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Combining Part-time Work and Social Benefits: Empirical Evidence from Finland[*]

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Abstract

We use detailed, population-wide data from Finland to provide evidence of the impact of earnings disregard policies on part-time work during unemployment spells, and describe the longer-run trends in combining part-time work and social benefits. We find that part-time or temporary work while receiving unemployment benefits is strongly concentrated at service and social and health care sectors, and women participate in part-time work much more commonly than men (25% vs. 12% of benefit recipients). The share of part-time workers among unemployment benefit recipients increased sharply from 10% to 18% over a few years after the implementation of earnings disregards in unemployment benefits and housing allowances. The earnings disregards allowed individuals to earn up to 300 euros per month without reductions in their benefits. Using variation in the impact of the reforms on incentives between individuals eligible to different types of benefits, we estimate a 17–28% increase in participation in part-time work rate due to the implementation of earnings disregards. However, we find no evidence of economically significant positive or negative effects of increased participation in part-time work on transitions to full-time employment.

Keywords: labor supply; social benefits; part-time work; earnings disregards.
JEL Codes: H24; J21; J22

1   Introduction

There is a common conception that the structure of labor markets is changing. In many developed countries, part-time and temporary work arrangements are becoming more typical, and the share of workers who receive their income from a combination of social benefits and small labor earnings is increasing (see e.g. Cahuc 2018). However, there is lack of empirical evidence illustrating how the share of these workers has developed over time, and how common is combining benefits with part-time jobs in different sectors and for different types of workers.

To encourage benefit recipients to participate in part-time labor markets, many developed countries have introduced policies that financially encourage combining benefits and part-time work, including, for example, the US, the UK and Germany. However, evidence on the effectiveness of these policies is still relatively scarce, even though their impact on the prevalence of part-time and temporary work arrangements among benefit recipients, and particularly their potential longer-run impact on labor market outcomes, are crucial for assessing the welfare and fiscal implications of these policies.

In this paper, we first provide descriptive evidence on the longer-run development of combining part-time work and unemployment benefits in Finland. Using population-wide monthly-level administrative data ranging from over 20 years, we illustrate how the share of unemployment benefit recipients working part-time has developed in different industries and different groups of individuals, enabling us to characterize the longer-run trends in working while receiving benefits. We then utilize the implementations of earnings disregards policies in 2014 and 2015 to study how financial incentives affect participation in part-time work during unemployment spells. These reforms allowed benefit recipients to earn up to 300 euros per month without reductions in their benefits, providing much stronger incentives to participate in part-time employment.

We begin by illustrating how the share of partially unemployed individuals has developed over time. As in many other countries, Finland applies a system of partial unemployment benefits, in which benefit recipients can work part-time during their unemployment

spell without fully losing their benefit.[1] When working while receiving benefits, one euro of labor income reduces the amount of the unemployment benefit by 0.5 euros.

Our descriptive evidence shows that part-time working during unemployment spells have increased over the last 20 years, and this increase is clearly associated with improvements in financial incentives. The share of unemployment benefit recipients with labor earnings remained rather stable around 10–12% in 2000–2013. This share began to rapidly rise after the implementations of earnings disregards in mid 2010s, and reached 18% by 2020. In Finland, an earnings disregard was first implemented for unemployment benefits in 2014, and then in 2015 for housing allowances. These policies allow benefit recipients to earn up to 300 euros per month without benefit reductions, which significantly improved incentives for participating in the part-time labor market. Our descriptive evidence thus indicatively illustrates that financial incentives are likely to play a role in the labor supply decisions of benefit recipients.

We find that part-time work among unemployment benefit recipients is concentrated on workers in service, and social and health care sectors, where the share of part-time work days of all benefit days was around 40% in 2020. In contrast, working while receiving partial benefits is still less common in certain industries such as in manufacturing and construction, in which this share is 10–15%. Relatedly, working part-time while receiving unemployment benefits is much more common among women (25% in 2020) compared to men (12%), as women are typically more likely to work in services and the social and health care sector compared to men. At the beginning of the 2000s, part-time work during unemployment was less common among older individuals aged 56 or older (6%) compared to younger groups (12%), but the age differences disappeared by 2020. However, the share of part-time workers increased in all of these groups after the implementation of earnings disregard policies. Also, we find that the largest increases in the share of part-time workers are not linked to simultaneous changes in overall unemployment in the same

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[1]Partial unemployment benefits are also known as adjusted, part-time or supplementary unemployment benefits. In Finland, partial benefits are also paid to those unemployed who take up a full-time job for two weeks or shorter time. We do make a distinction between these workers and those who work part-time while receiving benefits, but refer to all partial benefit recipients as part-time workers or part-time unemployed workers.

groups. This suggests that the increase in part-time work among the unemployed is not driven by transitions from full-time employment to part-time work while receiving benefits.

We then turn to more detailed analysis on how financial incentives affect participation in part-time employment. We zoom in to the earnings disregard reforms and analyze labor supply choices among those whose incentives were affected differently by these reforms, enabling us to assess their impact on part-time work participation. The first reform in January 2014 introduced the earnings disregard in unemployment benefits, and it reduced the participation tax rates for all unemployed individuals. In contrast, the second reform in September 2015 that introduced the similar earnings disregard for housing allowances had no effect on those unemployed individuals who were not eligible for housing allowances, but it significantly improved incentives for those unemployed individuals who also received housing allowances. Thus, the identifying variation in incentives in our analysis stems from differences in household incomes and composition that affect eligibility to housing allowance.

We first compare the labor market outcomes of these groups before 2014 to assess the validity of our empirical approach. We find that development of part-time work and labor earnings in these groups follow each other very closely before the reforms, supporting our empirical strategy. We then evaluate the effects of earnings disregards on both part-time participation and labor earnings while unemployed. Also, we study potential longer-run implications by following labor market outcomes over a longer period after the reforms. This analysis aims to reveal whether policies promoting part-time working during unemployment affects the likelihood of obtaining more permanent full-time employment in the future.

Part-time working may provide a *stepping stone* to more permanent employment through, for example, work experience and contacts with employers. On the other hand, part-time work can crowd-out full-time employment and delay or hinder transitions to full-time employment by reducing the time available to search for full-time jobs, constituting a so-called *lock-in effect* of part-time work. Therefore, due to these opposing

mechanisms, the sign of the net impact of part-time working during unemployment on subsequent full-time employment is unclear. Moreover, since partial benefits and earnings disregards make part-time employment financially more attractive compared to full-time employment, they may encourage unemployed job seekers to devote more time to search for part-time jobs instead of full-time jobs. This way policies promoting part-time work can reduce transitions to full-time employment also among unemployment benefit recipients who have not (yet) worked part-time. To account also for this *ex ante effect* of the partial benefits and earnings regards, one must be able to compare unemployed workers under different policy schemes. In our analysis, we do not aim to identify these three effects separately but utilize our quasi-experimental setup to study the overall effect of the earnings disregard policies.

We find significant 17% and 28% increases in the likelihood of participating in part-time employment after the implementation of earnings disregards, depending on the type of the unemployment benefit. First, we find that the introduction of the earnings disregard for all unemployment benefit recipients in 2014 is associated with an increase in part-time employment for all unemployed. After the implementation of earnings disregards for housing allowance in 2015, we find that the share of part-time workers with housing allowance increased more rapidly compared to those unemployed whose households were not eligible for housing allowance and thus unaffected by this later reform. This evidence illustrates that improving financial incentives can increase participation in part-time or temporary work. In relative terms, this effect is larger for those with flat-rate unemployment benefits compared to earnings-related benefits. We estimate the participation elasticity for part-time work to be around 0.8–0.9. This implies that labor supply choices regarding participation in part-time employment are relatively responsive to changes in financial incentives among benefit recipients. In addition to participation responses, we find a small 3–4% average increase in part-time earnings after the reforms among those participating in the part-time labor market.

We find that the increase in part-time employment due to the earnings disregards is not associated with significant changes in subsequent permanent employment. Using

our population-wide job spell data, we find no meaningful differences in future full-time employment spells between the groups that were affected differently by the earnings disregard reforms, indicating that these policies did not affect notably the likelihood of finding a more permanent job in the future. This indicates that neither the lock-in effect nor the stepping-stone effect dominates for benefit recipients with part-time jobs. Therefore, we conclude that even though earnings disregards increased part-time employment among the unemployed, the effects on full-time employment are small at best.

As mentioned above, partial unemployment benefits and various types of earnings disregard policies that encourage working while receiving benefits are used in several countries.[2] Nevertheless, the effectiveness of these forms of support has been relatively understudied. One reason for this is that individuals receiving both labor earnings and unemployment benefits "operate" between employment and unemployment, making it difficult to identify them. In many survey and administrative data sets, such individuals are classified either as employed or unemployed, preventing from fully disentangling them from full-time employees, part-time employees without benefits, and the full-time unemployed. Our detailed population-level administrative data cover all unemployment spells, and include monthly-level information on earnings while receiving unemployment benefits, direct information on whether the benefit was reduced due to labor earnings or not, and a comprehensive set of individual and household background characteristics. This allows for a careful analysis of how working while receiving benefits has developed over time in different groups, and combined with quasi-experimental variation in incentives, enables us to study how changes in earnings disregard rules are associated with labor supply choices both in the shorter and longer run.

Our study contributes to the literature on the labor supply effects of partial unemployment benefits and earnings disregards. Munts (1970), Holen and Horowitz (1974), McCall (1996) and Le Barbanchon (2016) provide evidence that unemployed individuals in the

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[2]In addition to Finland, the earnings disregards are applied at least in Australia, Austria, Belgium, Canada, Czech Republic, Finland, Germany, Luxembourg, Poland, the UK and in several US states (Cahuc (2018))

US labor market often earn just enough income to stay below the earnings disregard. In most US states, unemployment benefits are reduced on a dollar-per-dollar basis after labor earnings exceed the disregard, which may explain strong bunching at the disregard thresholds. O´Leary (1997) and Lee et al. (2021) analyze a randomized experiment in the Washington State UI system in 1994 that provided more generous partial benefits for treatment group members who take up a part-time job. Both studies find that more generous partial benefits increased part-time work, leading to longer benefit duration and higher benefit expenditures without a notable effect on overall labor supply. Exploiting variation in earnings disregard reforms in different US states in the mid-1990, Matsudaira and Blank (2014) find no effect of the earning disregards for welfare assistance on labor supply of single mothers.

Several European studies have relied on the timing-of-events approach or matching methods to estimate the causal effect of part-time work during benefit receipt on subsequent employment. These include Gerfin and Lechner (2002), Gerfin et al. (2005) and Lalive et al. (2008) for Switzerland, Kyyrä (2010) for Finland, Cockx et al. (2013) for Belgium, Fremigacci and Terracol (2013) and Auray and Lepage-Saucier (2021) for France, Kyyrä et al. (2013) for Denmark, and Godøy and Røed (2016) for Norway.[3] Many of these studies find significant lock-in effects for the duration of part-time work (e.g. Fremigacci and Terracol 2013 and Kyyrä et al. 2013), but not all (e.g. Cockx et al. 2013 and Godøy and Røed 2016). Most of the studies also find stepping-stone effects towards full-time employment after part-time work, so that estimated net effects on subsequent employment are typically either positive or around zero. Although the sign and magnitude of the net effect may vary across different subgroups of unemployed individuals, in most cases part-time working during unemployment seems to reduce benefit duration and increase employment in the European labor markets.[4] However, since these studies do not account for possible ex-ante effects of the partial benefit and earnings disregard schemes,

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[3]See Cahuc (2018) for a summary of this literature.

[4]Unemployed workers may not be aware of the possibility to keep part of their benefits if they take up a part-time job or they may not know the details of complex benefit rules. Using randomized information experiments, Altmann et al. (2022) and Benghalen et al. (2023) find that the provision of information about partial benefits increased the propensity to work part-time while receiving benefits in Denmark and France, respectively.

they do not identify the overall effects of policies promoting part-time work while receiving benefits, as we do in our analysis.

Finally, our study contributes to the more general literature on the effects of financial incentives on labor market participation, which are often difficult to analyze using administrative data due to lack of suitable (quasi-)experimental variation in incentives (Chetty et al. 2013). A recent study from Finland by Verho et al. (2022) utilizing the basic income experiment as an empirical setting finds that a massive reduction in participation tax rates had only a small impact on the labor supply of those who received flat-rate unemployment benefits, mostly comprising long-term unemployed and individuals with short or no employment history. Bastani et al. (2021) find a small participation elasticity of 0.13 for women with children in Sweden. Our setup enables us to provide evidence on the effects of financial incentives on participation in part-time work, as the earnings disregards had no direct impact on participation incentives for full-time employment. We provide novel quasi-experimental evidence that this labor supply margin is relatively responsive to changes in financial incentives among benefit recipients, even for those with shorter employment histories.

The remaining of the paper is organized as follows: Section 2 presents the institutional background and earnings disregard reforms in Finland. Section 3 describes the data, and Section 4 provides descriptive evidence on the longer-run trends in working while receiving benefits. Section 5 presents our results on earnings disregard reforms, and Section 6 concludes.

2   Institutions and Earnings Disregard Reforms

In this section, we first briefly introduce the main details of the Finnish unemployment benefit and housing allowance programs, and how both of them are adjusted if an individual works temporarily or part-time when receiving them. We then describe the introduction of earnings disregard policies for both of these benefits, and illustrate how these reforms affected incentives for participating in part-time or temporary employment.[5]

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[5]Kyyrä et al. (2017) provide a more detailed description of the Finnish UB system.

2.1 Unemployment Benefits and Housing Allowance

Unemployment benefits (UB). Finland applies a typical two-tier unemployment compensation system that provides earning-related unemployment benefits for a limited period of time, and less generous flat-rate unemployment benefits thereafter. To be eligible for unemployment compensation, a claimant must register as an unemployed job seeker at the local Employment and Economic Development Office, search actively for a full-time job, and be ready and able to start working upon receiving a job offer.

Unemployment funds pay earnings-related benefits (*ansiopäiväraha*) to their unemployed members who satisfy the employment condition, which requires that they have been working and making membership contributions for at least 26 weeks within the last 28 months.[6] During each contribution week, the claimant must have worked at least for 18 hours. Most unemployment funds are administrated by labor unions, and thereby targeted at certain occupation groups or workers in a given industry. Membership in unemployment funds is voluntary, and it is possible to enroll in a union-affiliated unemployment fund without being a member of the labor union. In 2022, about 70% of all workers were members of unemployment funds in Finland.

The level of the earnings-related benefit is determined by the average labor earnings over the employment weeks required for eligibility. There is no cap in the benefit level, but the replacement rate declines rapidly with past earnings.[7] For a worker with median labor earnings (3195 euros per month in 2022), the replacement rate is slightly below 60%. As of 2017, the maximum duration of earnings-related benefits has been 400 days for those with at least of three years of work history, and 300 days for those with a shorter work history.[8]

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[6]The minimum number of working weeks was gradually reduced from 43 weeks to 26 weeks between 2003 and 2014.

[7]Slightly higher benefits are paid for those who participate in active labor market programs, including e.g. labor market training courses and job search training.

[8]The maximum benefit duration is 500 days for workers aged 58 or older with at least five years of work history in the last twenty years. Until 2013, the maximum duration of earnings-related UB was 500 days for everyone. In 2014, the maximum duration was cut by 100 days for those unemployed with less than three years of work history. In 2017, the maximum duration was cut by another 100 days for all unemployed except for the oldest workers. Moreover, unemployed workers old enough on the day when their regular UB expires are eligible for extended benefits which can be received until the statutory retirement age. The age threshold for this benefit extension was gradually increased by five years during

Unemployment fund members who exhausted their earnings-related benefits or who do not satisfy the employment condition and those who do not belong to any unemployment fund are eligible for flat-rate unemployment benefits, which are paid by the Social Insurance Institution of Finland for an indefinite period.[9] Without child supplements, the flat-rate benefit was 768 euros per month in 2022, which amounts to 48% of the average earnings-related benefit.

Unemployment benefits are applied for retrospectively with a two-week reporting period at the beginning of unemployment, and subsequently in four-week or monthly periods if the unemployment spell further continues. The unemployed individual reports any amount of work performed to the unemployment fund or Social Insurance Institution, either electronically or using a paper form. In addition to reporting the number of working hours, the amount of labor earnings are also reported. The income is reported using a payslip, a salary certificate, or other reliable documentation, such as an informal statement from the employer regarding the salary that the individual received.

Benefit recipients who take up a part-time job (up to 80% of full-time working hours) or a short full-time job with the duration of no longer than two weeks (four week before 2013) are eligible for partial unemployment benefits (*soviteltu päiväraha*).[10] In exchange for the partial benefits, these workers should continue their search for full-time employment and be willing to accept a full-time job if such a job was offered. The basic rule of partial benefits that each euro of labor earnings reduces the benefit amount by 0.5 euros. For example, earning 800 euros per month would reduce monthly benefits by 400 euros.

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our 20-year observation period.

[9]Strictly speaking, there are two flat-rate benefits, both of which are paid by the Social Insurance Institution. Unemployed individuals who are not members of an unemployment fund but satisfy the employment condition are eligible for a flat-rate basic unemployment allowance (*peruspäiväraha*), whereas all those unemployed who are not eligible for earnings-related benefits nor for basic unemployment allowance can claim unemployment assistance (*työmarkkinatuki*). The unemployment assistance is means-tested against an individual's other income. Up until 2012, it was also means-tested against their spouse's income. The levels of the unemployment allowance and unemployment assistance are the same, and the only difference is that the unemployment allowance is not means-tested and it is available only for a limited period of time. We do not make a distinction between these two similar benefits, but refer to both of them as "flat-rate unemployment benefit". At the end of 2021, of all unemployment benefit recipients, 39% received earnings-related benefits, 11% unemployment allowance, and 50% unemployment assistance.

[10]In what follows, we do not make a distinction between short full-time and part-time jobs but refer to all partial UB recipients as part-time unemployed or part-time workers receiving UB.

However, the total amount of benefits and labor earnings cannot exceed the recipient's pre-unemployment monthly labor earnings (90% of the pre-unemployment earnings before 2014), i.e. the earnings that define the level of earnings-related benefits. Earnings exceeding this cap rule cut the benefit by 100%.

During the receipt of partial benefits, the entitlement period for earnings-related benefits elapses at a reduced rate proportional to the ratio of the partial benefit to the full benefit level, so that the total amount of the earnings-related benefits the claimant is entitled to remains intact. For example, a part-time worker with a 50% reduced benefit can receive partial benefits twice as long as they could receive benefits when full-time unemployed. Thus, the partial benefit scheme does not only provide relatively high income for part-time workers compared to both full-time unemployed and full-time employed workers, but also allow them to collect earnings-related benefits for a longer time. On the other hand, working on partial benefits may lead to lower benefits in the future. This is because all employment with the weekly working time of at least 18 hours contributes to the employment condition. If the employment condition is fulfilled while receiving partial earnings-related benefits, the benefit level will be recalculated using the most recent labor earnings. Thus, long periods on partial benefits can lead to a drop in the level of UB, especially if the old benefit was based on full-time working, although large drops are prevented by a rule that the recalculated benefit must be at least 80% of the old benefit.

Overall, the Finnish partial benefit scheme, especially after the introduction of the earnings disregards, is rather generous compared to similar schemes in other countries (see Cahuc (2018) for a cross-country comparison). Even before the implementation of earnings disregards, the financial incentives for participating in the part-time labor market were relatively good due to the partial benefit system, and the earnings disregard policies further enhanced them. However, recipients for multiple benefits such as housing allowances were still faced with higher effective tax rates when participating in the labor market, which we discuss in more detail below.

Housing Allowance (HA).   In Finland, low-income households are entitled to a means-tested housing allowance (*yleinen asumistuki*) to cover part of their housing expenses,

provided by the Social Insurance Institution. Eligibility is based on gross income, financial wealth, and household size, and it can be applied for private rental apartments, social housing units and owner-occupied apartments. Unemployed individuals are often low-income, and approximately half of the general housing allowance granted in 2017 was given to unemployed households.

The amount of HA can be up to 80% of eligible housing expenses. In brief, until January 2015, the amount of eligible housing expenses depended on floor area of the unit and the details of the building such as construction year, household size and structure, and four municipality groups. After January 2015, only the area and the household size and structure are taken into account. Especially in the capital city region, eligible housing expenses are almost always exceeded, so a single unemployed person eligible for the allowance typically receives a housing allowance of 413 euros per month. Eerola and Lyytikäinen (2021) provide a more detailed description of the housing allowance in Finland.

Earnings affect HA in a similar way as it does for UB. The main difference is that all household members' earnings, not just the unemployed person's earnings, impact the housing allowance. The main rule is that for each euro earned the HA is reduced by 0.34 euros.

Housing allowance can be applied for either online or using a paper form. The application for HA requires attachments such as a payslip and a copy of the employment contract. Social Insurance Institution conducts an annual review of housing allowance, but if the household's income or other conditions change, HA can be adjusted earlier. An interim review is conducted if the income increases by at least 400 euros per month or decreases by 200 euros per month. As a result, increased income has a less immediate impact on reducing HA compared to unemployment benefits which are assessed each month.

It is important to note that partial benefits and earnings disregards do not have as significant impact on the incentives of very low-income individuals who are entitled to last-resort income support. This means-tested social assistance is intended for persons

whose income from work, benefits or assets does not cover their essential daily needs such as nutrition and housing. Additional earnings reduce the amount of the income support, thus mitigating incentives to participate in the part-time labor market. Therefore, we restrict our baseline analysis of earnings disregard reforms to individuals not receiving or entitled to the last-resort income support. Consequently, we do not include income support in the microsimulation analysis below where we present and discuss the changes in incentives caused by the earnings disregard reforms.

2.2 Earnings Disregard Reforms and Changes in Incentives

Implementation of Earnings Disregards. The earnings disregard of 300 euros for unemployment benefits was introduced in January 2014. Prior to this, all labor earnings reduced the amount of UB by 50%, as described above. After the reform, an individual receiving UB can now earn up to 300 euros per month such that this amount does not reduce the benefit at all. Above the 300 euro earnings disregards threshold, additional labor income reduces UB by 50%, similarly as was described above.

The goal of the reform was to further encourage the unemployed to accept short-term and part-time jobs. The participation tax rates reduced significantly after the reform for these types of jobs, as we will discuss in more detail below. In addition to the partial UB system already in place, the earnings disregard further increased the disposable income if an unemployed individual participated in part-time or temporary employment.[11]

A 300 euro earnings disregard was introduced in housing allowance in September 2015. The earnings disregard in HA functions similarly to the earnings disregard in UB. After its implementation, the HA recipients can now earn up to 300 euros per month without these earnings affecting the amount of HA. Therefore, this reform had a similar impact on work incentives as the earnings disregard in UB. However, as mentioned above, the HA is reviewed less frequently than UB, and thus the effect of earnings disregards on incentives is likely to be more delayed than for UB which is reviewed on a monthly basis.

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[11]At the same time, the cap rule of combined maximum amount of partial UB and earnings changed such that the threshold was raised from 90% to 100% of the pre-unemployment earnings. The aim of this change was to increase the incentive to work for those whose daily benefits are low, and reduce the number of situations where working more does not increase disposable income.

The earnings disregard in HA further improved the financial incentives for accepting temporary and part-time work for unemployed individuals receiving the allowance. This applies particularly to those receiving the flat-rate UB, who in many cases are also eligible for the means-tested HA due to their lower income levels. Instead, those with higher earnings prior to unemployment and those with higher household incomes are often not eligible for HA. Thus, for these individuals the earnings disregard in HA had no immediate impact on incentives for participating in part-time or temporary employment.

Changes in Incentives. The earnings disregard reforms had differential impacts on the incentives among the unemployed. The first reform in 2014 that implemented earnings disregard for UB increased incentives to participate in part-time work for all individuals receiving this benefits (except for those receiving the last-resort income support who we exclude from our reform analysis). The incentives were further improved in 2015 when the earnings disregards were implemented also for HA. However, this reform had no impact on the incentives for those UB recipients who were not eligible for HA. Instead, it provided a significant additional incentive for unemployed HA recipients to participate in the part-time labor market. We utilize this difference in incentives between these groups of unemployed individuals to analyze the impact of financial incentives on labor supply choices in Section 5.

Figures 1 and 2 describe the participation tax rates in different groups before and after the implementation of the earnings disregards. The participation tax rates in the figures indicate how much monthly household disposable income increases with earning labor income at different earnings levels, compared to a situation where an individual remains unemployed with no labor earnings. Participation tax rate takes into account the impact of both income taxes and means-tested social benefits on disposable income when participating in the labor market. For example, if the participation tax rate is 0.7, 30% of the monthly gross wage income remains after income taxes and reduced social benefits. The participation tax rates in our analysis are calculated using the SISU microsimulation model, which includes the details of the Finnish tax and benefit legislation.

Figure 1 illustrates the participation tax rates for single-person households who receive

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Figure 1: Participation tax rates for single-person households, 2013–2015
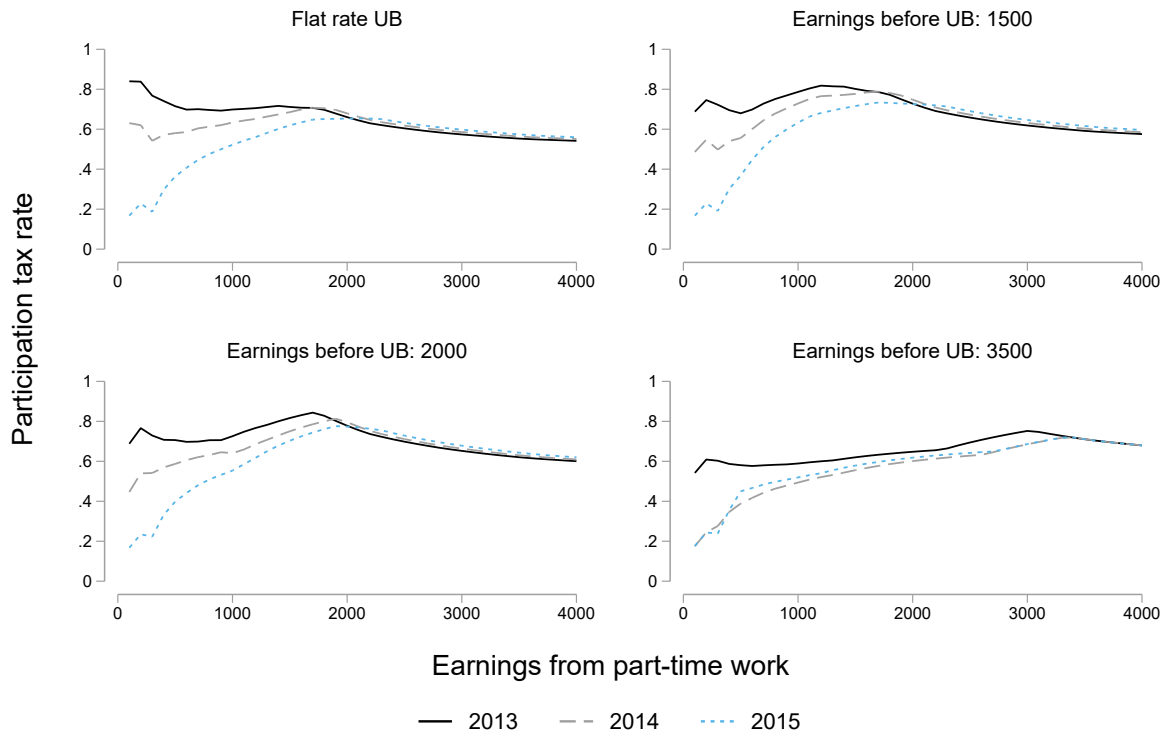
Notes: Figure presents the participation tax rates (PTR) in 2013, 2014 and 2015 for unemployed individuals with flat-rate UB and earnings-related UB recipients with different levels of earnings prior to unemployment: 1500, 2000 and 3500 euros per month. PTR indicates how much monthly household disposable income increases with labor earnings, compared to a situation where an individual remains unemployed with no labor earnings, accounting for income taxes and social benefit rules. PTRs in the figure do not account for the impact of last-resort income support, as we exclude households receiving this benefit from our analysis. The PTRs are calculated using the SISU microsimulation model.

UB. The figure includes flat-rate UB recipients and earnings-related UB recipients at different earnings levels between 1500–3000 euros per month before unemployment. As discussed above, earnings before unemployment define the daily UB such that higher earnings indicate higher benefits. Also, those with lower total income are more likely to be eligible for HA, which is included when calculating the participation tax rates in the figure. Table A1 in the Appendix presents the details for HA eligibility of these example cases.

From Figure 1 we can observe that participation tax rates were generally above 0.6 before the earnings disregard policies in 2013. For example, the participation tax rate for an individual with monthly earnings of 3500 euros prior to unemployment (bottom-right graph in the figure) and earning 500 euros per month while unemployed was 0.6.

Participation tax rates were larger and around 0.7–0.8 for those with flat-rate UB or lower earnings before unemployment, as these individuals were also eligible for HA. Therefore, this illustrates that the means-testing of HA further reduced the incentives to participate in part-time employment.

Figure 1 clearly illustrates that the earnings disregard for UB introduced in 2014 reduced the participation tax rates for all UB recipients. This is simply due to the fact that the first 300 euros of labor earnings do not affect UB, thus increasing disposable income when working part-time. Using average part-time earnings of approximately 600 euros per month for those eligible for HA (flat-rate UB recipients and those with low prior earnings), the participation tax rate reduced by approximately 36%. For those not eligible for HA with average part-time earnings of 900 euros per month, the reduction in participation tax rate in 2014 was 21%.[12]
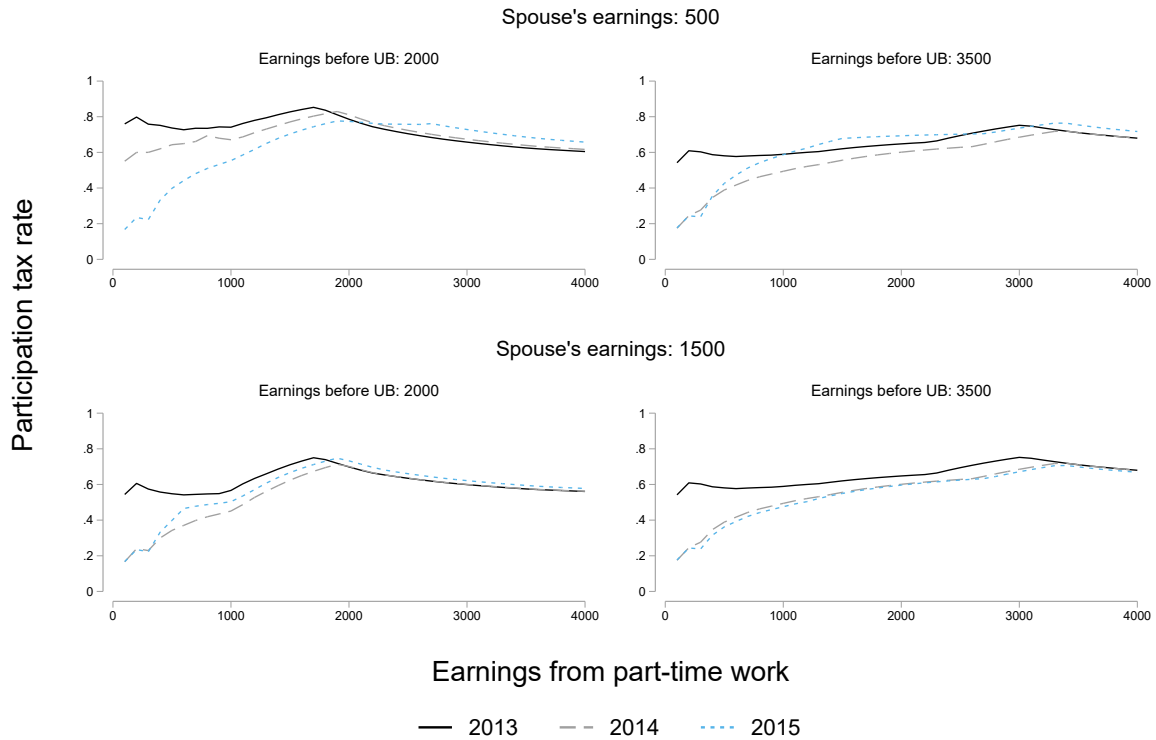
The implementation of earnings disregard for housing allowance in 2015 reduced the participation tax rate only for those eligible for HA. Therefore, participation incentives improved mainly for those with flat-rate UB and lower pre-unemployment earnings. After this reform, the participation tax rates for earnings up to approximately 700 euros per month were below 0.4 for all UB recipients. Importantly, as this reform did not concern those not receiving HA, the incentives for UB recipients not entitled to HA remained practically unchanged between 2014 and 2015 (see bottom-right graph of Figure 1).

Figure 2 presents similar graphs for two-person households using different assumptions of spouse's earnings: 500 euros (above) or 1500 euros (below) per month. As discussed above, spousal earnings do not affect UB but they are included when defining eligibility for HA. Similarly as above in Figure 1, higher earnings indicate that the household is less likely to be eligible for HA. Table A1 in the Appendix shows the details of HA eligibility for these groups.

Figure 2 delivers a similar message as Figure 1 above: participation incentives changed for all UB recipients in 2014, but the later reform in 2015 reduced the participation

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[12]Figure A4 in the Appendix shows the earnings distributions for earnings-related and flat-rate UB recipients in 2013, separately for those with and without HA. The figure illustrates that those UB recipients without HA tend to earn somewhat more than those with HA throughout the distribution.

Figure 2: Participation tax rates for two-person households in 2013–2015

Spouse's earnings: 500

Earnings before UB: 2000   Earnings before UB: 3500

Spouse's earnings: 1500

Earnings before UB: 2000   Earnings before UB: 3500

Earnings from part-time work

——— 2013   – – 2014   ····· 2015

Notes: Figure presents the participation tax rates (PTR) in 2013, 2014 and 2015 for earnings-related UB recipients with different levels of earnings prior to unemployment (2000 and 3500 euros per month) and with different spousal earnings (500 or 1500 euros per month). PTR indicates how much monthly household disposable income increases with labor earnings, compared to a situation where an individual remains unemployed with no labor earnings, accounting for income taxes and social benefit rules. PTRs in the figure do not account for the impact of last-resort income support, as we exclude households receiving this benefit from our analysis. The PTRs are calculated using the SISU microsimulation model.

tax rates only for those with smaller household earnings, as they are also eligible for HA. Therefore, differences in spousal earnings between UB recipients create additional variation in how the latter reform in 2015 affected the incentives to participate in the part-time labor market.

Expected Impacts. Consistent with the changes in incentives, we expect the UB earnings disregard policy implemented in January 2014 to increase participation in part-time employment for all unemployed individuals. We expect the second reform in September 2015 to increase part-time work only for HA recipients, as those who were not entitled or receiving HA were not affected by this later reform.

Changes in participation tax rates due to the implementation of earnings disregards

were relatively large. For example, for single persons earnings 500 euros per month during an unemployment spell, the introduction of earnings disregard in UB reduced the participation tax rate by over 30% (from approximately 0.6 to 0.4) among those who were not entitled to HA. The earnings disregard for HA further reduced the participation tax rate by 30% for those entitled to HA. Therefore, due to the extent of these changes in incentives, we can expect the reforms to have an impact on part-time labor supply choices. Also, the earnings disregard policies were likely to be relatively transparent to benefit recipients. The clear 300 euro rule is presumably easier to comprehend and absorb compared to, for example, complex rules regarding progressive income taxes that were in use both before and after 2014. Even though we cannot test the role of the simplicity of regulations in this case, we expect the transparency of the policy to further increase labor supply responses.

However, as can been observed from Figures 1 and 2, due to the relatively small income threshold of the disregard at 300 euros per month and the cap rule stating that earnings and partial UB cannot exceed earnings before unemployment, participating in employment more permanently with earnings around 2000 euros per month were not affected by these reforms. Therefore, earnings disregard policies have a direct effect only on incentives to part-time work, enabling us to provide novel evidence of how individuals respond to changes in financial incentives concerning this particular labor supply margin.

A potential increase in part-time work during unemployment spells can also affect longer-run labour market outcomes. The expected impact of part-time work on transitions to full-employment is ambiguous due to potentially opposite lock-in and stepping-stone effects. Moreover, UB recipients may acquire new skills when working part-time, which increases their productivity and earnings potential, and employers may use part-time and temporary jobs to screen potential candidates for more permanent full-time positions. Therefore, part-time working during unemployment spells may also lead to higher earnings and longer employment spells after benefit receipt.

In addition, the introduction of earnings disregards affected incentives for transitions from full-time employment to unemployment with part-time earnings. By making part-

time work relatively more attractive, these reforms could have reduced full-time employment while increasing part-time working while receiving UB. Nevertheless, this transition would require the worker to first resign from his or her current job and register as an unemployed job seeker, which entails requirements to search actively for a full-time job and readiness to start working upon receiving a job offer. In addition, voluntary resignations typically lead to a waiting period of up to 45 days before receiving UB. These imply that moving from full-time jobs to part-time employment with UB is rather costly for workers, which notably reduces the incentives for these types of transitions.

We are not able to directly test the prevalence of transitions from full-time employment to part-time jobs with UB, as it is difficult to construct a reliable empirical setup with treatment and comparison groups for the fully employed individuals at the time of the earnings disregard reforms. However, in Section 4 we present descriptive evidence that changes in the number of UB recipients are not linked to the changes in the share of UB recipients with labor earnings among different subgroups. This indicates that this channel is not likely driving the changes in part-time work among benefit recipients, as the increase in part-time work in different subgroups appears not to be closely associated with transitions into unemployment in the same groups.

Also, the implementation of earnings disregards can mechanically increase the number of benefit recipients with positive labor earnings. This is because now the first 300 euros of earnings that do not impact the benefits "push" those with higher earnings than before the reforms to being eligible for small amounts of benefits. This issue needs to be considered when evaluating participation to part-time work while receiving benefits, as this mechanical effect does not necessarily indicate a participation response. We take this issue into account in our empirical analysis, and show evidence that this mechanical effect is not driving our findings.

Finally, the introduction of earnings disregards generated a new kink point to the budget set of UB and HA recipients at 300 euros, above which the benefits begin to gradually reduce. In principle, this discontinuity could be used to identify local intensive-margin responses to financial incentives using the so-called bunching method (see e.g.

Kleven 2016). However, we do not use a bunching method in this study for two reasons: first, this method does not allow us to capture participation responses, which are the main outcome we are interested. Second, identifying a credible counterfactual distribution from a non-monotonous earnings distribution is challenging, implying that the local intensive-margin estimates are likely to be biased. However, we illustrate and briefly discuss the changes in the part-time earnings distributions around the earnings disregard reforms below in Section 5.

2.3   Other relevant reforms

Activation model.   In 2018 and 2019, the so-called activation model was implemented in Finland, which aimed at increasing employment by encouraging unemployed individuals to be more active throughout their period of unemployment. When the activation model was in effect, the UB was cut by 4.65% if an individual had not worked or participated in employment-promoting services during a three-month review period. The threat of benefit cut aimed to encourage unemployed individuals to seek short-term and part-time work or participate in employment-promoting services to a greater extent than before, both of which were expected to help prevent prolonged unemployment.

The incentives created by the activation model were different for different groups of unemployed individuals. In particular, the model did not provide additional financial incentives for those who, even without the activity requirement, would engage in short-term or part-time work during their unemployment period. Therefore, the model may have increased part-time work during unemployment especially in groups where working with benefits was relatively rare before the reform. Also, by reducing the unemployment benefits and tightening the activity condition, this reform may have increased full-time employment. This may show up as increased transitions to full-time employment in our analysis of the longer-run impacts of earnings disregard policies on more permanent employment.[13]

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[13]According to Kyyrä et al. (2019), the sanctions of the activation model particularly affected older unemployed individuals. Approximately half of unemployed workers over 55 years old were subject to the benefit cut. Also, men's unemployment benefits were more frequently reduced due to the activation model compared to women.

The unemployment benefit reform, which included the activation model, received a lot of criticism even before its implementation, especially from left-wing politicians and labor unions. After a change in government in June 2019, the activation model was abolished at the end of the year, so it was in effect for only two years.

COVID-19 measures. In 2020 and 2021, the government sought to alleviate the effects of the COVID-19 pandemic and the imposed restrictions on workers by making several changes to the rules of furloughs and unemployment benefits. The duration of collective negotiations within firms regarding furloughs and the notice period prior to a furlough were reduced for the period from April 2020 until the end of 2020. During this time, even employees with fixed-term contracts could be furloughed under the same conditions as those with permanent contracts. Also entrepreneurs temporarily gained the right to flat-rate unemployment benefits if their business income had decreased due to the pandemic. Normally, entrepreneurs are not entitled to unemployment benefits. The earnings disregard in unemployment benefits was raised from 300 euros to 500 euros for the period from June 2020 to November 2021.

Labor market adjustments occurred mainly through furloughs, and unemployment did not significantly increase during the pandemic. Most new flat-rate UB recipients during the pandemic were entrepreneurs. Although the pandemic caused only a short dip in employment at the economy level, it had a significant and long-lasting negative impact on certain industries and groups. The sectors most severely affected were accommodation and restaurants, recreational services, and logistics. Apart from the logistics, part-time work is relatively common in these sectors. Employment and earnings decreased especially in the group under 25 years old, which includes many students whose part-time and occasional side jobs likely decreased (Isotalo et al. 2022). The COVID-measures and their consequences do not impact our analysis of earnings disregard policies, but show up in our longer-run descriptive analysis of part-time work that includes this time period.

3 Data

We combine various administrative data sets to construct our data. Our data from the Social Insurance Institution and unemployment funds include individual-level information on each unemployment spell, and monthly-level information on unemployment benefits and earnings when receiving benefits from the period 2000–2021. These data allow us to reliably track down the development of working while on UB from a long time period for individuals in different sectors, and to study how the earnings disregard reforms are linked to part-time work. To measure longer-run labor market outcomes, we use data on all employment spells and annual earnings from the pension providers. These employment and earnings records are available until the end of 2018.

To these data we have linked various information on other incomes and social benefits including HA, and background characteristics such as age, sex, education, place of residence, and family status from different registers of the Statistics Finland. The data also enable us to link individuals living in each household. These data are available at annual level until 2020. Therefore, one limitation in our data is that we observe housing allowances only at the annual level, in comparison to monthly-level unemployment benefits. We discuss the implications of this limitation in terms of our empirical analysis of earnings disregard reforms below.

Another data limitation is that after the implementation of earnings disregards, we do not observe earnings below the 300 euro threshold for all earnings-related UB recipients. This is due to the fact that some of the unemployment funds that are responsible for UB payments do not register individual earnings below 300 euros after 2014, even though they typically record the part-time work status of benefit recipients also in these cases.[14] Due to this restriction, our analysis on earnings while unemployed is based on a subsample of individuals for whom the monthly earnings below 300 euros are observable in the data, which covers 66% of the recipients of earnings-related UB.

Table 1 presents descriptive statistics on key variables using our main estimation sam-

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[14]Whether earnings below the earnings disregard are registered or not in a given unemployment fund depends on the fund's IT system provider, which we do know.

Table 1: Descriptive statistics, 2012–2018

	All	Earnings-related UB	Flat-rate UB
Age	43.03	47.05	38.84
Female	0.53	0.55	0.50
Spouse	0.60	0.66	0.54
Spouse's earnings' (annual)	14,669	17,486	11,740
Family size	2.39	2.35	2.43
Number of children aged 7 and below	0.21	0.19	0.23
Working part-time (yes/no)	0.17	0.20	0.13
Received housing allowance (yes/no)	0.23	0.11	0.35
Earnings from part-time work (per month)	818	922	693
Observations	23,289,294	11,870,324	11,418,970
Unique observations	1,126,214	693,445	621,050

Notes: Table presents the key descriptive statistics for individuals who received unemployment benefits (UB). Mean values and standard deviations (in parenthesis) are presented for all UB recipients and the recipients of earnings-related and flat-rate UB.

ple from 2012–2018, which we use to analyze the impacts of earnings disregard reforms. We focus on this time period in our regression analysis because complete employment records are available only until 2018. The table shows mean values for all UB recipients and separately for earnings-related and flat-rate UB recipients. Those with earnings-related UB are slightly older, more likely to have a spouse, but less likely to have children below the school starting age (7 years in Finland). From the table we can observe that 20% of earnings-related and 13% of flat-rate UB recipients had part-time jobs in 2012–2018. Also, as can be expected, those with flat-rate UB are more likely to receive HA due to their lower individual and spousal incomes. Finally, earnings-related UB recipients' part-time earnings were higher (922 euros) compared to those with flat-rate UB (693 euros).

4 Combining Benefits and Part-time Work Over Time

In this section, we describe how combining unemployment benefits and part-time work has developed in Finland over the last 20 year, and describe how working while receiving

UB has evolved among different types of individuals and sectors.

First, Panel A of Figure 3 illustrates the development of the number of unemployed individuals and part-time workers receiving UB in Finland, and Panel B the overall trend in the share of part-time workers who received UB relative to all UB recipients during 2000–2021. The figure shows that while the number of unemployed persons has varied following the changes in the business cycle, the share of part-time workers receiving benefits remained relatively stable around 10–12% during 2000–2013, although the share dipped slightly after the financial crisis in 2008–2009. After 2013 the share of part-time workers begun to sharply increase, and before the pandemic in March 2020, their share reached 18%.[15] This increase took place at same time as earnings disregards in UB and HA were implemented, denoted by vertical dashed lines in the figure.[16] This tentatively suggests that these policies increased part-time working while receiving benefits, which we analyze in more detail below.
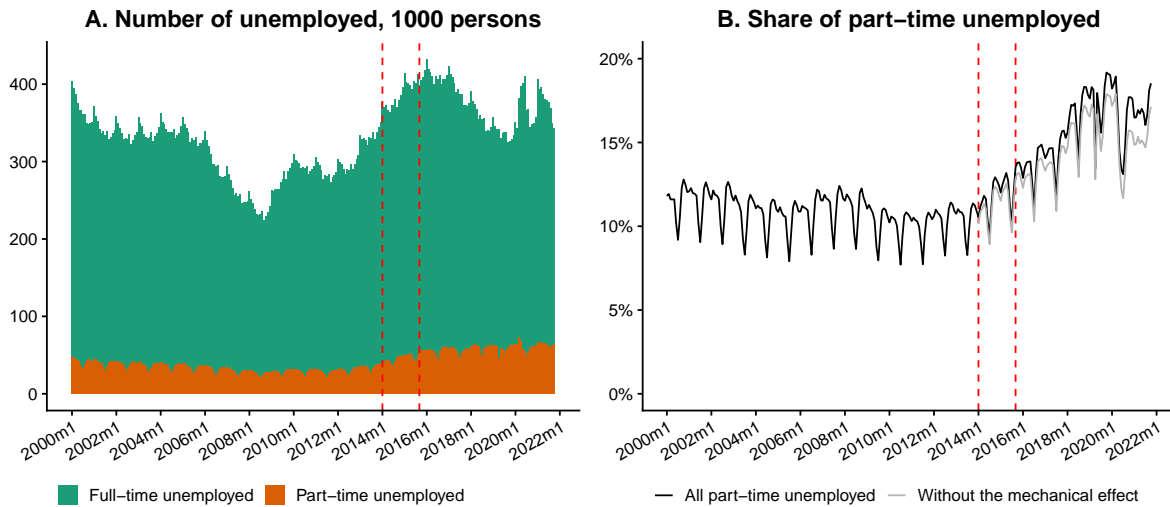
Also, Figure 3 illustrates the temporal variation in unemployment each year. The figures show that the number of fully unemployed persons increases during the summer, and consequently, the share of part-time workers drops at the same time. This phenomenon concerns particularly women (see Panel B of Figure 4 below), and is likely driven by school holidays when teachers, who are often women, are more likely to be unemployed, and mothers of young children more likely to be without employment due to the lack of daycare opportunities for their children. This issue is recently illustrated and discussed in more detail using data from the US by Price and Wasserman (2023).

In addition to the share of all part-time workers receiving benefits, Panel B of Figure 3 includes the share of them when excluding the mechanical effect of the 2014 earnings disregard reform. As discussed above, the first 300 euros of earnings that do not impact the benefit increases the number of those individuals eligible for small amounts of UB who were not eligible before the reform in 2014 due to their high labor earnings. The

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[15]During the COVID-19 pandemic in 2020–2021, the number of furloughed workers increased drastically, partly due to temporary legislative changes that made it easier to furlough workers. We focus on unemployed workers and exclude furloughed workers from our analysis. We also exclude entrepreneurs.

[16]Over the same period the share of part-time workers among all employed workers increased much less and smoothly from 12% in 2000 to 14% in 2020. See Figure A1 in the Appendix.

Figure 3: Full- and part-time unemployed workers in 2000–2021

A. Number of unemployed, 1000 persons

B. Share of part–time unemployed

Full–time unemployed   Part–time unemployed

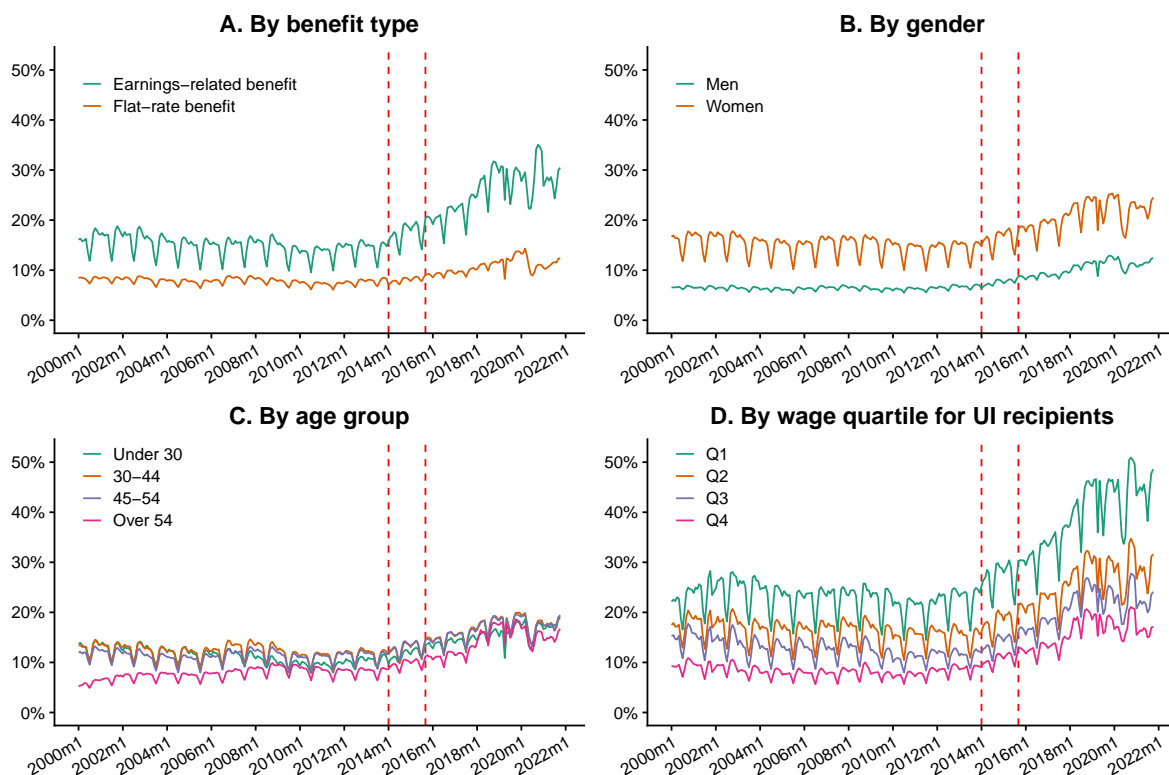All part–time unemployed   Without the mechanical effect

Notes: Panel A of the figure shows the number of unemployed individuals in 1000 persons in Finland in 2000–2021. The graph includes the number of full-time unemployed (green bars), and part-time employed (orange bars) who are working part-time and receiving benefits. Panel B shows the development of the share of part-time unemployed from all UB recipients in 2000–2021. The black line denotes the share of all part-time unemployed, and the grey line the share when excluding the mechanical increasing effect of the earnings disregard reforms on part-time unemployment. The vertical dashed lines denote the implementations of earnings disregards in unemployment benefits (January 2014) and housing allowances (September 2015).

figure shows that removing these individuals as partial UB recipients does not change the overall pattern of the increasing share in part-time unemployed workers after 2014, but reduces this share by approximately 1–1.5 percentage points. Therefore, based on this finding we conclude that the mechanical effect does not significantly alter the above implications.

Figure 4 illustrates the development of the share of part-time workers receiving benefits in different subgroups. Panel A shows the development by benefit type, dividing UB recipients to earnings-related and flat-rate UB recipients. Part-time work is more common among earnings-related UB recipients, but the share of part-time workers increased in both of these groups after the implementation of earnings disregards (vertical dashed lines in the figure). Panel B shows that combining part-time work and benefits is more common among women compared to men, but again part-time work increased in both groups after 2014. Also, these figures underline the temporal difference in unemployment and the share of part-time workers between the groups, stemming from the fact that

Figure 4: Share of part-time unemployed workers in different subgroups of all UB recipients

A. By benefit type

— Earnings–related benefit
— Flat–rate benefit

B. By gender

— Men
— Women

C. By age group

— Under 30
— 30–44
— 45–54
— Over 54

D. By wage quartile for UI recipients

— Q1
— Q2
— Q3
— Q4

Notes: Panels A, B, C and D show the development of the share of part-time unemployed workers among all UB recipients in 2000–2021 by benefit type (earnings-related/flat-rate), gender, age groups, and among recipients of earnings-related benefits by annual wage quartiles before the current benefit entitlement period, respectively. The vertical dashed lines denote the implementations of earnings disregards in unemployment benefits (January 2014) and housing allowances (September 2015).

full-time unemployment tends to increase particularly among women during the summer (see Price and Wasserman 2023).

Panel C of Figure 4 shows that in the early 2000s working part-time was much less common among older unemployed persons aged above 54 years, while the differences among other age groups were negligible. However, the share of part-time workers increased most notably among the oldest age group after 2014, and by 2020 the differences by age were rather small. The oldest group include workers who are eligible for extended unemployment benefits after their regular benefits expire. Since these extended benefits can be received until the statutory retirement age, the combination of the regular and extended UBs provides a kind of early retirement scheme. As a result, many of the oldest unemployed are not actively looking for a new job but passively wait for access to old-age

pension (Kyyrä and Ollikainen 2008). The age threshold of this early retirement scheme was gradually increased from 55 to 60 between 2005 and 2021, encouraging re-employment among the oldest unemployed group by increasing their risk of benefit exhaustion. These reforms probably partly explain the larger increases in part-time work in the oldest group compared to younger groups. Also, the activation model, which was in effect in 2018–2019, may have encouraged part-time working among older workers more than among younger workers due to the lower initial level of part-time employment within the oldest group.

Panel D shows the development by income group for earnings-related benefit recipients, measured as wage quartiles before the current benefit entitlement period. The UB recipients are allocated into different income groups according to the monthly wage on which the level of their earnings-related benefit is based on. This graph shows that individuals in the first income quartile are much more likely to work part-time while receiving UB, and in this group the share of part-time workers increased from 22% in 2013 to 50% in 2020. In contrast, the share of part-time workers in the top income quartile reached only 20% even after the earnings disregards were implemented. It should be stressed that the first income quartile is likely to include many individuals who work part-time frequently while receiving UB. For these individuals, the pre-unemployment wage income is at least partly based on part-time earnings, because also part-time working (with or without UB) contributes to the employment condition and hence to the level of the future earnings-related UB, provided that the working time is at least 18 hours per week.

Figure 5 shows how the share of unemployment days involving part-time work out of all unemployment days developed in 2010–2020 among earnings-related benefit recipients in certain occupations as identified by their unemployment fund, and among flat-rate benefit recipients.[17] Since most unemployment funds are administrated by labor unions, which represent different industries and occupation groups, information on the unemployment fund that pays out the benefit to the recipient represents an intuitive proxy for differences

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[17]The graph shows numbers only for the largest unemployment funds whose membership is targeted at clearly defined occupations or industries. Many smaller funds have merged over time, resulting in the combined funds with very heterogeneous member pools.

by industries, if we assume that members of the funds are likely to continue working in the same industry also in the future. In addition to industry and occupation-related unemployment funds, Figure 5 includes the general unemployment fund available for all workers irrespective of industry or occupation. The general fund has been gaining popularity steadily over time, and it is by now the largest unemployment fund, with roughly one-fifth of all workers being members of it. Note that UB regulations do not depend on the unemployment fund, meaning that all variation in the level or duration of benefits between these groups are driven by differences in the earnings and work history between the members of different funds. The graph also includes recipients of flat-rate benefits from the Social Insurance Institution as a separate group. This group mainly consists of long-term unemployed who have exhausted their earnings-related benefits and labor market entrants without sufficient work history to be eligible for earnings-related benefits.

From Figure 5 we can observe that there is large variation in both the level and development of part-time working during unemployment between different groups.[18] The figure shows that part-time work while receiving benefits is most common among social and health care sectors and service sector workers. Also, in these groups the share of part-time work days has increased the most during the years 2010–2020. The share of these days is also relatively large among teachers, but in this group the share has not much increased after 2014. In contrast, the share of part-time work days among clerical workers increased from around 15% to 35% between 2010–2020. Working part-time during unemployment spells is less common among construction, paper and manufacturing workers and among the members of the unemployment fund for highly educated workers. The low share in the first three of these groups is also likely to explain the large difference between part-time work among men and women presented above.

As discussed above, one potential channel behind the increase in the share of part-time workers receiving UB is transitions from full-time employment to part-time unemploy-

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[18]In many cases, the number of part-time work days during unemployment overestimates the true number of days worked because the benefits are claimed and the adjustment of unemployment benefits to labor earnings are done in monthly or four-week periods. For example, a one-week job during unemployment results in the payment of partial UBs for a period of four weeks or a month.

Figure 5: Share of part-time work days days by occupation and benefit type
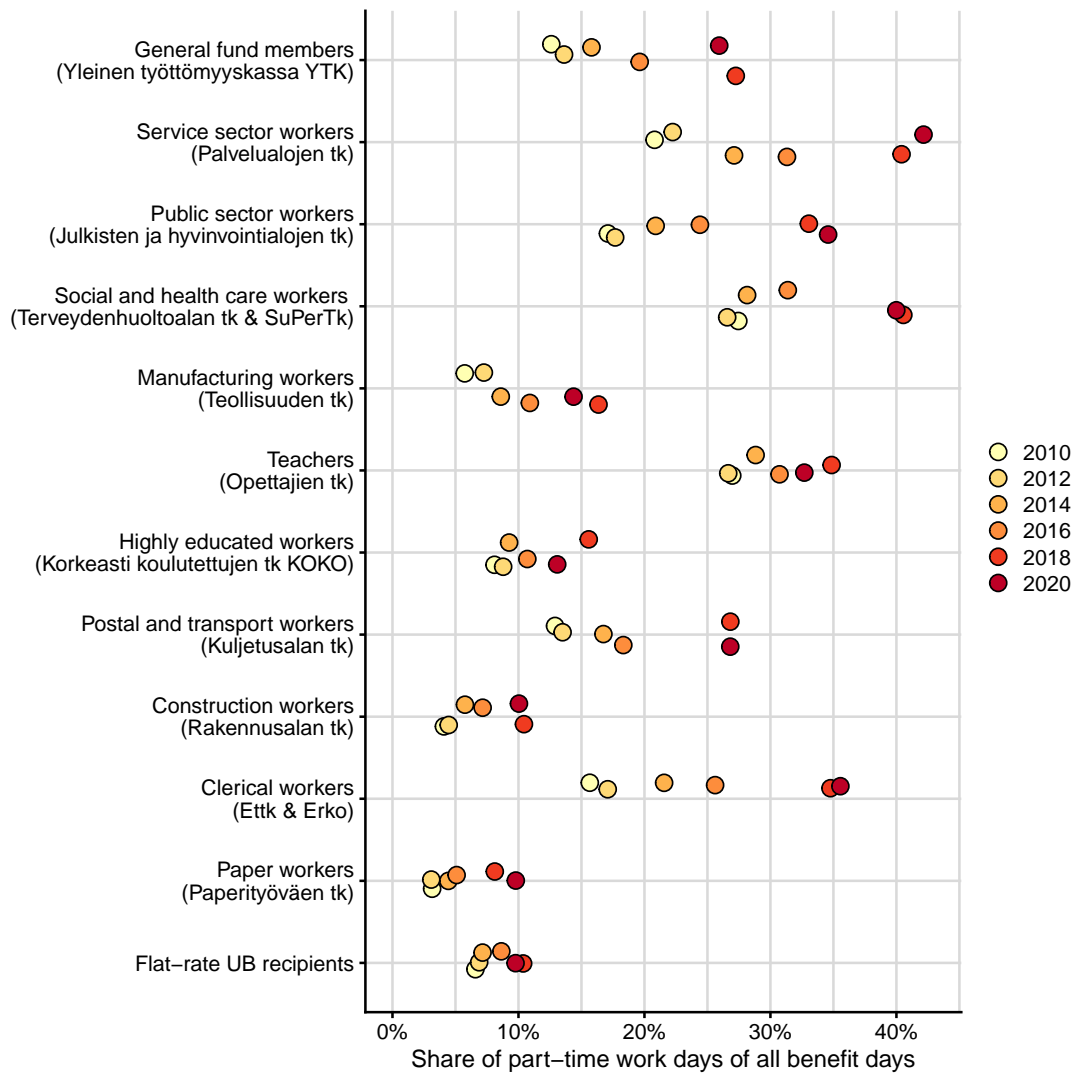
Notes: The figure presents the shares of days involving part-time work from all unemployment days for the members of different unemployment funds and for flat-rate UB recipients. Recipients of earnings-related benefits are allocated into different occupation and industry groups based on their unemployment fund (Finnish names for the funds shown in brackets). UB recipients from the general fund and recipients of flat-rate UB from the Social Insurance Institution are reported as separate groups.

ment. To characterize the extent of this potential margin, Figure A2 in the Appendix presents the changes in the number of all UB recipients in 2010–2020 for the same groups shown above in Figure 5. Comparing these two figures illustrate that the increases in the share of part-time workers are not very closely associated with changes in overall unemployment. For example, while combining part-time work and benefits has become much more common among service sector and clerical workers over the last decade, their overall unemployment has not significantly increased over the same period. Also, the

number of unemployed individuals has increased notably among the members of non-occupation specific general unemployment fund, but their share of part-time work days is still around 25%. One exception to this development are social and health care workers, in which group both unemployment and part-time working have increased at the same time. Overall, these observations suggest that transitions from employment to part-time jobs with UBs are not driving the increase in part-time work, but this channel could play some role in some specific sectors.

5   Analysis of Earnings Disregard Reforms

Next, we zoom into the implementation of the earnings disregard policies to evaluate how they affected part-time work while receiving benefits. In addition, we analyze whether potential participation responses to part-time work are linked to longer-run labor market outcomes.

5.1   Methods and Definitions

As discussed in detail above, implementations of the earnings disregards had differential impact on the incentives to work part-time for different unemployed individuals depending on whether their households received housing allowances or not. As shown in Figures 1 and 2, the earnings disregard in UB implemented in January 2014 reduced participation tax rates for all unemployed individuals. The earnings disregard in HA implemented in September 2015 further reduced participation tax rates but only for those who also received HA, leaving the incentives of other unemployed individuals unchanged. Due to the differential impact of the later reform, we will label as our treatment group those with both UB and HA, and the control group as those with only UB.

To study the impact of these reforms, we compare the monthly-level labor market outcomes between the treatment and control groups (UB recipients with and without HA). In our baseline analysis, we define the HA recipients as those with positive UB in a given month and whose household received HA during a year, as we can only observe

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HA on an annual basis in our data. Those UB recipients without HA are defined as those with only unemployment benefits in a given month. As a robustness check, we also analyze the outcomes by simulating HA recipient status based on the annual incomes of the household, and define the groups based on whether the individual's household is eligible for HA based on this simulation. However, the take-up of HA is not complete, meaning that some of the households eligible for HA do not apply for it. Therefore, the analysis based on the simulated HA status represents a lower bound of the potential effect, as those eligible for HA but not receiving it are presumably less likely to respond to changes in incentives related to the earnings disregard in HA. Our findings below confirm this hypothesis, as we find qualitatively similar but smaller effects when using simulated eligibility to HA to split UB recipients into the two groups.

As discussed and described above in Sections 2 and 3, individuals with earnings-related and flat-rate UB differ in various characteristics, including work history, prior earnings, age and spousal earnings. In addition, the share of housing allowance recipients is larger among flat-rate compared to earnings-related UB recipients, causing an imbalance of treatment and control groups across the types of UB. Furthermore, those with earnings-related UB tend to earn more while working part-time (on average 922 euros per month) compared to those with flat-rate UB (693 euros per month). These features indicate that pooling all UB recipients together can be challenging, as their labor market histories and potential responses to earnings disregard reforms might differ from each other. Therefore, we will study the impact of the earnings disregard reforms separately for both earnings-related and flat-rate UB recipients.

Our baseline identification assumption is *not* random assignment into the treatment and control groups (UB recipients with and without HA), but that the development of the labor market outcomes of the groups would have remained similar without the reforms. This is commonly referred to as the parallel trends assumption. To evaluate the validity of this assumption, we follow the development of the labor market outcomes in the treatment and control groups long before the implementation of the reforms. Our graphical analysis below illustrates that the development of the groups follows each other

very closely in the years preceding the reforms, strengthening the validity of our baseline identification assumption. We discuss other potential identification issues in the end of this section.

Our main measure for the effect of the reform is an indicator variable of participation in part-time or temporary employment while receiving UB. Using our detailed data, we define participation in part-time work each month and follow the development of the share of UB recipients working part-time over time, similarly as above in Section 4. In addition, we measure potential intensive-margin responses by studying labor earnings from part-time work between the groups.

We measure longer-run labor market outcomes by focusing on the likelihood of full-time employment, i.e. employment without receiving UB. We use the employment spell data to calculate the total number of working days in the next 24 months for UB recipients in each group for each month, including weekends and holidays but excluding the days in part-time work during an UB spell. We then estimate the impact of the earnings disregard reforms on the number of working days to analyze whether potential part-time work participation effects are linked to days in full-time employment in the future. In addition, we use several cutoffs to analyze transitions to more permanent employment. We define indicator variables using 360 employment days within the next 24 months (50% of days in employment), 550 (75%) and 660 days (90%). Results from these analyses enable us to comprehensively analyze the potential impact of earnings disregards on longer-run labor market outcomes. In addition to measuring employment for the next two years, we also run a separate analysis using data for the next year and for the second year (i.e. from 1–12 months and 13–24 months after the current period, respectively) to test the robustness of our findings to different time periods.

As discussed in Section 4, there is a clear seasonal pattern in the share of people who work part-time while receiving unemployment benefits, such that full-time unemployment tends to peak and the share of part-time workers to reduce during the summertime. In our analysis we remove this seasonality from our main outcome variables. To do this, we first run a regression of the outcome variable with calendar-month dummies separately for

the treatment and control groups, and then take the residuals of this regression, which represent the deviation of the actual data from the seasonal patterns captured by the calendar-month dummies.

More formally, to plot the timeline of the outcomes for earnings-related and flat-rate UB recipients, we estimate the following equation for treatment and control groups:

$$Y_{it} = \lambda_t + X_{it}\beta + \epsilon_{it} \tag{1}$$

where Y_{it} is the monthly outcome variable for individual i in period t, denoted in relation to December 2013, the month just before the implementation of the first reform. We omit this period dummy from the regression so that the estimated coefficients λ_t represent the average outcome development relative to the month before January 2014. We include as controls (X_{it}) age, gender, household size and the number of children below 7 years, and ϵ_{it} denotes the error term that is clustered at the individual level.

We estimate the following cross-sectional difference-in-differences equation to capture the magnitude of the effects for earnings-related and flat-rate UB recipients:

$$\begin{aligned} Y_{it} =& \alpha_1 + \alpha_2(Treat_{it} \times Post_{Jan2014}) + \alpha_3(Treat_{it} \times Post_{Sept2015}) \\ &+ \alpha_4 Treat_{it} + \alpha_5 Post_{Jan2014} + \alpha_5 Post_{Sept2015} + X_{it}\beta + \epsilon_{it} \end{aligned} \tag{2}$$

where the treatment group $(Treat_{it})$ is defined as those with both UB and HA, and the control group is those with only UB. We conduct the analysis using cross-sectional data of the groups, and thus define the treatment status for each individual each month. Therefore, our analysis aims to capture the differences in the development of the groups over time, and allow individuals to move out of the sample, for example, due to a transition to full-time employment. As unemployment benefits and housing allowances are often received for short periods of time, restricting the analysis to a panel setup where we would follow the same individuals over a long time would restrict the analysis to a small negatively selected sample of individuals who remain unemployed for a long time. However, as a robustness check, we estimate a similar model around the 2015 reform

using unbalanced panel data by keeping the treatment status fixed as it was observed one month before the implementation of earnings disregards in HA in September 2015. In this specification we follow the same individual one year before and after the reform.

$Post_{\text{Jan2014}}$ is an indicator variable for the period after the first reform (January 2014– August 2015), and $Post_{\text{Sept2015}}$ for the period after the second reform (September 2015 and later periods). Coefficient α_2 in equation (2) thus captures the difference between the groups after the introduction of earnings disregards for all UB recipients, and α_3 captures the difference after the implementation of earnings disregards in HA that affected only the treatment group. Both of the coefficients show the difference between the groups relative to the period before 2014. As such, the effect of the later reform is obtained as $\alpha_3 - \alpha_2$, which is the effect of primary interest. X_{it} includes controls for age, gender, household size and the number of children below 7 years, similarly as above, and ϵ_{it} is the error term. To study potential heterogeneity of the response, we interact both $Treat_{it} \times Post_t$ variables with indicator variables for gender, age (below or above 56 years), and below or above median wages before unemployment for earnings-related UB recipients.

Potential threats to identifying the effect of earnings disregards using equation (2) relate to compositional changes in the treatment and control groups that could affect the likelihood of participating in part-time work irrespective of the reforms. For example, if the composition of HA recipients changes over time such that this group would include significantly more women, who are more likely to participate in part-time work compared to men (see Figure 4), it could be that this change is driving the results instead of changes in financial incentives due to the earnings disregard reforms.

We conduct three tests to support the validity of our findings. First, we illustrate that the composition of HA recipients did not change significantly at the time of the earnings disregard reforms. Thus, this channel is likely not able to explain the observed effects after the earnings disregard reforms. Second, while the share of HA recipients in our sample increases over time, these increases occur rather similarly throughout our inspection period, including the years before the implementation of earnings disregards.[19]

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[19]The total number of HA recipients has increased steadily in Finland from 2010 onward. In 2010, the number of households receiving HA was approximately 175,000, and by 2016 it has increased to 270,000

Therefore, increases in the relative number of individuals in the treatment group that could be driven by e.g. mechanical effects of the earnings disregards discussed above, do not explain our findings after the reforms. Third, our panel data results using fixed treatment and control groups are very similar to the results from the cross-sectional baseline model, suggesting that potential (unobserved) changes in the composition of the groups do not explain our main findings.

5.2 Results

Participation in part-time work. We begin by plotting the development of participation in part-time work and earnings over time around the reforms. Figure 6 presents the development of the part-time work participation rate among earnings-related (left-hand side) and flat-rate (right-hand side) UB recipients in 2012–2018, divided between those with both UB and HA and those with only UB, estimated using equation (1). The bottom graphs in the figure show the differences between the groups each month. Development of part-time work is presented relative to December 2013, one month before the first earnings disregard reform, denoted by zero for all groups in the figure. The vertical lines in the figure denote the implementation of earnings disregard policies: first for all UB recipients in January 2014, and then for HA recipients in September 2015.

The figure shows that participation in part-time work developed very similarly in both treatment and control groups before the reforms. This supports the validity of our empirical approach. Second, the figure shows that in 2014 onward working part-time while receiving UB slightly increased after the implementation of earnings disregards for UB, particularly for flat-rate UB recipients. However, there are no clear differences between the treatment and control groups for either earnings-related or flat-rate UB recipients after the first reform. This was expected as this reform affected all UB recipients, including those with both UB and HA.

From Figure 6 we can observe a clear deviation in the development of part-time work between the treatment and control groups starting after the HA earnings disregard

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households.

Figure 6: Development of the share of part-time unemployed workers, earnings-related and flat-rate UB recipients
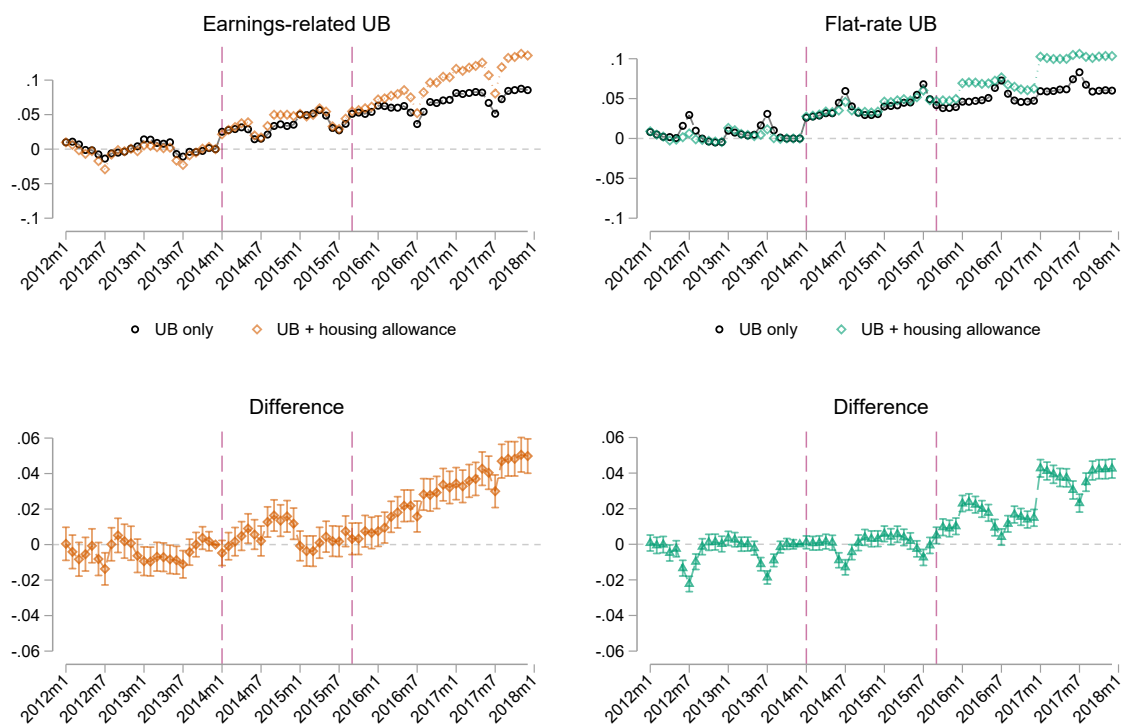
Notes: The figure plots the development of the share of part-time unemployed workers with labor earnings for earnings-related and flat-rate UB recipients in 2012–2018, separately for those with and without housing allowance. The share is presented relative to December 2013 which is denoted by zero for all groups. The figure also shows the difference between the groups each month with 95% confidence intervals. The baseline shares of part-time workers in December 2013 were 17% and 16% for earnings-related UB recipients without and with HA, and 8% and 10% for flat-rate benefit recipients, respectively.

implementation in September 2015. The share of part-time workers among those with both HA and UB increased more significantly compared to those with only UB who were unaffected by this later reform. This development is observed for both earnings-related and flat-rate UB recipients. Also, we observe that the difference in participation in part-time work increases gradually between the groups after the second reform, which is consistent with the fact that HA is reviewed less frequently compared to UB, implying that the incentives to participate to part-time work did not necessarily change to all HA recipients immediately after September 2015. Overall, the evidence in Figure 6 suggests that improving financial incentives to part-time work among benefit recipients increases their participation in part-time or temporary labor markets.

Closer inspection of Figure 6 shows that there are discontinuous changes in the de-

velopment of part-time work in the beginning of each year, particularly among flat-rate UB recipients. This stems from the fact that we rely on annual data to define HA recipient status, meaning that the treatment group status of UB recipients is defined in the beginning of each year in our data. However, this data-driven feature does not invalidate our setup and findings unless there are simultaneous compositional changes between the treatment and control groups at the time of the earnings disregard reforms that would affect part-time work participation through some other channels than changes in financial incentives.

Tables A2–A3 in the Appendix show how the compositions of the treatment (UB and HA) and control (UB only) groups for earnings-related and flat-rate UB recipients evolved in terms of age, gender and household characteristics in 2012–2018. Overall, there are no significant changes in these characteristics over time. If anything, there appears to be some small changes in household compositions within the groups over time, but as we control for these characteristics in our regressions it is unlikely that they are driving our observed patterns.

Second, Figure A5 in the Appendix shows the development of the shares of treatment and control groups over time for both benefit types. One might worry that the mechanical increase in the number of HA recipients due to the earnings disregard reforms is driving our results. However, based on Figure A5 this is not the case. The changes in the shares are small over time, but there is a small increasing trend in the share of HA recipients from 2013 to 2016. However, the relative share of HA recipients then slightly reduced in 2017. Therefore, these differential changes in the shares of HA recipients are not similar with our findings of consistent increase in part-time work in the treatment group in both 2016 and 2017 after the earnings disregard reform in HA. Therefore, potential mechanical effects that would increase the number of HA recipients after the 2015 reform are not driving our findings.

Third, Figure A6 in the Appendix shows the results for earnings-related and flat-rate UB recipients when using (unbalanced) panel data around the 2015 reform. In this specification, we fix the treatment status based on pre-reform observed HA recipients

and follow the same individuals one year before and after September 2015. The results show that the share of part-time workers in the treatment and control groups evolved very similarly before September 2015, as in our baseline model. Also, part-time work in the treatment group increases relative to the control group after the introduction of earnings disregards in HA for both earnings-related and flat-rate UB recipients in a very similar way as in our baseline model. This specification thus further demonstrates that potential changes in the compositions of the groups in the beginning of the year or the potential mechanical effects on HA eligibility after the reform are not affecting our baseline results. Overall, all these inspections strongly support the validity of our findings from our baseline cross-sectional regressions.

As an additional robustness check, Figure A7 in the Appendix shows the development of part-time work when dividing UB recipients to the groups based on simulated eligibility to HA instead of using the observed HA recipient status available in the data. Overall, the patterns in part-time work are similar as above, but the responses to the disregard reforms are more noisy and smaller among simulated HA recipients, as was expected.

Figure 7 shows the development of earnings from working while receiving UB for the two groups (UB recipients with and without HA), separately for the recipients of earnings-related and flat-rate UB. The figure again illustrates that the development of average earnings was similar in treatment and control both groups before 2014, further strengthening our identification assumption. After the earnings disregard reforms, the part-time earnings of those who received both UB and HA increased relatively more compared to those with only UB. This suggests that in addition to the likelihood of participating in the part-time labor market, the introduction of earnings disregards increased labor earnings. However, the relative increase in earnings is much smaller than the increase in participation rate, which we discuss in more detail below.[20]

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[20]Figure A3 in the Appendix presents the monthly earnings distributions for those who received partial UB in 2013, 2014 and 2016. From the figure we can observe that the distributions moved slightly to the right after the earnings disregard reforms for both UB types, which is consistent with an increase in earnings after the reforms. Also, we observe some degree of local bunching at the 300 euro threshold for both groups, indicating that some individuals are able to adjust their earnings precisely such that they do not exceed the monthly earnings disregard threshold.

Figure 7: Earnings from part-time work, earnings-related and flat-rate UB recipients
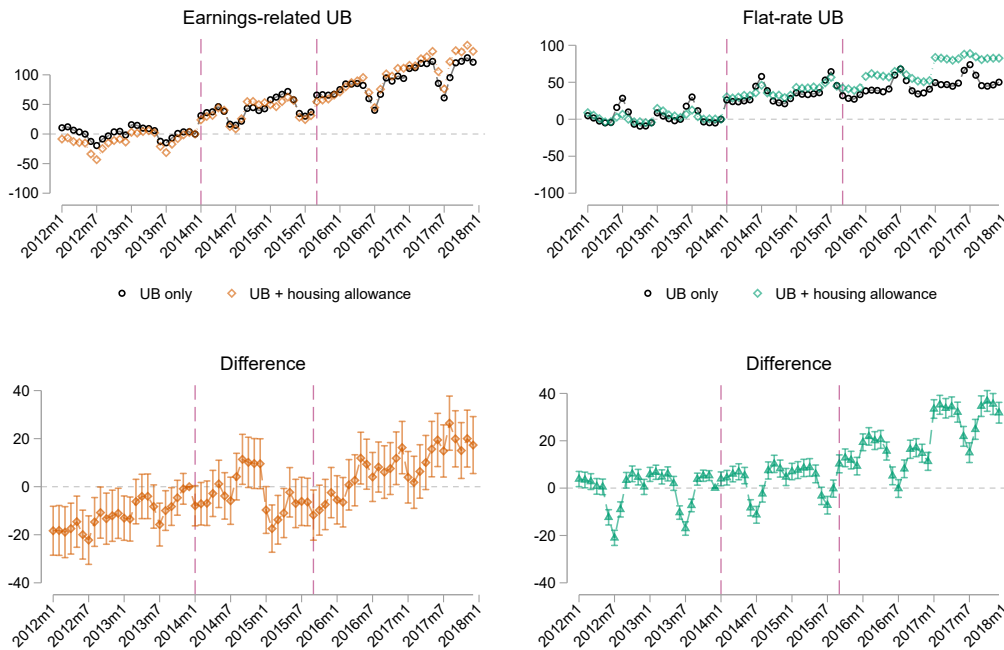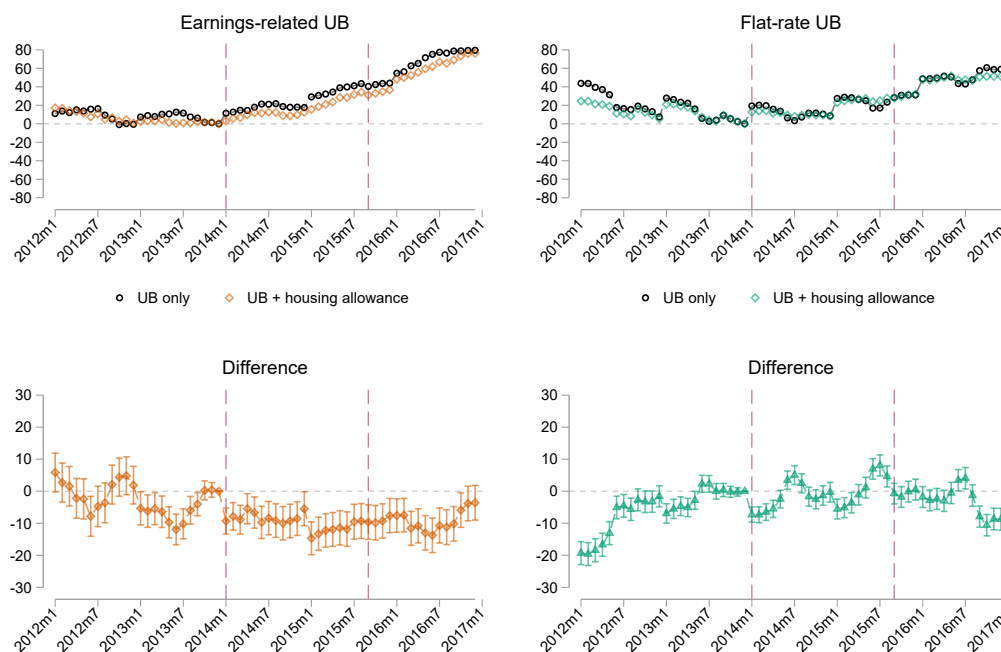

Notes: Figure plots the development of earnings from part-time work for earnings-related and flat-rate UB recipients, relative to December 2013 which is denoted by zero in the figure. UB recipients are split to two groups based on eligibility to HA, and the figures includes the difference in earnings between the groups each month with 95% confidence intervals. The baseline earnings from part-time work in December 2013 were 825 euros and 731 euros per month for earnings-related UB recipients with and without HA, and around 600 euros for both groups for those with flat-rate UB.

Permanent employment. Figure 8 plots the development of days in full-time employment within the next 24 months after each unemployment month in both the treatment and control groups around the earnings disregard reforms. The figure thus illustrates how the number of working days (excluding the days working while receiving UB) developed after unemployment for both earnings-related (left-hand side) and flat-rate (right-hand side) UB recipients, separately for those with and without HA.

Figure 8 shows that the number of days in full-time employment developed similarly in both groups and within both benefit types a year before the reforms. Days in full-time work increased slightly in both groups after 2014, but there is no economically significant difference in this development between the groups over time. This overall increase in full-time employment days continued after September 2015 as well, but there is again no clear difference in this trend between the treatment and control groups. This illustrates

Figure 8: Days in full-time employment within the next 24 months, earnings-related and flat-rate UB recipients

Notes: Figure plots the development of days in full-time employment each month within the next 2 years (24 months) for all earnings-related and flat-rate UB recipients in 2012–2018, presented separately for those with and without HA. The development is presented relative to December 2013 which is marked by zero for both groups. The baseline days in full-time employment within the next 24 months in December 2013 were 194 and 244 for earnings-related UB recipients with and without HA, and 145 and 143 days for flat-rate UB recipients with and without HA. The bottom graphs illustrate the difference between the groups each month with 95% confidence intervals.

that even though participation in part-time work diverged between the groups after the 2015 earnings disregard reform in HA, this pattern is not linked to a significant difference in the likelihood of subsequent full-time employment.

Figures 9 and 10 present the likelihood of working for at least 360 days (50%), 550 days (75%) or 600 days (90%) in full-time employment within the next 24 months for both treatment and control groups among earnings-related and flat-rate UB recipients. The figure paints a similar picture as above: while the likelihood of more permanent employment appears to have increased over time, there is no significant difference between the groups around the earnings disregard reforms.

Finally, Figures A8 and A9 in the Appendix present the results for the number of full-time working days within the next 12 months or within 13–24 months for recipients of

Figure 9: Likelihood of permanent employment in the future, earnings-related UB recipients

Notes: Figure presents the likelihoods of working for at least 360 days (50% of all working days), 550 days (75%) or 660 days (90%) in full-time employment within the next 24 months for earnings-related UB recipients, presented separately for those with and without housing allowance. The likelihoods are denoted in the figure relative to December 2013 which is marked by zero for both groups. The baseline likelihoods in December 2013 were 0.24 and 0.33 for those with and without HA for at least 360 days, 0.10 and 0.15 for 550 days, and 0.04 and 0.07 for working full time for at least 660 days within the next 24 months. The bottom graphs of the figure illustrate the difference between the groups each month with 95% confidence intervals.

both benefit types. The results for these first and second year outcomes are very similar to those presented above, and illustrate that there appears to be no clear-cut changes in full-time or more permanent employment between the treatment and control groups over time.

Regression estimates. Table 2 presents the difference-in-differences estimates based on equation (2) separately for earnings-related and flat-rate benefit recipients. The table shows the estimates separately for the effect of the first reform and for the joint effect of both reforms, as explained above. We are mainly interested in the effect of the later reform, which is obtained by subtracting the effect of the first reform from the joint

Figure 10: Likelihood of permanent employment in the future, flat-rate UB recipients

Notes: Figure presents the likelihoods of working for at least 360 days (50% of all working days), 550 days (75%) or 600 days (90%) in full-time employment within the next 24 months for flat-rate UB recipients, presented separately for those with and without housing allowance. The likelihoods are denoted in the figure relative to December 2013 which is marked by zero for both groups. The baseline likelihoods in December 2013 were 0.18 for those with and without HA for at least 360 days, 0.08 and 0.07 for 550 days, and 0.03 for working full time for at least 600 days within the next 24 months. The bottom graphs of the figure illustrate the difference between the groups each month with 95% confidence intervals.

effect. It captures the causal effect of the reduction in the part-time work participation tax rate due to the introduction of the earnings disregard for HA. Since the first reform affected both the treatment and control group, its effect does not capture the effect of the introduction of the earnings disregard for UB but describes the impact heterogeneity of the reform between the groups.

The estimates largely confirm the visual findings from the figures above. The estimates show that participation in part-time work increased for the treatment group (those with both UB and HA) relative to the control group (those with only UB) after the second earnings disregard reform in HA. There are also small 1.0 and 0.4 percentage points differences between the treatment and control groups participation rates after the first reform for earnings-related and flat-rate UB recipients, respectively. The effects of

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Table 2: Regression estimates for part-time work, earnings-related and flat-rate UB recipients

| | Earnings related UB | | Flat rate UB | |
	Working part-time	Part-time earnings	Working part-time	Part-time earnings
$\text{Treat}_{it} \times \text{Post}_{Jan2014}$	0.00956***	8.602**	0.00410**	3.871***
	(0.00235)	(2.703)	(0.00125)	(0.958)
$\text{Treat}_{it} \times \text{Post}_{Sept2015}$	0.0375***	21.78***	0.0320***	24.69***
	(0.00256)	(3.032)	(0.00142)	(1.067)
Baseline control	0.170	731.2	0.0800	604.1
Baseline treatment	0.160	825.6	0.100	594.5
Observations	11,870,324	8,056,990	11,418,970	11,418,970

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes: Table presents the difference-in-differences estimates estimated using equation (2) for participation in part-time work and earnings from part-time work for both earnings-related and flat-rate UB recipients. The treatment group is those unemployed individuals with both UB and HA and the control group those with only UB. Standard errors are presented in parenthesis.

the second reform concerning the earnings disregard in HA are much larger, given that the estimated joint effects of both reforms show 3.8 and 3.2 percentage-point increases in part-time work participation for earnings-related and flat-rate UB recipients, respectively. Subtracting away the effect of the first reform, these estimates imply 17% and 28% increases in participation to part-time work, relative to the baseline participation rates of 16% and 10% in December 2013 for earnings-related and flat-rate UB recipients, respectively. This is in line with the visual observations above showing that the implementation of the earnings disregards in HA was associated with a notable increase in the share of part-time work in the treatment group for both benefit types.[21]

We can evaluate the magnitude of the estimated response by approximating a participation elasticity with respect to incentives for part-time work. To do this, we relate this response to the change in the (net-of) participation tax rate due to the implementation of the earnings disregard in HA. To obtain a more easily interpretable estimate, we conduct this analysis by focusing on the latter reform that changed the incentives only for the treatment group of HA recipients.

The relative change in the participation tax rate caused by the 2015 reform was approximately 22% for earnings-related and 31% for flat-rate UB recipients using the av-

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[21]The estimates from the panel data analysis described in Figure A6 in the Appendix are similar to those in the cross-sectional baseline model. The difference-in-differences estimates for the September 2015 reform are 0.024 (standard error 0.003) for earnings-related and 0.013 (0.001) for flat-rate UB recipients in the panel regressions.

erage earnings from part-time work in the treatment group (826 and 595 euros per month for earnings-related and flat-rate UB, respectively). To capture the average participation response to the second reform alone, we deduct the small estimated effects of the first reform (1.0 and 0.4 percentage points) from the effect of the second reform for both benefit types. This gives us point estimates of 2.8 percentage points increases in part-time working, translating into 17% and 28% increases relative to the treatment group means for earnings-related and flat-rate UB recipients, respectively.

Therefore, the obtained participation elasticity point estimates for earnings-related and flat-rate UB recipients are approximately 0.8 and 0.9, respectively. These numbers indicate that part-time labor supply decisions of benefit recipients are relatively responsive to changes in financial incentives. These estimates are larger compared to what has been found for participation in full-time employment in the literature, where the elasticity with respect to the net-of-tax participation rate is typically estimated to be below 0.5 (Chetty et al. 2013).

In addition, Table 2 shows the estimates for earnings during part-time work for both benefit types. The estimates indicate a statistically significant increase in earnings for the treatment group after both reforms, and that the effect is again larger after the implementation of earnings disregard in HA, especially for flat-rate UB recipients. However, in relative terms, the earnings increase is much smaller compared to the participation response after the 2015 reform. The average 13 and 21 euros per month increases in earnings (after deducting the effect of the 2014 reform) correspond to 2.5% and 3.5% increases relative to the treatment group baseline means of 826 and 594 euros per month in December 2013 for earnings-related and flat-rate UB recipients, respectively.

Table 3 shows the regression results when we interact the $Treat_{it} \times Post_t$ terms in equation (2) with various heterogeneity indicators. We analyze how the effects differ by age (below or above 56 years) and gender, and by earnings below or above median for those receiving earnings-related UB.

The results show that the impact of the earnings disregard reforms are larger for individuals younger than 56 after the second reform. This is at odds with the evidence in

Table 3: Heterogeneity results: working part-time

	Earnings-related UB			Flat-rate UB	
	Below 56 years	Female	Above median	Below 56 years	Female
Treat$_{it}\times$ Post$_{Jan2014}$	0.0110	0.0021	-0.0064	-0.0055	0.0093**
	(0.0057)	(0.0044)	(0.0046)	(0.0036)	(0.0025)
Treat$_{it}\times$ Post$_{Sept2015}$	0.0372**	0.0092	-0.0137*	0.0087**	0.0212**
	(0.0064)	(0.0047)	(0.0047)	(0.0043)	(0.0029)
Observations	11,870,324	11,870,324	11,870,324	11,418,970	11,418,970

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table presents the difference-in-differences estimates from equation (2) interacted with heterogeneity indicator variables for age (below or above 56 years), gender and earnings below or above median for those receiving earnings-related UB. The treatment group is those unemployed individuals with both UB and HA and the control group those with only UB. The coefficients on Treat$_i\times$ post$_{Jan2014}$ and Treat$_i\times$ post$_{Sept2015}$ without interactions are –0.003 (0.006) and –0.01 (0.006) for earnings-related UB recipients and 0.004 (0.003) and 0.014 (0.004) for flat-rate UB recipients. Standard errors are presented in parenthesis.

Panel C of Figure 4, showing that part-time working during unemployment has increased most among the oldest workers over the past two decades. These differences suggest that the increases in part-time work among the oldest unemployed are not only driven by the implementations of the earnings disregards, but also other reforms, such as postponing the access to extended UBs and the activation model, have probably played a significant role.

The estimates among flat-rate UB recipients are larger among women compared to men, and the impact of the second reform in 2015 was larger for those with smaller earnings compared to those with above median earnings before unemployment among earnings-related UB recipients. These observations suggest that the overall increase in part-time work during unemployment observed in these same groups from mid-2010s onward discussed in Section 4 stems at least partly from the implementation of earnings disregards.

Tables 4 and 5 show the estimates for full-time employment for both benefit types. Column (1) shows the estimates for days in full-time employment within the next 24 months. There is a statistically significant increase of approximately 3 days after September 2015 among flat-rate UB recipients with HA. However, the economical importance of this small increase is not substantial, translating into an approximately 2% increase in working days relative to the treatment group baseline measured in December 2013.

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Table 4: Regression estimates for full-time employment, earnings-related UB recipients

	Days in employment	Full-time (360)	Full-time (550)	Full-time (660)
$\text{Treat}_{it} \times \text{Post}_{Jan2014}$	-5.874***	-0.00559	0.00151	0.00271**
	(1.692)	(0.00315)	(0.00185)	(0.00100)
$\text{Treat}_{it} \times \text{Post}_{Sept2015}$	-5.680**	-0.00625	-0.000460	0.0000646
	(1.810)	(0.00337)	(0.00194)	(0.00106)
Baseline control	244.2	0.330	0.150	0.0700
Baseline treatment	194	0.240	0.100	0.0400
Observations	7,937,657	7,937,657	7,937,657	7,937,657

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table presents the difference-in-differences estimates estimated using equation (2) for full-time employ-ment within the next 24 months after partial UB spell for earnings-related UB recipients. Column (1) shows the estimates on the number of days in full-time employment, and columns (2)–(4) the likelihoods of working at least 360, 550 and 660 days in full-time employment within the next 24 months. The treatment group is those unemployed individuals with both UB and HA and the control group those with only UB. Standard errors are presented in parenthesis.

The earnings disregard reforms had an opposite employment effect for earnings-related UB recipients with HA, as their working days reduced by some 6 days following the 2015 reform. Also this effect is small in relative terms, corresponding to a 3% drop in the average working days within the treatment group. For both benefit types, the overall employment effect stems from the earlier reform in 2014, while the effect of the imple-mentation of the earnings disregard for HA in September 2015 is close to zero. However, because of the 24-month observation window, the effect of the 2014 reform captures also part of the effect of the 2015 reform, suggesting the effects of the two reforms on the full-time employment outcomes are not separately identified.

Columns (2)–(4) show the estimates for the likelihood of working at least 360, 550 or 660 days in full-time employment during the next 24 months. All point estimates for earnings-related UB recipients are small and statistically insignificant. For flat-rate UB recipients the estimates are positive but well below 1 percentage point in all specifications. Together with the small estimate for full-time working days, these results confirm the visual observations above and illustrate that the increased part-time employment during (partial) UB spells after September 2015 within the treatment group are not linked to significant changes in transitions to full-time employment.

Table 6 shows the results for the heterogeneity in full-time working days within the

Table 5: Regression estimates for full-time employment, flat-related UB recipients

	Days in employment	Full-time (360)	Full-time (550)	Full-time (660)
$\text{Treat}_{it} \times \text{Post}_{Jan2014}$	4.515***	0.0106***	0.00700***	0.00350***
	(1.020)	(0.00181)	(0.00106)	(0.000581)
$\text{Treat}_{it} \times \text{Post}_{Sept2015}$	2.897*	0.00824***	0.00650***	0.00397***
	(1.161)	(0.00203)	(0.00115)	(0.000630)
Baseline control	142.9	0.180	0.0700	0.0300
Baseline treatment	145	0.180	0.0800	0.0300
Observations	7,315,800	7,315,800	7,315,800	7,315,800

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table presents the difference-in-differences estimates estimated using equation (2) for full-time employment within the next 24 months after partial UB spell for flat-rate UB recipients. Column (1) shows the estimates on the number of days in full-time employment, and columns (2)–(4) the likelihoods of working at least 360, 550 and 660 days in full-time employment within the next 24 months. The treatment group is those unemployed individuals with both UB and HA and the control group those with only UB. Standard errors are presented in parenthesis.

Table 6: Heterogeneity results: days worked in the next 24 months

	Earnings-related UB			Flat-rate UB	
	Below 56 years	Female	Above median	Below 56 years	Female
$\text{Treat}_{it} \times \text{Post}_{Jan2014}$	13.1209*	2.0256	0.5413	9.7166**	6.5401*
	(4.1894)	(3.4949)	(3.9848)	(2.6982)	(2.0445)
$\text{Treat}_{it} \times \text{Post}_{Sept2015}$	23.6834**	13.8859**	5.8518	11.3912**	9.8268**
	(4.6296)	(3.7176)	(4.1661)	(3.3233)	(2.3261)
Observations	7,937,657	7,937,657	7,937,657	7,315,800	7,315,800

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table presents the difference-in-differences estimates from equation (2) interacted with heterogeneity indicator variables for age (below or above 56 years), gender and earnings below or above median for those receiving earnings-related UB. The treatment group is those unemployed individuals with both UB and HA and the control group those with only UB. The coefficient on $\text{Treat}_i \times \text{post}_{Jan2014}$ and $\text{Treat}_i \times \text{post}_{Sept2015}$ without interactions are -10.2 (4.5) and -21.6 (5.0) for earnings-related UB recipients and -7.4 (2.6) and -12.1 (3.3) for flat-rate UB recipients. Standard errors are presented in parenthesis.

next 24 months by age, gender and income levels prior to unemployment, in a similar way as above in Table 3 for part-time work. The table shows that days in full-time work increased after the reforms more significantly for younger workers and women compared to men and older workers. This suggests that for these groups the stepping-stone effects could be somewhat larger.

Finally, Tables A4 –A7 in the Appendix present the results for full-time employment separately when using the first and second 12 months to measure the longer-run employment outcomes. Overall, the estimates from these specifications are very small and vary between negative and positive effects. Therefore, these results indicate that we do not

observe any consistent significant effects on transitions to full-time or more permanent employment. However, for flat-rate UB recipients the effects on full-time employment are consistently positive across different specifications but still very small in magnitude. If anything, this suggests that we find no evidence that the earnings disregards would discourage full-time employment of those with lower incomes and shorter work histories, who typically comprise the flat-rate benefit recipients.

6 Discussion

In this paper, we find that participation in part-time or temporary labor markets increased considerably after the implementations of earnings disregard policies that allow unemployment benefit recipients to earn small amounts of income without reductions in their benefits. The implied participation elasticity estimates of 0.8–0.9 derived from the earnings disregard reform for HA suggest that the part-time labor supply choices of benefit recipients are responsive to changes in financial incentives. These estimates are an order of magnitude larger than what is typically observed for labor market participation more generally (Chetty et al. 2013) and intensive-margin earnings responses for wage earners (see Neisser 2021 for a survey), where elasticity estimates are often found to be below 0.5.

However, we find no economically significant effects of increased participation in part-time work on transitions to full-time employment after a benefit spell. This implies that part-time work while receiving benefits does not appear to significantly decelerate or accelerate transitions from benefits to more permanent employment. However, we find some indication of small positive effects on full-time employment in some specifications and for some subgroups, indicating that at least the lock-in effects do not appear to dominate. The evidence of small effects on full-time or permanent employment aligns with various studies that do not find significant effects or associations between part-time work and employment in the future (O´Leary 1997; Cahuc 2018; Lee et al. 2021). Our study adds to this literature by utilizing a quasi-experimental setting from a transparent

reform that changed financial incentives and participation in part-time work between different types of individuals to further demonstrate that the effects of part-time work on permanent employment are small at best.

Furthermore, we find that part-time work while receiving benefits is heavily concentrated at service and health care sectors, and women participate in part-time work during unemployment spells significantly more often than men. This illustrates that the effects of policies aiming to encourage (or discourage) part-time work while receiving benefits are likely to entail very heterogeneous effects across industries and sectors, which need to be considered when evaluating the consequences of such policies.

Finally, even though we observe that part-time work is not linked to transitions to full-time employment, it could still improve the welfare of benefit recipients in other ways. In addition to increased income levels, it could, for example, improve mental health through increased social interactions and meaningful activities. Also, part-time work could in principle affect the qualitative aspects of future employment, such as job stability. Therefore, we need more evidence on these types of aspects of part-time work to draw more comprehensive conclusions on the welfare effects of policies aiming to encourage part-time or temporary work among benefit recipients.

References

Altmann, S., Cairo, S., Mahlstedt, R., and Sebald, A. (2022). Do job seekers understand the UI benefit system (and does it matter)? IZA Discussion Paper 15747.

Auray, S. and Lepage-Saucier, N. (2021). Stepping-stone effect of atypical jobs: Could the least employable reap the most benefits? *Labour Economics*, 68:101945.

Bastani, S., Selin, H., and Moberg, Y. (2021). The anatomy of the extensive margin labor supply response. *Scandinavian Journal of Economics*, 123(1):33–59.

Benghalen, H., Cahuc, P., and Villedieu, P. (2023). The lock-in effects of part-time unemployment benefits. *Journal of Human Resources*, Forthcoming.

Cahuc, P. (2018). Wage insurance, part-time unemployment insurance and short-time work in the XXI century. IZA Discussion Paper 12045.

Chetty, R., Guren, A., Manoli, D., and Weber, A. (2013). Does indivisible labor explain the difference between micro and macro elasticities? A meta-analysis of extensive margin elasticities. *NBER Macroeconomics Annual 2012*, 27(1):1–56.

Cockx, B., Goebel, C., and Robin, S. (2013). Can income support for part-time workers serve as a stepping-stone to regular jobs? An application to young long-term unemployed women. *Empirical Economics*, 44:189–229.

Eerola, E. and Lyytikäinen, T. (2021). Housing allowance and rents: Evidence from a stepwise subsidy scheme. *Scandinavian Journal of Economics*, 123:84–109.

Fremigacci, F. and Terracol, A. (2013). Subsidized temporary jobs: lock-in and stepping stone effects. *Applied Economics*, 45:4719–4732.

Gerfin, M. and Lechner, M. (2002). A microeconometric evaluation of the active labor market policy in Switzerland. *The Economic Journal*, 112(482):854–893.

Gerfin, M., Lechner, M., and Steiger, H. (2005). Does subsidized temporary employment get the unemployed back to work? An econometric analysis of two different schemes. *Labour Economics*, 12:807–835.

Godøy, A. and Røed, K. (2016). Unemployment insurance and underemployment. *LABOUR*, 30:158–179.

Holen, A. and Horowitz, S. (1974). Partial unemployment insurance benefits and the extent of partial unemployment. *The Journal of Human Resources*, 9(3):420–422.

Isotalo, E., Kyyrä, T., Lähdemäki, S., Pesola, H., Ravaska, T., Suhonen, T., and Villanen, J. (2022). Koronakriisin taloudellisten vaikutusten kohdentuminen. Valtioneuvoston selvitys- ja tutkimustoiminnan julkaisusarja 2022:56.

Kleven, H. (2016). Bunching. *Annual Review of Economics*, 8:435–464.

Kyyrä, T. (2010). Partial unemployment insurance benefits and the transition rate to regular work. *European Economic Review*, 54(7):911–930.

Kyyrä, T. and Ollikainen, V. (2008). To search or not to search? The effects of UI benefit extension for the older unemployed. *Journal of Public Economics*, 92:2048–2070.

Kyyrä, T., Parrotta, P., and Rosholm, M. (2013). The effect of receiving supplementary UI benefits on unemployment duration. *Labour Economics*, 21:122–133.

Kyyrä, T., Pesola, H., and Rissanen, A. (2017). Unemployment insurance in Finland: A review of recent changes and empirical evidence on behavioural responses. VATT Research Reports 184.

Kyyrä, T., Pesola, H., and Verho, J. (2019). The spike at benefit exhaustion: The role of measurement error in benefit eligibility. *Labour Economics*, 60:75–83.

Lalive, R., Van Ours, J. C., and Zweimüller, J. (2008). The impact of active labour market programmes on the duration of unemployment in Switzerland. *The Economic Journal*, 118:235–257.

Le Barbanchon, T. (2016). Optimal partial unemployment insurance: Evidence from bunching in the U.S. In *Social Insurance Programs (Trans-Atlantic Public Economic Seminar - TAPES)*. National Bureau of Economic Research, Inc.

Lee, D., Leung, P., O´Leary, C., Pei, Z., and Quch, S. (2021). Are sufficient statistics necessary? Nonparametric measurement of deadweight loss from unemploymnet insurance. *Journal of Labor Economics*, 39:455–506.

Matsudaira, J. D. and Blank, R. M. (2014). The impact of earnings disregards on the behavior of low-income families. *Journal of Policy Analysis and Management*, 33(1):7–35.

McCall, B. (1996). Unemployment insurance rules, joblessness, and part-time work. *Econometrica*, 64(3):647–682.

Munts, R. (1970). Partial benefit schedules in unemployment insurance: Their effect on work incentives. *The Journal of Human Resources*, 5(2):160–176.

Neisser, C. (2021). The elasticity of taxable income: A meta-regression analysis. *The Economic Journal*, 131(640):3365–3391.

O´Leary, C. (1997). An evaluation of the Washington State unemployment insurance earnings deduction experiment. Technical report, Report prepared for UI Program analysis, Washington State Employment Security Department.

Price, B. and Wasserman, M. (2023). The summer drop in female employment. NBER Working Paper 31566.

Verho, J., Hämäläinen, K., and Kanninen, O. (2022). Removing welfare traps: Employment responses in the Finnish basic income experiment. *American Economic Journal: Economic Policy*, 14(1):501–522.
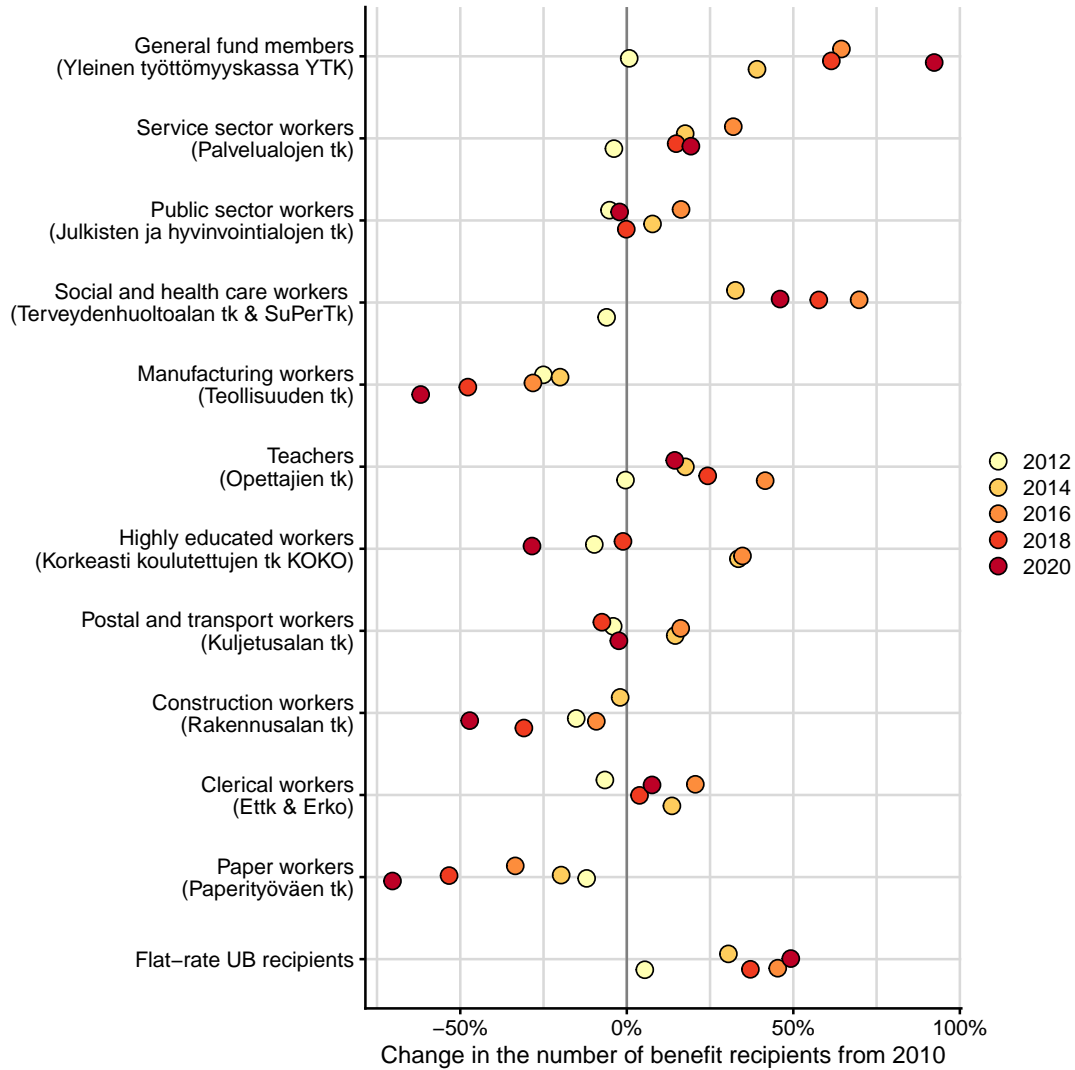
Appendix

Figures

Figure A1: Share of part-time workers in 2000–2020
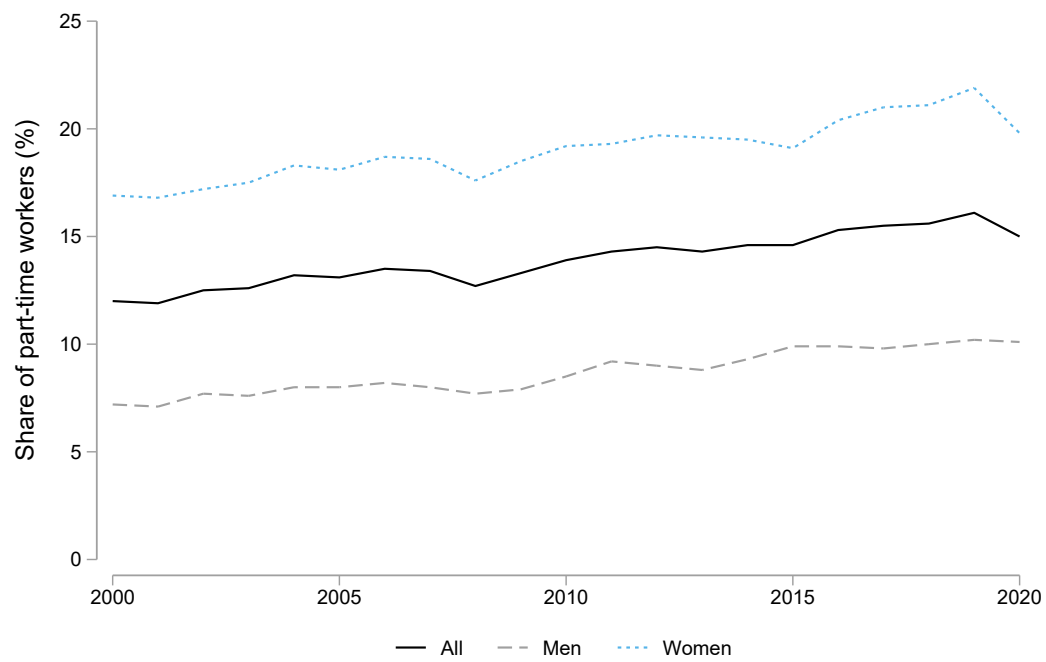
Notes: Figure shows the evolution of part-time workers in Finland in 2000–2020 both total and separately for men and women based on the Statistics Finland labour force survey.

Figure A2: Changes in unemployment by UI funds

Notes: The figure presents the relative change in the number of unemployed individuals for the members of different UI funds and for flat-rate UB recipients in 2012–2020, relative to unemployment levels in 2010 for each group. Recipients of earnings-related benefits are allocated into different occupation and industry groups based on their unemployment fund (Finnish names for the funds shown in brackets). UB recipients from the general fund and recipients of flat-rate UB from the Social Insurance Institution are reported as separate groups.

Figure A3: Distributions of part-time earnings when receiving partial UB in 2013, 2014 and 2016, earnings-related and flat-rate UB recipients

Figure A4: Distributions of part-time earnings when receiving partial UB in 2013 earnings-related and flat-rate UB recipient with and without housing allowance
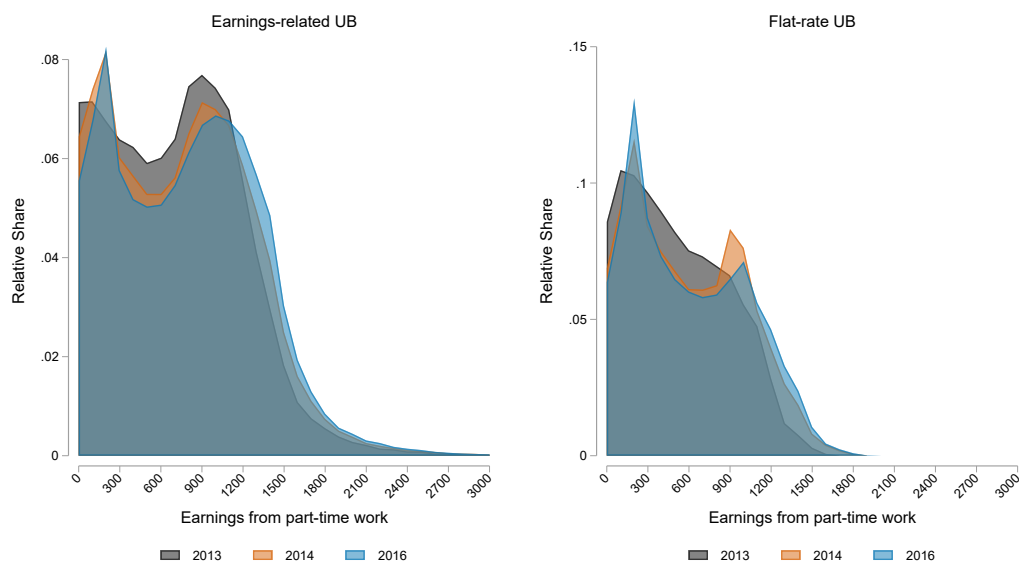
Notes: Figure shows the distributions of part-time earnings when receiving partial UB for earnings-related and flat-rate UB recipients in 2013, separately for with only UB and those with both UB and housing allowance. The figure for earnings-related UB includes only those for whom we can observe earnings below the 300 euro threshold after the reforms, which comprise of approximately 66% of all earnings-related UB recipients.

Figure A5: The shares of treatment (UB+HA) and control (UB only) groups over time for earnings-related and flat-rate UB recipients, 2012–2018
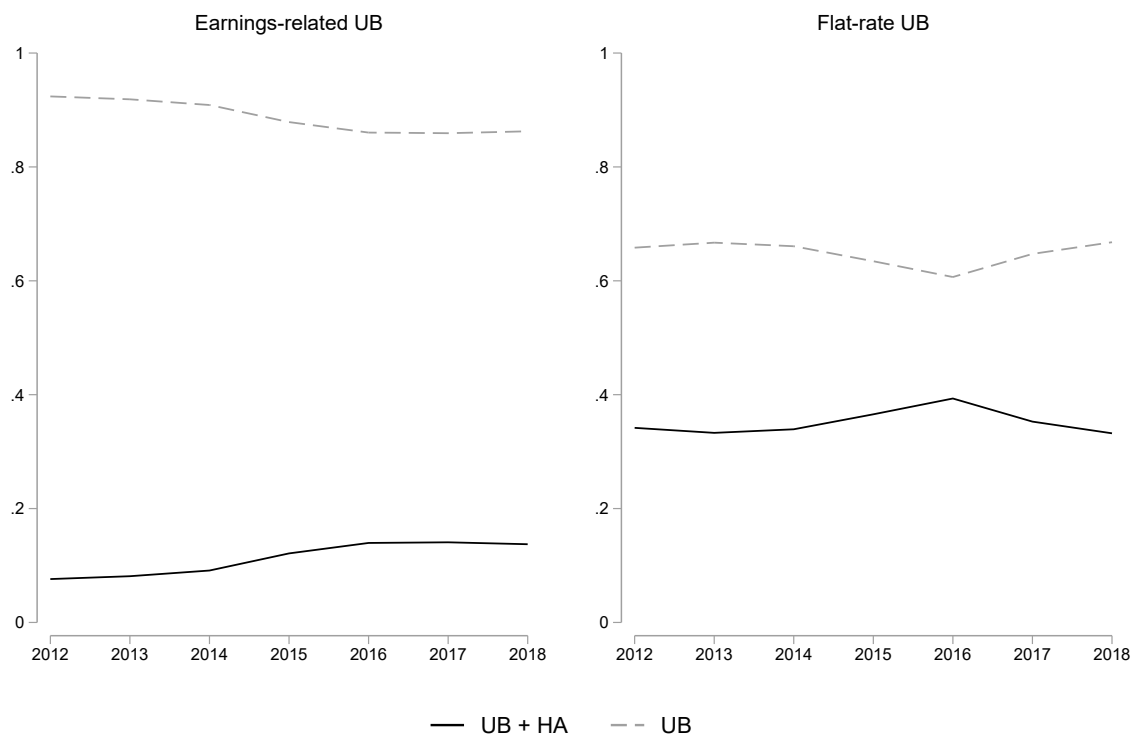
Notes: Figure presents the shares of treatment (UB+HA) and control (UB only) groups for earnings-related (left-hand side) and flat-rate (right-hand side) benefit recipients each year in 2012–2018.

Figure A6: Development of the share of part-time unemployed workers, panel data analysis
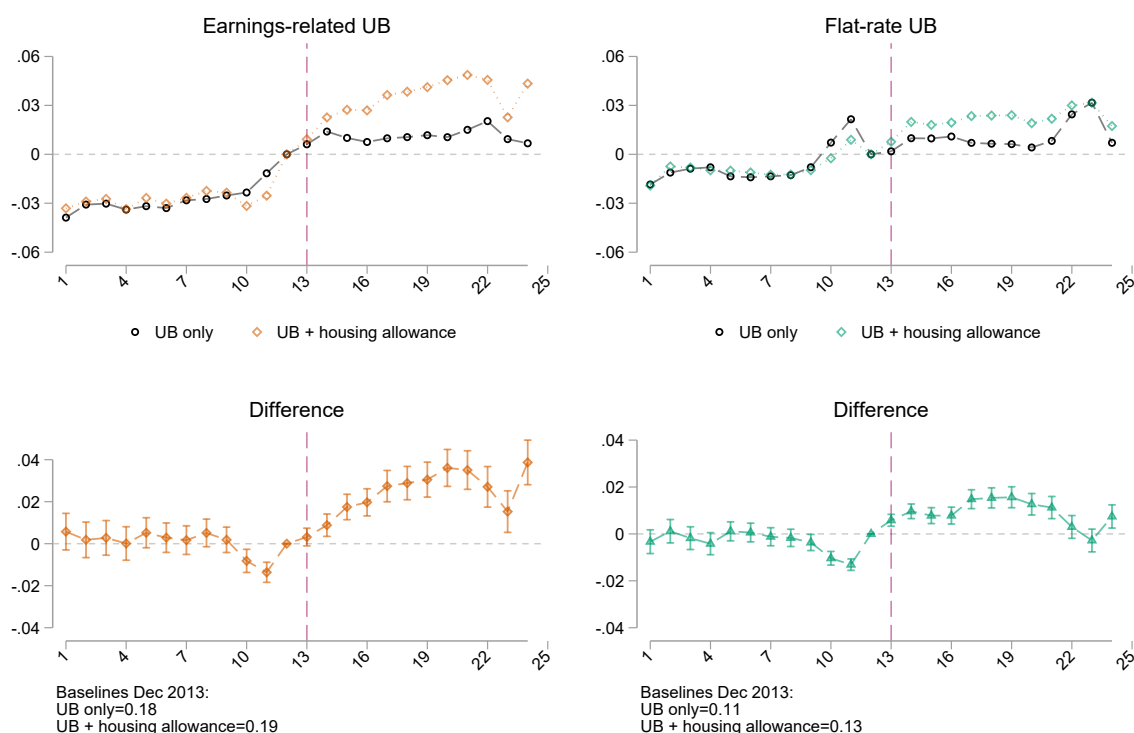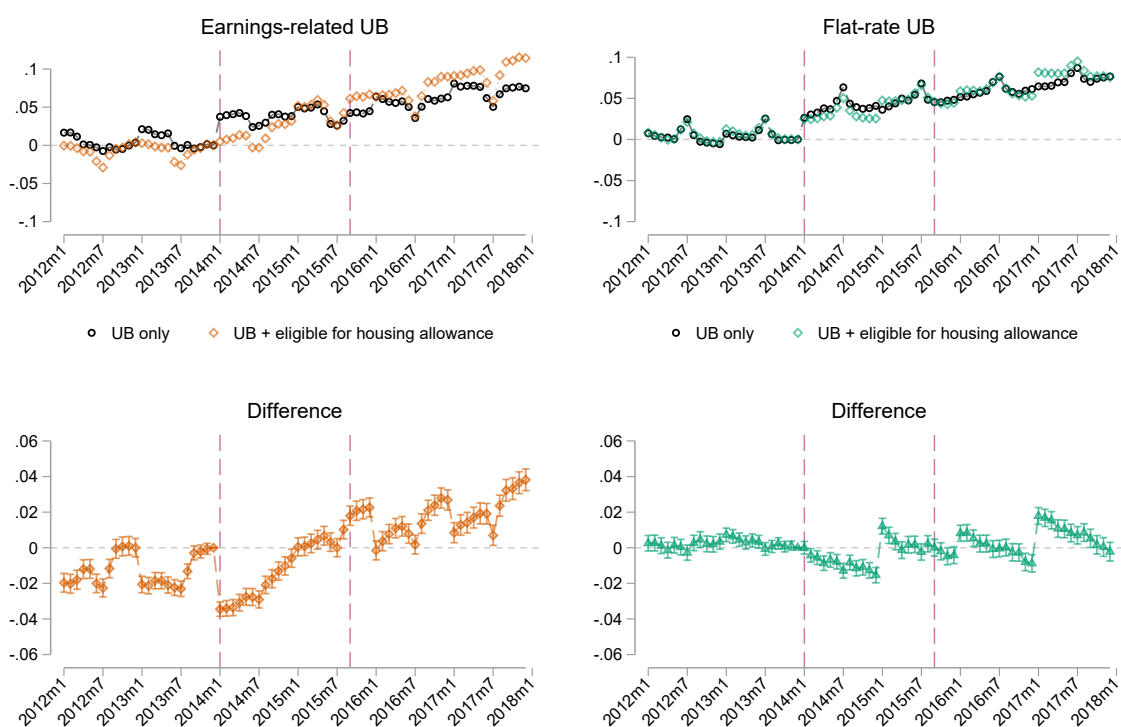

Notes: The figure plots the development of the share of part-time unemployed workers with labor earnings for earnings-related and flat-rate UB recipients in 2012–2018, separately for those with and without housing allowance. The share is presented relative to December 2013 which is denoted by zero for all groups. This analysis uses unbalanced panel data, and we define and fix the treatment group status based on August 2015, one month before the implementation of earnings disregards in HA. The number of observations for treatment and control groups in August 2015 are 20,018 and 142,379 for earnings-related, and 58,623 and 98,276 for flat-rate benefit recipients, respectively. The figure also shows the difference between the groups each month with 95% confidence intervals. The baseline shares of part-time workers in December were 18% and 19% for earnings-related UB recipients without and with HA, and 11% and 13% for flat-rate benefit recipients, respectively.

Figure A7: Development of the share of part-time unemployed workers when the HA recipient status is based on simulated eligibility
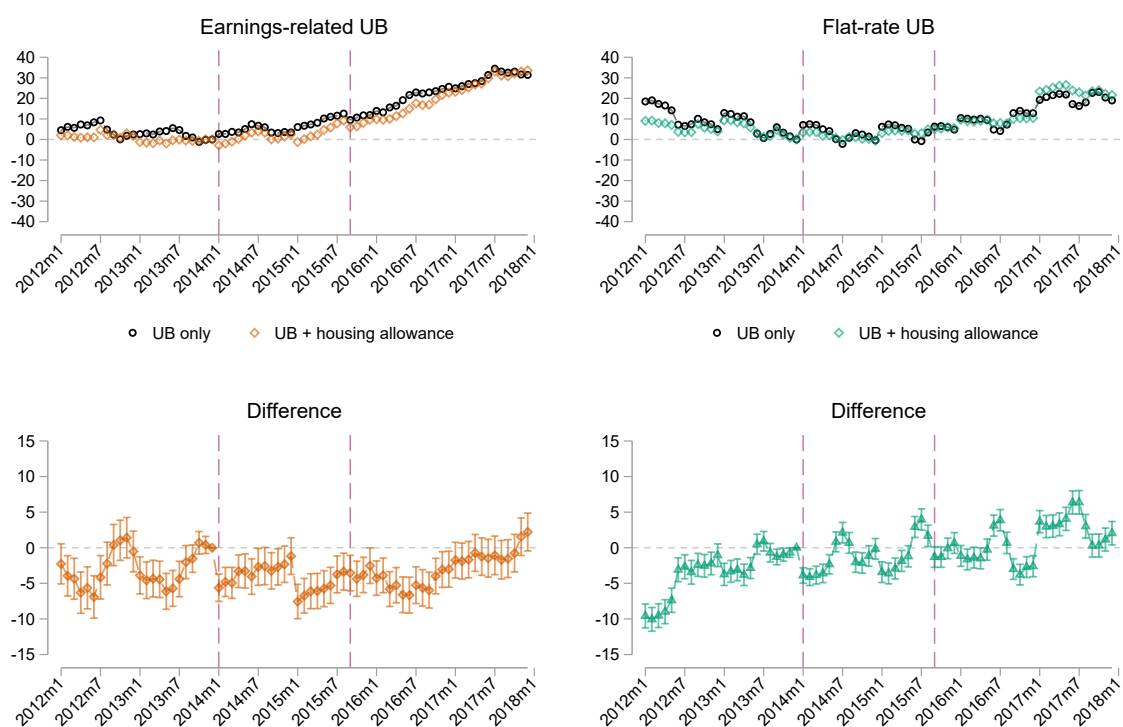

Notes: The figure plots the development of the share of part-time unemployed workers with labor earnings for earnings-related and flat-rate UB recipients in 2012–2018, separately for those with and without housing allowance. The HA recipients status is based on simulation instead of observed HA status as in the baseline analysis. The share is presented relative to December 2013 which is denoted by zero for all groups. The figure also shows the difference between the groups each month with 95% confidence intervals. The baseline shares of part-time workers in December were 17% and 20% for earnings-related UB recipients without and with HA, and 13% and 11% for flat-rate benefit recipients, respectively.

Figure A8: Days in full-time employment within the next 12 months, earnings-related and flat-rate UB recipients

Notes: Figure plots the development of days in full-time employment in the next 12 months for earnings-related and flat-rate UB recipients in 2012–2018, presented separately for those with and without HA. The development is presented relative to December 2013 which is marked by zero for both groups. The baseline days in full-time employment within the next 12 months in December 2013 were 71 and 90 for earnings-related UB recipients with and without HA, and 54 and 52 days for flat-rate UB recipients with and without HA. The bottom graphs illustrate the difference between the groups each month with 95% confidence intervals.

Figure A9: Days in full-time employment within 13-24 months, earnings-related and flat-rate UB recipients
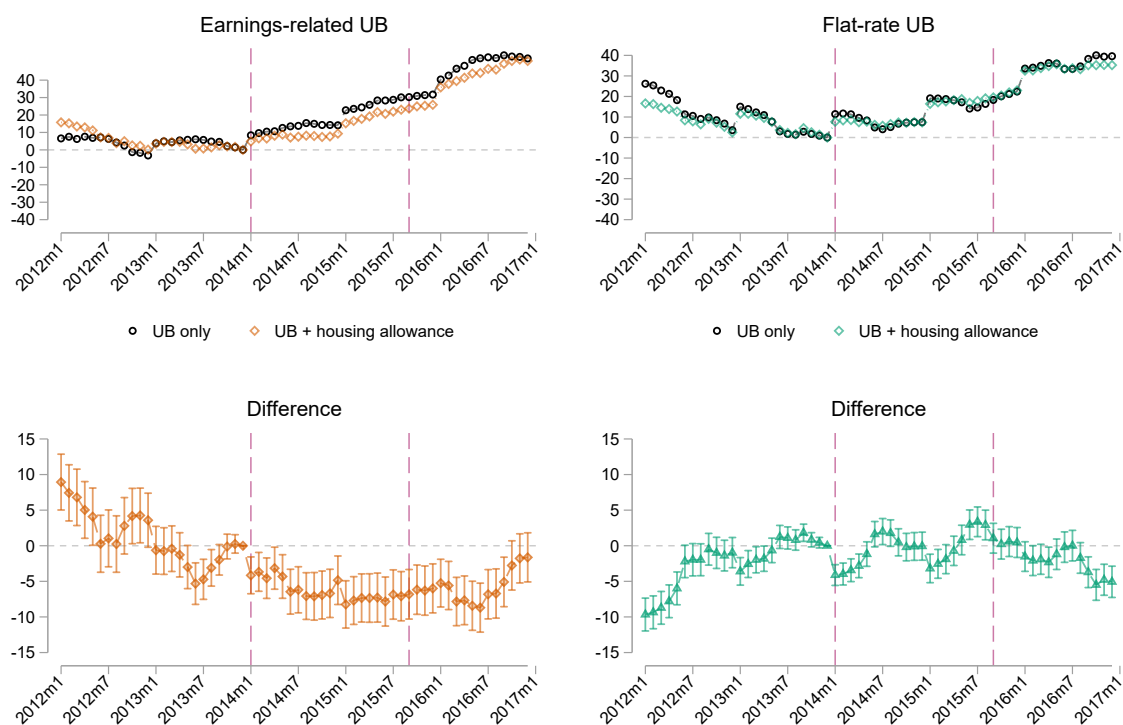
Notes: Figure plots the development of days in full-time employment in the next 13 to 24 months for earnings-related and flat-rate UB recipients in 2012–2018, presented separately for those with and without HA. The development is presented relative to December 2013 which is marked by zero for both groups. The baseline days in full-time employment within the next 12 months in December 2013 were 121 and 150 for earnings-related UB recipients with and without HA, and 91 and 90 days for flat-rate UB recipients with and without HA. The bottom graphs illustrate the difference between the groups each month with 95% confidence intervals.

Tables

Table A1: Simulated eligibility to housing allowance for different groups

	Year	Housing allowance (eur)	Monthly income threshold for HA eligibility
Flat rate UB			
Single-person households			
	2013	342.47	1800
	2014	372.96	1900
	2015	406.4	2300
Earnings related UB			
Single-personhouseholds			
Earnings before UB: 1500	2013	223.27	1800
	2014	257.76	1900
	2015	301.12	2300
Earnings before UB: 2000	2013	159.27	1000
	2014	189.76	900
	2015	232.32	2300
Earnings before UB: 3500	2013	0	0
	2014	0	0
	2015	44.16	500
Two-person households			
Spouse earns 500			
Earnings before UB: 2000	2013	174.8	900
	2014	220.12	800
	2015	384.92	2700
Earnings before UB: 3500	2013	0	0
	2014	0	0
	2015	193.76	1500
Spouse earns 1500			
Earnings before UB: 2000	2013	0	0
	2014	0	0
	2015	61.92	600
Earnings before UB: 3500	2013	0	0
	2014	0	0
	2015	0	0

Notes: Table presents the simulated housing allowance eligibility from the participation tax rate calculations presented in Figures 1 and 2. Table denotes the amount of HA with no earnings, and the monthly earnings threshold above which eligibility to HA ends.

Table A2: Descriptive statistics for earning-related UB recipients with and without HA

	UB only							UB + HA						
	2012	2013	2014	2015	2016	2017	2018	2012	2013	2014	2015	2016	2017	2018
Age	47.99	47.71	47.57	47.50	47.84	48.16	48.44	40.76	40.70	40.54	40.47	40.57	40.99	41.40
Female	0.54	0.53	0.53	0.54	0.55	0.56	0.56	0.67	0.65	0.64	0.63	0.63	0.64	0.64
Spouse	0.72	0.71	0.71	0.72	0.72	0.72	0.71	0.20	0.20	0.20	0.21	0.21	0.19	0.19
Family size	2.41	2.42	2.42	2.43	2.43	2.41	2.39	1.92	1.87	1.85	1.81	1.81	1.79	1.78
Number of children < 7	0.19	0.20	0.20	0.20	0.19	0.18	0.17	0.21	0.20	0.19	0.18	0.18	0.17	0.16
Observations	826596	980498	1112502	1168162	1181923	1103279	1012064	429195	489488	571191	673127	766195	601342	503408

Notes: Table presents the descriptive characteristics each year in 2012–2018 for earnings-related UB recipients with and without HA, which constitutes our control and treatment groups in the analysis. Table shows the mean values.

Table A3: Descriptive statistics for flat-rate UB recipients with and without HA)

	UB only							UB + HA						
	2012	2013	2014	2015	2016	2017	2018	2012	2013	2014	2015	2016	2017	2018
Age	40.41	40.25	40.14	40.09	40.42	40.92	41.21	34.93	35.09	35.11	35.33	35.69	36.88	37.85
Female	0.49	0.51	0.51	0.52	0.53	0.54	0.56	0.47	0.47	0.46	0.47	0.47	0.48	0.48
Spouse	0.64	0.66	0.67	0.68	0.69	0.71	0.72	0.29	0.29	0.29	0.29	0.29	0.26	0.24
Family size	2.68	2.72	2.74	2.78	2.80	2.81	2.80	1.85	1.83	1.83	1.82	1.81	1.76	1.74
Number of children < 7	0.24	0.25	0.26	0.27	0.27	0.27	0.27	0.17	0.17	0.17	0.17	0.17	0.15	0.15
Observations	826596	980498	1112502	1168162	1181923	1103279	1012064	429195	489488	571191	673127	766195	601342	503408

Notes: Table presents the descriptive characteristics each year in 2012–2018 for flat-rate UB recipients with and without HA, which constitutes our control and treatment groups in the analysis. Table shows the mean values.

Table A4: Regression estimates for full-time employment within the next 12 months, earnings-related UB recipients

	Days in employment	Full-time (180)	Full-time (275)	Full-time (330)
$\text{Treat}_{it} \times \text{Post}_{Jan2014}$	-1.135	-0.00199	0.00194	0.00280***
	(0.704)	(0.00244)	(0.00121)	(0.000760)
$\text{Treat}_{it} \times \text{Post}_{Sept2015}$	0.0787	0.000799	0.000533	0.00115
	(0.686)	(0.00236)	(0.00115)	(0.000721)
Baseline control	89.68	0.250	0.120	0.0600
Baseline treatment	71.10	0.190	0.0800	0.0400
Observations	9,973,465	9,973,465	9,973,465	9,973,465

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table presents the difference-in-differences estimates estimated using equation (2) for full-time employment within the next 12 months after partial UB spell for earnings-related UB recipients. Column (1) shows the estimates on the number of days in full-time employment, and columns (2)–(4) the likelihoods of working at least 180, 275 and 330 days in full-time employment within the next 12 months. The treatment group is those unemployed individuals with both UB and HA and the control group those with only UB. Standard errors are presented in parenthesis.

Table A5: Regression estimates for full-time employment within the next 12 months, flat-rate UB recipients

	Days in employment	Full-time (180)	Full-time (275)	Full-time (330)
$\text{Treat}_{it} \times \text{Post}_{Jan2014}$	2.066***	0.00832***	0.00440***	0.00301***
	(0.416)	(0.00141)	(0.000712)	(0.000447)
$\text{Treat}_{it} \times \text{Post}_{Sept2015}$	3.495***	0.0129***	0.00696***	0.00478***
	(0.421)	(0.00140)	(0.000691)	(0.000432)
Baseline control	52.26	0.140	0.0600	0.0300
Baseline treatment	53.57	0.140	0.0600	0.0300
Observations	9,379,868	9,379,868	9,379,868	9,379,868

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table presents the difference-in-differences estimates estimated using equation (2) for full-time employment within the next 12 months after partial UB spell for flat-rate UB recipients. Column (1) shows the estimates on the number of days in full-time employment, and columns (2)–(4) the likelihoods of working at least 180, 275 and 330 days in full-time employment within the next 12 months. The treatment group is those unemployed individuals with both UB and HA and the control group those with only UB. Standard errors are presented in parenthesis.

Table A6: Regression estimates for full-time employment within the next 13-24 months, earnings-related UB recipients

	Days in employment	Full-time (180)	Full-time (275)	Full-time (330)
$\text{Treat}_{it} \times \text{Post}_{Jan2014}$	-6.440***	-0.0172***	-0.0109***	-0.00858**
	(1.119)	(0.00356)	(0.00306)	(0.00283)
$\text{Treat}_{it} \times \text{Post}_{Sept2015}$	-6.380***	-0.0157***	-0.0143***	-0.0132***
	(1.195)	(0.00380)	(0.00328)	(0.00305)
Baseline control	150.1	0.410	0.290	0.250
Baseline treatment	121.2	0.330	0.210	0.170
Observations	7,913,789	7,913,789	7,913,789	7,913,789

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table presents the difference-in-differences estimates estimated using equation (2) for full-time employment within the next 13-24 months after partial UB spell for earnings-related UB recipients. Column (1) shows the estimates on the number of days in full-time employment, and columns (2)–(4) the likelihoods of working at least 360, 550 and 360 days in full-time employment within the next 13-24 months. The treatment group is those unemployed individuals with both UB and HA and the control group those with only UB. Standard errors are presented in parenthesis.

Table A7: Regression estimates for full-time employment within the next 13-24 months, flat-rate UB recipients

	Days in employment	Full-time (180)	Full-time (275)	Full-time (330)
$\text{Treat}_{it} \times \text{Post}_{Jan2014}$	1.903**	0.00804***	0.00757***	0.00734***
	(0.677)	(0.00212)	(0.00177)	(0.00162)
$\text{Treat}_{it} \times \text{Post}_{Sept2015}$	0.654	0.00382	0.00553**	0.00553**
	(0.773)	(0.00240)	(0.00200)	(0.00184)
Baseline control	89.89	0.240	0.160	0.130
Baseline treatment	91.28	0.250	0.170	0.140
Observations	7,246,609	7,246,609	7,246,609	7,246,609

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table presents the difference-in-differences estimates estimated using equation (2) for full-time employment within the next 13-24 months after partial UB spell for flat-rate UB recipients. Column (1) shows the estimates on the number of days in full-time employment, and columns (2)–(4) the likelihoods of working at least 360, 550 and 360 days in full-time employment within the next 13-24 months. The treatment group is those unemployed individuals with both UB and HA and the control group those with only UB. Standard errors are presented in parenthesis.