share of businesses anticipate offering teleworking than before the pandemic - with a greater proportion of employees expected to make use of the option to telework. Government actions in response to COVID-19 have played an important role in creating the impetus for a massive rollout of teleworking capabilities and are shaping employers' expectations for the future. At this point, policymakers should consider what actions could be taken to build upon the changes seen and to sustain the benefits of telework into the future; ensuring businesses and their employees have the flexibility they need to drive economic and social recovery, and to achieve improved well-being, after the world-changing events of 2020.

Notes

¹ i.e. jobs for which “working at home” is possible.

² The US figure of 42% based on ILO data is greater than the 37% figure the authors derive based on US BLS data due to the different weights implicit in these sources.

³ The large difference observed between these two groups remained in multivariate analyses, thereby confirming that productivity at home is a strong predictor of preferences for telework.

References

- Australian Bureau of Statistics (2020), *Business Impacts of COVID-19, September 2020*, [28]
<https://www.abs.gov.au/statistics/economy/business-indicators/business-conditions-and-sentiments/sep-2020>.]
- Australian Bureau of Statistics (2020), *Household Impacts of COVID-19 Survey*, [9]
<https://www.abs.gov.au/statistics/people/people-and-communities/household-impacts-covid-19-survey>.
- Australian Bureau of Statistics (2020), *Household Impacts of COVID-19 Survey 26-29 May 2020*, [26]
<https://www.abs.gov.au/statistics/people/people-and-communities/household-impacts-covid-19-survey/26-29-may-2020>.]
- Australian Bureau of Statistics (2020), *Household Impacts of COVID-19 Survey 6-10 July 2020*, [44]
<https://www.abs.gov.au/statistics/people/people-and-communities/household-impacts-covid-19-survey/6-10-july-2020>.]
- Australian Bureau of Statistics (2020), *Household Impacts of COVID-19 Survey, 12-15 May*, [25]
<https://www.abs.gov.au/statistics/people/people-and-communities/household-impacts-covid-19-survey/12-15-may-2020>.]
- Australian Bureau of Statistics (2020), *Household Impacts of COVID-19 Survey, 29 April - 4 May*, [3]
<https://www.abs.gov.au/statistics/people/people-and-communities/household-impacts-covid-19-survey/29-apr-4-may-2020>.
- Australian Bureau of Statistics (2020), *Household Impacts of COVID-19 Survey, December 2020*, [17]
<https://www.abs.gov.au/statistics/people/people-and-communities/household-impacts-covid-19-survey/dec-2020>.]
- Australian Bureau of Statistics (2020), *Household Impacts of COVID-19 Survey, November 2020*, [43]
<https://www.abs.gov.au/statistics/people/people-and-communities/household-impacts-covid-19-survey/nov-2020>.]
- Barrero, J., N. Bloom and S. Davis (2020), *Why Working From Home Will Stick*, [38]
<http://dx.doi.org/10.2139/ssrn.3741644>.]
- DARES (2020-21), *Enquête Activité et conditions d'emploi de la main d'œuvre – Covid*, [10]
<https://dares.travail-emploi.gouv.fr/publications/activite-et-conditions-d-emploi-de-la-main-d-oeuvre-pendant-la-crise-sanitaire-119594>.]
- Deng, Z., R. Morissette and D. Messacar (2020), *Running the economy remotely: Potential for working from home during and after COVID-19*, Statistics Canada, [46]
]

- <https://www150.statcan.gc.ca/n1/pub/45-28-0001/2020001/article/00026-eng.htm>.
- Dingel, J. and B. Neiman (2020), *How many jobs can be done at home?*, [1]
<https://github.com/jdingel/DingelNeiman-workathome/blob/master/DingelNeiman-workathome.pdf>.
- Eurofound and ILO (2017), *Working anytime, anywhere - the effects on the world of work*, [41]
https://www.eurofound.europa.eu/sites/default/files/ef_publication/field_ef_document/ef1658en.pdf.
- Eurostat (2021), *European Labour Force Survey data*, [8]
<https://ec.europa.eu/eurostat/web/microdata/european-union-labour-force-survey>.
- Eurostat (2020), *Glossary: Employment*, [4]
<https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Employment>.
- Eurostat (2020), *Glossary:Employed person - LFS*, [5]
https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Employed_person_-_LFS.
- 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://dx.doi.org/10.1787/34a2c306-en>. [24]
- Gal, P. et al. (2021 (forthcoming)), *Telework and productivity*. [40]
- Gascoigne, C. (2020), *Flexible working: lessons from the pandemic*, [39]
https://www.cipd.co.uk/Images/8051-working-from-home-report_tcm18-84208.pdf.
- Gascoigne, C. (2020), *Working from home: assessing the research evidence*, [36]
https://www.cipd.co.uk/Images/8051-working-from-home-report_tcm18-84208.pdf.
- ILO (2020), *Defining and measuring remote work, telework, work at home and home-based work*, [6]
https://www.ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/publication/wcms_747075.pdf.
- INSEE (2020), *Durée travaillée et travail à domicile pendant le confinement : des différences marquées selon les professions*, *INSEE Focus n° 207*, 14 octobre 2020., [19]
<https://www.insee.fr/fr/statistiques/4801229>.
- ISTAT (2021), *Rilevazione sulle forze di lavoro*. [7]
- ISTAT (2020), *Situation and perspectives of enterprises during the health emergency COVID-19*, [11]
<https://www.istat.it/it/archivio/244378>.
- Japan Cabinet Office (2021), *Under the influence of the new coronavirus infection: Under the influence of the new coronavirus infection*, [20]
https://www5.cao.go.jp/keizai2/manzoku/pdf/result2_covid.pdf.
- Johns Hopkins University (2020), *COVID-19 Data Repository by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University*, [16]
<https://github.com/CSSEGISandData/COVID-19>.
- Korea Source: Ministry of Science & ICT(2020) (2020), *2020 Yearbook of Information Society Statistics*. [32]

- Messenger, J. (2019), *Telework in the 21st Century, An Evolutionary Perspective*, Edward Elgar and ILO, https://www.ilo.org/global/publications/books/WCMS_723395/lang--en/index.htm. [42]
- OECD (2020), *A Roadmap toward a common framework for measuring the Digital Economy. Report for the G20 Digital Economy Task Force.*, <http://www.oecd.org/sti/roadmap-toward-a-common-framework-for-measuring-the-digital-economy.pdf>. [35]
- OECD (2020), *Digital Economy Outlook*, OECD Publishing, <https://doi.org/10.1787/bb167041-en>. [29]
- OECD (2020), *Productivity gains from teleworking in the post COVID-19 era : How can public policies make it happen?*, <http://www.oecd.org/coronavirus/policy-responses/productivity-gains-from-teleworking-in-the-post-covid-19-era-how-can-public-policies-make-it-happen-a5d52e99/>. [2]
- OECD (2019), *Going Digital: Shaping Policies, Improving Lives*, OECD Publishing, Paris, <https://dx.doi.org/10.1787/9789264312012-en>. [34]
- OECD (2019), *Measuring the Digital Transformation: A Roadmap for the Future*, OECD Publishing, Paris, <https://dx.doi.org/10.1787/9789264311992-en>. [30]
- OECD (2018), *Bridging the digital gender divide: include, upskill, innovate*, OECD Publishing, <http://www.oecd.org/digital/bridging-the-digital-gender-divide.pdf>. [33]
- OECD (2021 (forthcoming)), *Chapter 5 - Working time and its regulation in OECD countries: How much do we work and how?*, OECD Publishing, <http://www.oecd.org/employment-outlook/2021/>. [23]
- Office for National Statistics (2020), *Business impacts of COVID survey*, <https://www.ons.gov.uk/economy/economicoutputandproductivity/output/datasets/businessimpactsctofcovid19surveybicsresults>. [13]
- Office for National Statistics (2020), *Labour market survey - estimates of homeworking in the United Kingdom, April 2020*, <https://www.ons.gov.uk/file?uri=%2femploymentandlabourmarket%2fpeopleinwork%2femploymentandemployeetypes%2fdatasets%2fhomeworking%2fapril2020/finaltables.xlsx>. [21]
- Our World in Data (2021), *COVID-19: School and Workplace Closures*, <https://ourworldindata.org/covid-school-workplace-closures> (accessed on February 2021). [15]
- Solidarity Research Network (2020), "Coronavirus crisis brings changes to home-based work and telework. Digital divide leads to drop in income and reduces economic activity", *Covid-19: Public Policies and Society's Responses* 16, <http://www.iea.usp.br/pesquisa/nucleos-de-apoio-a-pesquisa/observatorio-inovacao-competitividade/boletim-oic-4-en>. [22]
- Statistics Canada (2021), *Study: Working from home: Productivity and preferences*, <https://www150.statcan.gc.ca/n1/daily-quotidien/210401/dq210401b-eng.htm>. [37]
- Statistics Canada (2020), *Table 33-10-0228-01 Percentage of workforce teleworking or working remotely, and percentage of workforce able to carry out a majority of duties during the COVID-19 pandemic, by business characteristics*, <https://doi.org/10.25318/3310022801-eng>. [27]
- Statistics Canada (2020), *Table 33-10-0274-01 Percentage of workforce teleworking or working remotely, and percentage of workforce anticipated to continue primarily teleworking or working remotely after the pandemic, by business characteristics*, <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3310027401&pickMembers%5B0%5D=3> [31]

.3.

- Statistics Canada (2020), *Table 33-10-0274-01 Percentage of workforce teleworking or working remotely, and percentage of workforce anticipated to continue primarily teleworking or working remotely after the pandemic, by business characteristics*, <https://doi.org/10.25318/3310027401-eng>. [45]
- Statistics Denmark (2020), *AKU280A: Employed with work at home by frequency, age and sex*, <https://www.statbank.dk/AKU280A> (accessed on February 2021). [18]
- Statistics Sweden (2020), *Labour Force Surveys*, <https://www.scb.se/en/finding-statistics/statistics-by-subject-area/labour-market/labour-force-surveys/labour-force-surveys-lfs/>. [12]
- U.S. Bureau of Labor Statistics (2020), *Supplemental data measuring the effects of the coronavirus (COVID-19) pandemic on the labor market*, <https://www.bls.gov/cps/effects-of-the-coronavirus-covid-19-pandemic.htm>. [14]