UNIVERSITÉ DE FRIBOURG
UNIVERSITÄT FREIBURG

WORKING PAPERS SES

Gender Effects of the Covid-19 Pandemic in the Swiss Labor Market

Corinne Dubois* Luisa Lambertini† Yu Wu‡

N. 525
V. 2022

FACULTÉ DES SCIENCES ÉCONOMIQUES ET SOCIALES ET DU MANAGEMENT
WIRTSCHAFTS- UND SOZIALWISSENSCHAFTLICHE FAKULTÄT

Gender Effects of the Covid-19 Pandemic in the Swiss Labor Market

Corinne Dubois * Luisa Lambertini † Yu Wu ‡

May 5, 2022

Working Paper

Abstract

We study the impact of the pandemic on gender gaps in labor market outcomes in Switzerland. Using the Swiss labor force survey data, we document a significant increase in the gender gap in labor market participation. We find no evidence of a worsening of unemployment gender gap during the pandemic but we find a large gender gap in being on STW, a government policy that subsidizes wage payments for employees whose hours are cut at companies in temporary distress. Unlike the United States, the presence of children in the household did not worsen labor gender gaps. Sector and occupation, however, play an important role in explaining gender gaps. In particular, we document substantial heterogeneity in the effect of the pandemic on participation, STW, hours worked, and wage outcomes depending on the availability of telework in the respondent's occupation.

Keywords: Covid-19, labor market inequality, labor market policies, gender gaps.
JEL: E24, J01, J08, J21

*Department of Economics, University of Fribourg, e-mail: corinne.dubois@unifr.ch
†Chair of International Finance, EPFL, e-mail: luisa.lambertini@epfl.ch
‡Chair of International Finance, EPFL, e-mail: yu.wu@epfl.ch

1 Introduction

The Covid-19 pandemic has deeply affected labor markets around the world. Previous studies (Alon et al. (2020), Collins et al. (2021), Bluedorn et al. (2021) among others) document that gender inequality in the labor market has increased during the Covid-19 crisis. For this reason, the term "she-cession" has been used by researchers and the media to refer to the coronavirus-induced recession started in 2020. Our paper is inspired by these novel findings on the gendered consequences of the Covid-19 pandemic in the labor market. We aim to understand if and how the Covid-19 pandemic affected gender gaps in the Swiss labor market.

We start by documenting the gender gap in labor market outcomes in terms of indicators such as labor market participation, unemployment, hours worked, leaves of absence, and recourse to short-time work (STW), a public program that covers employees' salaries when a company reduces operation due to reasons outside its control. We then examine which gaps have changed and how during the Covid-19 pandemic. Our empirical analysis uses Swiss labor force survey (SLFS) data. It relies on a diff-in-diff approach after controlling for usual labor market confounders, including age, education, location, sector, and occupation.

The Covid-19 pandemic reduced employment and participation, and it increased unemployment for male as well as female respondents in Switzerland. However, there was an additional negative effect on women's labor market participation (extensive margin), which is in line with findings in other countries (Bluedorn et al. (2021)). Specifically, the transition from unemployment to inactivity increased more for women than men upon impact, and the probability of remaining non-active during the second phase of the pandemic was also higher for women. We document that while the unemployment gender gap did not worsen during the pandemic, women have been more likely to be put on STW than men. We also find that the gender gap in working hours (intensive margin) was not affected by the pandemic.

We then analyze how family characteristics influence the evolution of the gender gaps during Covid-19. We find that being married or having children is associated with lower rates of inactivity and STW participation for women during the pandemic. The result pertaining to the presence of children contrasts with the effects documented in other countries. For example, Fabrizio et al. (2021), and Zamarro and Prados (2021) report a disproportionately negative impact of the crisis on mothers in the United States due to school closures; Andrew et al. (2020) find a similar effect in the United Kingdom. Several factors contribute to the opposite effect we find for Switzerland. First, the large recourse to STW allowed women to keep their employment contracts with a reduced workload, thus allowing them to care for children. Second, 50% of employed women have a part-time job in Switzerland. We believe that part-time work made it easier to take care of children during the pandemic, especially if the partner was working from home. Third,

school closures in Switzerland were considerably shorter than in the United Kingdom or the United States, allowing mothers a swift return to work. Finally, the result could be driven by a family-insurance mechanism, where women keep or take new employment or increase their working hours to make up for the potential income loss of their partners.

Next, we turn our attention to the role of occupation and telework availability in explaining the gender gap dynamics during the pandemic. After controlling for Covid-19 occupation- and sector-specific effects, we find that the non-active gender gap disappears, suggesting that the differential impact is mainly driven by the fact that women were more likely to work in sectors and occupations hit hard by the pandemic. After categorizing occupations by telework availability, we find that the non-active gender gap disappears for respondents with high-teleworkable jobs. In contrast, the gap persists among respondents with low-teleworkable jobs. This result is in line with the findings in Alon et al. (2021) and Shibata (2021), who argue that the increase of telework availability can reduce gender inequalities in the labor market. Moreover, our results indicate that gender gaps in hours worked and use of STW widened in low-teleworkable occupations, leading to a higher probability for women in these occupations to experience an income reduction during the pandemic.

The rest of the paper is organized as follows. Section 2 reviews the relevant literature. Section 3 and 4 describe the labor force survey data and our regression design. Section 5 presents changes in labor market status. Section 6 discusses the reliance on STW scheme. Section 7 focuses on employed respondents and shows how they adjusted their working time. Section 8 shows changes in gender wage gap. Section 9 concludes.

2 Literature

Our work relates to the growing literature analyzing the labor market impact of the Covid-19 pandemic. Cajner et al. (2020a), Bick and Blandin (2020), Coibion et al. (2020), Forsythe et al. (2020), Juranek et al. (2021) and Gupta et al. (2020) provide empirical evidence that this pandemic has resulted in large employment losses and substantial declines in hours worked. A subset of this literature focuses on the heterogeneous effects of the Covid-19 crisis across sectors, occupations and worker characteristics (e.g., Leibovici et al. (2020), Mongey and Weinberg (2020), Montenovo et al. (2020), Cajner et al. (2020b) and Benzeval et al. (2020)). Our analysis confirms a large negative effect of the Covid-19 crisis on the Swiss labor market, but we rather focus on the differential impact for male and female workers. Given that Switzerland is characterized by both a high female participation rate and a high female part-time employment rate, it is interesting to investigate the gender effects of the Covid-19 pandemic and compare it with other countries. Our results indicate an increased gender gap in non-participation during Covid-19, which is broadly in line with recent work on the disproportionately negative impact of the pandemic on women (Zamarro et al. (2020); Alon et al. (2020); Couch

et al. (2020) and Albanesi and Kim (2021)). Unlike previous studies carried out on U.S. data, we observe no significant change in the gender gap of being unemployed and hours worked during the crisis in Switzerland.

An important channel for the larger effects on women's labor market outcomes is that women bear the brunt of increased childcare needs due to school and daycare closures and are therefore forced to reduce hours worked or exit the labor market (Del Boca et al. (2020), Queisser et al. (2020), Alon et al. (2020), Collins et al. (2021), Farré et al. (2020), Sevilla and Smith (2020)). Our results for Switzerland are different from most previous findings, as we find that motherhood contributes to decreasing the gender gap during the Covid-19 crisis. A high female part-time employment rate of Switzerland may give women more flexibility to hold on to their jobs or work more to compensate for their partner's income loss.

Another channel documented in the literature is that women may be over-represented in the most affected sectors and occupations. Mongey and Weinberg (2020) suggest that social distancing rules had the biggest effect on more female-dominated sectors, namely the service industry. Alon et al. (2021) provide a decomposition analysis and show that the differential occupation distribution accounts for 12 percent of the gender gap in the employment decline. Our results are consistent with these findings. We document that gender differences in the distribution across occupations and sectors explains the gender gap in labor market participation during Covid-19. We also show the importance of telework availability on gender gaps during the pandemic. In line with previous findings by Albanesi and Kim (2021), Shibata (2021) and Mongey and Weinberg (2020), we show that the possibility to work from home greatly reduced (or even eliminated) gender gaps in the concerned occupations.

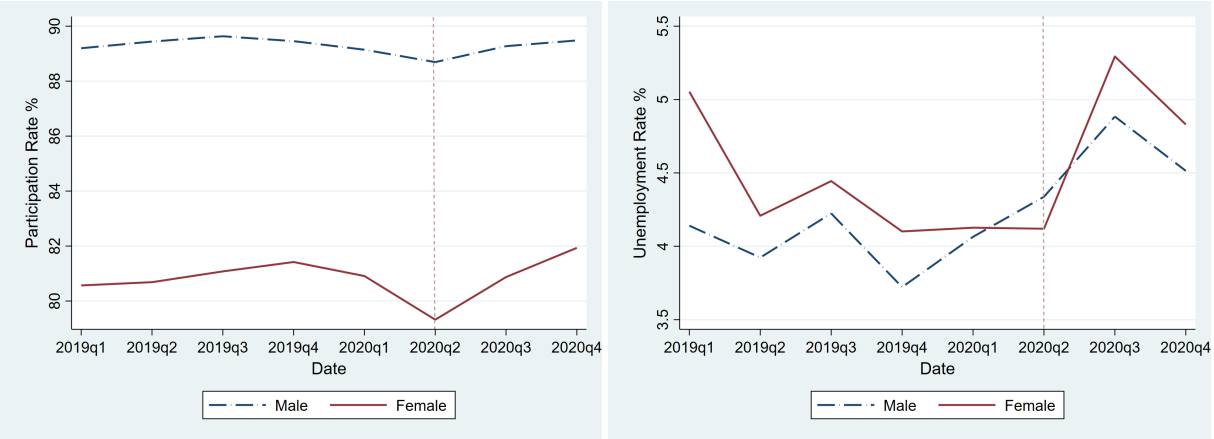
Finally, this paper relates to the literature on the effectiveness of labor market policies in cushioning the economic consequences of Covid-19. During this crisis, a prominent feature in policy has been the introduction or expansion of furloughing and STW schemes. Kopp and Siegenthaler (2017), Hijzen and Venn (2011) and Abraham and Houseman (2014) find that STW helped stabilizing employment during the Great Recession. Adams-Prassl et al. (2020) compare the impact of the Covid-19 crisis in the United Kingdom, the United States and Germany. They show that German employees were less affected by the crisis thanks to a well established STW scheme. We find that STW played a significant role in Switzerland during the crisis and that women have been more likely than men to use it.

3 Data and Descriptive Statistics

The Swiss Labor Force Survey (SLFS) is a quarterly survey conducted in Switzerland since 1991 among residents aged 15 and older. It aims to provide information on the labor force structure and labor market patterns. The survey is carried out by telephone

on a representative sample of the population (around 120'000 annual interviews). The SLFS sample is a 4-wave rotating panel: the persons who participate in the survey are interviewed four times over 15 months.[1] The SLFS includes questions on current and previous labor market status, working conditions, occupation, salary, job seeking, as well as general questions on education, household composition and other demographic characteristics. Our dataset includes quarterly data for the period 2019Q1 to 2020Q4; it contains a total of 231'667 observations, i.e., approximately 30'000 observations per quarter.

Figure 1: Labor Market Status by Gender



(a) Participation Rate

(b) Unemployment Rate

Notes: The participation rate is measured as the number of working-age respondents in the labor force as a percentage of the total number of working-age respondents. The unemployment rate is calculated as the number of working-age respondents currently unemployed as a percentage of the total number of working-age respondents in the labor force. We break down these indicators by gender, measured as a percentage of each gender group.

Figure 1 reports the dynamics of labor market status by gender between 2019Q1 and 2020Q4 and it reveals that the pandemic affected men and women differently. Female labor market participation fell sharply in the second quarter of 2020 and returned to its pre-pandemic level by the end of the year. In contrast, the reduction in male labor market participation was less severe. Interestingly, the female unemployment rate did not increase in 2020Q2, but it jumped by 1.2 percentage points in 2020Q3; on the other hand, the male unemployment rate increased continuously over the two quarters. This evidence suggests that women were more likely than men to drop out of the labor market at the height of the pandemic.

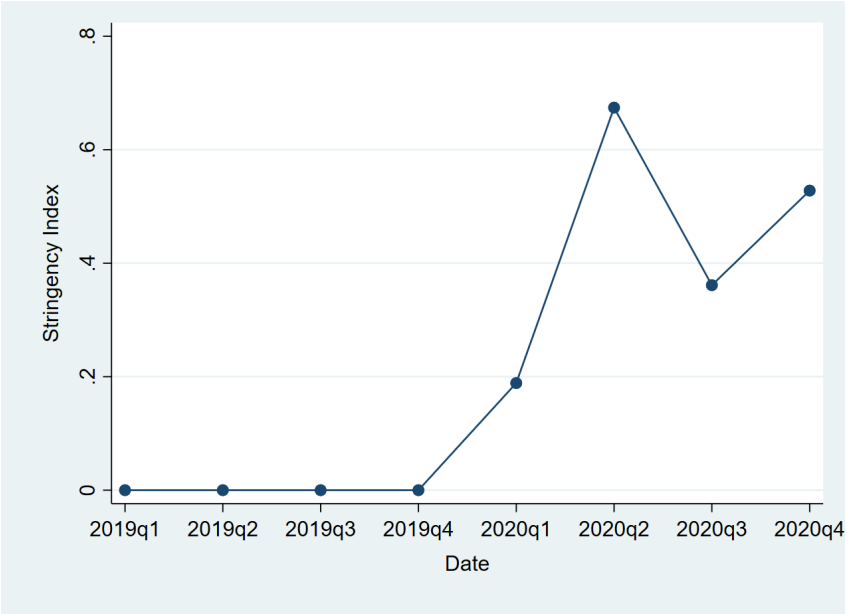
We use the KOF stringency index,[2] which records the stringency of Covid-19 policy measures in Switzerland, to capture the Covid-19 pandemic in our setting. The index is

[1] The interviews are conducted with a gap of 3 months between the first and the second interview, 9 months between the second and the third, and 3 months again between the third and the fourth.

[2] See Appendix for more details.

available at the cantonal level daily; we construct the national index as the (population) weighted average of the cantonal indices and convert daily to quarterly values by averaging.[3] The value of the index ranges from 0 (= no measures) to 100 (= full lockdown). The national KOF stringency index, normalized to a scale from 0 to 1, is displayed in Figure 2; stringency measures peaked in the second quarter of 2020, reaching the value of 0.75; they were reduced in the third quarter and raised again in the fourth quarter of 2020.

Figure 2: KOF Stringency Index



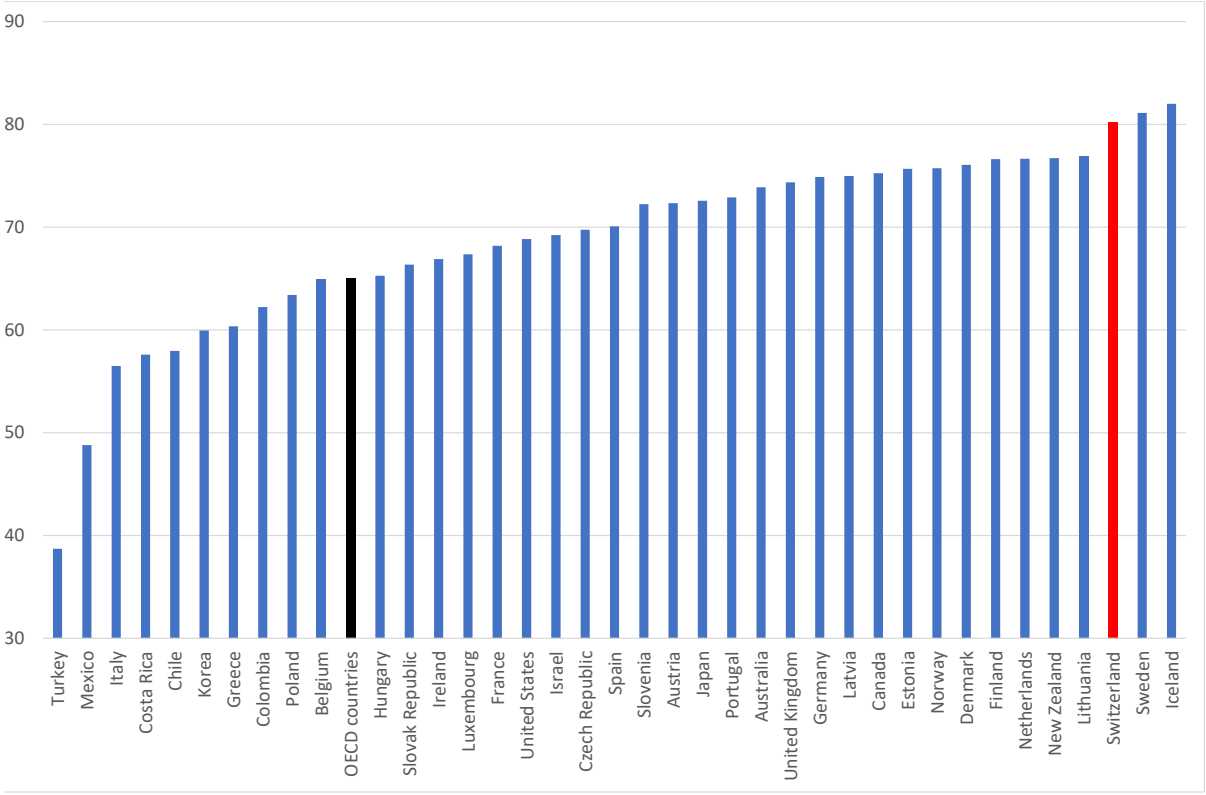
Notes: The index records the stringency of Covid-19 policy measures in Switzerland. It is constructed as the (population) weighted average of the cantonal indexes. The values range from 0 (=no measures) to 1 (=full lockdown). Source: KOF Swiss Economic Institute.

Figure 3 reports the female labor market participation rate in Switzerland and other OECD countries. It shows that the Swiss female participation rate is high in international comparison: it is the third highest of all OECD countries and about 15 percentage points above the OECD average. However, a distinctive feature of the Swiss labor market is the widespread use of part-time work, especially among women. The percentage of employees (both male and female) in a part-time job in 2019 was on average 16.7% in OECD countries, while it was 26.9% in Switzerland. Figure 4 indicates that the percentage of part-time workers among women employees in Switzerland is particularly high (44.9%) and is the second largest of all OECD countries. These facts suggest that women in Switzerland benefit from increased flexibility in their employment. The possibility to work part-time allows work-family balance and encourages the participation to the labor

[3]We calculate the correlation matrix for the Cantonal stringency index, and all the coefficients are above 0.95, showing a high degree of similarity of Covid-19 policies across cantons. Therefore, we use a national stringency index instead of a cantonal one.

market of women and especially mothers. In our sample, we find that 35% of employed women without children work part-time, while this percentage increases to 65 for mothers of children between 0 and 6 and 63 for mothers of 7-14 year-old children. These distinctive features of the Swiss labor market play an important role in the response of women to the Covid-19 crisis and make Switzerland and interesting case study to analyze.

Figure 3: Female labor market participation (2019)



Notes: Data from the OECD labor force statistics. The labor force participation rates is calculated as the labour force divided by the total working-age population (15-64).

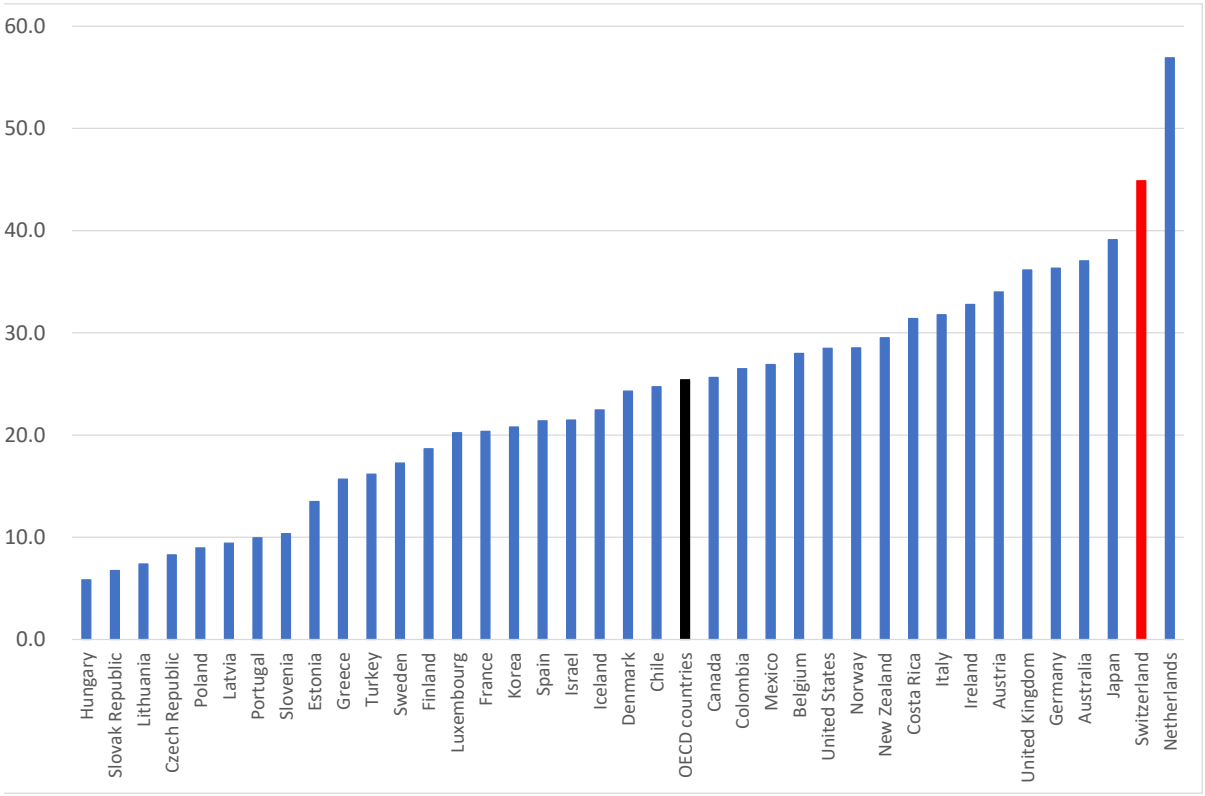
4 Regression Design

We use a diff-in-diff specification to study whether Covid-19 impacted differently men and women on the labor market. The typical regression specification looks as follows:

$$y_{i,t} = \alpha + \gamma_1 female_i + \gamma_2 CovInd_t + \gamma_{cov} female_i \times CovInd_t + \gamma_3 X_{i,t} + \epsilon_{i,t}, \quad (1)$$

where $y_{i,t}$ is the dependent variable of interest, including labor market status, STW, searching for jobs, having worked last week, hours worked, and taking family leave. $female_i$ is a binary variable equal to one if the respondent is female. $CovInd_t$ is the Covid-19 stringency index shown in Figure 2; $X_{i,t}$ is a vector of covariates, including age cohort, indicators for occupation, location, sector of economic activity and the level

Figure 4: Women employed in part-time work, as percent of total employed women (2019)



Notes: Data (for all countries except the United States) from the OECD labor force statistics, data for the United States comes from the Current Population Survey. The part-time rate is calculated as the number of employed women working less than 30 hours (35 for the United States) weekly over the total number of employed women.

of education. Suppose $y_{i,t}$ is the labor market status of the respondent, which is set as a dummy equal to one for employed and zero for unemployed and non-active; then γ_1 measures the differential likelihood of female respondents being employed relative to male respondents and γ_2 is the differential likelihood of both male and female respondents being employed during the Covid-19 crisis relative to normal times; γ_{cov} is our parameter of interest, it captures the employment gender gap differential caused by Covid-19.[4]

To capture the effect of a specific factor z_i on female's differential likelihood of being employed/unemployed/on STW/etc. during Covid-19, we use a triple-diff regression of the following type:

$$y_{i,t} = \alpha + \gamma_1 female_i + \gamma_2 CovInd_t + \gamma_3 z_{i,t} + \gamma_4 female_i \times z_{i,t} + \gamma_5 CovInd_t \times z_{i,t} + \gamma_{cov} female_i \times CovInd_t + \gamma_{cov,z} female_i \times CovInd_t \times z_{i,t} + \gamma_6 X_{i,t} + \epsilon_{i,t}, \quad (2)$$

where $z_{i,t}$ is the specific independent variable of interest, including civil status, presence

[4]To check the robustness of our estimations, we replace the KOF stringency index by a Covid dummy that equals one for quarters two, three and four of 2020 and report the results in Section D.1.

of children in the household or telework availability. $\gamma_{cov,z}$ captures the differential effect of $z_{i,t}$ on the gender gap of interest during Covid-19.

5 Covid-19 and Labor Market Status

We start our empirical analysis by studying how the Covid-19 pandemic impacted the labor market status of male and female respondents and which characteristics explain differential effects.

5.1 Effect of Gender and Covid-19 on Labor Market Status

Table 1 presents the estimates based on regression (1) with labor market status as the dependent variable. Labor market status is set as a dummy with value 1 if the person is employed (column 1), unemployed (column 2), or non-active (column 3); we control for the respondent's age, level of education, canton of residence, type of occupation (ISCO code) and the type of economic activity as measured by NOGA 1st level code.[5] In this regression, we only consider working-age population, i.e. respondents between age 15 and 64.

Table 1: Covid-19 and Labor Market Status

	Employed	Unemployed	Non-active
female	-0.0408***	-0.00166	0.0412***
	(0.00232)	(0.00139)	(0.00205)
CovInd	-0.0165***	0.00556***	0.0117***
	(0.00278)	(0.00211)	(0.00252)
female × CovInd	-0.00165	-0.00461	0.00583*
	(0.00385)	(0.00292)	(0.00350)
Constant	0.727***	0.0291	0.243***
	(0.0396)	(0.0233)	(0.0350)
Age FE	YES	YES	YES
Canton FE	YES	YES	YES
Education FE	YES	YES	YES
NOGA FE	YES	YES	YES
ISCO FE	YES	YES	YES
Observations	186881	186881	186881
R^2	0.417	0.0423	0.459

Notes: * p<0.1, ** p<0.05, *** p<0.01. Estimates from regression (1) of labor market status on a constant, female dummy (1 for women and 0 otherwise), Covid-19 stringency index and its intersection with the female dummy. Sample includes respondents aged 15 to 64. Regressions estimated with linear probability model, including random effects. Robust standard errors in parentheses.

[5] About half the non-active respondents do not report previous occupation and sector; they are nonetheless included in all the regressions in this Section. Our results are robust to only including participants with information on sector and occupation, as shown in Appendix D.1.

Several findings in Table 1 are worth mentioning. First, women are less likely to be employed and more likely to be non-active than men in normal times; this confirms the well-known lower female participation presented in Figure 1. Second, the Covid-19 pandemic has decreased the likelihood of employment and increased that of being unemployed and non-active for male as well as female respondents. Third, women are more likely than men to be non-active during Covid-19. Since we do not control for the respondent's previous labor market status,[6] this suggests that women either become more likely to exit the labor market or become less likely to reenter it during the pandemic. Fourth, lockdown measures did not make women more likely to be unemployed than men.

To analyze how the probability of being non-active evolved over time for men and women, we run the following regression:

$$y_{i,t} = \alpha + \sum_{s=2019Q2}^{2020Q4} \gamma_{cov,s} Q_{s,t} + \gamma_2 X_{i,t} + \epsilon_{i,t}, \tag{3}$$

where $y_{i,t}$ is the dummy for being non-active, $Q_{s,t}$ are quarterly dummies and $X_{i,t}$ is the same vector of covariates as in regression (1). The coefficients of interest, $\gamma_{cov,s}$ indicate the differential propensity of being non-active in quarter s compared to 2019Q1. The regression is run separately for male and female respondents and the coefficient estimates of the quarterly dummies are plotted in Figure 5. First, we observe that the probability of being non-active increased during Covid-19; it peaked in 2020Q2 when the strictest lockdown measures were adopted, fell in 2020Q3 when sanitary standards were relaxed, but increased again in quarter 4, following the resurgence of the pandemic in the Fall. Second, non-active propensities were systematically higher, although not significantly, for women. For example, in the second quarter of 2020, men were 0.9% more likely to be non-active relative to 2019Q1, while women were about 1.5% more likely to be so.

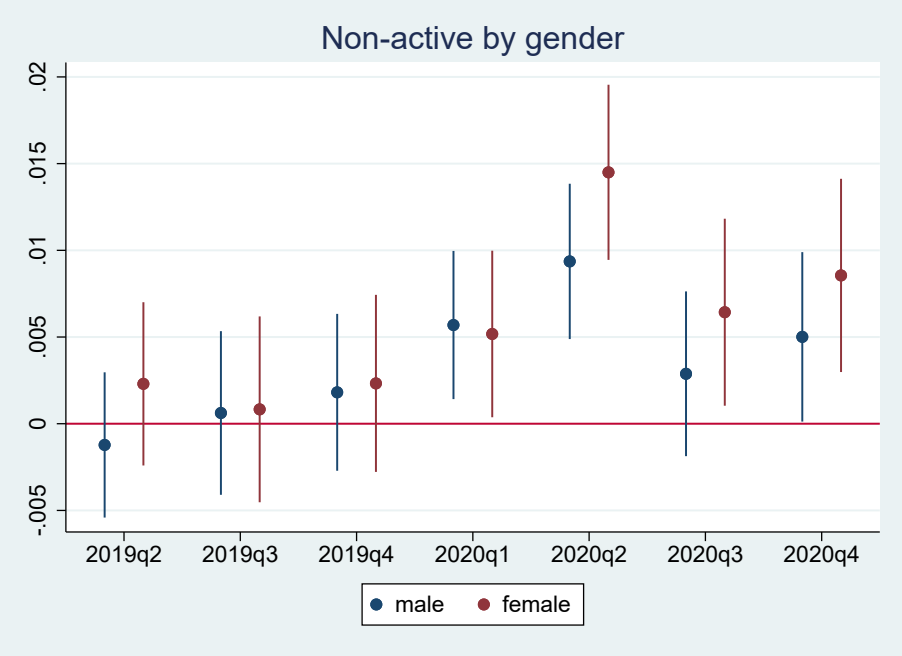
5.2 Labor Market Transitions by Gender

To better understand the influence of Covid-19 on labor-market gender gaps, we consider the respondent's previous working status and calculate the average transition probabilities between different labor market statuses for two consecutive quarters separately for male and female respondents over time. Table 2 panel (a) reports the average quarter-to-quarter transition probabilities in the pre-Covid period, i.e. 2019Q1 to 2020Q1. Panels (b) and (c) report the change in 2020Q2 and 2020Q3-Q4, respectively, relative to the pre-Covid period. *E*, *U* and *NA* refer to respondents' current labor market status (employed, unemployed and non-active, respectively); *L.E*, *L.U* and *L.NA* indicate their status in the previous quarter.

Panel (a) confirms the lower participation of women in the labor market: regardless of their previous employment status, women were more likely to transition to non-active status than men before Covid-19. The gender gap is strongest among previously unemployed

[6] We consider transitions between different labor market statuses in Section 5.2.

Figure 5: Non-active Over Time for Men and Women



Notes: Estimates from regression (3) of non-active dummy on quarterly dummies, run separately for men (blue) and women (red), with 95% confidence intervals. Regressions estimated with linear probability model, including random effects.

respondents: men are more likely to remain unemployed while women exit the labor market. Panel (b) reveals how transition probabilities changed in 2020Q2 when the strictest lockdown measures were in place. Interestingly, previously employed male and female respondents were little affected by the pandemic; this result is likely the consequence of the government policies to protect employment, such as STW as well as liquidity provision to firms.[7] Among previously unemployed respondents, we see a decrease in the probability of finding employment accompanied by an increase in the likelihood of remaining unemployed or becoming non-active, with the latter effect being much larger for women. Finally, among previously non-active respondents, we observe a worsening of all gender gaps as women became less likely than men to transition to employment and more likely to remain non active. These results confirm the disproportionate effect of the pandemic on women documented in Table 1.

Panel (c) reports how transition probabilities changed in 2020Q3 and Q4 relative to the pre-Covid period.[8] Lockdown measures were relaxed in quarter 3 and tightened again in quarter 4 of 2020; nevertheless, measures were at all times milder than in 2020Q2. Panel (c) shows that, again, previously employed respondents did not experience substantial

[7] We discuss the gendered effects of the STW policy in Section 6.2.

[8] We calculate the probabilities in panel (c) by taking the average of quarter-to-quarter transition probabilities in 2020Q3 and 2020Q4, and then taking the difference relative to the relevant estimate in panel (a).

Table 2: Labor Market Transition Probabilities

	Men				Women			
(a). PreCovid		E	U	NA		E	U	NA
	L.E	97.38	1	1.62	L.E	96.31	1.05	2.64
	L.U	33.11	51.16	15.73	L.U	33.79	44.68	21.53
	L.NA	11.92	5.62	82.46	L.NA	9.83	4.58	85.59
(b). Changes in 2020Q2		E	U	NA		E	U	NA
	L.E	0.01	0.17	-0.18	L.E	-0.26	0	0.26
	L.U	-8.38	6.53	1.85	L.U	-9.08	5.32	3.76
	L.NA	0.98	-1.38	0.4	L.NA	-2.59	-0.92	3.5
(c). Changes in 2020Q3-Q4		E	U	NA		E	U	NA
	L.E	0	0.18	-0.17	L.E	0.18	0	-0.17
	L.U	-4.98	7.23	-2.25	L.U	0.37	5.21	-5.57
	L.NA	2.85	2.58	-5.43	L.NA	0.17	0.57	-0.74

Notes: E=employed; U=unemployed; NA=non-active. L.E, L.U, L.NA show previous statuses. Sample includes respondents aged 15 to 64 for which we have information on employment status in two consecutive quarters. Panel (a) shows the average quarter-to-quarter transition probabilities in the pre-covid period, from 2019Q1 to 2020Q1. Panel (b) and (c) report the changes in 2020Q2 and 2020Q3-Q4 (average of the two quarters), respectively, relative to the pre-Covid quarters. Results are reported in percentage points.

changes in their labor market status. There are signs of labor market recovery in the second half of 2020, as previously unemployed respondents are more likely to remain unemployed rather than exit the labor market, and previously non-active respondents become more likely to re-enter labor force. The latter effect is however weaker for women than for men.

To summarize, women were more likely to leave the labor market at the peak of the pandemic and not to re-enter as the labor market started to recover.

5.3 Labor Market Status and Marital Status

This section studies if family-related characteristics explain the evolution of the gender gaps in the labor market during the pandemic. We start by studying the role of marital status using regression (2). The dependent variables are still the labor market status dummies (*Employed*, *Unemployed* and *Non-active*); we add to the explanatory variables of Table 1 the marital status dummy (1 for married or in a registered relationship and 0 otherwise), its interactions with the female dummy and the Covid-19 index, as well as the triple interaction of female, Covid-19 index and marital status.

Table 3 reports the estimates. In normal times, marriage worsens all gender gaps: married women are less likely to be employed, more likely to be unemployed or non-active than married men. Interestingly, however, marriage improves gender gaps during the pandemic. In other words, the Covid-19 pandemic increased gaps between unmarried

Table 3: Covid-19, Labor Market and Marital Status

	Employed	Unemployed	Non-active
female	-0.00362	-0.00551***	0.00864***
	(0.00325)	(0.00197)	(0.00288)
CovInd	-0.0157***	0.00737**	0.0103***
	(0.00413)	(0.00313)	(0.00375)
female × CovInd	-0.0115**	-0.00586	0.0162***
	(0.00576)	(0.00437)	(0.00523)
married	0.0311***	-0.0134***	-0.0166***
	(0.00323)	(0.00196)	(0.00286)
married × female	-0.0692***	0.00732***	0.0603***
	(0.00559)	(0.00424)	(0.00508)
married × CovInd	-0.00110	-0.00373	0.00225
	(0.00559)	(0.00424)	(0.00508)
married × female × CovInd	0.0176**	0.00256	-0.0185***
	(0.00776)	(0.00589)	(0.00704)
Constant	0.706***	0.0329	0.260***
	(0.0395)	(0.0234)	(0.0350)
Age FE	YES	YES	YES
Canton FE	YES	YES	YES
Education FE	YES	YES	YES
NOGA FE	YES	YES	YES
ISCO FE	YES	YES	YES
Observations	186881	186881	186881
R^2	0.419	0.0429	0.460

Notes: * p<0.1, ** p<0.05, *** p<0.01. Estimates from regression (1) of labor market status on a constant, female dummy (1 for women and 0 otherwise), Covid-19 stringency index, marital status dummy(1 for married/in a registered relation and 0 otherwise) and their interactions. Sample includes respondents aged 15 to 64. Regressions estimated with linear probability model, including random effects. Robust standard errors in parentheses.

men and women but reduced them for married respondents. A possible explanation for the reversal of the effect of marriage is family insurance. During the Covid-19 pandemic, married women were more likely to become or remain employed in order to offset an income reduction by their partner.

5.4 Labor Market Status and Child Care

In this section, we study how the presence of children in the household affects the differential impact of the Covid-19 pandemic using regression (2). We add to our starting set of explanatory variables a dummy *child0-6*, which equals 1 if the respondent has children 6 years old or younger, and a dummy *child7-14*, which is equal to 1 if the respondent has children between 7 and 14 years old;[9] we also include the interaction of our two children

[9]The children dummies only consider the age of the youngest child in the household.

dummies with the female dummy, their interaction with the Covid-19 index, and the triple interaction of female, Covid-19 index and children dummies.

Table 4: Covid-19, Labor Market Status and Child Care Responsibility

	Employed	Unemployed	Non-active
female	-0.0173***	-0.00726***	0.0230***
	(0.00276)	(0.00167)	(0.00244)
CovInd	-0.0167***	0.00449*	0.0129***
	(0.00335)	(0.00254)	(0.00304)
female × CovInd	-0.00990**	-0.00409	0.0135***
	(0.00466)	(0.00354)	(0.00423)
child0-6	0.0309***	-0.0153***	-0.0165***
	(0.00448)	(0.00279)	(0.00398)
child7-14	0.0353***	-0.0162***	-0.0191***
	(0.00457)	(0.00288)	(0.00407)
child0-6 × female	-0.110***	0.0233***	0.0881***
	(0.00604)	(0.00376)	(0.00537)
child7-14 × female	-0.0429***	0.0142***	0.0294***
	(0.00612)	(0.00384)	(0.00544)
child0-6 × CovInd	-0.00218	0.00586	-0.00375
	(0.00821)	(0.00622)	(0.00745)
child7-14 × CovInd	0.00714	0.000584	-0.00723
	(0.00841)	(0.00638)	(0.00763)
child0-6 × female × CovInd	0.0453***	-0.00794	-0.0343***
	(0.0112)	(0.00853)	(0.0102)
child7-14 × female × CovInd	-0.000995	0.00734	-0.0101
	(0.0115)	(0.00874)	(0.0104)
Constant	0.714***	0.0384	0.247***
	(0.0410)	(0.0245)	(0.0363)
Age FE	YES	YES	YES
Canton FE	YES	YES	YES
Education FE	YES	YES	YES
NOGA FE	YES	YES	YES
ISCO FE	YES	YES	YES
Observations	175360	175360	175360
R^2	0.422	0.0426	0.462

Notes: * p<0.1, ** p<0.05, *** p<0.01. Estimates from regression (2) of labor market status and no job search for family reasons on a constant, female dummy (1 for women and 0 otherwise), Covid-19 stringency index, child dummies (child0-6 for having child(ren) under 7 years old, child7-14 for having school age child(ren)) and their interactions. Sample includes respondents aged 15 to 64. Regressions estimated with linear probability model, including random effects. Robust standard errors in parentheses.

Table 4 display the estimates. In normal times, women are overall less likely to be employed and more likely to be non-active than men; the presence of children increases these disparities, especially when children are under 7 years old. During Covid-19, the gender gap in employment and non-participation increases for women without children;

the presence of school-aged children (7 to 14) does not significantly change this effect. However, the presence of young children actually increases the probability of employment and decreases that of non-participation for women during Covid-19. In other words, the labor market participation gap between fathers and mothers of young children significantly diminished during the pandemic. These findings differ from previous studies for other countries, such as the United Kingdom and the United States, which found that the gender gap in employment worsened with the presence of children during the Covid-19 crisis. There are several factors at play in reducing the gap. First, 33% of the Swiss labor force was put in STW during the lockdown (see Section 6). As a result, women kept their employment but with a reduced workload and were thus able to reconcile family responsibility and employment during the crisis. Second, school/kindergarten closure policies were relatively lenient in Switzerland.[10] Third, since mothers in Switzerland usually work part-time, they could more easily hold on to their job while meeting higher childcare needs during the crisis. Fourth, men in STW or working from home helped share child care responsibilities during the lockdown.

5.5 Labor Market Status, Sector and Occupation Effects

The Covid-19 pandemic affected sectors and occupations differently. Sectors such as food services and accommodation or entertainment were hit hard, while others such as information technology or financial services remained largely unscathed. Table 5 re-estimates regression (2) allowing for differential effect of Covid-19 on sectors and occupations. This is to say that, we keep the labor market status dummies (*Employed*, *Unemployed* and *Non-active*) as dependent variables and add $occupation \times CovInd$ and $sector \times CovInd$ fixed effects. The coefficient estimate of the female and Covid-19 interaction for non-active respondents is one order of magnitude smaller than our estimates in Table 1 and statistically insignificant. This suggests that the observed gender gap in the non-active status is mainly due to women being predominantly employed in sectors and occupations that suffered more during the crisis.

5.6 Labor Market Status and Telework Availability

We use regression (2) to test whether the availability of telework in a given occupation relates to the gender-specific effects of the Covid-19 pandemic. Telework availability is measured by the percentage of workers in a given occupation who worked from home occasionally or regularly during the last four weeks. We rank occupations by average telework availability in 2020, as displayed in Figure 6. Telework availability varies greatly across occupations. In 2019, it ranged from approximately 5% for elementary professions to almost 60% for directors and scientific professions. During the pandemic crisis

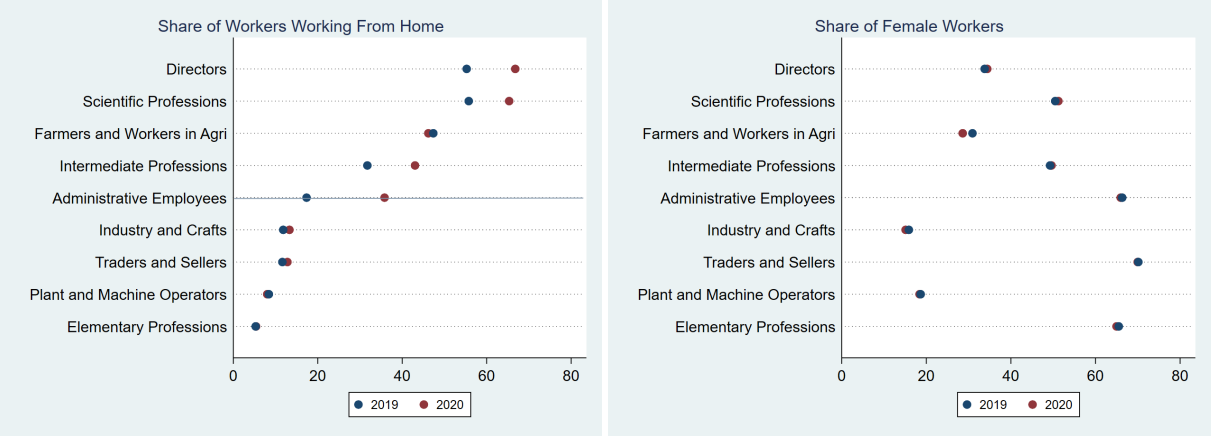
[10]See Figure 11 for the stringency of school closure policy; Switzerland reopened its schools in May 2020 while other countries kept strict measures throughout 2020.

Table 5: Covid-19, Labor Market Status and Occupation/Sector-specific Effects

	Employed	Unemployed	Non-active
female	-0.0410***	-0.00251*	0.0423***
	(0.00236)	(0.00143)	(0.00209)
CovInd	0.0626	-0.0112	-0.0627
	(0.0958)	(0.0716)	(0.0869)
female × CovInd	-0.000766	-0.000875	0.000807
	(0.00431)	(0.00327)	(0.00391)
Constant	0.712***	0.0305	0.259***
	(0.0436)	(0.0269)	(0.0387)
Age FE	YES	YES	YES
Canton FE	YES	YES	YES
Education FE	YES	YES	YES
NOGA FE	YES	YES	YES
ISCO FE	YES	YES	YES
NOGA × CovInd	YES	YES	YES
ISCO × CovInd	YES	YES	YES
Observations	186881	186881	186881
R^2	0.417	0.0428	0.459

Notes: * p<0.1, ** p<0.05, *** p<0.01. We show estimates from regression (1) of labor market status after adding the interaction of the Covid-19 stringency index and dummies for occupations and sectors as controls. Regressions estimated with linear probability model, including random effects. Robust standard errors in parentheses.

Figure 6: Telework Availability and Female Share by Occupation



Notes: The share of workers working from home (telework availability) is measured as the number of respondents who worked from home in the last 4 weeks as a percentage of the total number of respondents in each occupation group. The share of female workers is calculated as the number of respondents who are female as a percentage of the total number of respondents in each occupation group. We rank occupations in a descending order of telework availability in 2020.

of 2020, telework substantially increased for the occupations that had above-median teleworkability already in 2019 but remained almost unchanged for the other occupations.

We construct a dummy variable *LowTele* that equals 1 for occupations that have below-median telework availability (industry and crafts, traders and sellers, plant and machine operators and elementary professions) and 0 for occupations with above-median telework availability (directors, scientific professions, farmers, intermediate professions and administrative employees). Note that low-teleworkable occupations are typically blue-collar jobs requiring physical labor or services requiring physical presence; these occupations are not necessarily female-dominated, with the share of female workers ranging from 17% to 68%.

Table 6: Covid-19, Labor Market Status and Telework Availability

	Employed	Unemployed	Non-active
female	-0.0413***	0.00300*	0.0370***
	(0.00289)	(0.00164)	(0.00248)
CovInd	-0.0101***	0.00346	0.00739**
	(0.00354)	(0.00252)	(0.00299)
female × CovInd	-0.00357	-0.000196	0.00336
	(0.00490)	(0.00350)	(0.00415)
LowTele	-0.0137***	0.00803***	0.00508*
	(0.00358)	(0.00210)	(0.00306)
LowTele × female	-0.0176***	-0.00170	0.0195***
	(0.00479)	(0.00281)	(0.00410)
LowTele × CovInd	-0.0159**	0.0117***	0.00433
	(0.00623)	(0.00442)	(0.00527)
LowTele × female × CovInd	-0.00325	-0.0122*	0.0163**
	(0.00890)	(0.00631)	(0.00753)
Constant	0.883***	0.0230***	0.0942***
	(0.00786)	(0.00445)	(0.00674)
Age FE	YES	YES	YES
Canton FE	YES	YES	YES
Education FE	YES	YES	YES
NOGA FE	YES	YES	YES
Observations	171218	171218	171218
R^2	0.0611	0.0787	0.0415

Notes: * p<0.1, ** p<0.05, *** p<0.01. We show estimates from regression (2) of labor market status on a constant, female dummy (1 for women and 0 otherwise), Covid-19 stringency index, LowTele dummy (1 for respondents in an occupation with low telework availability and 0 otherwise) and their interactions. Regressions estimated with linear probability model, including random effects. Robust standard errors in parentheses.

We add to the explanatory variables of Table 1 the telework dummy *LowTele*, its interactions with the female dummy and with the Covid-19 index and the triple interaction $LowTele \times female \times CovInd$. Table 6 reports the estimates. Occupations with low teleworkability are characterized by lower employment, higher unemployment and non-active rates for men and more so for women in normal times. Our results also confirm the findings of Table 1: the non-active gender gap has widened during the pandemic

but mainly so in these occupations with low teleworkability. The estimated coefficient is indeed almost twice as large as the one estimated in Table 1. Hence, women have been more likely to drop out of the labor market in those professions that do not allow work from home.

Putting our results together, we find that Covid-19 has worsened the non-active gender gap in specific occupations and, indirectly, via the sectoral impact of the pandemic. Children and marital status do not contribute to such widening.

6 Covid-19 and Short-time Work

Our analysis this far has revealed a mild effect of Covid-19 on unemployment in Switzerland, thanks to the massive use of STW. This section reviews STW policy in Switzerland and analyzes whether there was a gender gap in the recourse to STW during Covid-19.

6.1 Short-time Work in Switzerland

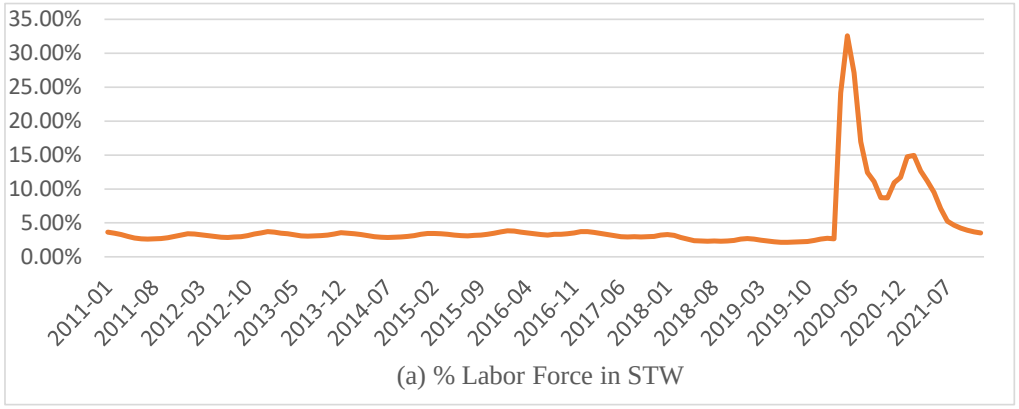
STW is a public policy that allows firms facing a fall in demand to keep their employees while transferring the cost to the government. The shortfall in demand must be outside the company's control, and it may come, for example, from a downturn in economic activity, unusual weather conditions, or a pandemic. The STW compensation is paid to the employer and covers 80% of the loss of earnings attributable to the reduction in hours worked, up to a maximum insured gain of 148'200 CHF yearly. The aim is to reduce employees' work without the need to lay them off. Note that employees have the right not to accept the STW compensation. In this case, the employer either continues paying the full salary or lays off the employee.

In March 2020, the federal government decided to simplify and expedite the administrative procedures for requesting STW. The government reduced justification and reporting requirements, abolished the 2-day waiting period and the 10-day notice for requesting STW, and extended the maximum duration from 3 to 6 months. Moreover, the government decided to broaden STW eligibility to apprentices and employees on fixed-term contracts. Panel (a) of Figure 7 shows average STW rate as percentage of the Swiss labor force. The STW rate jumped to 29.3% in April 2020 and peaked again at 11.3% in February 2021.

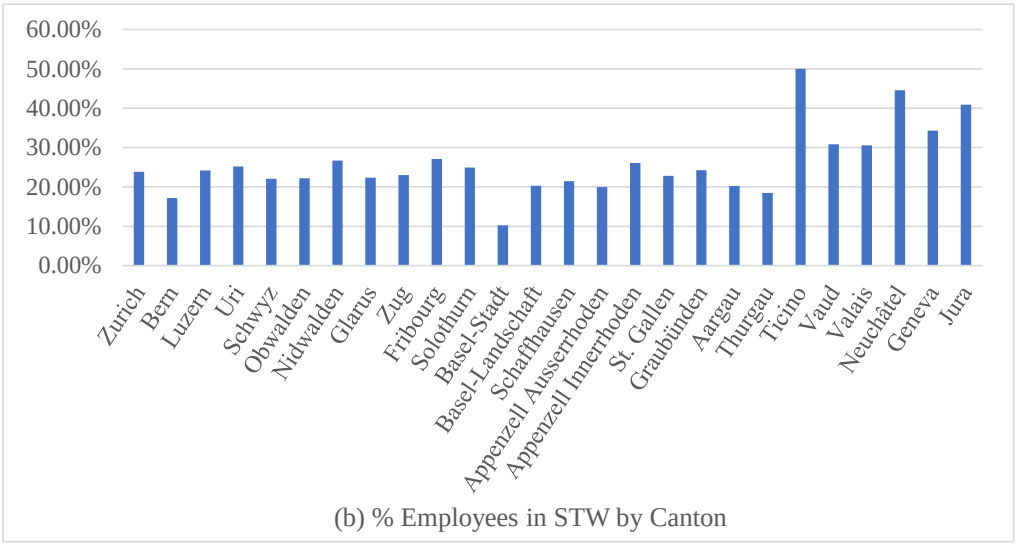
Panel (b) of Figure 7 reports the number of employees in STW in April 2020 as a percentage of the number of employed persons in that canton. We observe significant variation in the share of employees in STW across cantons, ranging from 10% for Basel-city to 50% for Ticino. On average, the German-speaking cantons were less affected than the French and Italian-speaking cantons.

Finally, panel (c) of Figure 7 plots the share of employees in STW by economic sector in April 2020. Lockdown measures included the complete shutdown of restaurants, non-

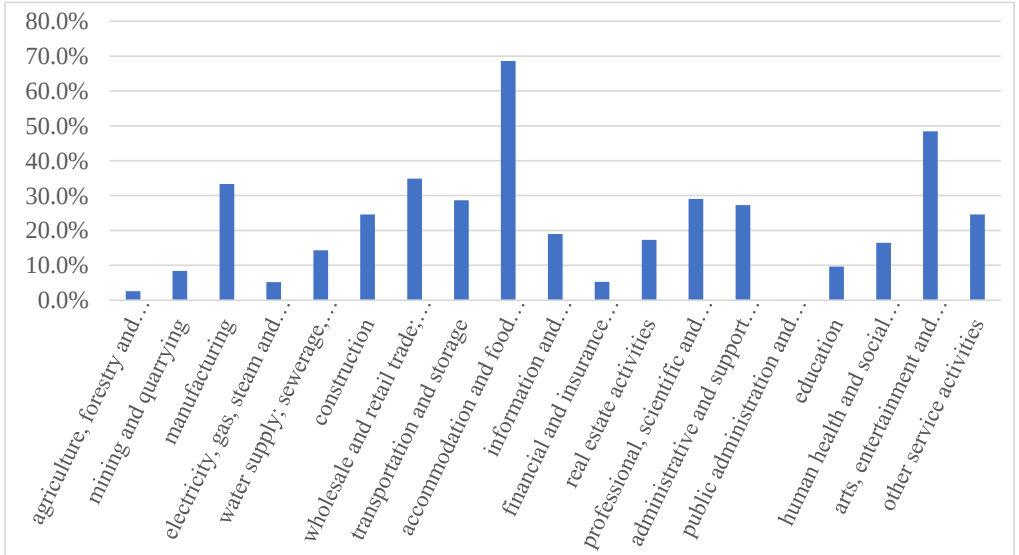
Figure 7: STW in Switzerland



(a) % Labor Force in STW



(b) % Employees in STW by Canton



(c) % Employees in STW by Sector

Source: State Secretariat for Economic Affairs (SECO). Notes: Panel (b), Number of employees in STW in April 2020, divided by the total number of employees in each canton in 2019. Panel (c), Number of employees in STW in April 2020, divided by the total number of employees in each sector in 2019.

essential shops, cinemas, theaters, etc. hence, accommodation, food services, arts, and entertainment sectors were the most affected. Sectors dealing with essential goods and services, such as agriculture and electricity, were slightly impacted. Sectors where most of the work could be done remotely, such as the financial service sector, were barely affected.

6.2 Effect of Gender and Covid-19 on Short-time Work

This section analyzes whether women were more likely to be placed on STW during the Covid-19 crisis. Table 7 displays the estimates from regressions where the dependent variable is a dummy that equals 1 if the person is on STW and 0 otherwise. Column (1) includes the Covid-19 index, the female dummy, the interaction between the two, and controls for age, education, occupation type, sector of work, and canton of residence. It confirms that the Covid-19 pandemic increased STW for both men and women. The positive and significant coefficient on the interaction term $female \times CovInd$ indicates that women were more likely to be put on STW during the pandemic. Appendix Table 16 shows the estimates from a similar regression, but adding occupation times CovInd and sector times CovInd fixed effects. The coefficient on the interaction between *female* and *CovInd* is remarkably similar to the one in our main specification in Table 7. This suggests that differences in sector and occupation distribution cannot explain the STW gender gap during the pandemic. In other words, within sector and occupation, female workers were still more likely to be put on STW than their male counterparts during the pandemic.[11]

Column (2) explores the role of the presence of children in the household. We include children dummies and their interactions with the female dummy and the Covid-19 index. We find that for men, the presence of children in the household does not significantly alter the probability of being on STW during Covid-19. For women with children, the effect on STW is negative. These results suggest that, while women have been overall more likely to use STW during the Covid-19 crisis, the presence of children does not contribute to it. This result also confirm our finding in Table 4 that the presence of children did not amplify gender gaps during Covid-19.

Column (3) considers the role of telework availability of occupation on recourse to STW. We add the dummy variable *LowTele*, as defined in Section 5.6. The results show that having a job with low telework availability increases the probability of engaging in STW during the Covid-19 pandemic. However, this effect is significantly larger for women than for men, as can be seen in the positive and significant coefficient on the triple interaction term $female \times LowTele \times CovInd$. The STW gender gap is also significant in the high-teleworkable occupations but considerably smaller.

[11]Note that we find no evidence that the STW gender gap is related to the lower pre-pandemic occupation rate of women. Women are more likely to be put on STW than men, regardless of working full-time or part-time. Results are available upon request.

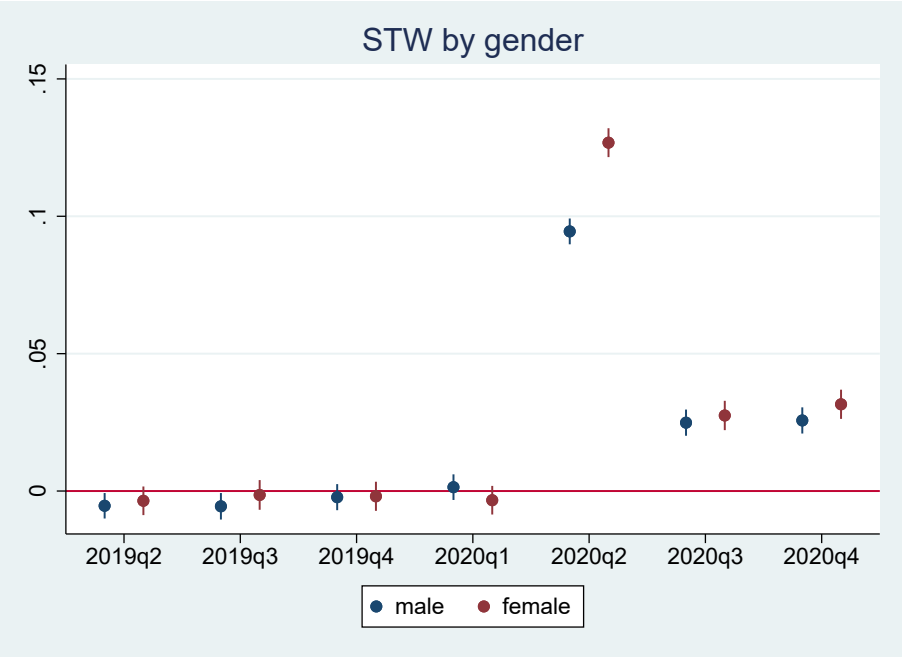
Table 7: The Effect of Covid-19 and Gender on STW

	In Short-time Work		
	(1)	(2)	(3)
female	0.000416	-0.000910	0.00154
	(0.00139)	(0.00172)	(0.00160)
CovInd	0.112***	0.113***	0.105***
	(0.00251)	(0.00309)	(0.00304)
female × CovInd	0.0311***	0.0370***	0.0198***
	(0.00360)	(0.00443)	(0.00430)
child0-6 × CovInd		0.00167	
		(0.00731)	
child7-14 × CovInd		0.00130	
		(0.00752)	
child0-6 × female × CovInd		-0.0204*	
		(0.0105)	
child7-14 × female × CovInd		-0.0177*	
		(0.0106)	
LowTele			-0.000404
			(0.00207)
LowTele × female			-0.00146
			(0.00285)
LowTele × CovInd			0.0241***
			(0.00540)
LowTele × female ×CovInd			0.0438***
			(0.00787)
Constant	0.0146	0.0157	0.00246
	(0.0220)	(0.0238)	(0.00396)
Age FE	YES	YES	YES
Canton FE	YES	YES	YES
Education FE	YES	YES	YES
NOGA FE	YES	YES	YES
ISCO FE	YES	YES	
Observations	158250	148431	158162
R^2	0.0466	0.0480	0.0474

Notes: * p<0.1, ** p<0.05, *** p<0.01. Estimates from regression (2) of STW dummy on a constant, female dummy, Covid-19 stringency index, child dummies (column 2) and low telework dummy (column 3) . The sample is restricted to respondents who are employed or apprentices. Regressions estimated with linear probability model, including random effects. Standard errors in parentheses.

We further analyze how the probability of engaging in STW evolves through time by running regression (3) separately for men and women. The coefficient estimates of the quarterly dummies are plotted in Figure 8. The figure shows that the effect of Covid-19 on the probability of being on STW is highest in the second quarter of 2020; it falls substantially in the third and fourth quarters but remains well above the pre-covid levels. The figure also shows an economically large and statistically significant difference between men and women in the second quarter of 2020: women's probability of being in STW was about 3% higher than men's in this quarter. The gender gap persists to some extent in the third and fourth quarters but is not statistically significant.

Figure 8: STW Over Time for Men and Women



Notes: Estimates from regression (3) of STW dummy on quarterly dummies, run separately for men (blue) and women (red). Regressions estimated with linear probability model, including random effects.

Overall, the results in Table 1 and Table 7 suggest that the widespread use of STW was indeed effective in reducing the increase in unemployment in Switzerland, for both male and female workers. The STW gender gap found after controlling for low telework availability suggests that women have been disproportionally selected for STW. We do not know if this was the result of a request by female workers or simply a choice by the employer; nevertheless, it implies a disproportionate impact on female income since STW leads to a 20% reduction in salary.

7 Covid-19 and Hours Worked

In this section, we only consider respondents who are currently employed or apprentices. We examine the effect of the Covid-19 crisis on (i) the probability of having effectively

worked in the previous week and (ii) the number of hours worked in the previous week.

In the regressions presented in Table 8, the dependent variable is a dummy equal to 1 if the respondent did at least one hour of paid work in the previous week and 0 otherwise. Some employed respondents worked zero hours during the last week, possibly because they were on paid or unpaid leave, on STW, or working on an irregular schedule. The explanatory variables are the female dummy, the Covid-19 index, and their interaction. We control for age, education, occupation type, sector of work, and canton of residence. The results in column (1) show that, in normal times, women are less likely than men to have worked in the past week. During Covid-19, the probability of having worked in the past week fell for both men and women, but the effect is four times larger for women. This result is in line with the evidence that women are more likely to be in STW than men during Covid, documented in Section 6.2.

Column (2) introduces a full-time dummy that equals one if the respondent works full time and zero otherwise. The estimation results in Column (2) reveal that the probability of having worked in the past week fell similarly for both part-time working men and women during Covid-19. However, among full-time working respondents, women were more likely not to have worked than men during the pandemic. We speculate that part-time working women had sufficient flexibility to reconcile the additional family care needs imposed by the pandemic with their work schedule, while full-time working women lacked that flexibility and did not work.

Column (3) controls for the presence of children in the household. We find that, in normal times, the presence of children reduces the likelihood of having worked in the past week. The effect is strongest for women with children under 7 years old, suggesting that in normal times, a woman is more likely to take a leave of absence from work to take care of a child when it is needed. There is, however, no differential effect between men and women with children during Covid-19. Again, we speculate that men and women shared the additional childcare needs due to Covid-19 restrictions equally, or that women with children and part-time jobs had the flexibility to hold on to work, as documented in Section 3.

In the last column of Table 8, we consider the role of telework availability. In normal times, the gender gap in work probability is smaller in low-teleworkable occupations relative to high-teleworkable ones. During the pandemic, low teleworkability had a strong negative impact on the probability of having worked in the previous week for all respondents; and this effect is twice as large for women as for men. The effect could either come from the demand side, i.e. women in low-teleworkable occupations may have been disproportionately put on leave or STW by their employers, or from the supply side, i.e. women in those occupation may have asked to take leave during the pandemic.

We continue to test the effect of the pandemic on the absolute number of hours worked. The effect heavily depends on the occupation rate before the pandemic, as shown in Table 17 in the Appendix. Therefore, we construct a relative hours worked variable and use it

Table 8: The Effect of Covid-19 and Gender on Having Worked Last Week

	Worked Last Week			
	(1)	(2)	(3)	(4)
female	-0.0286***	-0.0250***	-0.0180***	-0.0346***
	(0.00244)	(0.00442)	(0.00297)	(0.00280)
CovInd	-0.00903**	-0.0287***	-0.0187***	0.0117**
	(0.00440)	(0.0108)	(0.00539)	(0.00533)
female × CovInd	-0.0269***	-0.00609	-0.0223***	-0.00983
	(0.00626)	(0.0122)	(0.00766)	(0.00748)
FullTime		0.0213***		
		(0.00431)		
FullTime × female		0.0103*		
		(0.00550)		
FullTime ×CovInd		0.0238**		
		(0.0119)		
FullTime × female ×CovInd		-0.0279*		
		(0.0154)		
child0-6			-0.00870*	
			(0.00462)	
child7-14			-0.0171***	
			(0.00480)	
child0-6 × female			-0.0633***	
			(0.00652)	
child7-14 × female			-0.0104	
			(0.00661)	
child0-6 × CovInd			0.0181	
			(0.0124)	
child7-14 × CovInd			0.0460***	
			(0.0127)	
child0-6× female × CovInd			-0.00401	
			(0.0178)	
child7-14× female × CovInd			-0.0189	
			(0.0180)	
LowTele				-0.0127***
				(0.00364)
LowTele × female				0.0219***
				(0.00500)
LowTele × CovInd				-0.0646***
				(0.00943)
LowTele × female × CovInd				-0.0702***
				(0.0137)
Constant	0.832***	0.788***	0.841***	0.833***
	(0.0381)	(0.0386)	(0.0402)	(0.00725)
Age FE	YES	YES	YES	YES
Canton FE	YES	YES	YES	YES
Education FE	YES	YES	YES	YES
NOGA FE	YES	YES	YES	YES
ISCO FE	YES	YES	YES	
Observations	151565	144373	142149	151478
R^2	0.0119	0.0143	0.0153	0.0131

Notes: * p<0.1, ** p<0.05, *** p<0.01. Estimates from regression (2) of work last week on a constant, female dummy, Covid-19 stringency index, full-time dummy(column 2), child dummies (column 3) and low telework dummy (column 4). The sample is restricted to respondents who are employed or apprentices. Regressions estimated with linear probability model, including random effects. Standard errors in parentheses. Some insignificant estimates are eliminated for brevity.

Table 9: The Effect of Covid-19 and Gender on Relative Hours Worked

	Hours Worked Last Week Over Hours Worked Per Contract			
	(1)	(2)	(3)	(4)
female	0.00685	-0.00723	0.00611	-0.000381
	(0.00417)	(0.00718)	(0.00512)	(0.00477)
CovInd	-0.0726***	-0.0883***	-0.0778***	-0.0678***
	(0.00632)	(0.0154)	(0.00784)	(0.00755)
female× CovInd	-0.0128	0.00923	-0.0115	-0.00209
	(0.00938)	(0.0177)	(0.0115)	(0.0111)
FullTime		-0.0467***		
		(0.00677)		
FullTime × female		-0.00951		
		(0.00878)		
FullTime × CovInd		0.0184		
		(0.0169)		
FullTime × female× CovInd		-0.0377*		
		(0.0222)		
child0-6			-0.00992	
			(0.00763)	
child7-14			-0.00897	
			(0.00791)	
child0-6 × female			-0.00678	
			(0.0112)	
child7-14 × female			0.000276	
			(0.0113)	
child0-6 × CovInd			0.00784	
			(0.0177)	
child7-14 × CovInd			0.0109	
			(0.0183)	
child0-6 × female× CovInd			-0.0104	
			(0.0270)	
child7-14 × female× CovInd			0.0128	
			(0.0271)	
LowTele				-0.00790
				(0.00605)
LowTele × female				0.0248***
				(0.00849)
LowTele × CovInd				-0.0157
				(0.0139)
LowTele × female× CovInd				-0.0436**
				(0.0210)
Constant	1.148***	1.202***	1.144***	1.036***
	(0.0809)	(0.0813)	(0.0851)	(0.0134)
Age FE	YES	YES	YES	YES
Canton FE	YES	YES	YES	YES
Education FE	YES	YES	YES	YES
NOGA FE	YES	YES	YES	YES
ISCO FE	YES	YES	YES	
Observations	116951	116724	109629	116636
R^2	0.00573	0.00754	0.00608	0.00496

Notes: * p<0.1, ** p<0.05, *** p<0.01. Estimates from regression (2) of hours worked last week over per contract hours worked on a constant, female dummy, Covid-19 stringency index, full-time dummy (column 2), child dummies (column 3) and low-teleworkable dummy (column 4). The sample is restricted to respondents who are employed or apprentices. Regressions estimated with linear model, including random effects. Standard errors in parentheses.

as the dependent variable in Table 9. The relative hours worked variable is defined as the number of hours worked in the previous week divided by per contract hours worked.[12] Column (1) indicates that in relative terms, there is no differential impact between male and female hours worked during the pandemic.

Column (2) introduces the full-time dummy and its interactions with the female and Covid index dummies. The estimation results reveal that full-time working women cut their relative hours worked more than men during the pandemic. There is, however, no similar gender gap for part-time workers. This result supports the argument that part-time working women had sufficient flexibility to reconcile the additional childcare needs with their work schedule and therefore were comparatively less affected. Full-time working women did not have the same flexibility, making it more challenging to continue working the usual hours during the pandemic.

Column (3) assesses how the presence of children affected relative hours worked during the pandemic. It indicates that children did not significantly affect relative hours worked during Covid, neither for men nor for women. Finally, column (4) considers the role of teleworkability on hours worked during the pandemic; it shows that women in low-teleworkable occupations experienced a more significant decrease in hours worked than their male counterparts. The pandemic had no differential effect on men and women in high-teleworkable occupations.

8 The Gender Wage Gap

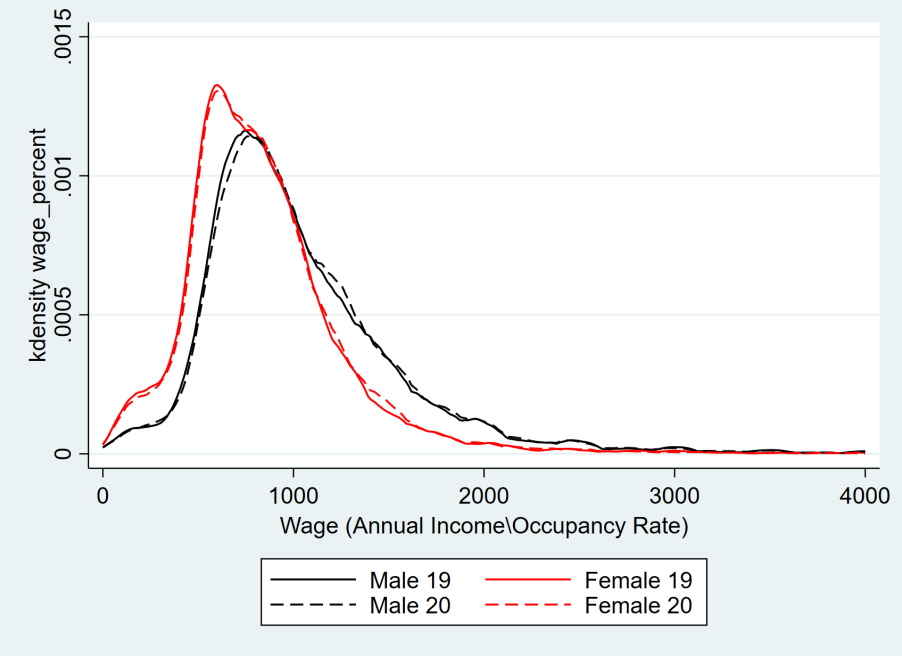
We finally ask if the Covid-19 pandemic affected wages of men and women differently. We measure wage by dividing a respondent's annual income by his or her occupation rate.[13] Figure 9 shows the wage distribution of male and female respondents in 2019 and 2020. In both years, men's wage distribution is situated to the right of women's, indicating that men earn on average more than women after controlling for occupation rate. In addition to this, men's distribution is more heavily skewed to the right, indicating a bigger fraction of men among the high earners. Similarly, the wage distribution indicates a higher fraction of women among low earners. During Covid-19, men's wage distribution shifted slightly rightwards while women's distribution remained unchanged, suggesting that the gender wage gap increased.

Figure 10 documents how wages evolved during the Covid-19 pandemic across gender and occupations. We restrict the sample to respondents with wage information available in both 2019 and 2020 and plot the percentage of workers who experienced wage decrease (left panel) and increase (right panel) between 2019 and 2020 by gender and occupation. In Figure 10, occupations are ranked in descending teleworkability order. The figure

[12] Per-contract hours worked are replaced by usual hours worked for independent employees.

[13] Ideally, we would calculate wage per hour by dividing annual income by annual hours worked. Data on annual hours is not available, so we use the occupation rate as a proxy.

Figure 9: Wage Distribution by Gender and Year



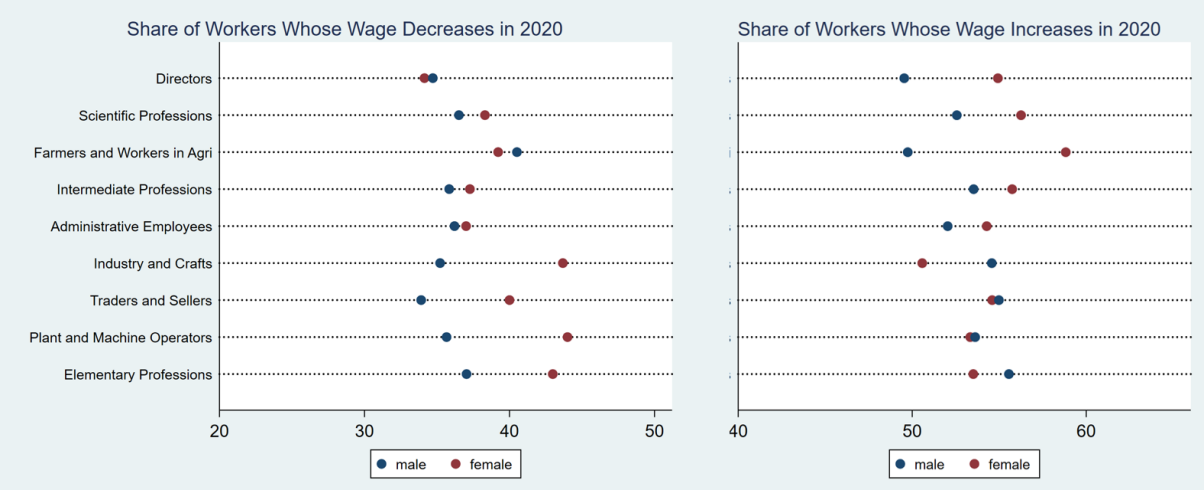
Notes: This figure plots kernel density of the wage distribution of men and women in 2019 and 2020. Wage is measured by dividing income by the occupation rate. The black line is for men and red line is for women. The solid and dashed lines correspond to the data in 2019 and 2020, respectively.

indicates that, in low-teleworkable occupations, women were more likely than men to experience a wage reduction during the Covid-19 period, indicating an increase in the gender wage gap. Interestingly, in high-teleworkable occupations, women were more likely than men to experience a wage increase during Covid-19. The decline in wages may relate to the recourse to STW during the pandemic: Employees in STW maintain their employment contract, and therefore also their contractual occupation rate, but receive compensation of only 80% for the reduced working hours. The wage gap result is thus consistent with our previous insights on STW, namely that women, particularly in low-teleworkable occupations, were more likely to be put on STW than their male counterparts and, therefore, suffer a wage drop.

9 Conclusion

The Covid-19 crisis generated an unprecedented decline in economic activity, employment and hours worked. This paper studies the effect of Covid-19 on labor-market gender gaps in Switzerland. In particular, we find that women were more likely to exit the labor force during the peak of the pandemic than their male counterparts. An important explanation for this effect is that women were overly present in sectors and occupations that were hit particularly hard. This result may have long-lasting consequences if non-active women

Figure 10: Wage Changes by Gender and Occupation



Notes: We restrict the sample to respondents with wage information (annual income/occupation rate) in 2019 and 2020, calculate the percentage of respondents whose wage has decreased/increased from 2019 to 2020, and then break it down by occupation types and gender. Occupations are ranked in descending order of telework availability in 2020.

see their skills depreciate, find it harder to regain employment or must accept lower wages after the crisis.

Our results also point to a significant role played by telework feasibility. We reveal significant heterogeneity in the effects of the pandemic on labor market outcomes depending on the availability of telework. Gender gaps in labor market participation, STW and hours worked were significantly larger in occupations where telework was not feasible. Women in low-teleworkable occupation experienced wage decline more often than their male counterparts, while women in high-teleworkable occupation more often benefited from increase in their wage. This result has significant implications also for the future. We can conjecture that the heterogeneity in the gender gaps will persist and that women in high-teleworkable occupations will face more favorable conditions in the future, with increased opportunities to work from home, higher flexibility and easier reconciliation of career and family life. On the other hand, women in low-teleworkable occupations are left more vulnerable after the pandemic.

In addition, our study show specificities of the Swiss labor market that mitigated the negative effect of the crisis on women. Contrary to the United States, there was no gender gap in unemployment during the pandemic in Switzerland, but we find a significant gender gap in the recourse to STW. The Swiss government greatly facilitated the use of STW during the pandemic; this policy likely prevented many layoffs and in particular for women.

Marriage and the presence of children in the household did not amplify the labor market participation gender gap during the crisis. This result contrasts with findings in

the United States, where mothers were disproportionately affected. This result can be explained by several factor. First, the widespread use of STW policy allowed women to maintain their employment while reducing hours worked to care for children or elderly family members. Second, school closure in Switzerland was much shorter than in the United States and many other countries. Finally, the high percentage of women working part-time points to more flexibility for women in the Swiss labor market, allowing women to continue working during the pandemic. To support this hypothesis, we show that women working full-time were more likely to be absent from work and reduced hours worked more than men but that there was no such effect for part-time workers.

References

Abraham, K. G. and S. N. Houseman (2014): "Short-time compensation as a tool to mitigate job loss? Evidence on the US experience during the recent recession," *Industrial Relations: A Journal of Economy and Society*, 53, 543–567.

Adams-Prassl, A., T. Boneva, M. Golin, and C. Rauh (2020): "Inequality in the impact of the coronavirus shock: Evidence from real time surveys," *Journal of Public Economics*, 189, 104245.

Albanesi, S. and J. Kim (2021): "Effects of the COVID-19 recession on the US labor market: Occupation, family, and gender," *Journal of Economic Perspectives*, 35, 3–24.

Alon, T., S. Coskun, M. Doepke, D. Koll, and M. Tertilt (2021): "From Mancession to Shecession: Women's Employment in Regular and Pandemic Recessions," Tech. rep., National Bureau of Economic Research.

Alon, T. M., M. Doepke, J. Olmstead-Rumsey, and M. Tertilt (2020): "The impact of COVID-19 on gender equality," Tech. rep., National Bureau of economic research.

Andrew, A., S. Cattan, M. Costa Dias, C. Farquharson, L. Kraftman, S. Krutikova, A. Phimister, and A. Sevilla (2020): "The gendered division of paid and domestic work under lockdown," *IZA Discussion Paper No. 13500*.

Benzeval, M., J. Burton, T. F. Crossley, P. Fisher, A. Jäckle, H. Low, and B. Read (2020): "The idiosyncratic impact of an aggregate shock: the distributional consequences of COVID-19," *Available at SSRN 3615691*.

Bick, A. and A. Blandin (2020): "Real-time labor market estimates during the 2020 coronavirus outbreak," *Available at SSRN 3692425*.

Bluedorn, J., F. Caselli, N.-J. Hansen, I. Shibata, and M. Tavares (2021): "Gender and Employment in the COVID-19 Recession: Evidence on "She-cessions"," Tech. rep., IMF working paper.

Cajner, T., L. D. Crane, R. Decker, A. Hamins-Puertolas, and C. J. Kurz (2020a): "Tracking labor market developments during the covid-19 pandemic: A preliminary assessment," *FEDS Working Paper No. 2020-030*.

Cajner, T., L. D. Crane, R. A. Decker, J. Grigsby, A. Hamins-Puertolas, E. Hurst, C. Kurz, and A. Yildirmaz (2020b): "The US labor market during the beginning of the pandemic recession," Tech. rep., National Bureau of Economic Research.

Coibion, O., Y. Gorodnichenko, and M. Weber (2020): "Labor markets during the COVID-19 crisis: A preliminary view," Tech. rep., National Bureau of Economic Research.

Collins, C., L. C. Landivar, L. Ruppanner, and W. J. Scarborough (2021): "COVID-19 and the gender gap in work hours," *Gender, Work & Organization*, 28, 101–112.

Couch, K. A., R. W. Fairlie, and H. Xu (2020): "Gender and the COVID-19 labor market downturn," Tech. rep., Stanford Institute for Economic Policy Research (SIEPR).

Del Boca, D., N. Oggero, P. Profeta, and M. Rossi (2020): "Women's and men's work, housework and childcare, before and during COVID-19," *Review of Economics of the Household*, 18, 1001–1017.

Fabrizio, M., D. Gomes, and M. Tavares (2021): "COVID-19 she-cession: The employment penalty of taking care of young children. international monetary fund," Tech. rep., IMF Working Paper WP/21.

Farré, L., Y. Fawaz, L. González, and J. Graves (2020): "How the COVID-19 lockdown affected gender inequality in paid and unpaid work in Spain," *IZA Discussion paper No. 13434*.

Forsythe, E., L. B. Kahn, F. Lange, and D. Wiczer (2020): "Labor demand in the time of COVID-19: Evidence from vacancy postings and UI claims," *Journal of public economics*, 189, 104238.

Gupta, S., L. Montenovo, T. D. Nguyen, F. Lozano-Rojas, I. M. Schmutte, K. I. Simon, B. A. Weinberg, and C. Wing (2020): "Effects of social distancing policy on labor market outcomes," *NBER Working paper*.

Hijzen, A. and D. Venn (2011): "The role of short-time work schemes during the 2008-09 recession," *OECD Social, Employment and Migration Working Papers, No. 115*.

Juranek, S., J. Paetzold, H. Winner, and F. Zoutman (2021): "Labor market effects of COVID-19 in Sweden and its neighbors: Evidence from administrative data," *Kyklos*, 74, 512–526.

Kopp, D. and M. Siegenthaler (2017): "Does short-time work prevent unemployment?" *labor market policy*, 49.

Leibovici, F., A. M. Santacreu, and M. Famiglietti (2020): "Social distancing and contact-intensive occupations," *On the economy, St. Louis FED*.

Mongey, S. and A. Weinberg (2020): "Characteristics of workers in low work-from-home and high personal-proximity occupations," *Becker Friedman Institute for Economic White Paper*.

Montenovo, L., X. Jiang, F. L. Rojas, I. M. Schmutte, K. I. Simon, B. A. Weinberg, and C. Wing (2020): "Determinants of disparities in COVID-19 job losses," Tech. rep., National Bureau of Economic Research.

Queisser, M., W. Adema, and C. Clarke (2020): "COVID-19, employment and women in OECD countries," *CEPR VoxEu. org, April*.

Sevilla, A. and S. Smith (2020): "Baby steps: the gender division of childcare during the COVID-19 pandemic," *Oxford Review of Economic Policy*, 36, S169–S186.

Shibata, I. (2021): "The distributional impact of recessions: The global financial crisis and the COVID-19 pandemic recession," *Journal of Economics and Business*, 115, 105971.

Zamarro, G., F. Perez-Arce, and M. J. Prados (2020): "Gender Differences in the Impact of COVID-19," *KTLA*, 16, 2021.

Zamarro, G. and M. J. Prados (2021): "Gender differences in couples' division of childcare, work and mental health during COVID-19," *Review of Economics of the Household*, 19, 11–40.

A Definition of Variables

KOF stringency index: The indices are composite measures including different lockdown policies, such as school and workplace closure. The values range from 0 (= no measures) to 100 (= full lockdown). The data is available at the national level and for all individual 26 cantons of Switzerland from January 2020 onwards. The construction largely follows the code book of the Oxford Covid-19 Government Response Tracker.[14]

Gender (BB04A): male, female.

Labor market status (B0000): active, apprentice, unemployed according to the ILO, non active.

Age category (AGE64): 15-24, 25-39, 40-54, 55-64, 65+.

Education (TBQ2): Highest education level achieved: middle school, high school or equivalent, college.

Canton (B017): canton of residence.

Occupation (BFU7): Occupation according to the International Standard Classification of Occupations (ISCO-08 at 1 position). The variable refers to current occupation for employed respondents and to previous occupation for unemployed and inactive ones. Respondents who were never active or have been inactive for more than 8 years do not answer this question.

Sector (BMU3): Sector according to the General Classification of Economic Activities classification (NOGA-08 level 1). The variable refers to current sector for employed respondents and to previous sector for unemployed and inactive ones. Respondents who were never active or have been inactive for more than 8 years do not answer this question.

Civil status (IS03): single, married, divorced, widower, in a registered partnership, separated, other.

Children (FAMTYP2): The variable refers to the presence of children in the household, either own or partner's child. No child under 15, youngest child aged 7-14, youngest child aged 0-6.

Work from home (EI04): Binary variable recording whether the respondent worked from home at least once over the last four weeks.

Reason for reduction in hours of work (EK101): Respondents who experienced a reduction in hours worked in the previous week provide a reason for the reduction (vacation, military service, maternity/paternity leave, sick leave, education, family responsibilities, STW, personal, weather, variable hours, compensation of overtime, other). The variable is used to construct the STW dummy and the family leave dummy.

Job search (BD08): Respondents that are not currently employed are asked whether they were searching for a job in the last 4 weeks.

Reasons for not searching job (BD131, BD132, BD133): Respondents that are not

[14]For details on the KOF Swiss Economic Institute Stringency Index, see https://kof.ethz.ch/en/forecasts-and-indicators/indicators/kof-stringency-index.html.

currently employed and not currently searching for a job are asked to state the reasons why they are not searching. Education, military service, retirement, sickness, invalidity, child care, other personal or family responsibilities, other.

Worked last week (BD01): The variable records whether the respondent performed at least one hour of paid work in the previous week.

Hours worked last week (EK08): Number of hours effectively worked in the previous week.

Occupation rate in percent (EK08)

Annual income (BWU1): Gross annual professional income.

B Summary Statistics

Table 10, Table 11, Table 12 and Table 13 document the number of observations by gender and respectively, labor market status, education, family type and occupation type.

Table 10: Number of Observations by Labor Market Status (B0000), Gender and Quarter

	Men				Women			
	Employed	Appr.	Unempl	Non-active	Employed	Appr.	Unempl	Non-active
2019q1	9848	498	409	3548	9622	333	497	5364
2019q2	9675	505	376	3155	9339	349	399	4873
2019q3	9267	456	390	3159	8808	358	400	4611
2019q4	9383	479	349	3168	9186	364	379	4690
2020q1	9610	505	390	3237	9448	369	398	4863
2020q2	9869	492	428	3606	9510	338	397	5325
2020q3	9768	464	480	3461	9309	349	504	4924
2020q4	9844	492	443	3360	9532	360	469	4886

Table 11: Number of Observations by Education (TBQ2), Gender and Quarter

	Men			Women		
	Mandatory school	High school	University	Mandatory school	High school	University
2019q1	2284	5867	6152	3061	7630	5125
2019q2	2139	5587	5985	2818	7116	5026
2019q3	1835	5613	5824	2473	6961	4743
2019q4	1918	5603	5858	2572	7182	4865
2020q1	2082	5588	6072	2742	7264	5072
2020q2	2164	5900	6331	2857	7379	5334
2020q3	1984	5954	6235	2580	7209	5297
2020q4	2012	5813	6314	2666	7206	5375

Table 12: Number of Observations by Family Type (FAMTYP2), Gender and Quarter

	Men			Women		
	No Child	Child 0-6	Child 7-14	No Child	Child 0-6	Child 7-14
2019q1	8217	1247	1116	8890	1502	1426
2019q2	10522	1690	1499	11257	1904	1799
2019q3	10208	1595	1469	10757	1749	1671
2019q4	10342	1551	1486	11100	1800	1719
2020q1	8201	1222	1166	8797	1372	1364
2020q2	11145	1671	1579	11789	1931	1850
2020q3	10943	1632	1598	11529	1830	1727
2020q4	10867	1639	1633	11674	1832	1741

Table 13: Number of Observations by Occupation Type, Gender and Quarter

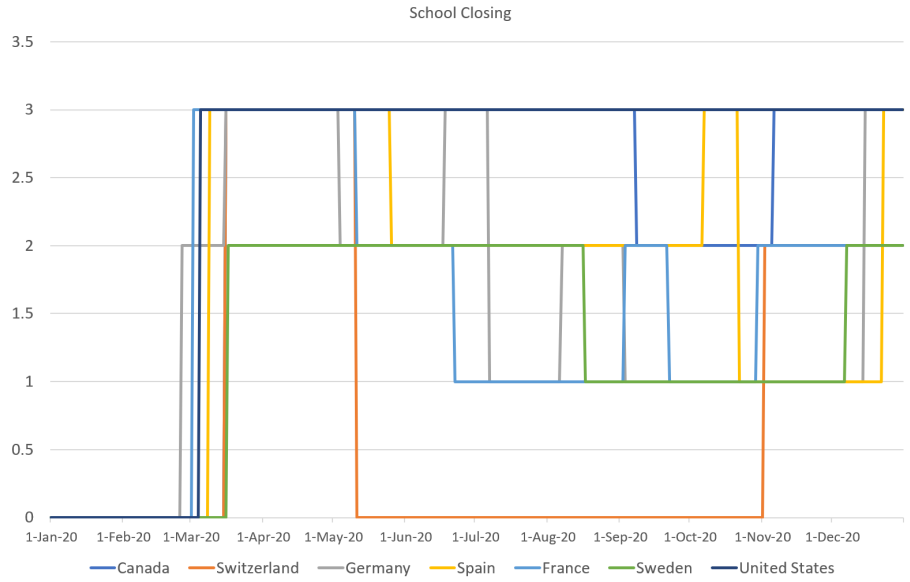
	Men		Women	
	HighTele	LowTele	HighTele	LowTele
2019q1	8126	4149	8508	3868
2019q2	8064	4018	8277	3660
2019q3	7761	3851	7801	3443
2019q4	7859	3855	8121	3645
2020q1	8068	3980	8452	3723
2020q2	8345	4146	8686	3746
2020q3	8228	4045	8435	3587
2020q4	8369	4040	8675	3599

C School Closure Policies

The Oxford Covid-19 Government Response Tracker (OxCGRT) collects information on school closure policies across countries and summarizes them on a scale from 0 to 3 reflecting the stringency of the measures. In the data, 0: no measures; 1: recommend closing or all school open with alterations resulting in significant differences compared to non-Covid-19 operations; 2: require closing (only some levels or categories, eg just high school or public schools); 3: require closing all levels.

Figure 11 shows that Switzerland has a more lenient school closure policy. Swiss schools reopened in May 2020 while other countries kept strict measures throughout 2020.

Figure 11: School Closure Index



Notes: The index records the stringency of school closure policy in several developed economies. The values range from 0 (=no measures) to 3 (= closing all levels). Source: Oxford.

D Additional Tests

D.1 Robustness

Table 14 presents a robustness check where we only include respondents for which we have complete information on occupation type (ISCO) and economic sector (NOGA). For non-active respondents, this question is only answered by participants who had been employed over the previous 8 years. The sample in this robustness check therefore excludes non-active respondents who never worked or exited the labor market more than 8 years ago. The regression estimates are consistent with those in the main text (Table 1).

Table 14: Robustness: Covid-19 and Labor Market Status

	Employed	Unemployed	Non-active
female	-0.0402***	0.00104	0.0375***
	(0.00254)	(0.00142)	(0.00218)
CovInd	-0.0148***	0.00650***	0.00928**
	(0.00288)	(0.00204)	(0.00244)
female × CovInd	-0.00502	-0.00310	0.00805**
	(0.00406)	(0.00287)	(0.00343)
Constant	0.713***	0.0324	0.253***
	(0.0421)	(0.0230)	(0.0362)
Age FE	YES	YES	YES
Canton FE	YES	YES	YES
Education FE	YES	YES	YES
NOGA FE	YES	YES	YES
ISCO FE	YES	YES	YES
Observations	170619	170619	170619
R^2	0.0422	0.0108	0.0445

Notes: * p<0.1, ** p<0.05, *** p<0.01. Estimates from regression (1) of labor market status on a constant, female dummy, Covid-19 stringency index and its interaction with the female dummy. Sample includes respondents aged 15 to 64. Regressions estimated with linear probability model, including random effects. Robust standard errors in parentheses.

As an additional robustness, we run regression (1) replacing the Covid-19 index by a Covid-19 dummy that equals zero from 2019Q1 to 2020Q1 and one from 2020Q2 to 2020Q4. Table 15 shows the estimates when taking labor market statuses as dependent variables and Table 16 reports the results when taking STW, work last week and relative hours worked as dependent variables. The results are broadly consistent with those in the main text.

D.2 Covid-19 and Hours Worked

In Table 17 we analyze how the Covid-19 pandemic affected the respondents' hours worked. The dependent variable is the respondent's effective hours worked in the past week. The explanatory variables are the female dummy, the Covid-19 index, and their interaction. We control for age, education, occupation type, sector of work, and canton of residence. Column (1) shows that women worked about 9 hours per week less than men in normal times; during the pandemic, all respondents reduced their hours worked, but women reduced them less than men. This result may simply be driven by the fact that women typically hold a part-time job and cannot reduce hours as much as men.

Column (2) estimates how the presence of children in the household affects hours worked during normal and pandemic times. The results show that in normal times, the presence of children, whether pre-school or school-aged, significantly impacts mothers' working hours, while it barely affects that of fathers. Women without children work about

Table 15: Robustness: Replacing Covid Stringency Index by Covid Dummy

	Employed	Unemployed	Non-active
female	-0.0399***	-0.00247*	0.0412***
	(0.00230)	(0.00137)	(0.00203)
Covid	-0.00763***	0.00348***	0.00470***
	(0.00151)	(0.00114)	(0.00137)
female × Covid	-0.00328	-0.000605	0.00336*
	(0.00210)	(0.00158)	(0.00190)
Constant	0.726***	0.0291	0.244***
	(0.0396)	(0.0233)	(0.0350)
Age FE	YES	YES	YES
Canton FE	YES	YES	YES
Education FE	YES	YES	YES
NOGA FE	YES	YES	YES
ISCO FE	YES	YES	YES
Observations	186881	186881	186881
R^2	0.417	0.0423	0.459

Notes: * p<0.1, ** p<0.05, *** p<0.01. Estimates from regression (1) of labor market status on a constant, female dummy, Covid-19 dummy and its interaction with the female dummy. Regressions estimated with linear probability model, including random effects. Robust standard errors in parentheses.

Table 16: Robustness: Replacing Covid Stringency Index by Covid Dummy

	In STW	Worked last week	Relative Hours worked
female	0.00240*	-0.0298***	0.00542
	(0.00135)	(0.00238)	(0.00409)
Covid	0.0517***	-0.0128***	-0.0358***
	(0.00133)	(0.00229)	(0.00340)
female × Covid	0.0136***	-0.0175***	-0.00396
	(0.00191)	(0.00328)	(0.00504)
Constant	0.0202	0.785***	1.147***
	(0.0219)	(0.0389)	(0.0809)
Age FE	YES	YES	YES
Canton FE	YES	YES	YES
Education FE	YES	YES	YES
NOGA FE	YES	YES	YES
ISCO FE	YES	YES	YES
Observations	158729	158721	116951
R^2	0.0398	0.0206	0.00523

Notes: * p<0.1, ** p<0.05, *** p<0.01. Estimates from regression (1) of STW (column 1), work last week (column 2) and relative hours worked last week (column 3) on a constant, female dummy and Covid-19 dummy. The sample is restricted to respondents who are employed or apprentices. Regressions estimated with linear probability model, including random effects. Standard errors in parentheses.

6.6 hours less than their male counterparts on average, but the gender gap more than doubles for mothers of children under 15. During the pandemic, the evidence suggests that the presence of school-aged children did not significantly impact hours worked by fathers and mothers. We find that mothers of younger children experienced a lower decrease in hours worked, most likely because they were working fewer hours before the pandemic.

D.3 Covid-19 and Family Leave

The Swiss federal government imposed complete school closure between March 16 and May 11, 2020 (8 weeks). It is possible that some workers would request a family leave to care for their children or elderly parents. Table 18 displays estimates from a regression whose dependent variable is a dummy with value one if the person was on family leave in the previous week and zero otherwise. Employed respondents are said to be on family leave if they did not work last week and state that this absence is due to family responsibilities. Family leave can refer to a paid or unpaid leave.

Column (1) displays regression results, including the Covid-19 index, the female dummy and their interaction, as well as the usual labor market controls. The estimates emphasize that, in normal times, women are more likely to be on family leave. The Covid-19 crisis significantly increased the recourse to family leave for both men and women, but without any significant difference between the two.

Column (2) addresses the role of children in the household. We include children dummies and their interactions with the female dummy and the Covid-19 index. During the Covid-19 crisis, having children under 7 increased the probability of being on family leave without any significant difference between men and women. However, in households with children aged 7 to 14, women were more likely to be on family leave during the crisis, possibly reflecting the effect of school closures. Column (3) considers teleworkability and indicates that the latter affects family leave neither in normal nor in Covid-19 times.

Table 17: The Effect of Covid-19 and Gender on Hours Worked

	Hours Worked Last Week	
	(1)	(2)
female	-8.999***	-6.626***
	(0.128)	(0.152)
CovInd	-2.979***	-3.067***
	(0.187)	(0.229)
female × CovInd	0.514*	0.120
	(0.270)	(0.330)
child0-6		-0.585**
		(0.232)
child7-14		0.426*
		(0.240)
child0-6 × female		-8.887***
		(0.332)
child7-14 × female		-7.430***
		(0.333)
child0-6 × CovInd		-0.0668
		(0.522)
child7-14 × CovInd		0.552
		(0.537)
child0-6 × female × CovInd		1.417*
		(0.771)
child7-14 × female × CovInd		1.015
		(0.770)
Constant	50.21***	51.05***
	(2.117)	(2.156)
Age FE	YES	YES
Canton FE	YES	YES
Education FE	YES	YES
NOGA FE	YES	YES
ISCO FE	YES	YES
Observations	133583	125218
R^2	0.223	0.250

Notes: * p<0.1, ** p<0.05, *** p<0.01. Estimates from regression (2) of hours worked last week on a constant, female dummy, Covid-19 stringency index and child dummies (column 2). The sample is restricted to respondents who are employed or apprentices. Regressions estimated with linear model, including random effects. Standard errors in parentheses.

Table 18: The Effect of Covid-19 and Gender on Family Leave

	Request a Family Leave		
	(1)	(2)	(3)
female	0.00236***	0.00138***	0.00268***
	(0.000422)	(0.000518)	(0.000488)
CovInd	0.00238***	-0.000105	0.00306***
	(0.000802)	(0.000973)	(0.000972)
female × CovInd	0.00157	0.000102	0.00172
	(0.00115)	(0.00139)	(0.00137)
child0-6		0.00275***	
		(0.000827)	
child7-14		0.00227***	
		(0.000858)	
child0-6 × female		0.00667***	
		(0.00117)	
child7-14 × female		0.00148	
		(0.00118)	
child0-6 × CovInd		0.0151***	
		(0.00230)	
child7-14 × CovInd		0.00247	
		(0.00237)	
child0-6 × female × CovInd		0.000233	
		(0.00331)	
child7-14 × female × CovInd		0.00800**	
		(0.00335)	
LowTele			0.000956
			(0.000631)
LowTele × female			-0.00143
			(0.000869)
LowTele × CovInd			-0.00213
			(0.00172)
LowTele × female × CovInd			-0.000850
			(0.00251)
Constant	0.000685	0.00260	0.00190
	(0.00652)	(0.00701)	(0.00118)
Age FE	YES	YES	YES
Canton FE	YES	YES	YES
Education FE	YES	YES	YES
NOGA FE	YES	YES	YES
ISCO FE	YES	YES	
Observations	158250	148431	158162
R^2	0.00191	0.00600	0.00193

Notes: * p<0.1, ** p<0.05, *** p<0.01. Estimates from regression (2) of family leave dummy on a constant, female dummy, Covid-19 stringency index, children dummies (column 2), and low telework dummy (column 3). The sample is restricted to respondents who are employed or apprentices. Regressions estimated with linear probability model, including random effects. Standard errors in parentheses.

Working Paper 525 May 2022

Authors

Corinne DUBOIS
Department of Economics, University of Fribourg
Bd de Pérolles 90, 1700 Fribourg, Switzerland
E-mail: corinne.dubois@unifr.ch; Web: https://www.unifr.ch/ecopol/en/departement/senior-researcher/corinne-dubois.html

Luisa LAMBERTINI
Chair of International Finance - Ecole Polytechnique Fédérale de Lausanne (EPFL)
Email: luisa.lambertini@epfl.ch

Yu WU
Chair of International Finance - Ecole Polytechnique Fédérale de Lausanne (EPFL)
Email: yu.wu@epfl.ch

Abstract

We study the impact of the pandemic on gender gaps in labor market outcomes in Switzerland. Using the Swiss labor force survey data, we document a significant increase in the gender gap in labor market participation. We find no evidence of a worsening of unemployment gender gap during the pandemic but we find a large gender gap in being on STW, a government policy that subsidizes wage payments for employees whose hours are cut at companies in temporary distress. Unlike the United States, the presence of children in the household did not worsen labor gender gaps. Sector and occupation, however, play an important role in explaining gender gaps. In particular, we document substantial heterogeneity in the effect of the pandemic on participation, STW, hours worked, and wage outcomes depending on the availability of telework in the respondent's occupation.

Jel Classification

E24, J01, J08, J21

Keywords

Covid-19, labor market inequality, labor market policies, gender gaps.

Working Papers SES collection

Last published

516 Fernandes A., Huber M., Vaccaro G.: Gender Differences in Wage Expectations; 2020
517 Deschênes S., Dumas C., Lambert S.: Household Resources and Individual Strategies; 2020
518 Dumas C., Jàativa X.: Better roads, better off? Evidence on improving roads in Tanzania; 2020
519 Huber M., Imhof D., Ishii R.: Transnational machine learning with screens for flagging bid-rigging cartels; 2020
520 Eugster N., Ducret R., Isakov D., Weisskopf J-P.: Chasing dividends during the COVID-19 pandemic; 2020
521 Loginova D., Portmann M. and Huber M. Assessing the effects of seasonal tariff-rate quotas on vegetable prices in Switzerland; 2020
522 Herz H, Zihlmann C..: Adverse Effects of Monitoring: Evidence from a field experiment; 2021
523 Grossmann V.: Das House Kapital; 2021
524 Ducret R. : Investors' perception of business group membership during an economic crisis. Evidence from the COVID-19 pandemic

Catalogue and download links

http://www.unifr.ch/ses/wp
http://doc.rero.ch/collection/WORKING_PAPERS_SES

Publisher

Université de Fribourg, Suisse, Faculté des sciences économiques et sociales et du management Universität Freiburg, Schweiz, Wirtschafts- und sozialwissenschaftliche Fakultät University of Fribourg, Switzerland, Faculty of Management, Economics and Social Sciences

Bd de Pérolles 90
CH-1700 Fribourg
Tél.: +41 (0) 26 300 82 00
decanat-ses@unifr.ch
www.unifr.ch/ses