

The Impact of the Covid-19 Pandemic on Perceived Employment (In)Security in Switzerland

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Abstract: The Covid-19 pandemic and the way this health crisis has been handled has changed labour market inequalities. We argue that workers are affected differently by changed work and employment conditions, depending on the workers' employment relations and study the impact of remote work, polarization of the core, and peripheral workforce as well as changes in working time during the Covid-19 pandemic on perceived employment insecurity. Based on data from the Swiss Household Panel and its special wave ("Covid-19 Study"), our results show that the perceived employment insecurity is related to employment strategies aimed at increasing flexibility in the labour market. In particular, short-time work increased perceived employment insecurity.

Keywords: Covid-19 pandemic, perceived employment insecurities, remote work, flexibilization, atypical employment

Die Auswirkungen der Covid-19-Pandemie auf die wahrgenommene Beschäftigungs(un)sicherheit in der Schweiz

Zusammenfassung: Die Covid-19-Pandemie und der Umgang mit dieser Gesundheitskrise haben die Arbeitsmarktungleichheiten verändert. Wir argumentieren, dass Arbeitnehmer:innen in verschiedenen Beschäftigungsverhältnissen von diesen Veränderungen unterschiedlich stark betroffen sind und untersuchen den Einfluss von Arbeit im Homeoffice, der Spaltung in Kern- und Randbelegschaft sowie Veränderungen der Arbeitszeiten während der Covid-19-Pandemie auf die wahrgenommene Beschäftigungssicherheit. Auf Basis des Schweizer Haushalt-Panels und der «Covid-19» Ergänzungswelle kann gezeigt werden, dass die wahrgenommenen Beschäftigungssicherheit davon abhängt, inwiefern es zu einer Flexibilisierung der Beschäftigung kommt. Dabei erhöht insbesondere Kurzarbeit während der Pandemie die wahrgenommene Beschäftigungsunsicherheit.

Schlüsselwörter: Covid-19-Pandemie, wahrgenommene Beschäftigungsunsicherheiten, Homeoffice Arbeit, Flexibilisierung, atypische Beschäftigung

Les effets de la pandémie de Covid-19 sur l'(in)sécurité professionnelle perçue en Suisse

Résumé: La pandémie de Covid-19 et la manière de faire face à cette crise sanitaire ont modifié les inégalités sur le marché du travail. Nous argumentons que les travailleurs et travailleuses dans différentes relations de travail sont affectés à des degrés divers par ces changements et étudions l'impact du télétravail, de la polarisation entre le personnel stable et le personnel périphérique ainsi que des changements du temps de travail pendant la pandémie de Covid-19 sur la sécurité d'emploi perçue. Sur la base des données du Panel suisse de ménages et l'enquête

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complémentaire « Covid-19 », nous démontrons que les inquiétudes perçues concernant la précarité de l'emploi dépendent de l'adoption de formes flexibles d'emploi. En particulier, le chômage partiel a accru la perception de l'insécurité de l'emploi.

Mots-clés: Pandémie de Covid-19, insécurités perçues sur le marché du travail, télétravail, flexibilisation, emploi atypique

1 Introduction

The Covid-19 pandemic and the political measures to contain it (Hale et al. 2020; Hale et al. 2021), including lockdown measures, (temporarily) altered many aspects of social life. Its social and political impact on health and economic risks was very unequal (e.g. Bambra et al. 2021).

In Switzerland, for example, pre-existing economic inequalities were exacerbated by the pandemic and households with the lowest incomes reported the largest reduction in income and subjective well-being at the beginning of the pandemic and the slowest normalization after the first semi-lockdown (Martínez et al. 2021). The Covid-19 crisis-induced economic and health risks were related to many different aspects of a person, such as gender (Imboden and Michel 2021) or citizenship (Plümecke et al. 2022). Work-related factors like employment status or the possibility of working remotely also had an influence on the economic risks of individuals and households, such as becoming unemployed or being in short-time work (e. g. Götz et al. 2021; Martínez et al. 2021).

In this article, we investigate changes in the perception of employment insecurity¹ of dependent employees in Switzerland due to the Covid-19 pandemic, including worries about losing their employment and becoming unemployed. Existing studies show differences in the effects of the pandemic between dependent employees and self-employed workers, indicating a higher economic vulnerability of self-employed workers during the crisis (Refle et al. 2020; Holst et al. 2021), but little is known about possible changes in inequalities within the group of dependent employees in Switzerland due to differences in the employment relationship and its flexibilization. We thereby focus on the role of (i) remote work, (ii) the polarization of the core and peripheral workforce, and (iii) changes in working time of employees and employment policies during the first two waves of the pandemic in 2020 and the beginning of 2021 (including short-time work, flexible working hours and increased or reduced overtime).

¹ The concept of *job insecurity* reflects the perceived "threat to the continuity and stability of employment as it is currently experienced" (Shoss 2017, 1911), whereas the term *labour market insecurity* refers to workers' "immediate labour market opportunities if they are laid off" (Dixon et al. 2013, 1053). We therefore use *employment insecurity* to encompass both the perceived risk of losing one's job and becoming unemployed after losing that job.

As the digital transformation allows some jobs to be carried out more flexibly in terms of location, remote working from home has become increasingly important during the pandemic (Nagel 2020). However, not every employee has a job that can be done equally well from home. Therefore, our first question is: (1) Does the impact of the Covid-19 pandemic on employment insecurities differ between employees in jobs that can be done remotely and employees who work on-site (i. e. who need to be physically present at their workplaces)?

Our second question deals with whether the Covid-19 pandemic changes or reinforces pre-existing labour market inequalities between employees belonging to the "core workforce" and those belonging to the "peripheral workforce". Specifically, our question is: (2) Does the Covid-19 pandemic affect the perceived employment insecurity of employees in employment relations typically found in the "peripheral workforce" more than employees in other employment relations?

Our third question addresses changes in working time of dependent employees during the first wave (spring 2020) and second wave (winter 2020/21) in Switzerland and its impact on employment insecurity. Therefore, we ask the following question: (3) Did short-time work, overtime, overtime reduction, and flexible working hours change the perceived employment insecurities?

Empirically, we take advantage of longitudinal data from the Swiss Household Panel (Tillmann et al. 2016) and the supplementary Covid-19 survey conducted during the Swiss semi-lockdown in spring 2020 that can be linked to the Swiss Household Panel (SHP Group 2021). These data contain information on the perceived impact of the Covid-19 pandemic on employees' employment security as well as on employees' jobs, employment status, and work trajectories.

In the next section, we develop hypotheses regarding changed employment practices and their impact on employees' employment (in)security during the Covid-19 pandemic. In Section 3, we describe the Swiss case and the situation during the first two waves of the Covid-19 pandemic in 2020 and the beginning of 2021 in Switzerland when the data were collected. We then describe the methods and the data, including the Covid-19 survey that is linked to the Swiss Household Panel (Tillmann et al. 2016) (Section 4). In Section 5, we present our results, which is followed by a discussion in Section 6.

2 Covid-19 Pandemic and Employment Insecurity

2.1 Changes in Labour Market Inequalities During the Covid-19 Pandemic

Research that investigated employment insecurity in Switzerland before the outbreak of the Covid-19 pandemic found a pronounced increase in employment insecurity between 2000 and 2010. For instance, Bühlmann (2018) categorized people according to formal aspects of their contract (stable or unstable employment) and their assessment of the risk of becoming unemployed (secure, insecure, or very insecure employment). The results show that during this decade, there was a decrease in the number of people in stable and secure labour market positions and slightly less than 30 percent held such a position in 2010. The study documents an increase in the number of people who worry about their employment and, therefore, see themselves in a position with insecure or very insecure employment (Bühlmann 2018, 135): "The period between 2000 and 2010 was characterised by a massive growth of subjective employment insecurity". Moreover, Pfrombeck et al. (2020, 70–73) report an increase in job insecurity in Switzerland between 2007 and 2020, but not an increase in labour market insecurity.

Analysing the antecedents of employment insecurity in Switzerland in 2008, 2011 and 2013, Baruffini (2019) shows that socio-demographic characteristics, such as nationality, age and region of residence, and occupational characteristics, like atypical employment, whether the job is a public sector job or not and income, affect worries regarding the security of employment. With regard to atypical employment, the study indicates that workers who were employed on fixed-term contracts were more worried about their jobs and employment than workers on permanent contracts, whereas workers in part-time employment show inconstant results with no clear relation between part-time employment and worries about the security of their employment (Baruffini 2019).

Since the start of the pandemic, empirical studies have been able to document how employment and job insecurity during the Covid-19 pandemic influenced various outcomes, such as greater depressive symptoms in the U.S. (Wilson et al. 2020), depression and stress in Poland (Chirkowska-Smolak and Chumak 2021), depression and anxiety in Germany (Dragano et al. 2022), a reduction of life satisfaction in a sample of employees of a German public educational institution (Kovács et al. 2021), and emotional exhaustion, organizational deviance, and saving behaviour in China (Lin et al. 2021). In regard to the antecedents of changes in employment security during the pandemic, there are no studies for Switzerland yet. As for other countries, Holst et al. (2021) show for Germany that changes in employment insecurity caused by the first wave of the pandemic (April and May 2020) differ between occupations and class positions. Their findings demonstrate that the increase in insecurity is highest among self-employed workers. Looking at class positions, their findings indicate that employees in lower classes with a lower marketability of skills face a higher increase in employment insecurity than workers in academic and semi-academic occupations from the higher classes. These class-based differences in employment insecurity remained significant even after one year of the pandemic (Niehoff et al. 2022 with data from April and May 2021). Additionally, Bünning et al. (2020) study changes in worries regarding job loss in Germany based on an online survey conducted in in early 2020. Their results show among other things that self-employed and poorer people faced the most substantial increase in job insecurity and they document substantial sectoral differences. In terms of remote work, it has been shown that being able to work remotely during the pandemic weakened the negative impacts of the pandemic such as reduced working hours (Eurofound 2020), or for Canada, job losses (Béland et al. 2020).

This article will contribute to the literature by documenting changes in employment insecurity in Switzerland since the outbreak of this new disease and by linking these changes to job characteristics.

2.2 Changes in Employment Insecurity During the Covid-19 Pandemic

Job insecurity is a perceptual phenomenon and its antecedents include not only individual but also contextual factors (Keim et al. 2014; Lee et al. 2018; Shoss 2017), such as organizational change and economic fluctuations (Sverke and Hellgren 2002) as well as labour market and welfare system institutions (Kalleberg 2018).

Looking at perceived job insecurity during difficult market conditions, Anderson and Pontusson (2007) show in a study with data from OECD countries that national unemployment rates are positively related to people's worries about losing their job. The announcement of cost-cutting measures by a work organization (Van Egdom et al. 2022) as well as the anticipation of lay-offs (Ito and Brotheridge 2007) increase the job insecurity of employees.

As regards employment insecurity in Switzerland, in early 2020, when the first semi-lockdown was announced, employees did not know for how long the pandemic and the lockdown measures would last or what long-term effects the Covid-19 pandemic would have on the availability of jobs and the organization of work. It was a period of rapid change regarding how jobs and working times were organized (Refle et al. 2020) and a time of an impending rise in unemployment. In this situation of high uncertainty, we hypothesize that the overall worries regarding employment stability would have increased even for those employees who were able to retain their jobs during the first wave (spring 2020) and second wave (winter 2020/21) of the pandemic.

- > H1: The Covid-19 pandemic leads to an increase in perceived employment insecurity.
- 2.3 Remote Work, Labour Market Positions, and Changes in Working Time of Employees

The pandemic has led to a rapid digital transformation in the world of work and to a very strong increase in the number of people working remotely from home. Nagel's (2020) study on changes in work practices reveals that many people see the Covid-19 outbreak both as a trigger accelerating the digital transformation of work and as a trigger diminishing the importance of traditional jobs² as a secure source of income. As a result, digital forms of work become more relevant as a secure source of income (Nagel 2020).

The abilities and opportunities to undertake remote work are unevenly distributed among employees. Before the crisis, remote work was often considered to be a privilege (Lott 2019). Mergener (2020) argues that jobs with manual tasks can be organized less well as remote work than those with cognitive tasks. In particular, tasks that are closely related to digital ICT, such as answering e-mails, using the Internet, researching and consulting, enhance the accessibility of remote work. The monitoring and coordination costs of remote work vary between different job positions and tasks (e.g. depending on interactions with clients and the importance of teamwork). This makes remote work more or less worthwhile for employers (Pabilonia and Vernon 2020).

Research on the consequences of ICT shows a "computer wage premium" (e. g. Buchmann et al. 2020; Kristal and Edler 2021) for people who work with computers and have novel ICT skills. The question of a similar "remote work wage premium" or other benefits, such as a higher employment security or faster promotions for employees who work remotely, is subject of current scientific research. Pabilonia and Vernon (2020), for example, find that some employees profit from a wage premium, but the effect of working from home on wages is structured by the occupation, gender, parental status, and remote-work intensity.

In a non-crisis context, organizations are expected to move the digital transformation of work forward, including the possibility of remote work, if it enhances the company's efficiency and creates new value propositions (Vial 2019). However, the Covid-19 pandemic and the political lockdown measures forced employers to accelerate the implementation of remote work suddenly. In the context of the crisis, we expect that employees who work remotely benefit in terms of higher employment security, because these employees are able to perform their usual tasks even in the context of a semi-lockdown. Following on, we expect that workers who don't have the possibility of working remotely experience the most negative impacts of the Covid-19 pandemic, as they are often not allowed to work to their full capacity.

> Hypothesis 2a: The Covid-19 pandemic increases the perceived employment insecurity of workers who work remotely less than that of workers that cannot work remotely.

The relationship between remote work and employment (in)securities might vary depending on whether the work can be done as well remotely as on-site. Cognitive and non-manual tasks (Mergener 2020) as well as knowledge-based tasks (Arlinghaus

² In this context, traditional jobs are those jobs that remain little affected by the digital transformation but still correspond to a greater extent to the principles of standardized Taylorist-Fordist work models.

2017) are less dependent on physical locations and can therefore be done as well remotely. Thus, workers in knowledge-based fields are better suited to remote work than other jobs. In the context of this crisis, workers holding an academic position that are given the opportunity to work from home should perceive their employment insecurity as lower than workers in non-academic jobs.

> Hypothesis 2b: The negative impact of the Covid-19 pandemic on perceived employment insecurity is weaker for workers holding an academic job who work remotely than for workers that cannot work remotely.

Labour markets, as well as positions within companies, are structured according to the economic vulnerability and privileges of employees. Two concepts that describe this structure are the insider-outsider divide (e.g. Rueda 2005; Schwander and Häusermann 2013) and the core-peripheral workforce dualism (e.g. Atkinson 1984; Hakim 1990).

The literature on the insider-outsider dualization of the labour market argues that "labor is divided into two segments: those with secure employment (insiders) and those without (outsiders)" (Rueda 2005, 61). When employment flexibility is required during periods of fluctuation in labour demand, it is difficult to make external adjustments (such as lay-offs or temporary lay-offs) for permanent full-time workers (Edler 2020). This creates a mutual bond between employer and employee. These employees can be referred to as "insiders". They have long-term employment prospects, which also means that they are protected from competition from external labour markets (Sørensen 1983) and enjoy opportunities for advancement in the company's internal labour market (Lutz 1987; Sengenberger 1987), whereas labour market "outsiders" are not, or are less, protected by labour market institutions and are therefore at higher risk of being in precarious positions or being unemployed (Biegert 2019). Even though the insider-outsider divide can be assumed to be weaker in Switzerland than in other corporatist countries due to its lower employment protection (OECD.stat data 2023), a gap between employees can still be expected according to the core-peripheral workforce dualism (e.g. Atkinson 1984; Hakim 1990). Considering employment policies within companies Atkinson (1984) argues that there is a segmentation of workforces into core and peripheral to generate external flexibility, but at the same time to create a certain personnel stability. On the one hand, companies employ a core group of people who are responsible for the companies' key activities. Workers in this core group have company-specific skills and a functional flexibility and can be redeployed to different tasks and functions. The size of the core group is numerically stable and benefits from financial stability, e.g. in the form of full-time permanent careers (Atkinson 1984). The peripheral workforce, on the other hand, is subject to numerical flexibility adjustments. These workers have lower job security, more precarious job conditions and fewer career opportunities. This can also be shown empirically: studies show that there is a divide between permanent and temporary workers regarding subjective employment insecurity, whereby temporary workers have greater employment insecurity than permanent workers (Balz 2017; Burgoon and Dekker 2010; Chung 2019; Debus et al. 2014). Consequently, in times of financial stress at the level of the company or in an economic crisis in general, the risk of dismissals for people in different jobs is unevenly distributed. The argument is that labour market outsiders or people in peripheral positions in companies face a higher risk of losing their jobs and having periods of unemployment (e.g. Rueda 2014).

We argue that the semi-lockdown during the Covid-19 pandemic has led to a reduced demand for labour in the course of the economic downturn. Companies that have to dismiss staff as a consequence of the economic downturn in early 2020 will lay off employees in positions that are more dispensable for the company. These positions are characterized by temporary employment or employment with reduced working hours, as this employment is designed to flexibly adapt the workforce to the labour demand: temporary employment serves to generate external flexibility through the use of external labour markets. In times of increased demand, employees are hired from the external labour market, and in times of lower demand, employment contracts are no longer extended. Part-time employment, on the other-hand, is used for internal flexibility, which means that the company keeps its workforce, but the work organization is flexibly geared to the needs of the company (Keller and Seifert 2006; Liebig and Hense 2007).

Also, workers may differ in their job security depending on their tenure and time spent in unemployment. When dismissing employees with less accumulated (company-specific) human capital, employers will lose less investment, e.g. in further education or on-the-job training. Moreover, long periods of unemployment also show a missing accumulation and devaluation of (job-specific) human capital, as the formation of human capital obtained on the job is interrupted and obsolescence and dismantling of human capital can lead to a plunge in human capital.

› Hypothesis 3: The Covid-19 pandemic increases the perception of employment insecurity of employees belonging to the "core workforce" less than that of employees belonging to the "peripheral workforce".

During the first wave of the pandemic (May and June 2020), employers quickly adapted their organizational practices and employment policies to respond to economic fluctuations and changes in legal obligations. Employees faced adjustments regarding their working time, such as short-time work, flexible working hours, and an increase or reduction in overtime (Refle et al. 2020).

We argue that the changes in working time function as a signal regarding the present and future viability of a job. Employees who face a reduction in working time, such as a state-subsidized short-time work arrangement or a requirement to reduce overtime, will perceive employment insecurity as higher. Conversely, people who have to work more overtime have a lower perceived employment insecurity because it sends a positive signal to employees that their jobs are in high demand during a time of high uncertainty.

> Hypothesis 4: The Covid-19 pandemic affects the perception of employment (in)security for employees in jobs where the working time has changed (shorttime work, flexible working hours, and increased or reduced overtime) due to the pandemic.

3 The Swiss Context

Before the pandemic, the Swiss labour market was characterized by a comparatively low unemployment rate (OECD 2018), and it has shown high resilience to large economic shocks in recent decades (Lalive and Lehmann 2020). Switzerland is known for its labour flexibility in terms of low employment protection (OECD.stat data 2023) related to a rather weak insider-outsider labour market. But due to the low unemployment rates owing to the high labour demand in pre-crisis times, labour relations were quite stable (Gebel 2013). However, the crisis may have triggered a change, as the mandated political measures and the changes in economic demand had a direct impact on employment relations in Switzerland (Refle et al. 2020; Götz et al. 2021).

Switzerland was strongly affected by the first wave of Covid-19 in early 2020. The first confirmed case was recorded on 25 February 2020. Within days, the authorities declared an "extraordinary situation", banned larger events with over 1,000 participants and started an information and prevention campaign (FOPH 2020a). Throughout March, the virus continued to spread quickly. At the time, Switzerland was among the countries with a high number of medically detected infections per capita across the world (Salathé et al. 2020) and the pandemic had a low-to-moderate effect on the overall death rate during the first wave (Kontis et al. 2020). The incidence was especially high in the Italian-speaking part of Switzerland (Ticino) and in the French-speaking cantons of Geneva and Vaud (Kuhn et al. 2021).

In mid-March 2020, the federal government implemented containment measures (Uhlmann and Scheifele 2021). These emergency policies prohibited social gatherings with more than five people and included distancing measures, travel restrictions, and the closure of non-essential retail businesses, bars, restaurants, schools, and other public institutions. Other business sectors like the industrial sector, construction, hotels and supermarkets did not have to close down. The government took measures to reopen in multiple steps from the end of April to mid-June. This semi-lockdown was accompanied by regulations regarding financial aid for businesses, state-subsidized short-time work, and other economic support measures (Eichenauer and Sturm 2020; Uhlmann and Scheifele 2021). In addition to the legal measures, the authorities strongly encouraged the population to stay at home and to work from home whenever possible.

Economic activity in Switzerland started to decline after the first confirmed case was recorded and the federal authorities declared an "extraordinary situation" at the end of February 2020 and even before formal measures were implemented (Eckert and Mikosch 2020). It began to recover slowly at the end of April and accelerated when the containment measures ended. By late June 2020, sales activity had approached normal, pre-pandemic levels (Eckert and Mikosch 2020).

Even though the actual percentage of unemployed workers only increased slightly (around 1 percentage point) during the first and second waves of the pandemic (SECO 2022)³, it is still likely that employment (in)security varied among groups of employees as research shows that the groups at higher risk of becoming unemployed in Switzerland at the beginning of the pandemic in 2020 were temporary employees, employees with little tenure and younger employees (Götz et al. 2021).

The initial employment shock of the Covid-19 crisis also triggered a rise in short-time work (Refle et al. 2020; FSO 2021; Götz et al. 2021). During the first wave in April and May 2020, there were substantial changes in the work situation of employees, apprentices, and interns in Switzerland: 22 percent reported that they worked partially and 25 percent entirely from home due to the semi-lockdown (Refle et al. 2020). A considerable share of employees self-reported that their overall working time and working time patterns had changed, e.g. 19 percent reported that they were working short-time, 13 percent had to work overtime and 17 percent reported a flexibilization of working hours (Refle et al. 2020).

The peak of the second, deadlier wave of the Covid-19 crisis (FOPH 2022) was in November and December 2020. At the same time, people realized that an end to the pandemic was not in sight anytime soon. In response to the rising number of cases, the national government decided to implement a new set of measurements to reduce the spread of the virus in October 2020, including a mask mandate. In November and December additional restrictions were implemented, including the closure of universities and other institutions of higher education, shorter opening hours, and later the closure of restaurants, museums, and other cultural institutions and the banning of spectators from sports events (Federal Council 2000a; 2020b). The roll-out of the vaccination campaign started in December 2020 (FOPH 2020b). In mid-February 2021 the federal government began to reverse some of the lockdown measures.

Short-time work compensations by the national unemployment insurance (UI) were a very important political instrument aimed at preventing lay-offs during an economic crisis in Switzerland (Eichenauer and Sturm 2020). Companies

³ The pre-pandemic registered unemployment rate (based on SECO definition) in January 2020 was 2.6 percent. It rose to 3.4 percent in May 2020 and peaked in January 2021 at 3.7 percent before it dropped back to pre-pandemic levels. In March 2022, the Swiss unemployment rate was 2.4 percent (SECO 2022).

could apply for this instrument when there is a temporary and substantial reduction in labour demand. The employees affected by short-time work were compensated with 80 percent of the income they lost due to the reduction of working hours.⁴ In Switzerland, the use of short-time work had grown to 37 percent of the labour force by the end of May 2020 (Arni 2020).

4 Data and Methods

We use data from the Swiss Household Panel (SHP) on living conditions and societal change in Switzerland (SHP Group 2021). The SHP is an ongoing household and person survey, representative of the Swiss residential population conducted by the FORS (Swiss Foundation for Research in Social Sciences). Our study builds on (1) two panel waves of the SHP: the standard sample "wave 21" collected between September 2019 and March 2020 a few months before the outbreak of the pandemic and the beta version of the standard sample "wave 22" collected between September 2020 and February 2021 extending over the several stages of the second wave. (2) A further supplementary survey on the Covid-19 pandemic collected between May 2020 and June 2020 after the first peak of the pandemic is linked to the two SHP panel waves. In total, 5843 respondents of the supplementary survey on the Covid-19 pandemic 2020/21 could be linked to the standard sample wave 2019/20 and 5629 respondents from the beta version of the sample wave 2020/21. In this article, we analyse data for individuals aged 18 to 65 who were employed in both waves of the standard SHP as well as in the supplementary survey, bearing in mind that there could be a selection bias, as those workers that were unemployed at one of the data points might be inherently different from those who were not unemployed.5

We know from other studies that there are substantial differences in the effects of the pandemic between self-employed workers and dependent employees, indicating a higher economic vulnerability of self-employed workers during the crisis (Refle et al. 2020; Holst et al. 2021). However, the aim of this study is to examine possible changes in inequalities due to differences in the employment relationship and its flexibilization. Therefore, we exclude self-employed workers from our analytical sample and focus on dependent employees. Furthermore, employees enrolled

⁴ Before and at the very beginning of the Covid-19 pandemic, short-time work was limited just to employees in permanent employment. By March 2020, the allowance of short-time work had been extended to fixed-term and temporary employees (Arni 2020). Employees with fixed-term contracts could receive this compensation until the end of August 2020 and from January to September 2021.

⁵ Workers belonging to the "non-core workforce" might have had a higher likelihood of being unemployed during the first wave (spring 2020) and second wave (winter 2020/21) of the pandemic. Thus, our estimated risks of job loss and the change scores of unemployment might be underestimated. However, this bias should be quite small as unemployment increased only by around 1 percentage point during the Covid-19 pandemic (see Chapter 3).

in education at the time of the survey are excluded. After restricting our data, our analytical sample I, consisting of data from the standard wave of 2019/20 linked to data from the supplementary Covid-19 survey, includes 2258 individuals. In our analytical sample II, the standard wave of 2020/2021 is additionally added. Due to missing values in the standard wave of 2020/2021 and changes in work status⁶, the sample size of analytical sample II is reduced to 1959 people. Table A.1 shows the sample reduction after each data restriction and deletion of missing values of variables included in the analyses.

4.1 Dependent Variables

The purpose of this paper is to study changes in the perception of employment (in)security of employees due to the Covid-19 pandemic. We use two variables, one from the regular survey and one from the supplementary Covid-19 survey.⁷

In studying whether, according to the respondents, the employment insecurity changed during the first wave of the Covid-19 pandemic (spring 2020), we use the following question measured on a 10-point scale:

How big do you assess the risk of losing your job as the result of layoffs or company closure due to the coronavirus crisis for yourself in the next 12 months? The risk of job loss was assessed on a scale of 0, meaning "no risk at all", to 10, meaning "very high risk".

As the data collection took place at the end of the first wave of the pandemic (spring 2020), the negative impact of the Covid-19 pandemic on the perception of employment insecurity of dependent employees might vary from the further course of the pandemic. Therefore, we also consider change scores using a question with the same wording in both the standard waves (2019/20 and 2020/2021) to measure the perceived risk of losing one's job and becoming unemployed:

How do you evaluate the risk of becoming personally unemployed in the next 12 months? The risk of job loss was assessed on a scale of 0, meaning "no risk at all", to 10, meaning "very high risk".

The change scores are built upon intra-individual difference of the variable "perceived risk of becoming unemployed" measured before the pandemic and during the second wave of the pandemic (winter 2020/21) encompassing several stages of the second wave.

⁶ Changes in work status are changes to self-employment, the start of further education or unemployment in 2020/2021.

⁷ The wording of the question in the supplementary survey is different from the regular panel surveys.

4.2 Explanatory Variables

The main independent variables in our analyses are, firstly, information about whether it is possible for employees to work remotely from home. The dummy variable is coded 1 if employees are working partly or fully from home and 0 otherwise. However, as remote work and the possibility of carrying out work without productivity losses vary according to whether the worker is holding an academic job, we use an interaction term of the variables "working remotely from home" and "academic job" in the analyses. We built the dummy variable "academic job" on the basis of the ISCO (3-digit) occupational qualification, classifying all people with professions for which academic training is commonly required as one.

Furthermore, we include information about whether workers are in job positions typically used for internal and external flexibilization. This is operationalized using two different variables. We use the employees' work status distinguished as (1) three different categories of work volume: less than 50 percent, between 50 and 80 percent, and more than 80 percent and, (2) whether the job is fixed-term or permanent, offering a different potential of labour flexibilization. To operationalize whether a worker belongs to the core or peripheral workforce we additionally use tenure and time in unemployment. Tenure is used as an indicator of belonging to the core workforce. With increasing tenure the accumulated company-specific skills and knowledge grow and the mutual bond between employer and employee becomes firmer.

The opposite is true with experienced unemployment. As peripheral workers alternate more often between employment and unemployment, we use the accumulated length of unemployment throughout the employment biography to depict that group of employees. We calculate the accumulated length of unemployment measured by a categorical variable with four categories: accumulated unemployment of (a) less than three months, (b) three to six months, (c) seven to eighteen months, and (d) more than eighteen months.

Additionally, we consider employment policies that were increasingly utilized during the Covid-19 pandemic to react to the changes in labour demand. First and foremost is (1) short-time work, a flexibility strategy that was very frequently used during the pandemic to keep employees in the labour market. Besides short-time work, we also consider (2) flexible working hours, (3) reduction of overtime, and (4) increased overtime⁸ used to deal with changes in the labour demand during the pandemic.

We control for confounding factors by including gender, age and age squared⁹, education¹⁰, and firm size. While data collections during the pandemic took place

⁸ In Switzerland, overtime must be compensated by an additional wage supplement of 25 percent of the regular wage or by free time of at least the same duration as the overtime.

⁹ Because age has a non-linear effect, the squared terms of both variables are also included to model the diminishing marginal negative effect on economic vulnerability with increasing age.

¹⁰ Education is measured in four categories: low education encompasses individuals with incomplete compulsory school, completed compulsory school, elementary training, domestic science

over several months, we include the date of interview to control for timing issues and to avoid biased results deriving from differences in the development of the pandemic. Furthermore, as the economic structure and labour market situation as well as the spread of the Covid-19 virus vary regionally, dummy variables for each economic region are added as control variables (NUTS1¹¹). Furthermore, employment relations of workers categorized as outsiders are spread very unequally across the individual sectors of the economy. We therefore include economic sectors measured by the General Classification of Economic Activities (NACE Rev. 1.1) grouped in 14 categories.¹² Since too many cases would be lost if missing values of economic sectors were excluded from the analyses, an extra category for missing values (MV) is included in the analyses. We additionally run all models using occupations measured by one-digit ISCO-88 codes instead of economic sectors; they show similar results.¹³ Given that individuals living in a partnership might be less worried about losing their jobs as they can mutually support each other, we include the control variable "living with a partner". In this context, moreover, it might be significant whether the major share of the household's income relies more on one main earner. Consequently, we include an interaction term of the variable "living with a partner" and a variable capturing whether the individual earns more than 60 percent of the household earnings.

Since we have information about the work status in both standard SHP waves collected in 2019/20 and 2020/21, we use as additional control variables changes in the work volume as well as changes from fixed-term to permanent and vice versa to capture changes in the work status during the Covid-19 pandemic when using analytical sample II. The descriptive statistics for all variables are presented in the Appendix (Table 2).¹⁴

course, one year school of commerce or general training school; medium education encompasses individuals with completed apprenticeship (Swiss Federally Recognized Competence Certificate CFC, Swiss Federally Recognized Competence Certificate EFZ) or full-time vocational school; high education I encompasses individuals with a completed bachelor/maturity, vocational high school with master certificate or federal certificate, technical or vocational school or vocational high school (École Technique Supérieure ETS, Higher Technical Institute HTL etc.); high education II encompasses individuals with university, academic high school, HEP, PH, HES, FH.

¹¹ Mittelland (BE, FR, SO, NE, JU), Lake Geneva (VD, VS, GE), North-West Switzerland (BS, BL, AG), Zurich, East Switzerland (GL, SH, AR, AI, SG, GR, TG), Central Switzerland, (LU, UR, SZ, OW, NW, ZG), Ticino.

^{12 (1)} Agriculture, hunting, forestry; (2) manufacturing; (3) electricity, gas and water supply; (4) construction; (5) wholesale, retail, motor vehicle repairs, household goods; (6) hotels and restaurants; (7) transport, storage, and communication; (8) financial intermediation, insurance; (9) real estate, renting, computers, research; (10) public admin, national defence, compulsory social security; (11) education; (12) health and social work; (13) other community, social and personal service activities; (14) extra-territorial organizations and bodies.

¹³ These additional models are available upon request.

¹⁴ Testing for differences between the two datasets (a) the analytical sample I and (b) the analytical sample II with a t-test shows that the means do not differ between the samples for the majority of variables: one out of fifty variables has a significantly different mean at a 95 percent level and nine at a 99 percent level.

4.3 Analytical Strategy

In the statistical analyses, we estimate OLS regressions for (1) the perceived risk of job loss due to the pandemic during its first wave (spring 2020) using analytical sample I. We then estimate (2) the change scores of perceived job insecurity calculated on the basis of intra-individual differences of these variables measured before the Covid-19 pandemic and during the second wave (winter 2020/21) of the pandemic using analytical sample II. For each of these dependent variables we carry out a baseline model only including the control variables (see model 1), separate models with several sets of variables testing our hypotheses (see models 2–4) and a full model including all variables (see model 5). In all models, we use populationbased weights to correct for potential biases.

5 Results

5.1 Descriptive Analyses

Both of the variables "risk of job loss due to the Covid-19 pandemic" and "change scores of risk of unemployment" (in Table A.2) show that employment insecurity increased during the Covid-19 pandemic. With regard to the first wave of the pandemic (spring 2020), perceived risk of job loss increased by an average of 1.618 points on a scale of 0 to 10. The variable "change scores of risk of unemployment" refers to the changes in the risk perception of becoming unemployed comparing the risk perception before the Covid-19 pandemic and during the second wave of the pandemic (winter 2020/21) (see Table A.3). The change scores show that the risk perception of becoming unemployed increased by an average of 0.271 points on a scale from -10 to 10. These results are in accordance with our first hypothesis: The Covid-19 pandemic leads to a increase in perceived employment insecurity.¹⁵

In the next paragraph we consider how changes in employment security due to the Covid-19 pandemic differ between employees.

5.2 Multivariate Analyses

Tables A.4 and A.5 present the results from the OLS regression analyses. These regressions predict changes in the perceived employment insecurity during the Covid-19 pandemic. While Table A.4 uses the perceived change of risk of job loss

¹⁵ The difference in means of the variables "risk of job loss due to the Covid-19 pandemic" and "change scores of risk of unemployment" suggests that perceived job insecurity went up during the first lockdown but then recovered. For further interpretation, however, it must be recalled that these statistical measures are not directly comparable. This is because the time of measurement is once in cross-section (sample I) and once in longitudinal section (sample II). In addition, the scale of the dependent variables differs from each other.

due to the Covid-19 pandemic as dependent variable, Table A.5 uses the change scores of risk of unemployment. Model 1 (in Tables A.4 and A.5) shows the results for the control variables. In models 2–4 (in Tables A.4 and A.5), the specific variables testing the hypotheses are added. Model 5 (in Tables A.4 and A.5) includes all variables together. To facilitate the interpretation of the variables that relate to our hypotheses, we show predicted margins based on model 5 for the central variables (see Figures 1 and 2). Our first model indicates that the control variables have little explanatory potential. This shows that job segmentation with regard to the risk of job loss is not primarily induced by industry, region, or company size. Only after including variables that measure polarization of the "core" and "peripheral workforce", as well as changes in employment policies and employees' working time during the first two waves of the pandemic in models 4 and 5, the explained variance increases substantially.

To test our second hypothesis, we estimate the effect of remote work on the changes in perceived employment insecurity in model 2. The results of the main effects show no differences between employees who work remotely and those who work on-site. However, when introducing an interaction effect between "academic job" and "working remotely", the hypothesis is supported in model 3 for the dependent variable "risk of job loss" referring to the first wave of the pandemic (spring 2020) but not for the change scores models with the dependent variable "change scores of risk of unemployment" referring to the second wave of the pandemic (winter 2020/21). This means that the perceived employment insecurity of employees in academic jobs who had the possibility of working remotely increased less severely than for employees who had no possibility of working remotely during the first wave of the pandemic (spring 2020) (see model 3 in Table A.4).

However, when including the variables measuring work status and accumulated length of tenure and unemployment (see model 5 in Table A.4), results for the first wave become insignificant. This suggests that working remotely in an academic job led to a decreasing risk of job loss at the beginning of the pandemic when there was a semi-lockdown during which all employers had been encouraged to instruct their employees to work from home whenever possible. But this is mostly moderated by variables regarding employment flexibility. This could be due to the fact that academic jobs are associated with other characteristics such as greater internal flexibility due to greater temporal flexibility (such as flexible working hours or the possibility of working part-time).

Building on our third hypothesis, we analyse whether the employment insecurity of employees belonging to the "core workforce" was increased less by the Covid-19 pandemic than that of employees belonging to the "peripheral workforce". Two forms of atypical employment – part-time and temporary work – as well as the accumulated tenure and length of unemployment are considered. Employees in part-time employment did not perceive greater employment insecurity during the Covid-19



Note: Predicted margins of the OLS regression model 5 in Table A.4; N = 2258; R² = 0.201. Source: Authors' calculations of the SHP data (analytical sample II: analytical sample II: analytical sample I: SHP standard sample "wave 21" 19/20 and Covid-19 survey 20).

Figure 2 Change Scores of Risk of Unemployment



Note: Predicted margins of the OLS regression model 5 in Table A.5; N = 1959; R² = 0.132. Source: Authors' calculations of the SHP data (analytical sample II: standard sample "wave 21" 19/20 and Covid-19 survey 20 and standard sample "wave 22" 20/21).

pandemic. This suggests that in times of crisis, such as the Covid-19 pandemic, when labour demand decreases, part-time work can be used flexibly to adapt the workforce to the labour demand¹⁶ without making use of the employment policy of "hiring and firing". This holds true especially for the case of Switzerland: here the percentage of part-time workers is relatively high compared to other European countries, and part-time workers often have to reduce or extend their working hours depending on the workload to be done (Krone-Germann 2011). It is different for employees in fixed-term employment. The results indicate that employees who were in fixed-term employment showed an increased risk perception of becoming unemployed during the second wave of the pandemic (winter 2020/21) compared to employees with a permanent contract. This is in line with our hypothesis. According to hypothesis 3, employees and thus run the risk, especially in times of crisis, of being dismissed or becoming unemployed as expiring employment contracts are not extended.

When considering tenure as a variable measuring whether workers belong to the "core workforce", it reveals that increasing employment insecurity is not dependent on tenure. Also, as regards the length of unemployment, the results do not support our hypothesis. Even though long periods of unemployment in the working life suggest that employees belong to the "non-core workforce", the perception of risk of becoming unemployed is less increased for employees with long periods of unemployment (more than 18 months) than for employees with short or medium unemployment (less than 18 months) during the second wave of the pandemic (winter 2020/21). Adopting Kraemer (2008) and Kraemer and Speidel's (2005) theoretical concept of the precarization of labour, where especially in times of labour precarization, fears of losing one's job and "slipping down" socially pass on to employees in standard employment relationships, provides a possible explanation for this finding. While workers who experienced long or frequent unemployment periods already had to cope with a lower level of employment security before the pandemic, but showed no or only a relatively limited increase of risk perception of becoming unemployed during the pandemic, the risk perception of becoming unemployed increases for workers who enjoyed stable employment during the pandemic. Therefore, the results suggest that the fear of losing one's job and becoming unemployed is not restricted to employees in unstable employment relationships but also affects employees in standard employment relationships in times of crises such as the Covid-19 pandemic.

So far, we have considered remote work of employees in academic and non-academic jobs, employment policies of part-time and fixed-term employment, as well as tenure and length of unemployment throughout the employment biography. Yet, as argued above, it is possible that new inequality patterns between employees in different employment relations have been created during the Covid-19 pandemic.

¹⁶ Also known as "internal flexibility" (see Liebig and Hense 2007).

In the following, we examine whether, and to what extent, the pandemic affected the employment insecurity depending on newly introduced employment policies to adjust the workforce to the changed demand. Figures 1 and 2 (Tables A.4 and A.5) show that short-time workers (explicitly due to the pandemic) experience an increase in employment insecurity. None of the other newly introduced employment policies used to adjust the workforce to the changed demand, such as overtime reduction, flexible working hours, and overtime work, showed any significant effects.

The rise in employment insecurity caused by short-time work can be attributed to two factors: the reduction in working hours signals, on the one hand, that one's own workforce is dispensable, but on the other hand, it can also indicate that there are structural factors leading to short-time work. Even though the primary objective of short-time work is to help companies to cope better with the crisis and thus help to retain jobs so that social costs are limited, this applies only for jobs threatened by a short-run lack of demand due to the Covid-19 pandemic shock. However, if structural factors lead to a company's difficult economic situation, the policy instrument of short-time work might hinder restructuring and lead to staff reduction at a later point in time (Arni 2020; Konle-Seidl 2020). Hence, the results reveal that some employees are concerned about the ability of their companies to absorb the crisis or about the future survival of their jobs. Similar results are shown by Arni (2020) indicating a striking increase in the job loss fear of employees in short-time work.

6 Discussion

The Covid-19 pandemic has brought about overarching changes in private and work life. The accompanying mobility and distancing restrictions have been fairly universal. Research early on in the pandemic suggests that the consequences of the crisis, such as earning losses (Martínez et al. 2021) and work-related mental (e.g. Dragano et al. 2022) and economic risks (e.g. Holst et al. 2021), for individual employees are not, however, universal. This paper investigates who is experiencing changes in their employment (in)security and thereby contributes to a better understanding of the impact of the pandemic. More precisely, our focus is on dependent employees in different jobs and employment relations.

Using the two most recent available standard surveys of the Swiss Household Panel ("wave 21" and "wave 22") linked with the supplementary Covid-19 survey, we investigate possible new labour market inequalities as a result of the Covid-19 pandemic and the reinforcement of pre-existing labour market inequalities among employees in Switzerland. Our multivariate analyses provide evidence that the employment insecurity of employees increased only for some employees through the first and second waves of the Covid-19 crisis in 2020 and the beginning of 2021. Working from home became increasingly important during the Covid-19 pandemic (Nagel 2020). However, working from home is not equally suitable for all tasks and employees: while, for example, tasks for academic workers in knowledge-based fields of activities rely less on specific environments (such as factories or workshops), manual tasks still correspond to a greater extent to the principles of standardized Taylorist-Fordist work models linked to certain machines in production facilities or to customer services (Mergener 2020). Accordingly, the results confirm that employees in academic jobs who had the possibility of working from home experienced less employment insecurity than other employees during the semi-lockdown at the beginning of the pandemic when employees were required to work from home. However, this effect becomes insignificant when adjusting for other dimensions of labour market insecurities such as employment policies generating greater temporal flexibilities. Also the explained variance increases considerably (in models 3 and 4) when including these variables. This shows that job segmentation in terms of risk of job loss during the Covid-19 pandemic is primarily caused by variables measuring the polarization of the core and peripheral workforce, as well as changes in working time of employees and employment policies during the first two waves of the pandemic.

Investigating whether already existing inequalities in the Swiss labour market between employees belonging to the "core workforce" and employees belonging to the "peripheral workforce" were reinforced, some differences between the first and second waves of the pandemic become apparent. While employees in fixed-term employment did not show any differences in employment insecurity compared to employees with a permanent contract in the first wave of the pandemic, this changed in the second wave. This might be explained by the fact that during the first wave people were not yet aware of the extent and duration of the Covid-19 pandemic and employees may have had hopes that it would soon be over and the labour market situation would recover immediately afterwards. Similarly, companies might still have held back dismissals or cuts in compensations for employees. However, during the second wave of the pandemic it became clear that the end of the pandemic was not in sight and the political will to protect non-core workers subsided.

With regard to the employment biography, our analyses reveal that contrary to the expectations expressed in hypothesis 3, the accumulation of a rather long period of unemployment did not result in a greater increase in employment insecurity during the pandemic. Indeed, if one looks at the results referring to the second wave of the pandemic, employees with no or short to medium accumulated unemployment showed a higher increase in risk than those with long periods of unemployment. How should this striking result be interpreted against the background that these employees with low accumulated unemployment showed a relatively high level of employment security before the pandemic? According to Kraemer (2008) and Kraemer and Speidel's (2005) theoretical concept, the fear of losing one's job or falling into precarity is not restricted to employees in atypical employment, but in times of increasing labour precarization it also encompasses employees in standard employment relationships. In line with this, our results suggest that employment security eroded through the pandemic, and this became apparent in the second Covid-19 pandemic wave.

Finally, if we consider different forms of employment, short-time work was the most widely used employment policy during the first wave of the Covid-19 pandemic (Refle et al. 2020). Short-time work is intended to help companies cope with crises, preserve jobs, and avoid social costs when jobs are threatened by a short-term lack of demand due to an external shock. However, it signals that one's own workforce is dispensable and it delays restructuring measures and downsizing in companies with structural problems (Arni 2020; Konle-Seidl 2020). This is reflected in our results: employees experiencing short-time work might anticipate a higher risk that their company will restructure and downsize when necessary. Hence, they showed higher employment insecurities due to the pandemic during the first and second waves of the Covid-19 pandemic.

What do these results imply for the future and the field of labour market research? The findings suggest that crises such as the Covid-19 pandemic lead to different implications for employees depending on the type of flexibility. In terms of numerical flexibility, employees in fixed-term and short-time employment seem to be exposed to greater employment insecurity in times of crises, while this is not the case with employment relations generating functional or spatial flexibility.

In respect of differences between temporary and permanent employees, Switzerland represents a weak insider-outsider divide in the labour market due to the low level of protection against dismissal (Gebel 2013; Biegert 2017; OECD 2022).¹⁷ In such weak insider-outsider labour markets, employees in fixed-term employment tend to have a low risk perception of employment insecurity when the economic situation is as favourable as was the case in pre-pandemic times, particularly in Switzerland, with its high demand for labour (Lalive and Lehmann 2020). Our results suggest that in times of crisis such as the Covid-19 pandemic, when employers actually refrain from, and/or are assumed to refrain from, keeping someone employed after the end of the fixed-term contract or recruiting new employees, the perception of employment insecurity rises for employees on fixed-term contracts.

In this context, it would be interesting for further research to see whether there are parallels of our findings with changes in (in)security perceptions in other crises. An empirical comparison between this pandemic and a previous economic crises such as the 2008 financial crisis (e.g. Chung and van Oorschot 2011) would therefore give us a more accurate understanding of the scope and mechanisms of the impact on economic risk perceptions.

Another interesting avenue for future research would be a comparison between countries to further investigate how the Covid-19 pandemic led to different changes

¹⁷ Further characteristics of the weak insider-outsider job market in Switzerland are the relatively low union density, bargaining coverage, and strike incidence (Visser 2007).

in the employment insecurity and reach the "core workforce" depending on welfare state regimes to learn more about the different mechanisms leading to labour market inequalities in times of crises.

Besides, looking at remote work – a form of spatial flexibility – only academic professions seem to be partially protected by the increased perceptions of employment insecurity. Given the rise in remote work (Nagel 2020), it is still uncertain whether the use of remote work will endure after the pandemic and what consequences this will have. However, in this context, it should also be considered that remote work cannot be seen just as a positive opportunity offering increased autonomy and greater compatibility of work and private life. For some employees it turned out to be an additional strain (e. g. if they did not have a quiet workspace at home or were distracted by other obligations).

Moreover, as previous research showed that the Covid-19 pandemic affected well-being and the general health (e.g. Kuhn et al. 2021, Recchi et al. 2020, Tušl et al. 2021), it would be promising for further research to add this aspect and to examine the impact that employment insecurity has on health and well-being in Switzerland.

Last but not least, employees in short-time employment are affected by the increase in employment insecurity. But it remains open, whether short-time work actually lead to job losses later on. While during the first wave of the pandemic (spring 2020), Switzerland took swift action to protect workers from the markedly adverse effects of the economic instability by pledging short-time work with government income support, a further interesting research question would therefore be whether these employment measurements will have a lasting effect and contribute to securing jobs in the long run. In light of this, long-term analysis is required as many of the effects of the pandemic will only fully unfold in the long term.

This study is not without limitations. Firstly, the data we used relate only to the first and second waves of the Covid-19 pandemic in 2020 and the beginning of 2021.

Secondly, we have used the "Covid-19 Study", a supplementary survey of the SHP, which provides cross-sectional data for studying the changes in the risk perception during the first wave of the pandemic. In contrast to the second wave, this data structure does not allow change score models to study the effects of the first wave of the pandemic. This can lead to biased estimation of the effects of the first wave, for example in the case when employees with different forms of employment relationships already differed in their general risk perception before the pandemic. It is therefore not clear whether differences in the results between the two waves of the pandemic derive from the differences in statistical modelling or from actual changes between the waves.

Thirdly, we have not considered the entire labour force, but only those who remained in work, excluding a small but vulnerable percentage of workers who have lost their jobs or who were already unemployed but actively searching for a job before the outbreak of the pandemic.

Forth, we could not study how the pandemic affected the perceived job (in)security of foreign workers in the border regions daily commuting to work (which have been effected by border related restrictions) as the sample only includes individuals living in Switzerland.

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Appendix

Table A.1 Sample Size

(a) Analytical sample I		(b) Analytical sample II	
	N		Ν
Standard sample "wave 21" 19/20 and Covid-19 survey 20	5843	Standard sample "wave 21" 19/20 and Covid-19 survey 20 & standard sample "wave 22" 20/21	5629
Sample restriction to workers that are		Sample restriction to workers that are	
active in the labour market in wave 21	3419	active in the labour market in wave 21 and in wave 22	3572
employed in wave 21	3202	employed in wave 21 and in wave 22	3120
aged 18–65 years in wave 21	3039	aged 18–65 years in wave 21 and in wave 22	2985
in dependent employment in wave 21	2723	in dependent employment in wave 21 and in wave 22	2322
not enrolled in education in wave 21	2662	not enrolled in education in wave 21 and in wave 22	2175
After deletion of missing values in wave 21*	2258	After deletion of missing values in wave 21 and in wave 22*	1959

Note: *The exclusion of missing values does not involve missing values of the variable "economic sector" since too many cases would be lost. In the analyses missing values of the economic sector are included as an extra category.

		•								
		(a) analytical wave 21" 19.	sample I: stanc '20 and Covid–	tard sample 19 survey 20		(b) analytic Covid–19	al sample II: si survey 20 an	tandard sample d standard sam	"wave 21" 1 ple "wave 22	9/20 and " 20/21
Variables	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Мах
Risk of job loss due to the Covid–19 pandemic	2258	1.618	2.164	0	10	1	1	I	1	1
Change scores of risk of unemployment	I	I	I	I	I	1959	0.271	2.284	-10	10
Date of interview: 1st half of May '20	2258	0.503	0.500	0	-	I	I	I	I	I
Date of interview: 2nd half of May '20	2258	0.171	0.376	0	-	I	I	I	I	I
Date of interview: 1st half of Jun '20	2258	0.288	0.453	0	-	I	I	I	I	I
Date of interview: 2nd half of Jun '20	2258	0.038	0.190	0	+	I	I	I	I	I
Date of interview: Aug '20	I	I	I	I	I	1959	0.044	0.205	0	1
Date of interview: Sep '20	I	I	I	I	I	1959	0.411	0.492	0	1
Date of interview: Oct '20	I	I	I	I	I	1959	0.342	0.474	0	1
Date of interview: Nov '20	I	I	I	I	I	1959	0.126	0.332	0	1
Date of interview: Dec '20	I	I	I	I	I	1959	0.034	0.181	0	-
Date of interview: Jan '21	I	I	I	I	I	1959	0.028	0.166	0	1
Date of interview: Feb '21	I	I	I	I	I	1959	0.014	0.120	0	-
Agriculture, hunting, forestry	2258	0.008	0.091	0	-	1959	0.005	0.073	0	-
Manufacturing	2258	0.118	0.322	0	-	1959	0.123	0.328	0	-
Electricity, gas, and water supply	2258	0.009	0.094	0	-	1959	0.010	0.098	0	-
Construction	2258	0.023	0.151	0	-	1959	0.021	0.143	0	-
Wholesale, retail, motor vehicle repairs, household goods	2258	060.0	0.286	0	~	1959	0.096	0.295	0	-
Hotels and restaurants	2258	0.013	0.114	0	-	1959	0.013	0.113	0	-
Transport, storage, and communication	2258	0.049	0.215	0	-	1959	0.054	0.225	0	-
Financial intermediation, insurance	2258	0.064	0.244	0	-	1959	0.067	0.249	0	-
Real estate, renting, computers, research	2258	0.123	0.329	0	-	1959	0.118	0.322	0	-
Public admin, national defence, compulsory social security	2258	0.111	0.314	0	-	1959	0.119	0.324	0	-
Education	2258	0.143	0.351	0	1	1959	0.143	0.350	0	1

Descriptive Statistics

Table A.2

Continuation of Table A.2 on the following page.

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	Contii

		(a) analytical "wave 21" 19,	sample I: stand '20 and Covid–	dard sample -19 survey 20		(b) analytic Covid–19	al sample II: s survey 20 an	tandard sample d standard samp	"wave 21" ole "wave 22	19/20 and 2" 20/21
Variables	Obs	Mean	Std. Dev.	Min	Мах	Obs	Mean	Std. Dev.	Min	Мах
Health and social work	2258	0.172	0.378	0	-	1959	0.167	0.373	0	-
Other community, social, and personal service activities	2258	0.057	0.231	0	1	1959	0.055	0.229	0	1
Extra-territorial organizations and bodies	2258	0.003	0.051	0	-	1959	0.002	0.046	0	1
Missing values sector	2258	0.017	0.130	0	-	1959	0.007	0.083	0	-
Lake Geneva	2258	0.156	0.363	0	-	1959	0.164	0.370	0	-
Mittelland	2258	0.262	0.440	0	-	1959	0.258	0.438	0	-
North–West Switzerland	2258	0.138	0.345	0	-	1959	0.133	0.340	0	-
Zurich	2258	0.171	0.376	0	1	1959	0.172	0.377	0	1
East Switzerland	2258	0.117	0.322	0	1	1959	0.118	0.322	0	-
Central Switzerland	2258	0.123	0.329	0	-	1959	0.114	0.318	0	1
Ticino	2258	0.033	0.179	0	-	1959	0.042	0.200	0	-
Firm size: 1–49 employees	2258	0.385	0.487	0	-	1959	0.355	0.479	0	1
Firm size: 50–99 employees	2258	0.123	0.329	0	-	1959	0.124	0.330	0	-
Firm size: 100-499 employees	2258	0.232	0.422	0	1	1959	0.232	0.422	0	-
Firm size: >= 500 employees	2258	0.259	0.438	0	1	1959	0.289	0.453	0	-
Swiss nationality	2258	0.956	0.205	0	1	1959	0.957	0.203	0	-
Male	2258	0.452	0.498	0	1	1959	0.476	0.500	0	-
Age (per 10 years)	2258	4.642	1.148	1.8	6.5	1959	4.748	1.055	1.8	6.5
Living with partner	2258	0.758	0.429	0	1	1959	0.850	0.357	0	-
Main earner	2258	0.470	0.499	0	1	1959	0.451	0.498	0	-
Low education	2258	0.062	0.240	0	-	1959	0.048	0.214	0	-
Medium education	2258	0.317	0.466	0	1	1959	0.358	0.480	0	-
High education I	2258	0.278	0.448	0	1	1959	0.240	0.427	0	-
High education II	2258	0.343	0.475	0	1	1959	0.353	0.478	0	-
Supervisory task	2258	0.528	0.499	0	-	1959	0.548	0.498	0	-

Continuation of Table A.2 on the following page.

		(a) analytica "wave 21" 19	l sample I: stano /20 and Covid–	dard sample -19 survey 21		(b) analytio Covid–19	cal sample II: s 9 survey 20 an	tandard sample d standard sam	e "wave 21" 1ple "wave 2	19/20 and 2" 20/21
Variables	Obs	Mean	Std. Dev.	Min	Мах	Obs	Mean	Std. Dev.	Min	Max
Change to fixed-term job	1	I	1	1	1	1959	0.010	0.100	0	-
Change to permanent job	I	I	I	I	I	1959	0.013	0.115	0	-
Decrease in working hours	I	I	I	I	I	1959	0.069	0.254	0	-
Increase in working hours	I	I	I	I	I	1959	0.058	0.234	0	1
Academic job	2258	0.387	0.487	0	1	1959	0.395	0.489	0	1
Working remotely	2258	0.426	0.495	0	1	1959	0.431	0.495	0	-
Volume of working hours: >80 %	2258	0.198	0.399	0	1	1959	0.169	0.375	0	-
Volume of working hours: < 50 %	2258	0.277	0.448	0	1	1959	0.278	0.278	0	-
Volume of working hours: 50–80 %	2258	0.525	0.499	0	1	1959	0.553	0.553	0	-
Fixed-term	2258	0.050	0.217	0	1	1959	0.032	0.177	0	-
Tenure (in years)	2258	12.843	8.842	0.014	22.175	1959	13.270	8.711	0.014	22.170
Unemployment: <3 months	2258	0.892	0.892	0	1	1959	0.894	0.307	0	-
Unemployment: 3–6 months	2258	0.031	0.031	0	1	1959	0.032	0.176	0	-
Unemployment: 7–18 months	2258	0.060	0.060	0	1	1959	0.057	0.232	0	-
Unemployment: > 18 months	2258	0.017	0.017	0	1	1959	0.016	0.127	0	-
Overtime reduction	2258	0.100	0.300	0	1	1959	0.103	0.304	0	-
Short-time work	2258	0.169	0.374	0	1	1959	0.170	0.375	0	-
Flexible working hours	2258	0.178	0.382	0	1	1959	0.179	0.384	0	-
Overtime	2258	0.146	0.353	0	-	1959	0.141	0.348	0	-
Source: Authors' calculations of the SHP data	ı (a. sample	" wave 21"	19/20 and the	e Covid-19	survey 20, b	. sample "w	ave 21" 19/	20, the Covic	d-19 survey	20 and the

Continuation of Table A2.

The Impact of the Covid-19 Pandemic on Perceived Employment (In)Security in Switzerland

Table A.3 Change Scores

	Pre-Covid-19	2 nd wave of Covid-19 (Aug '20–Feb '21)	Change scores
Risk of unemployment	1.891	2.162	0.271

Source: Authors' calculations of the SHP data (b. sample "wave 21" 19/20, the Covid-19 survey 20 and the sample "wave 22" 20/21).

Table A.4 Linear Regress	ion on Risk	of Job Los	s due to	the Covid	-19 Pand	emic				
	-		2					4		5
1ª half of May '20	Ref.		Re	ef.		tef.	R	ef.		ef.
2 nd half of May '20	-0.044 (0.144)	-0.046	(0.145)	-0.055	(0.144)	-0.016	(0.139)	-0.025	(0.140)
1ª half of Jun '20	0.102 (0.153)	0.089	(0.153)	0.084	(0.153)	0.102	(0.149)	0.091	(0.149)
2 nd half of Jun '20	-0.068	0.301)	-0.076	(002:0)	-0.062	(0.298)	-0.095	(0.323)	-0.088	(0.322)
Sectors	Control	led	Contr	olled	Con	trolled	Cont	rolled	Cont	rolled
NUTS regions	Controll	led	Contr	olled	Con	trolled	Cont	rolled	Cont	rolled
Firm size: 1-49 employees	Ref.		Re	ef.	LL.	tef.	R	ef.	Ľ.	ef.
Firm size: 50–99 employees	0.058 (0.194)	0.069	(0.190)	0.074	(0.190)	0.154	(0.192)	0.162	(0.192)
Firm size: 100–499 employees	0.031 (0.140)	0.034	(0.140)	0.036	(0.139)	0.039	(0.137)	0.041	(0.136)
Firm size: >=500 employees	-0.162 (0.149)	-0.167	(0.151)	-0.162	(0.151)	-0.090	(0.151)	-0.090	(0.153)
Swiss nationality	-0.424+ (0.236)	-0.410+	(0.235)	-0.409+	(0.234)	-0.291	(0.236)	-0.282	(0.235)
Male	-0.312* (0.125)	-0.295*	(0.125)	-0.295*	(0.125)	-0.253+	(0.134)	-0.242+	(0.133)
Age (per 10 years)	1.337** (0.414)	1.348**	(0.419)	1.385**'	(0.417)	1.295**	(0.407)	1.331*	* (0.411)
Age (per 10 years) ²	-0.142** (0.047)	-0.144**	(0.048)	-0.147**	(0.047)	-0.133**	(0.046)	-0.137*	* (0.047)
Main earner	-0.529 (0.360)	-0.540	(0.363)	-0.547	(0.359)	-0.351	(0.346)	-0.355	(0.343)
Living with a partner	-0.728+ (0.377)	-0.739+	(0.379)	-0.738*	(0.374)	-0.527	(0.354)	-0.529	(0.349)
Main earner * living with a partner	0.723+ (0.396)	0.741+	(0.400)	0.741+	(0.394)	0.459	(0.380)	0.464	(0.376)
Low education	Ref.		Re	ef.	LL.	tef.	R	ef.	Ŀ	ef.
Medium education	-0.327 (0.296)	-0.334	(0.296)	-0.354	(0.296)	-0.347	(0.291)	-0.368	(0.291)
High education I	-0.038	0.304)	-0.019	(0.305)	-0.069	(0.307)	-0.030	(0.297)	-0.063	(0.303)
High education II	-0.272 (0.291)	-0.176	(002:0)	-0.212	(0.299)	-0.229	(0.286)	-0.209	(0.299)
Supervisory task	-0.167 (0.122)	-0.159	(0.122)	-0.158	(0.122)	-0.121	(0.129)	-0.118	(0.131)
Academic job			-0.188	(0.150)	0.060	(0.192)			0.092	(0.190)
Working remotely			-0.006	(0.139)	0.195	(0.182)			0.166	(0.187)
Academic job * working remotely					-0.500*	(0.248)			-0.396	(0.248)
Volume of working hours: >80 %							R	ef.	Ŀ	ef.
Volume of working hours: < 50 %							0.075	(0.193)	0.076	(0.193)
Volume of working hours: 50–80 %							-0.250+	(0.135)	-0.237+	(0.135)
								Continuation of	Table A.4 on th	e following page.

Linear Regression on Risk of Job Loss due to the Covid-19 Pandemic

The Impact of the Covid-19 Pandemic on Perceived Employment (In)Security in Switzerland

Continuation of Table A.4.						
	-	2	œ	4		10
Fixed-term				-0.102 (0.260)	-0.080	(0.260)
Tenure				-0.011 (0.007)	-0.011	(0.007)
Unemployment: < 3 months				Ref.	R	ef.
Unemployment: 3–6 months				0.419 (0.265)	0.416	(0.266)
Unemployment: 6–18 months				0.005 (0.266)	-0.015	(0.268)
Unemployment: > 18 months				0.658+ (0.397)	0.614	(0.393)
Overtime reduction				0.234 (0.180)	0.222	(0.180)
Short-time work				1.199*** (0.191)	1.189**:	(0.191)
Flexible working hours				0.068 (0.139)	0.079	(0.138)
Overtime				0.072 (0.151)	0.071	(0.151)
Constant	1.510+ (0.904)	1.491 (0.917)	1.387 (0.906)	0.755 (0.931)	0.659	(0.935)
R ²	0.154	0.155	0.157	0.199	0.201	
Cohen's f ²	0.182	0.183	0.186	0.248	0.252	
df_r	1805	1805	1805	1805	18	05
BIC	9936.154	9948.81	9950.306	9896.334	166	1.587
Z	2258	2258	2258	2258	22	58
Contraction of the state of the	Caried 10 nandomic					

Dependent variable: Risk of job loss '20 due to the Covid-19 pandemic.

Sample weights are applied. The coefficients are followed by robust standard errors in parentheses.

+ p < 0.1; * p < 0.05; * p < 0.01, * * p < 0.001. Standard errors in parentheses. Source: Authors' calculations of the SHP data (analytical sample I: SHP standard sample "wave 21" 19/20 and Covid-19 survey 20)

estate, renting, computers, research; (10) public admin, national defence, compulsory social security; (11) education; (12) health and social work; (13) other community, social and personal service activities; Notes: The analysis covers (1) dependent employees; (2) not enrolled in education; (3) aged 18–65 years. Sectors included: (1) agriculture, hunting, forestry; (2) manufacturing; (3) electricity, gas and water suppy; (4) construction; (5) wholesale, retail, motor vehicle repairs, household goods; (6) hotels and restaurants; (7) transport, storage and communication; (8) financial intermediation, insurance; (9) real 14) extra-territorial organizations and bodies NUTS regions included: Lake Geneva, Mittelland (Ref.), North-West Switzerland, Zurich, East Switzerland, Central Switzerland, Ticino.

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			2		m		4		2	
Aug '20	Re	if.	Re		Re	ť	Rei		Re	
Sep '20	-0.315	(0.326)	-0.323	(0.322)	-0.329	(0.324)	-0.245	(0.329)	-0.258	(0.327)
Oct '20	-0.461	(0.329)	-0.454	(0.326)	-0.459	(0.329)	-0.352	(0.334)	-0.350	(0.333)
Nov '20	-0.023	(0.381)	-0.034	(0.379)	-0.038	(0.382)	0.008	(0.383)	-0.005	(0.384)
Dec '20	0.366	(0.631)	0.371	(0.624)	0.363	(0.624)	0.460	(0.599)	0.456	(0.592)
Jan '21	-0.360	(0.411)	-0.382	(0.408)	-0.379	(0.409)	-0.163	(0.424)	-0.184	(0.421)
Feb '21	-2.046**	(0.660)	-2.046**	(0.662)	-2.029**	(0.661)	-1.867**	(0.648)	-1.853**	(0.651)
Sectors	Contr	olled	Contro	olled	Contr	olled	Contro	olled	Contr	olled
NUTS regions	Contr	olled	Contro	olled	Contr	olled	Contro	olled	Contr	olled
Firm size: 1–49 employees	Re	ef.	Re	j.	Re	ť	Rei	j.	Re	j.
Firm size: 50–99 employees	-0.193	(0.187)	-0.167	(0.186)	-0.161	(0.187)	-0.152	(0.186)	-0.121	(0.186)
Firm size: 100–499 employees	0.361+	(0.188)	0.369*	(0.185)	0.371*	(0.185)	0.302	(0.185)	0.312+	(0.181)
Firm size: >=500 employees	0.040	(0.165)	0.038	(0.167)	0.038	(0.166)	0.043	(0.164)	0.041	(0.165)
Swiss nationality	-0.398	(0.317)	-0.387	(0.313)	-0.381	(0.313)	-0.351	(0.292)	-0.336	(0.288)
Male	0.244	(0.153)	0.267+	(0.155)	0.259+	(0.155)	0.318*	(0.158)	0.336*	(0.160)
Age (per 10 years)	-0.127	(0.566)	-0.047	(0.568)	-0.066	(0.568)	-0.043	(0.520)	0.006	(0.522)
Age (per 10 years) ²	0.006	(0.063)	-0.003	(0.063)	-0.001	(0.063)	0.001	(0.058)	-0.005	(0.058)
Main earner	-0.233	(0.583)	-0.214	(0.584)	-0.188	(0.588)	-0.055	(0.561)	-0.016	(0.564)
Living with a partner	-0.370	(0.554)	-0.338	(0.557)	-0.321	(0.561)	-0.248	(0.532)	-0.208	(0.538)
Main earner * living with a partner	0.266	(0.600)	0.257	(0.602)	0.249	(0.605)	0.148	(0.579)	0.136	(0.583)
Low education	Re	ef.	Re	<u> </u>	Re	÷	Rei	<u> </u>	Re	
Medium education	0.128	(0.371)	0.129	(0.372)	0.129	(0.372)	0.112	(0.362)	0.115	(0.362)
High education I	0.270	(0.403)	0.332	(0.408)	0.350	(0.409)	0.281	(0.392)	0.354	(0.399)
High education II	-0.028	(0.375)	0.163	(0.384)	0.170	(0.384)	-0.018	(0.363)	0.168	(0.375)
Supervisory task	0.145	(0.153)	0.168	(0.151)	0.170	(0.151)	0.215	(0.153)	0.237	(0.150)
Change to fixed-term job	-1.049*	(0.482)	-1.065*	(0.480)	-1.069*	(0.475)	-0.961*	(0.435)	-0.979*	(0.423)
Change to permanent job	-1.738*	(0.789)	-1.737*	(0.785)	-1.744*	(0.786)	-2.729**	(0.934)	-2.764**	(0.929)
Decrease in working hours	0.143	(0.272)	0.160	(0.273)	0.153	(0.272)	-0.082	(0.252)	-0.073	(0.251)
Increase in working hours	-0.008	(0.280)	0.003	(0.281)	-0.001	(0.282)	-0.214	(0.286)	-0.211	(0.289)

Linear Regression on Change Scores of Risk of Unemployment

Table A.5

Continuation of Table A.5 on the following page.

Continuation of Table A.5.										
Academic job			-0.273+	(0.156)	-0.424+	(0.223)			-0.396+	(0.212)
Working remotely			-0.091	(0.185)	-0.215	(0.261)			-0.166	(0.248)
Academic job * working remotely					0.301	(0.321)			0.254	(0.305)
Volume of working hours: >80%							Re	ef.	Ref	
Volume of working hours: < 50 %							0.175	(0.228)	0.185	(0.227)
Volume of working hours: 50–80 %							0.166	(0.155)	0.172	(0.155)
Fixed-term							1.122*	(0.491)	1.155*	(0.486)
Tenure							-0.006	(0.008)	-0.006	(0.008)
Unemployment: <3 months							Re	ef.	Ref	
Unemployment: 3–6 months							0.764+	(0.413)	0.757+	(0.416)
Unemployment: 6–18 months							0.218	(0.291)	0.204	(0.287)
Unemployment: >18 months							-1.335*	(0.546)	-1.305*	(0.530)
Overtime reduction							0.359	(0.240)	0.360	(0.240)
Short-time work							0.981***	(0.226)	0.973***	(0.223)
Flexible working hours							0.085	(0.147)	0.086	(0.147)
Overtime							-0.242	(0.155)	-0.236	(0.156)
Constant	1.738	(1.364)	1.536	(1.380)	1.593	(1.375)	-0.622	(1.377)	-0.714	(1.386)
R ²	060.0		0.093		0.094		0.130		0.132	
Cohen's f2	0.099		0.103		0.104		0.149		0.152	
df_r	1	549	15	49	15	61	15	49	154	•
BIC	86	59.290	866	9.576	867	5.572	8660.045		8677.114	
Z	1	959	19	59	19	69	19	59	195	0
Dependent variable: Change scores of risk of unemployn	nent. Sample	weights are appli	ed. The coeffic	cients are follov	ved by robust s	andard errors	in parentheses.			

+p<0.1; *p<0.05; ** p<0.01; *** p<0.01.

Standard errors in parentheses.

dependent employees; (2) not enrolled in education; (3) aged 18-65 years. Sectors included: (1) agriculture, hunting, forestry; (2) manufacturing; (3) electricity, gas and water supply; (4) construction; (5) wholesale, retail, motor vehicle repairs, household goods; (6) hotels and restaurants; (7) transport, storage and communication; (8) financial intermediation, insurance; (9) real estate, renting, computers, research; (10) public admin, national defence, compulsory social security; (11) education; (12) health and social work; (13) other community, social and personal service activities; (14) extra-territorial organizations and bodies. NUTS regions included: Lake Geneva, Mittelland (Ret), North-West Switzerland, Zurich, East Switzerland, Teino. Source: Authors' calculations of the SHP data (analytical sample II: standard sample "wave 21" 19/20 and Covid-19 survey 20 and standard sample "wave 22" 20/21). Notes: The analysis covers (1)

Susanne Edler and Ivo Staub