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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. The share of part-time workers among benefit recipients increased sharply from 10% to 18% over a few years after the implementation of earnings disregards in unemployment benefits and housing allowances, which 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 for different types of benefits, we estimate a 21–30% increase in participation in part-time work due to the implementation of earnings disregards. On average, we find no economically sizable effects of the earnings disregards on future full-time employment or the likelihood of leaving unemployment benefits, but find moderate positive employment effects among those unemployed individuals who are more attached to the labor market.

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

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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. To encourage benefit recipients to participate in part-time labor markets, many developed countries have introduced policies that financially encourage combining social 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 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 utilize the implementation of earnings disregards policies in 2014 and 2015 in Finland 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. The reforms affected labor supply incentives differently for individuals eligible for different types of benefits, which enables us to assess their causal impact on part-time work participation.

In addition to part-time work, we focus on the longer-run implications of earnings disregard policies by following benefit recipients and their labor market outcomes over a longer period after the reforms. This analysis aims to reveal whether policies that promote part-time working during unemployment are associated with permanent employment in the future, which is important in assessing the overall efficiency of these types of policies. In addition, we study whether improved financial incentives to part-time work are linked with transitions from full-time work to part-time work while receiving benefits. These types of effects would counter the goal of the policy in terms of increasing 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 unemploy-

ment 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 work during unemployment benefit spells has 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 at around 10–12% in 2000–2013. This share began to rise rapidly after the implementation of earnings disregards in the mid-2010s, and reached 18% by 2020. This evidence thus indicatively illustrates that financial incentives are likely to play an important role in the labor supply decisions of benefit recipients and the recent surge in part-time work among benefit recipients in Finland.

We then turn to more detailed analysis of how financial incentives affect participation in part-time work and longer-run employment outcomes. We zoom in on 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 significantly reduced the participation tax rates for part-time work for all unemployed individuals. In contrast, the second reform in September 2015 that introduced a similar earnings disregard for housing allowances had no effect on those unemployed individuals who were not eligible for this benefit, but it significantly improved incentives for those unemployed individuals who also received housing allowances. Our analysis focuses on this latter reform where the identifying variation in incentives stems from differences in household incomes and composition that affect eligibility for housing allowance differently for otherwise similar types of individuals. We find that the development of part-time working in the groups that were affected differently by this reform follow each other closely before the reform, supporting our empirical strategy.

[1]Partial unemployment benefits are also known as adjusted, part-time or supplementary unemployment benefits in the literature. In Finland, partial benefits are also paid to those unemployed individuals who take up a full-time job for two weeks or less. We do not make a distinction between these workers and those who work part-time while receiving benefits, and refer to all partial benefit recipients as part-time workers or part-time unemployed workers.

We find significant 21% and 30% increases in participation in part-time employment after the September 2015 reform, depending on the type of the unemployment benefit. After the reform, 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 reform. We estimate a participation elasticity for part-time work with respect to incentives for working part-time close to 1. This implies that labor supply choices regarding participation in part-time employment are responsive to changes in financial incentives among benefit recipients. Despite the large participation responses, we do not find significant changes in part-time earnings after the September 2015 reform among those participating in the part-time labor market.

Part-time working can affect longer-run labor market outcomes in different ways. It may provide a *stepping stone* to more permanent employment through, for example, increased work experience and contacts with employers. On the other hand, subsidized 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 and making part-time-work relatively more attractive compared to full-time employment, 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 work 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 searching 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 partial benefit and earnings disregard policies, one must be able to compare unemployed workers under different policy schemes, which is a key novelty in our analysis. However, we do not aim to identify these three mechanisms separately, but utilize our quasi-experimental setup to study the overall effect of the earnings disregard policies by including all of these potential channels.

Using our population-wide job spell and unemployment data, we find that the implementation of the earnings disregards policy is not, on average, associated with sizable changes in subsequent working days and unemployment. However, we find a moderate increase in future full-time working days (excluding working days when receiving unemployment benefits) and the likelihood of leaving unemployment benefits among earnings-related unemployment benefit recipients, who are likely to be more attached to the labor markets than flat-rate benefit recipients who typically have less work experience and longer unemployment spells. We estimate a 1.5–2.3% (1.3–1.9 percentage points) decrease in the likelihood of remaining unemployed in the future and a 7.5% increase in full-time working days within the next 12 months for earnings-related UB recipients. For flat-rate benefit recipients we estimate a below 1.5% reduction in future unemployment (1–1.2 percentage points) and a 4% effect on future working days. Overall, this evidence suggests that the part-time working effects of earnings disregards do not crowd-out permanent employment, and that there is at least a moderate stepping-stone effect for some unemployed individuals. However, the overall effects of earnings disregards on future employment are still not economically sizable.

Increased financial incentives for part-time work make combining benefits and part-time work relatively more attractive compared to full-time work, which could induce transitions from full-time employment to unemployment with part-time earnings. This undesired effect of the earnings disregards would counter the aim of increasing employment by this policy. However, we do not observe an increase in the prevalence of transitions from full-time work to unemployment with part-time earnings when the policy was introduced. In contrast, we find that transitions from full-time unemployment to part-time work increased after the implementation of earnings disregards, especially among flat-rate unemployment benefit recipients. This evidence suggests that the costs of the earnings disregards reforms in terms of transitions from full-time employment to part-time work with benefits are small at best.

Unemployment benefits and other social benefits such as housing allowance provide an insurance against adverse labor market events such as unemployment. But at the same

time, they create undesired incentives to become or remain unemployed, depending on the details of the system and benefit generosity. In principle, policies such as an earnings disregard could, on one hand, reduce these disincentives by providing better financial incentives to participate in the labor market while receiving unemployment benefits, which can reduce the costs of the benefit system and increase employment in the shorter and longer run. Our evidence shows that earnings disregards increase participation in part-time work, and that there is a moderate increase in future employment among individuals affected by the reform. Also, we find that improving the financial attractiveness of part-time work is not associated with increased transitions from full-time work to part-time work with benefits, which, on the other hand, would reduce employment and increase the costs of implementing such policies. Nevertheless, our simple calculations indicate that the costs of implementing the earnings disregard policy exceed its monetary benefits in terms of reduced benefit usage among those who responded to the reform by participating in part-time work. The costs of the policy mainly stem from increased benefits paid to those unemployed individuals who would work part-time in any case. Therefore, the potential broader benefits of increased part-time work stemming from earnings disregards, such as small improvements in longer-term employment, need to be evaluated against this cost.

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, making it challenging to fully disentangle them from full-time workers, part-time workers without benefits, and the full-time unemployed. Our detailed population-level administrative data cover all unemployment

[2]In addition to Finland, earnings disregards are applied at least in Australia, Austria, Belgium, Germany, Luxembourg, New Zealand, the UK and most US states, and partial benefits are applied in Canada, Denmark, France, Ireland, Italy, The Netherlands, Norway, Slovenia, Switzerland and the US (Boeri and Cahuc 2023).

spells, and include monthly-level information on earnings while receiving unemployment benefits, and direct information on whether the benefit was reduced due to labor earnings or not, together with 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, and combined with quasi-experimental variation in incentives, enables us to study how changes in earnings disregard rules affect 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 US labor market often earn just enough income to stay below the earnings disregard threshold. 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-1990s, Matsudaira and Blank (2014) find no effect of the earning disregards for welfare assistance on the labor supply of single mothers.

Several European studies have relied on the timing-of-events approach or matching methods to estimate the effect of part-time work during unemployment spells 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 while receiving

[3]See Boeri and Cahuc (2023) for a summary of this literature.

benefits (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 the 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, 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 a lack of suitable (quasi-)experimental variation in incentives. 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 persons and individuals with a 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 responsive to changes in financial incentives among benefit recipients.

The remainder 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 provides descriptive evidence on the longer-run development of part-time un-

[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.

employment, and introduces our empirical methods. Section 4 presents our results on earnings disregard reforms, and Section 5 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 employment.[5]

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 for at least 18 hours. Most unemployment funds are administrated by labor unions, and are thus targeted at certain occupation groups or workers in a given industry. Membership of unemployment funds is voluntary, and it is possible to enroll in a union-affiliated unemployment fund without being a member of a labor union. In 2022, about 70% of all workers in Finland were members of unemployment funds.

[5]Kyyrä et al. (2017) provide a more detailed description of the Finnish unemployment benefit system, and Eerola and Lyytikäinen (2021) of the Finnish housing allowance system.

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

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 on 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 three years of work history, and 300 days for those with a shorter work history.[8]

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 continues. An 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,

[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 20 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 our 20-year observation period.

[9]There are two types of flat-rate benefits in Finland, 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 or for basic unemployment allowance can claim unemployment assistance (*työmarkkinatuki*). The unemployment assistance is means-tested against individual's other income. 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 for a limited period of time. We do not make a distinction between these two very similar benefits, and refer to both of them as "flat-rate unemployment benefit". At the end of 2021, out of all unemployment benefit recipients, 39% received earnings-related benefits, 11% unemployment allowance, and 50% unemployment assistance.

the amount of labor earnings is also reported. The income is reported using a payslip, a salary certificate, or other reliable documentation, such as an informal salary statement from the employer.

Benefit recipients who take up a part-time job (up to 80% of full-time working hours) or a short full-time job with a duration of no longer than two weeks (four weeks 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 is offered. The main eligibility requirement for partial benefits is that part-time work must be involuntary in nature. Therefore, it is possible to transition directly from full-time to part-time employment and start collecting partial benefits. This may also occur within the same company, provided that the reduction in working hours was initiated by the employer.

The basic rule of partial benefits is that each euro of labor earnings reduces the benefit by 0.5 euros. For example, earning 800 euros per month would reduce monthly benefits by 400 euros. However, the total amount of benefits and labor earnings cannot exceed the recipient's pre-unemployment monthly labor earnings (90% of 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%.

Also, 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. For example, a part-time worker with 50% reduced benefits can receive partial benefits for 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 allows 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, because all employment with weekly working time of at least 18 hours contributes to the employment condition. Thus long periods on partial benefits can lead to a drop in the level of earnings-

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

related UB, although large drops are prevented by a rule that the recalculated benefit must be at least 80% of the old benefit.

In certain jobs where the amount of work varies significantly, the employment contract may not specify a fixed number of working hours but instead define a range of hours per week. In such cases, the employer is only required to provide the minimum number of hours stated in the contract, which can be zero. These types of employment contracts are more common for specific occupations, such as waiters, chefs, cashiers, and substitute caregivers. Workers under such contracts may be eligible for unemployment benefits during periods of minimal work availability.[11]

Overall, the Finnish partial benefit scheme, especially after the introduction of the earnings disregards we discuss below, is rather generous compared to similar schemes in other countries (see Boeri and Cahuc 2023 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 of 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 claimed 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

[11]In some cases, unemployment benefits can be received without job loss. When facing temporary difficulties, Finnish employers have the option to furlough their permanent workers. Furloughs can be either full-time or part-time. During a furlough, the employment contract remains in effect, but wage payments are temporarily halted or reduced. Furloughed workers are entitled to unemployment benefits, including partial benefits, under the same conditions as unemployed workers. However, we exclude furlough workers from our analysis and focus only on unemployed individuals.

January 2015, the amount of eligible housing expenses depended on the 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 region of residence and the household size and structure have been 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.

Earnings affect HA in a similar way as they affect 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. The 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 household's 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.

Income Support. It is important to note that partial benefits and earnings disregards do not have as significant an 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 food and housing. Additional earnings reduce the amount of the income support almost one-to-one, 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 calculations 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%. 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 before.

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 among all UB recipients (except for those receiving the last-resort income support, who we exclude from our reform analysis), as we will discuss in more detail below. In addition to the partial UB system already in place, the earnings disregard further increased disposable income if an unemployed individual participated in part-time employment.[12]

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, 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 incentives as the earnings disregard in UB. However, as mentioned above, 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.

The earnings disregard in HA further improved the financial incentives for accepting part-time work for unemployed individuals who receive the allowance. This applies particularly to those receiving 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

[12] At the same time, the cap rule of the combined maximum amount of partial UB and earnings changed such that the threshold was raised from 90% to 100% of 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.

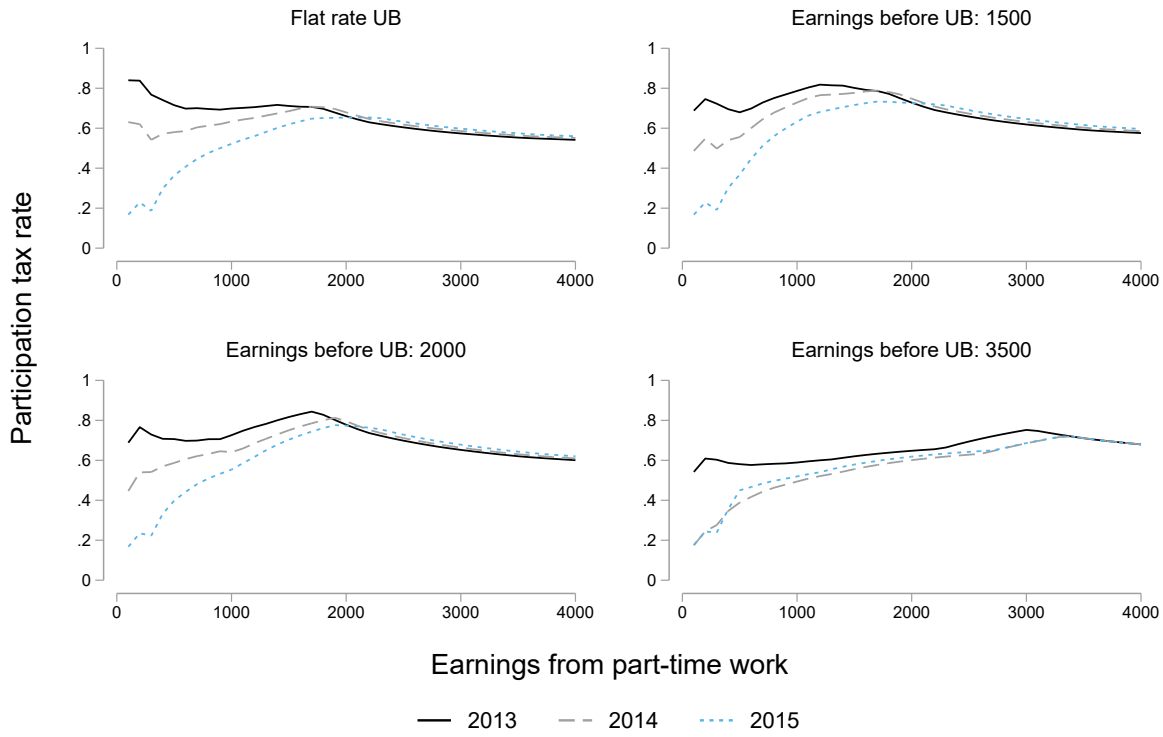
the incentives to participate in part-time employment. For these reasons, our empirical analysis in Section 4 focuses on this latter reform in which the incentives for part-time work were differently affected among UB recipients.

The new earnings disregard policies were largely covered by the Finnish media at the time of implementation, and the unemployment funds that administer the earnings-related UB and the Social Insurance Institution that administers both flat-rate UB and HA informed their customers about the reforms and the new system in place. Even though we cannot precisely measure the salience of the reforms, this suggests that UB and HA recipients were aware of these changes in the social insurance system. Also, the rapid increase in part-time work right after the implementation of the earnings disregards illustrated in Figure 3 below suggests that UB recipients were aware of the policy and responded to it.

Changes in Incentives. Figures 1 and 2 describe the participation tax rates in different groups before and after the implementation of 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. The participation tax rate takes into account the impact of both income taxes and changes in social security benefits on disposable income when participating in the labor market. For example, if the participation tax rate is 0.7, 30% of 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 UB. The figure includes flat-rate UB recipients and earnings-related UB recipients at different earnings levels between 1500 and 3500 euros per month before unemployment. As discussed above, earnings before unemployment define the daily UB such that higher earnings indicate higher benefits among those who are eligible for earnings-related UB. Also, those with lower total income (earnings + benefits) are more likely to be eligible for

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. The 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.

HA, which is included when calculating the participation tax rates in the figure. Table A1 in the Appendix presents the details of HA eligibility for 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 (solid line in the figure). 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 higher 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 participation tax rates for small part-time earnings for all UB recipients (dashed line). This is simply due to the fact that the first 300 euros of labor earnings no longer 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 the participation tax rate in 2014 was 21%.[13]

The implementation of an earnings disregard for housing allowance in 2015 reduced the participation tax rate only for those eligible for HA (dotted line). 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 spouses' earnings: 500 euros (upper panel) or 1500 euros (lower panel) 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 latter reform in 2015 reduced the participation 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 reform in September 2015 affected the incentives to participate in the part-time labor market.

[13]Figure A2 in the Appendix shows the part-time earnings distributions for earnings-related and flat-rate partial UB recipients in 2013, separately for those with and without HA. The figure illustrates that partial 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, 2013–2015

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). The 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. The 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.

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 included in our analysis. Instead, we expect the second reform in September 2015 to increase part-time work only for HA recipients, as those who were not receiving HA were not affected by this later reform.

The changes in participation tax rates for part-time work due to the implementation of earnings disregards were relatively large. As an example, for single persons earning 500 euros per month during an unemployment spell, the introduction of the earnings disregard in UB in January 2014 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 introduced in September 2015 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 for 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 the 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, participation in employment more permanently with earnings around 2000 euros per month was not affected by these reforms. Therefore, earnings disregard policies have a direct effect only on incentives for part-time work. This feature enables us to provide novel evidence on how individuals respond to changes in financial incentives concerning this particular labor supply margin.

Earnings disregards can also affect longer-run labor market outcomes such as future full-time employment and unemployment benefit usage. The expected impact of part-time work on transitions to full-time employment is, however, ambiguous due to the potentially opposite lock-in and stepping-stone effects. If earnings disregards increase part-time employment, participating in these types of jobs could increase the likelihood of finding a permanent job in the future through, for example, increased work experience and more active contacts with employers. Moreover, UB recipients may acquire new skills when working part-time, which can increase their productivity, and employers may use part-time jobs to screen potential candidates for more permanent full-time positions. Therefore, part-time work during unemployment spells may also lead to longer employment spells after benefit receipt. On the other hand, taking up part-time jobs could slow down or hinder transitions to full-time employment if they crowd each other out. Also, earnings disregards may encourage unemployed job seekers to devote more time searching

for part-time jobs instead of full-time employment, which can reduce full-time work in the longer run.

The introduction of earnings disregards increased incentives for transitions from full-time employment to part-time work while receiving UB, as the difference between the net incomes from part-time and full-time work were reduced. Therefore, by making part-time work relatively more attractive, these reforms can increase part-time working while receiving UB at the expense of full-time work. If this channel is relevant, we expect that individuals affected by these reforms are more likely to transit from full-time employment to part-time work with UB after the reform compared to the period before it. Nevertheless, this transition would require a 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. This implies that voluntarily moving from full-time jobs to part-time employment with UB is rather costly for workers, which on its part reduces the incentives for these types of transitions. However, full-time workers in fixed-term jobs are not subject to such costs, and may therefore be more keen to search for part-time jobs after their current employment contract expires.

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 into being eligible for small amounts of benefits. This issue needs to be considered when evaluating participation in part-time work while receiving benefits, as this mechanical effect does not necessarily indicate a labor supply 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 in the budget set of UB and HA recipients at 300 euros, above which 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). We do not use the 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 in. Second, identifying a credible counterfactual distribution from a non-monotonous part-time 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 4.

3 Data, Descriptive Statistics and Methods

3.1 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, earnings when receiving benefits and received housing allowances in the period 2000–2021. These data allow us to reliably follow the development of part-time work while receiving UB and HA over a long time period for individuals, 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 from the pension providers. The employment records are available until the end of 2018. To these data we link key background characteristics such as total earnings, age, gender, place of residence, and family status from different registers of Statistics Finland. The data also enable us to link individuals living in each household. These data are available at an annual level until 2020.

One 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 in these cases too.[14] Due to this restriction, our analysis on earnings while unemployed is based on a sub-sample of individuals for whom monthly earnings below 300 euros are observable in the data, which covers 66% of the recipients of earnings-related UB.

3.2 Descriptive Statistics

Key Characteristics. Table 1 presents descriptive statistics on key variables using our main estimation sample 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 employment spell records are available in our data 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 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' average part-time earnings among those who worked part-time (part-time earnings larger than zero) were higher (922 euros) compared to those with flat-rate UB (693 euros).

Development of part-time unemployment over time. Figure 3 describes the longer-run development of working part-time while receiving unemployment benefits. Panel A of the figure 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 in 2000–2021, using monthly-level data. 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,

[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 know.

Table 1: Descriptive statistics, 2012–2018

	All	Earnings-related UB	Flat-rate UB
Age	43.03	47.05	38.84
Female	0.53	0.56	0.51
Spouse	0.60	0.66	0.54
Spouse's earnings (annual)	14,669	17,486	11,740
Family size	2.38	2.35	2.42
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	23,402,858	11,925,680	11,477,178
Unique observations	1,132,715	694,272	626,834

Notes: Table presents the key descriptive statistics for individuals who received unemployment benefits (UB) in 2012–2018. Mean values are presented for all UB recipients and the recipients of earnings-related and flat-rate UB separately. Mean monthly earnings from part-time worked are calculated for those with positive part-time earnings while receiving UB.

although the share slightly dipped after the financial crisis in 2008–2009. After 2013, the share of part-time workers began to increase sharply, and before the COVID-19 pandemic in March 2020 their share reached 18%.[15] This increase took place at the same time as earnings disregards in UB and HA were implemented, denoted by vertical dashed lines in the figure. This tentatively suggests that these policies increased part-time working while receiving benefits, which we analyze in more detail below.[16]

Moreover, the increase in the monthly share of the part-time unemployed in the post-reform period cannot be explained by a higher part-time work intensity, i.e. longer part-time work spells of groups that used to combine part-time work and benefits already before the reforms. Out of all individuals who received UB in 2013, 17% worked part-time at some point when receiving UB within the year. This share increased to 24% by 2019,

[15]During the 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. Also, we exclude entrepreneurs who were temporarily given eligibility for flat-rate UB during the pandemic from Figure 3.

[16]Over the same period the share of part-time workers among all workers in Finland increased much less and in a smoother fashion from 12% in 2000 to 14% in 2020, see Figure A1 in the Appendix. This suggests that the rapid increase in unemployed part-time workers in the mid-2010s does not stem from a similar sharp increase in the prevalence of part-time work in Finland at the same time.

Figure 3: Full-time and part-time unemployed individuals, 2000–2021

Notes: Panel A of the figure shows the number of unemployed individuals in 1000 persons in Finland in 2000–2021 using monthly-level data. The graph includes the number of full-time unemployed (light blue bars), and part-time unemployed (dark blue bars) who are working part-time and receiving benefits. Panel B shows the development of the share of part-time unemployed of all UB recipients in 2000–2021. The black line denotes the share of all part-time unemployed, and the gray 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).

so that a higher share of the unemployed have worked part-time after the reforms.

Also, Figure 3 illustrates the seasonal variation in unemployment occurring each year, both before and after the earnings disregard reforms. First, unemployment tends to peak in the beginning of each year (left-hand side graph). Second, the figures show that the number and share of part-time workers who receive UB drops each year in the summertime. This phenomenon concerns women in particular (see Panel B of Figure A3 in the Appendix), and is likely driven by school holidays when teachers, who are often women, are more likely to be unemployed, and mothers of young children who are 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 (2024).

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 size of the benefit increase the number of individuals eligible for small amounts of UB, who were not eligible before the reform in 2014 due to their high labor earnings. The figure shows that removing these individuals as partial UB recipients does not change the overall pattern of an increasing share of 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 A3 in the Appendix illustrates the development of the share of part-time workers receiving benefits in different subgroups. The figure shows that part-time work is more common among earnings-related UB recipients, but the share of part-time workers increased also for flat-rate UB recipients after the implementation of earnings disregards (Panel A of Figure A3). Also, 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 (Panel B). The share of part-time workers increased in all age groups but most notably among the oldest age group after 2014, and by 2020 the differences by age were rather small (Panel C).[17] Finally, the figure shows that individuals with low pre-unemployment incomes are much more likely to work part-time while receiving UB compared to other income groups (Panel D). However, part-time work increased in all income groups after the earnings disregard reforms.[18]

Transitions to part-time work with UB. From our detailed employment spell data we can observe the status of part-time workers before they started to receive UB and work part-time, enabling us to characterize transitions to part-time work from different sources. Figure 4 illustrates these transitions over time from 2011–2018 for part-time workers with earnings-related and flat-rate UB.[19]

[17]The oldest group includes 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 benefits provides a kind of early retirement scheme. As a result, many of the oldest unemployed are not actively looking for a new job but are passively waiting for their old-age pension eligibility to start (Kyyrä and Ollikainen 2008).

[18]Previous working paper version of this study (Kalin et al. 2024) includes more descriptive evidence on the longer-run developments in part-time work while receiving UB among different occupations.

[19]We are unable to link the employer-level employment data with the benefit data that include monthly-level housing allowances. Therefore, we can describe transitions to part-time work at the em-

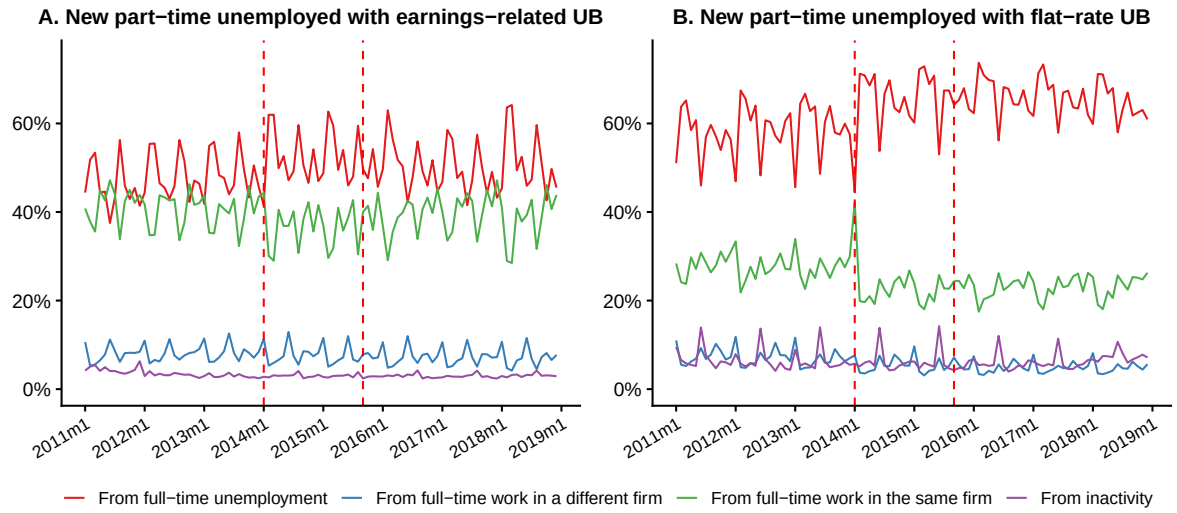
In 2011–2018, most newly transitioned part-time workers were fully unemployed before starting their part-time work spell among both earnings-related (50% of part-time workers) and flat-rate (63%) UB recipients. However, we find that a significant share became part-time workers while receiving UB immediately after being fully employed in the previous month. Most of these individuals continued working part-time at the same firm they originally worked. On average, 39% of new part-time workers with earnings-related UB were employed at the same firm before receiving UB, compared to 25% of new part-time workers with flat-rate UB. In comparison, Figure 4 shows that it is far less common for individuals to leave a full-time job at one firm, and take up a part-time job at a new firm while collecting UBs in the next month. Likewise, it is relatively rare to enter part-time unemployment from outside the labor force.[20]

As discussed above, the implementation of earnings disregards increased financial incentives to switch from a full-time job to part-time jobs while collecting UB. A potential avenue for these types of transitions is to continue working in the same firm as before but with smaller working hours. However, Figure 4 shows that the share of these types of transitions out of all new part-time workers with UB did not change at the time of the earnings disregard reforms. Instead, the shares of the transitions to part-time work from different sources have remained rather constant over time, despite the rapid increase in part-time work after 2014 described above in Figure 3. If anything, Figure 4 indicates that the share of part-time workers coming from full-time unemployment has slightly increased after 2014 relative to those who transition from full-time employment or outside of the labor force, particularly among flat-rate UB recipients. This finding indicates that the increase in part-time work is not stemming from increased transitions from full-time work to unemployment with part-time earnings. This implies that the potential negative employment effects through increased transitions from full-time work

ployer level only for all UB recipients.

[20]It is worth noting that Figure 4 conceals considerable variation across different sectors. Direct transitions from full-time work to part-time unemployment within the same firm are particularly common among service sector workers, postal and transport workers, and social and healthcare workers. In contrast, such transitions are relatively rare among construction and manufacturing workers. In certain sectors with fluctuating labor demand, it appears that working hours and work opportunities vary and workers regularly supplement their labor income with unemployment benefits.

Figure 4: Decomposition of transitions to part-time unemployment by previous labor market status, 2011–2018



Notes: The figures decompose the number of new part-time unemployed workers according to their labor market status in the previous month for part-time workers with earnings-related (left-hand side) and flat-rate UB (right-hand side). The red line shows the share of part-time unemployed who were previously full-time unemployed. The green line shows the share of part-time unemployed who continue working part-time in the same firm where they worked full-time in the previous month. The blue line shows the share of part-time unemployed whose employer changed at the beginning of part-time working. The lilac line shows the share of part-time workers who were not in the labor market in the previous month. The vertical dashed lines denote the implementations of earnings disregards in unemployment benefits (January 2014) and housing allowances (September 2015).

to part-time work after the implementation of earnings disregards are not a relevant issue.

3.3 Methods and Definitions

As discussed in detail above, the implementation 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 latter reform on the incentives to work part-time, we will focus on this reform in our empirical analysis.

We define our treatment group as those individuals who received UB in the month in

question and received HA in the same month and three preceding months, and the control group as those with UB only in the same month. We define the HA status by using the previous months' HA receipts to rule out cases where HA is received only for a short period of time such as one month. However, altering the treatment group definition, for example, to only include HA recipients in the month in question, has no significant impact on our results. We then compare the monthly-level labor market outcomes between the treatment and control groups before and after the reform using cross-sectional data.

As described above, individuals with earnings-related and flat-rate UB differ in various characteristics, including work history, prior earnings, age and spousal earnings. Those with earnings-related UB are likely to be more attached to the labor markets, as they have, on average, more work experience and higher earnings before unemployment. In contrast, those with flat-rate UB comprise of individuals with more limited work experience before unemployment or longer unemployment spells. In addition, the share of housing allowance recipients is larger among flat-rate compared to earnings-related UB recipients, causing an imbalance in the size of the 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 the implementation of earnings disregards might differ from each other. Therefore, we study the impact of the earnings disregard reforms separately for both earnings-related and flat-rate UB recipients.

Our identification assumption is *not* random assignment into the treatment and control groups, but that the development of the labor market outcomes of the groups would have remained similar without the earnings disregard reforms. This is commonly referred to as the parallel trends assumption. To evaluate the validity of this assumption, we follow the development of the outcomes in the treatment and control groups long before the implementation of the reforms. Our graphical analysis below illustrates that the part-time work outcomes of the groups developed very similarly in the months preceding

the reform, strengthening the validity of our baseline identification assumption. However, there is more variation in pre-reform trends between the groups for outcomes that measure longer-run labor market outcomes among earnings-related UB recipients, which we take into account in our analysis by allowing for group-specific pre-existing linear trends. We discuss our estimation approach in more detail below.

Our main outcome variable is an indicator of participation in part-time 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 3.2. In addition, we measure potential intensive-margin responses by studying labor earnings from part-time work.

We measure longer-run labor market outcomes by focusing on the likelihood of full-time employment, i.e. employment without receiving UB. First, we use the employment spell data to calculate the total number of working days in the next 12 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.[21] Since we only observe annual total earnings and do not have data on working hours, this measure includes all working days when not receiving UB, including full-time work and potential part-time work without UB. We then estimate the impact of the reform on the number of working days to analyze whether the introduction of the earnings disregard in HA has an effect on days in employment in the future. In addition, we expand this variable to cover working days in the next 24 months to analyze potential effects on employment that may occur over a longer period. Second, we analyze the likelihood of leaving UB within the next three or six months to measure the effect of earnings disregards on receiving UB in the future. Both of these variables (future working days and unemployment) capture the combination of potential stepping-stone, lock-in and ex-ante effects of the policy, which is central in assessing the overall impact of earnings disregards on both future employment outcomes and benefit usage.[22]

[21] This variable is defined only for individuals who we observe in the data over the full 12-month period.

[22] Another interesting outcome would be to study future full-time earnings as an indicator of the effects of earnings disregards on, for example, job quality. However, we observe full-time earnings only

To plot the timeline of part-time working for earnings-related and flat-rate UB recipients, we estimate the following equation separately for the 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 the month before the implementation of the reform (August 2015). We omit this period dummy from the regression so that the estimated coefficients λ_t represent the average outcome development relative to this month. We include as controls (X_{it}) age, gender, household size and the number of children below 7 years. ϵ_{it} denotes the error term. We cluster standard errors at the individual level.

We estimate the following difference-in-differences equation to capture the differences between treatment and control groups and the magnitude of the effects of the 2015 reform, separately for earnings-related and flat-rate UB recipients:

$$Y_{it} = \lambda_t + \alpha_1(Treat_{it} \times Post_t) + \alpha_2 Treat_{it} + X_{it}\beta + \epsilon_{it} \tag{2}$$

where the treatment group ($Treat_{it}$) is defined as those with both UB and HA and the control group as those with UB only, as discussed in more detail above. $Post_t$ denotes the period from September 2015 until December 2018, the last available month in our employment spell data. We use the period from April 2012 to August 2015 as the pre-period in our regressions.[23] In the baseline analysis we use the same set of control variables as in equation (1) above. To study potential heterogeneity of the response, we interact the $Treat_{it} \times Post_t$ variable with indicator variables for gender and age for all UB recipients, and below or above median wages before unemployment for earnings-related UB recipients.

To account for the slightly differential pre-trends in longer-run labor market outcomes (future working days and unemployment), we apply a simple two-step procedure.

at the annual level in our data, which makes measuring potential changes in full-time earnings around the September 2015 reform subject to considerable measurement issues.

[23]Limiting the pre-period to include only the months after the first reform in January 2014 has no significant impact on our results or implications.

First, we regress the outcome variable against a linear time trend variable, the treatment dummy, their interaction, and control variables, using only the pre-reform data. Based on these estimates, we then calculate predicted outcomes for all individuals over all time periods and subtract the predicted values from the observed outcomes. This procedure effectively removes the group-specific pre-existing linear trends from the outcome variable. In the second step, we conduct the standard difference-in-differences analysis using the de-trended outcome variable. That is, we replace Y_{it} with its de-trended counterpart in equation (2) and estimate the model without control variables X_{it} (as their effects are already removed).[24]

The benefit of our baseline cross-sectional estimation is that it allows us to carefully study the longer-run impacts of the reform, including its potential impact on longer-run employment outcomes. However, potential threats to identifying the effect of earnings disregards using equation (2) relate to potential 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 were to change over time such that this group included significantly more women, who are more likely to participate in part-time work compared to men (see Panel B of Figure A3 in the Appendix), it could be that this change is driving the results instead of changes in financial incentives due to the earnings disregard reforms. Also, while we control for gender and other observable characteristics in our regressions, potential compositional changes in unobserved characteristics could have a similar impact.

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 overall number of HA recipients in Finland and in our data increases over time during our analysis period, this increase occurs rather similarly throughout the period, including the years before the

[24]Figure A6 in the Appendix shows the development of longer-run employment outcomes when removing group-specific pre-existing linear trends and Figure A7 without it (relative to August 2015). We discuss the implications of our estimation procedure on our difference-in-differences estimates in Section 4.2.

implementation of earnings disregards. Therefore, increases in the relative number of individuals in the treatment group that could be driven by, for example, the mechanical effects of the earnings disregards discussed above do not explain our findings.[25] Third, we study the impact of the September 2015 reform on part-time work using panel data, where we fix the treatment and control status at the time of the 2015 reform and follow the same individuals over time before and after the reform. Here we define the treatment group as individuals with both UB and HA in August and September 2015, and the control group as those with only UB in the same months. Our panel data results using these fixed treatment and control groups are similar but somewhat smaller in magnitude compared to the estimates from the cross-sectional baseline model (see Figure A8 in the Appendix), suggesting that potential unobserved changes in the composition of the groups are not likely to explain our main findings.[26]

4 Results

4.1 Participation in part-time work and participation elasticities

We begin by plotting the development of participation in part-time work and part-time earnings over time around the earnings disregards reforms. Figure 5 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 the treatment and control groups (those with both UB and HA and those with UB only), estimated using equation (1). The bottom graphs in the figure show the differences between the groups each month. The development of part-time work is presented relative to August

[25] We find that the composition of HA recipients did not change significantly at the time of the reforms, see Tables A2 and A3. Also, the share of HA recipients out of all UB recipients remained rather stable in 2012–2018, as illustrated in Figure A5. This implies that potential mechanical effects that could increase the number of HA recipients after the 2015 reform are not driving our findings.

[26] A downside of the panel data approach is that it narrows our analysis to individuals who were unemployed in specific months. Unemployment benefits are often received for short periods of time, and when studying part-time employment responses over a longer time period we end up restricting the sample to a small (negatively) selected group of individuals who remain unemployed for a long time. Therefore, we use the cross-sectional analysis as our baseline estimation approach.

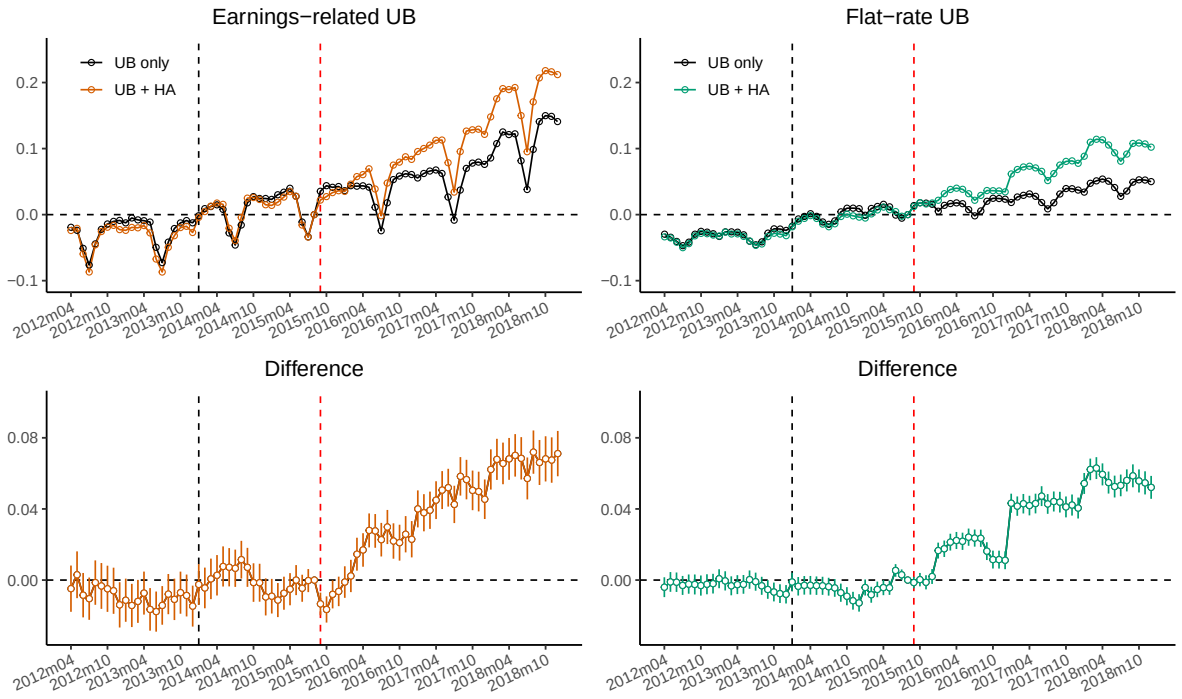
2015, one month before the second earnings disregard reform, denoted by zero for both groups in the figure.

First, Figure 5 shows that participation in part-time work developed very similarly in the treatment and control groups before the earnings disregard reforms for both earnings-related and flat-rate UB recipients. This supports the validity of our empirical approach. Second, after January 2014 when the earnings disregards were implemented for all UB recipients (black dashed line in the figure), we observe a small increase in part-time work in both groups. However, significant differences in part-time working between the groups were not expected after the first reform, as it affected all UB recipients, including those with both UB and HA. Third, the figure clearly shows that from September 2015 onward (the red dashed line in the figure), part-time working significantly increased in the treatment group relative to the control group among both earnings-related and flat-rate UB recipients. This indicates that the earnings disregard policies have an impact on part-time working decisions while receiving UB. Also, we observe that the difference in participation in part-time work increases gradually between the groups after September 2015, which is consistent with the fact that HA is reviewed less frequently than UB, implying that the incentives to participate in part-time work did not necessarily change for all HA recipients immediately after September 2015.[27]

As a robustness check, Figure A8 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 and control group status based on benefits received at the time of the reform and follow these same individuals one year

[27]Tables A2–A3 in the Appendix show how the compositions of the treatment and control groups evolved in terms of age, gender and household characteristics in 2012–2018. Overall, there are no notable changes in these characteristics over time, and as we control for these characteristics in our regressions, it is unlikely that they are driving the observed patterns. Second, Figure A5 in the Appendix shows the development of the shares of treatment and control groups out of all UB recipients over time for both benefit types. One might worry that the a potential 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. Overall, changes in the shares are small over time, particularly among earnings-related UB recipients. There is a small increasing trend in the share of HA recipients from 2013 to 2016, but the relative share of HA recipients then flattens out and begins to decrease among both earnings-related and flat-rate UB recipients. Therefore, these differential changes in the shares of HA recipients are not similar to our findings of a consistent increase in part-time work in the treatment group relative to the control group after September 2015.

Figure 5: The share of part-time unemployed workers



Notes: The figure plots the development of the share of part-time unemployed workers with labor earnings out of all UB recipients for earnings-related and flat-rate UB recipients in 2012–2018, separately for those with (UB + HA) and without housing allowance (UB only). The share is presented relative to August 2015, 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 are reported in Table 2.

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 in Figure 5. Also, part-time working 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 similar way as in Figure 5, except that the effect is somewhat smaller among flat-rate UB recipients than in our baseline model. This specification further demonstrates that potential changes in the compositions of the treatment and control groups or the potential mechanical effects on HA eligibility after the reform are not affecting our results, as the panel data specification does not allow any compositional changes in the groups over time.[28]

[28]As an additional robustness check, Figure A9 in the Appendix shows the development of part-time work when dividing UB recipients into treatment and control groups based on simulated eligibility for HA based on annual income information instead of using the observed monthly HA recipient status available in the data. Overall, the patterns in part-time work are similar as above, but the evolution of

Figure 6 shows the development of earnings from working while receiving UB separately for the recipients of earnings-related and flat-rate UB. The figure includes positive earnings from part-time work (that is, those with no part-time earnings are not included in the figure). The figure illustrates that the development of average earnings was rather similar in the treatment and control groups before the implementation of earnings disregards, but there is a slight downward trend in this outcome for both benefit types. After the reform of September 2015, there is no significant difference in part-time earnings between the treatment and control groups. This suggests that the introduction of earnings disregards did not have a significant impact on average part-time earnings, conditional on participating in part-time work while receiving UB.[29]

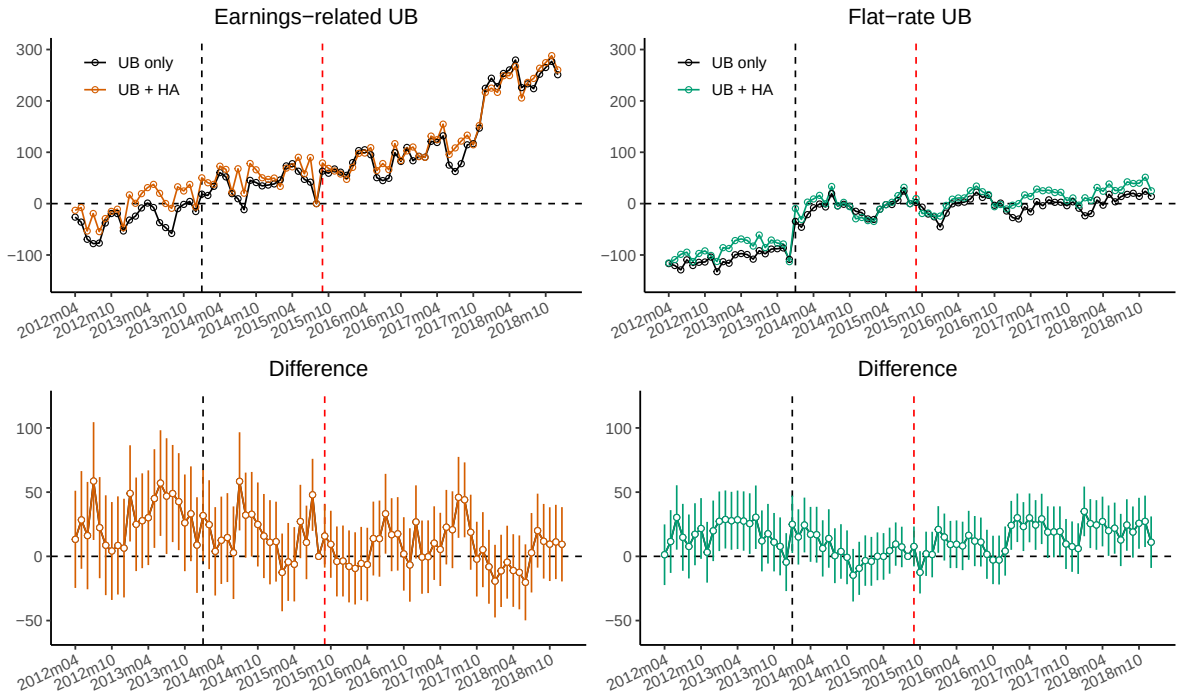
Table 2 presents the difference-in-differences estimates of the earnings disregard policy on participation in part-time work and part-time earnings based on equation (2), estimated separately for earnings-related and flat-rate UB recipients using the latter reform in September 2015, as explained above in Section 3.3. 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 relative to the control group after the implementation of the earnings disregards for HA. The difference-in-differences estimates are 0.040 (standard error 0.003) for earnings-related and 0.037 (0.001) for flat-rate UB recipients.

We evaluate the magnitude of the estimated response by approximating a part-time work participation elasticity with respect to changes in incentives for part-time work. To do this, we relate the relative response in participation to part-time work from our analysis above to the relative average change in the net-of-participation tax rate to part-time work (1 minus the participation tax rate) due to the implementation of the earnings disregard in HA in 2015. The relative increase in the net-of-participation tax rate for part-time

the outcomes and responses to the 2015 reform are more noisy for simulated HA recipients, particularly among earnings-related UB recipients. This can be expected as HA simulations do not account for the incomplete take-up of the benefit, which means that the treatment status is imprecisely measured in this analysis.

[29]Figure A4 in the Appendix presents the monthly earnings distributions for those who received UB in 2013, 2014 and 2016. From the figure we can observe that the distributions moved slightly to the right for higher incomes after the earnings disregard reforms for both UB types, and that there is visible local bunching at the 300 euro threshold for both groups after the earnings disregard reforms, indicating that some individuals are able to adjust their earnings precisely such that they do not exceed the monthly earnings disregard threshold after which the benefits begin to reduce.

Figure 6: Earnings from part-time work, earnings-related and flat-rate UB recipients



Notes: The figure plots the development of the average positive monthly earnings from part-time work for earnings-related and flat-rate UB recipients in 2012–2018 separately for those with (UB + HA) and without housing allowance (UB only), presented relative to August 2015 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 part-time earnings are reported in Table 2.

work caused by the 2015 reform was approximately 22% for earnings-related and 31% for flat-rate UB recipients, calculated using the average earnings from part-time work in the treatment group (826 and 595 euros per month for earnings-related and flat-rate UB, respectively). Our point estimates for the percentage-point increases in part-time work (0.04 and 0.037 for earnings-related and flat-rate UB recipients) translate into 21% and 29.6% increases relative to the treatment group baseline means for earnings-related (19.2 percentage-points) and flat-rate UB recipients (12.5 pp.), respectively. Therefore, the obtained participation elasticity estimates for part-time work are approximately 0.95 for both benefit types. These numbers indicate that the part-time labor supply decisions of UB recipients are responsive to changes in financial incentives. These estimates are larger than what has been found for the participation elasticity for full-time employment in the literature, where the elasticity with respect to the net-of-participation-tax rate is

Table 2: Regression estimates for part-time work

	Earnings related UB		Flat rate UB	
	Working part-time	Part-time earnings	Working part-time	Part-time earnings
$Treat_{it} \times Post$	0.0404***	-18.96***	0.0370***	4.605
	(0.0028)	(6.353)	(0.00140)	(4.098)
Baseline control	0.183	847.2	0.115	714.7
Baseline treatment	0.192	798.1	0.125	685.9
Observations	11,327,849	1,690,963	10,640,612	1,353,005

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 UB only. Baseline levels are the average values of the outcome variable in August 2015. Standard errors clustered at the individual level are presented in parenthesis. Significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

typically estimated to be below 0.5 (see e.g. Chetty et al. 2013).

Table 2 includes the estimates for earnings during part-time work for both benefit types. The estimates indicate a statistically significant but small reduction of 19 euros per month for earnings-related UB recipients, and an insignificant increase of 5 euros for flat-rate UB recipients. In relative terms, the effects on earnings is much smaller compared to the participation response. For earnings-related UB recipients, the estimate corresponds to a 2.4% reduction and for flat-rate UB recipients a 0.7% increase in part-time earnings relative to the treatment group baseline means of 798 and 686 euros per month in August 2015 for earnings-related and flat-rate UB recipients, respectively. Therefore, the most significant impact of the 2015 reform occurred in participation to part-time work while receiving benefits, but its effect on intensive-margin earnings from part-time work were very small.[30]

4.2 Permanent employment and future unemployment

Figure 7 plots the development of full-time working days (working days excluding the days when receiving UB) within the 12 months following each unemployment month around the reforms. The figure thus illustrates how the number of working days developed

[30]Table A4 presents the difference-in-differences results when we allow for group-specific linear trends for the part-time work outcomes. The estimates for the share of part-time workers are very similar to those presented in Table 2, as can be expected. Due to the slightly different pre-trends, the estimates for earnings from part-time work increase for both benefit types compared to the baseline specification Table 2. Nevertheless, in relative terms the effects on part-time earnings remain small (1% for earnings-related and 4.5% for flat-rate UB recipients) even when allowing for group-specific pre-existing linear trends.

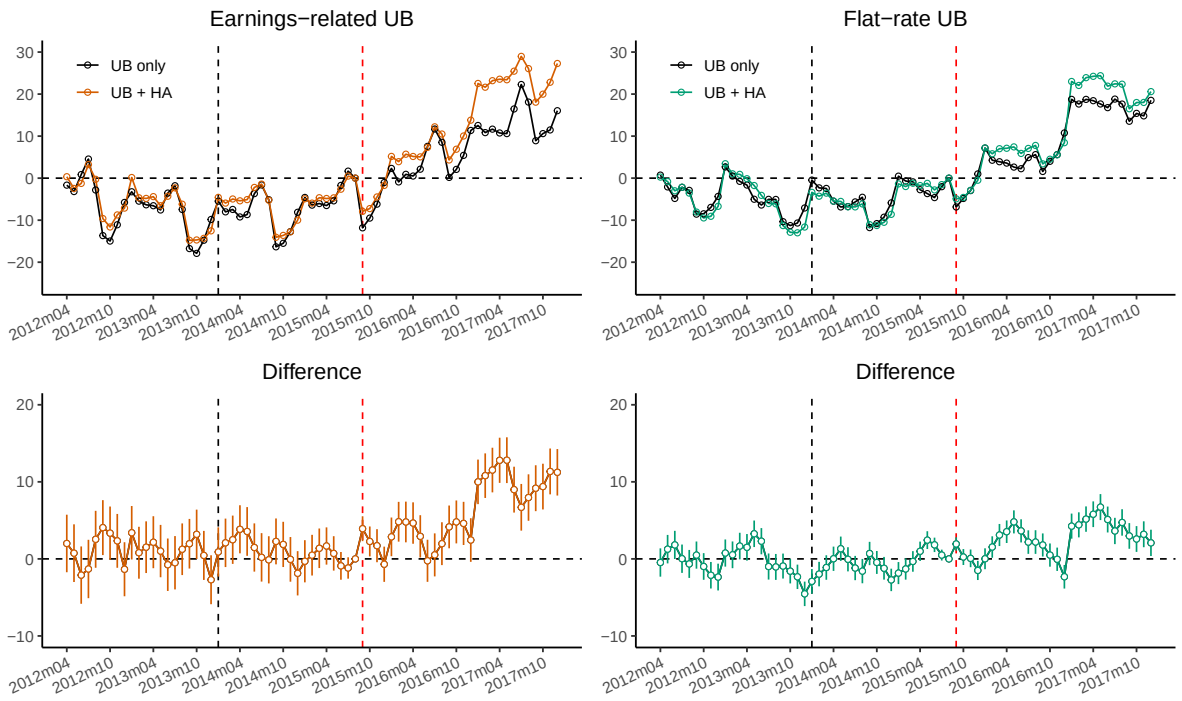
for both earnings-related (left-hand side) and flat-rate (right-hand side) UB recipients, separately for the treatment and control groups. As an example, the average number of full-time working days within the next 12 months was 66 days for earnings-related UB recipients in the treatment group. As explained above in Section 3.3 in more detail, in the analysis of longer-run employment outcomes we allow for group-specific linear trends for the treatment and control groups to account for the slight differences in the pre-reform trends of the outcomes between the treatment and control groups in the raw data.

Figure 7 shows that the number of days in full-time employment developed very similarly in both groups and within both benefit types before the earnings disregard reforms. After September 2015, the figure shows that there is a gradual increase in working days in the treatment group relative to control group among both benefit types, and that the increase in working days is somewhat larger for earnings-related than flat-rate UB recipients. This suggests that the implementation of earnings disregards in HA had a small effect on future employment among UB recipients.[31]

Table 3 presents the regression estimates for full-time employment and future unemployment for both earnings-related (Panel A) and flat-rate (Panel B) UB recipients, estimated using equation (2) and allowing for group-specific linear trends. Column (1) shows the estimates for days in full-time employment within the next 12 months, which confirm the visual observations from Figure 7 above. Difference-in-differences estimates indicate that there is an increase of 5 working days for earnings-related UB recipients and 2.8 days for flat-rate UB recipients in the treatment group relative to the control group. Column (2) presents the estimates when expanding the evaluation period to cover full-time working days within the next 24 months after a benefit spell. This specification aims to study potential changes in full-time employment that potentially occur over a longer time span than the next year. For both benefit types, we again observe a positive effect

[31]Figure A7 in the Appendix shows the development of working days within the next 12 months and the other variables measuring longer-run employment outcomes without removing the group-specific linear trends. The figure shows that there is slight downward trend in the working days variables before the earnings disregards reforms between the treatment and control groups among earnings-related UB recipients, but the trends are rather similar for flat-rate UB recipients. Figure A6 in the Appendix illustrates the development of all the baseline variables measuring longer-run employment when allowing for group-specific linear trends, separately for both benefit types.

Figure 7: Days in full-time employment withing the next 12 months, earnings-related and flat-rate UB recipients



Notes: Figure plots the development of days in full-time employment within the next 12 months for earnings-related and flat-rate UB recipients in April 2012–December 2018, estimated allowing for group-specific pre-existing linear trends. The development is presented relative to August 2015, which is marked by zero for both groups. The bottom graphs illustrate the difference between the groups each month with 95% confidence intervals. The baseline working days within the next 12 months are reported in Table 3.

on full-time working days, approximately 10 and 2 working days for earnings-related and flat-rate UB recipients.

Columns (3) and (4) of Table 3 present the regression results for the likelihood of still receiving unemployment benefits three or six months after the current month, respectively. This specification thus analyzes the potential impact of earnings disregards on remaining unemployed for a longer or shorter period in the future. In theory, the earnings disregards and the associated increase in part-time work during unemployment could either increase (lock-in effect) or decrease (stepping-stone effect) the likelihood of remaining unemployed.

Our estimates for earnings-related UB recipients indicate a small negative effect on the likelihood of remaining unemployed in the future of 1.3 and 1.9 percentage-points

Table 3: Regression estimates for future full-time employment and unemployment

	(1) Working days within next 12 months	(2) Working days within next 24 months	(3) Unemployed 3 months later	(4) Unemployed 6 months later
Panel A – Earnings-related UB				
$Treat_{it}$ x $Post_t$	5.021***	9.764***	-0.0129***	-0.0188***
	(0.6715)	(1.722)	(0.0015)	(0.0021)
Baseline control	101.3	280.5	0.790	0.710
Baseline treatment	66.1	192.5	0.873	0.821
Observations	9,508,148	7,524,187	10,792,770	10,309,865
Panel B – Flat-rate UB				
$Treat_{it}$ x $Post_t$	2.844***	2.259**	-0.0106***	-0.0119***
	(0.361)	(1.008)	(0.0007)	(0.0011)
Baseline control	59.99	173.9	0.880	0.834
Baseline treatment	43.69	130.3	0.920	0.881
Observations	8,689,011	6,707,534	9,872,287	9,293,727

Notes: Table presents the difference-in-differences estimates estimated using equation (2) while allowing for group-specific pre-existing linear trends for both earnings-related (Panel A) and flat-rate UB recipients (Panel B). Columns (1) and (2) show the estimates for the number of days in full-time employment within the next 12 and 24 months, and columns (3) and (4) the likelihood of receiving UB 3 and 6 months after the current month, respectively. The treatment group is those unemployed individuals with both UB and HA and the control group those with UB only. Baseline levels are the average values of the outcome variable in August 2015. Standard errors clustered at the individual level are presented in parenthesis. Significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

three and six months after a benefit spell, respectively. For flat-rate UB recipients the estimates indicate that earnings disregards reduced the likelihood of being unemployed after 3 or 6 months by approximately 1.1 and 1.2 percentage-point. These findings are well in line with the small observed average increases in full-time working days for both benefit types in columns (1) and (2).[32]

The magnitude of the average effects of earnings disregards on future employment in Table 3 are in general small. The coefficients on future full-time working days in the next 24 months are between 2–10 days, and below 2 percentage-points for the likelihood

[32]Table A5 in the Appendix shows the estimates without allowing for group-specific linear trends. The estimates for flat-rate UB recipients are mostly similar in this specification in comparison to Table 3, which can be expected as there are no clear differences in pre-trends in the outcomes for this group based on a visual examination of Figure A6 (linear trends) and Figure A7 (no trends). However, allowing for group-specific linear trends changes the signs of the estimates on full-time working days for earnings-related UB recipients, as can be expected based on these figures. However, the estimates without accounting for the trends are small in magnitude similarly as our baseline estimates, indicating effects less than 10 future full-time working days and statistically insignificant effects on the likelihood of remaining unemployed.

of future unemployment. Therefore, these numbers suggest that earnings disregards do not have an economically sizable average impact on longer-run employment outcomes. In relative terms, the effect on full-time working days in the future are 5–7.5% relative to the treatment group baseline means for earnings-related UB recipients and 2–4% for flat-rate UB recipients. The relative (negative) effects on the likelihood of future unemployment are 1.5–2.4% and 1.2–1.4% for earnings-related and flat-rate UB recipients, respectively.

In summary, our results indicate that the earnings disregards policies had at best a moderate positive effect on the overall development of full-time working days and the likelihood of being employed in the future among UB recipients. However, we find that the effects of earnings disregards on longer-run labor market outcomes are consistently larger for earnings-related UB recipients compared to flat-rate UB recipients. This suggests that the stepping-stone effects are larger among those unemployed individuals who are likely to be more attached to the labor markets and who participate in part-time work during unemployment more actively to begin with. Also, our evidence indicates that the potential lock-in effects of earnings disregards do not appear to significantly crowd-out full-time employment for either of the benefit types. Together with the evidence presented in Figure 4 above showing that the implementation of earnings disregards is not associated with increased transitions from full-time work to part-time work with benefits, this suggests that earnings disregards are not likely to have a negative impact on permanent employment.

4.3 Heterogeneity

Table 4 present the regression results when we interact the $Treat_{it} \times Post_t$ term in equation (2) with various heterogeneity indicators. We analyze how the effects on part-time work and permanent employment differ by age (below 30, between 31-50 years and above 51 years) and gender for all UB recipients, and by earnings below or above the median before unemployment for those receiving earnings-related UB.

The results for part-time work indicate that among earnings-related UB recipients the effect of the earnings disregard reform of 2015 was larger among younger individuals

Table 4: Heterogeneity results

	Earnings-related UB				Flat-rate UB		
	31–50 years	Above 51 years	Male	Above median	31–50 years	Above 51 years	Male
Panel A - Part-time work							
$Treat_{it}$ x $Post_t$	-0.0257***	-0.0701***	-0.0853***	-0.0381***	-0.011***	-0.0245***	-0.0444***
	(0.0052)	(0.0057)	(0.0043)	(0.0043)	(0.0025)	(0.0032)	(0.0024)
Observations	11,327,849	11,327,849	11,327,849	11,327,849	10,640,612	10,640,612	10,640,612
Panel B - Full-time working days							
$Treat_{it}$ x $Post_t$	-11.72***	1.524	-6.059***	-1.016	-0.588	1.736***	-6.421***
	(1.255)	(1.331)	(0.978)	(1.228)	(0.5864)	(0.6524)	(0.4978)
Observations	9,508,148	9,508,148	9,508,148	9,508,148	8,659,011	8,689,011	8,689,011

Notes: Table presents difference-in-differences estimates from equation (2) interacted with indicator variables for age (below 30 years, 31-50 years and above 51 years) and gender for all UB recipients, and pre-unemployment earnings (above or below median) for earnings-related UB recipients. Estimation for full-time working days within the next 12 months allows for group-specific pre-existing linear trends. The treatment group consists of unemployed individuals receiving both UB and housing allowance, and the control group consists of those receiving UB only. The baseline coefficient on $Treat_{it} \times Post_t$ is 0.111 (standard error 0.005) for earnings-related UB recipients and 0.0707 (0.003) for flat-rate UB recipients in the part-time work outcome, and for full-time working days the corresponding coefficients are 11.81 (1.238) for earnings-related UB recipients and 6.240 (0.661) for flat-rate UB recipients. Standard errors clustered at the individual level are presented in parenthesis. Significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

below 30 years of age compared to older ones and those with smaller earnings before unemployment compared to those with above median earnings. In addition, the part-time work response is significantly larger for women compared to men. For flat-rate UB recipients, the part-time work responses were also larger among women compared to men, and among younger individuals compared to older ones.

For full-time working days within the next 12 months, we observe a larger effect for younger compared to middle-aged individuals and for women compared to men, but there is no difference by pre-unemployment earnings. For flat-rate UB recipients, the results show no big differences in responses by age, but a larger positive effect for women compared to men.

Overall, the heterogeneity results in Table 4 indicate that the part-time labor supply responses of women are significantly larger than those of men for both UB types. Also, the positive impact of earnings disregards on future full-time employment is larger for women among both benefit types. Also, we find similar evidence for younger individuals compared to older ones. This evidence suggests that for groups such as women and

younger individuals who are more likely to participate in part-time work to begin with (see Panels B and C in Figure A3 in the Appendix), policies that encourage part-time work can be more successful in promoting both part-time work participation and future permanent employment. However, our estimates suggest that the impact of earnings disregards policies on full-time employment are likely to be moderate even for these subgroups.

5 Discussion

In this paper, we find that participation in part-time employment among unemployment benefit recipients increased considerably after the implementations of earnings disregard policies that allow the benefit recipients to earn small amounts of income without reductions in their benefits. Our implied estimate for the participation elasticity for part-time work is close to 1, suggesting 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.

We find no economically sizable effects of earnings disregards on overall full-time employment or leaving unemployment among unemployment benefit recipients. However, we observe larger positive effects on future employment among earnings-related UB recipients, who are typically more attached to the labor market and participate in part-time work during unemployment more actively compared to flat-rate UB recipients, who more often have less work experience and longer unemployment spells. Also, we find larger positive effects on full-time employment for women, indicating that part-time work may further help some particular groups to find more permanent employment in the future. Overall, this evidence aligns with various previous studies that do not find significant average effects or associations between part-time work and employment in the future (O´Leary 1997; Boeri and Cahuc 2023; Lee et al. 2021). Our study adds to this liter-

ature by utilizing a quasi-experimental setting from a transparent reform that changed financial incentives and participation in part-time work between different types of unemployed individuals to demonstrate that the effects of part-time work while receiving UB on permanent employment are likely to be small on average, but they can vary between different types of benefit recipients.

Our findings imply that earnings disregards can alleviate the undesired disincentives of benefit systems by encouraging labor market participation among benefit recipients without significantly affecting transitions from full-time employment to part-time work with benefits. It is, however, important to note that policies such as an earnings disregard have an ambiguous effect on public expenditure even when they do not crowd-out full-time employment. Potential part-time labor supply responses reduce benefit payments paid to those who would otherwise remain full-time unemployed, but the earnings disregard also increases benefits paid to unemployed individuals who participate in part-time work irrespective of the reform. Our simple microsimulation calculation shows that saved benefits due to increased part-time work may not be enough to cover the increased unemployment benefits and housing allowances paid because of the earnings disregard for those who already participated in the labor market.[33] This implies that the potential benefits of increased part-time work, such as their small positive effects on future employment among certain groups of individuals, need be evaluated against this cost. Also, part-time work during unemployment can improve the welfare of some 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 (see e.g. Ahammer and Packham 2023 for the health effects of extended UI benefits). Also, part-time working

[33]Using the average part-time earnings from the data, we find that, on average, participating in part-time work reduces benefit payments more than the earnings disregard increases them for those who were already working before the reform. However, based on our participation response estimates, the associated increase in the share of part-time workers after the September 2015 earnings disregard reform (4.0 and 3.7 percentage-points for earnings-related and flat-rate UB recipients) is not large enough to overcome the sum of the benefit costs stemming from the increase in benefits for those who were already working (16 and 10% of all earnings-related and flat-rate UB recipient in 2013). In this simplified calculation, we assume that all part-time workers earn the average wage, and therefore it does not necessarily reflect the true net costs of the reform. The current Finnish government has abolished earnings disregards from April 1st 2024 onward. They estimated a static net saving in public expenditure of 56 million euros per year from abolishing the earnings disregards.

could affect the qualitative aspects of future employment, such as job stability or quality. Therefore, we need more evidence on these types of aspects to draw more comprehensive conclusions on the welfare effects of policies aiming to encourage part-time work among benefit recipients.

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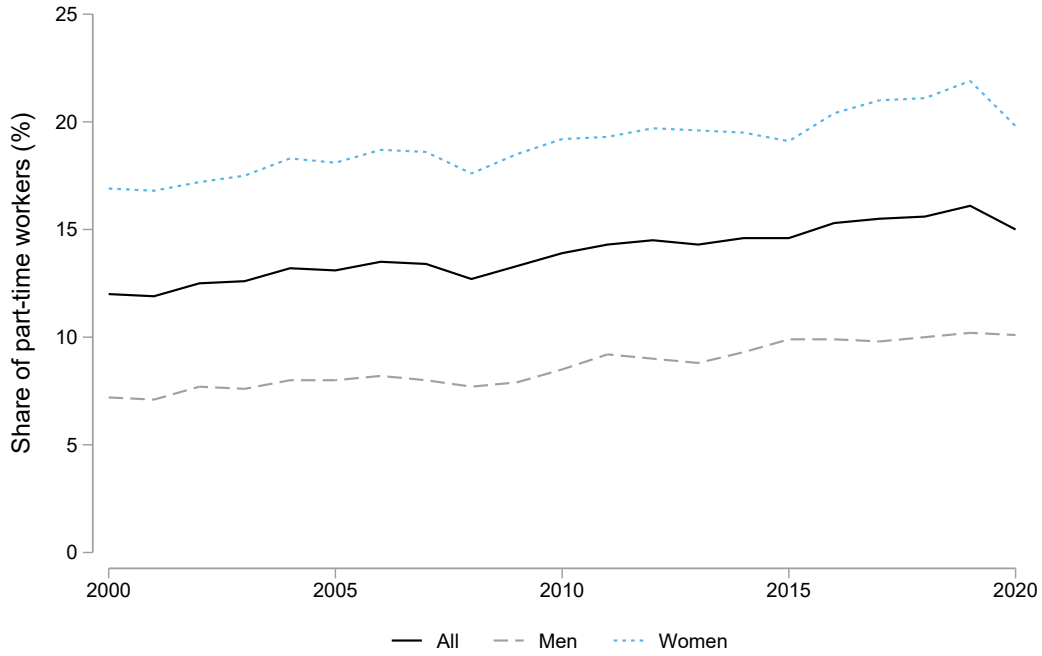
Appendix

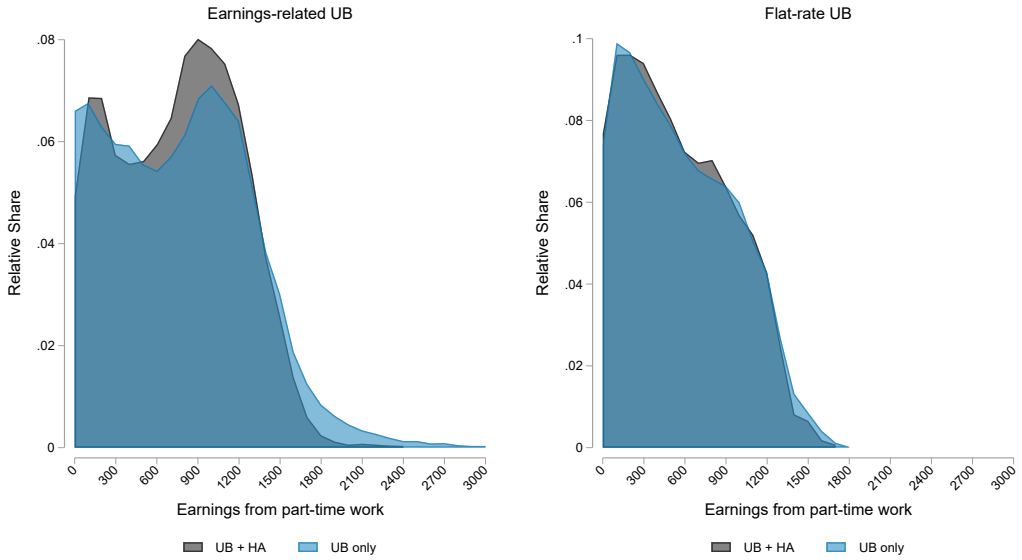
Figures

Figure A1: Share of part-time workers in Finland, 2000–2020



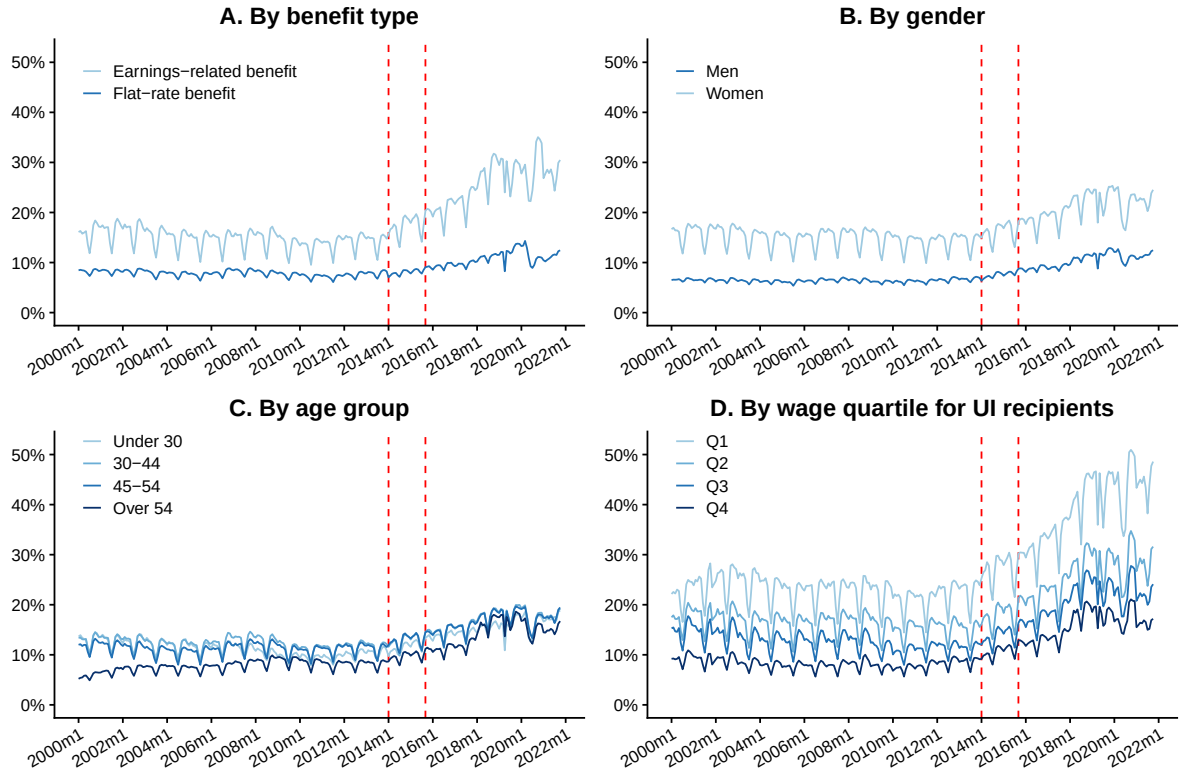
Notes: Figure shows the evolution of the share of part-time workers out of all workers in Finland in 2000–2020 in total and separately for men and women. The figure is based on the Statistics Finland Labour Force Survey. The figure shows that the share of part-time workers in Finland has increased steadily from around 12% in 2000 to 14% in 2020. This development differs from that presented in Figure 3 in the main text, showing the rapid increase in part-time workers among UB recipients from the mid-2010s onward. This illustrates that the surge in UB recipients working part-time is not stemming from a general increase in part-time work arrangements in Finland at the same time.

Figure A2: Distributions of part-time earnings when receiving UB in 2013, earnings-related and flat-rate UB recipients with and without housing allowance



Notes: Figure shows the distributions of part-time earnings when receiving partial unemployment benefit (UB) for earnings-related and flat-rate UB recipients in 2013, separately for those with UB only 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, who comprise approximately 66% of all earnings-related UB recipients (see Section 3).

Figure A3: Share of part-time unemployed workers in different subgroups of all UB recipients, 2000–2022

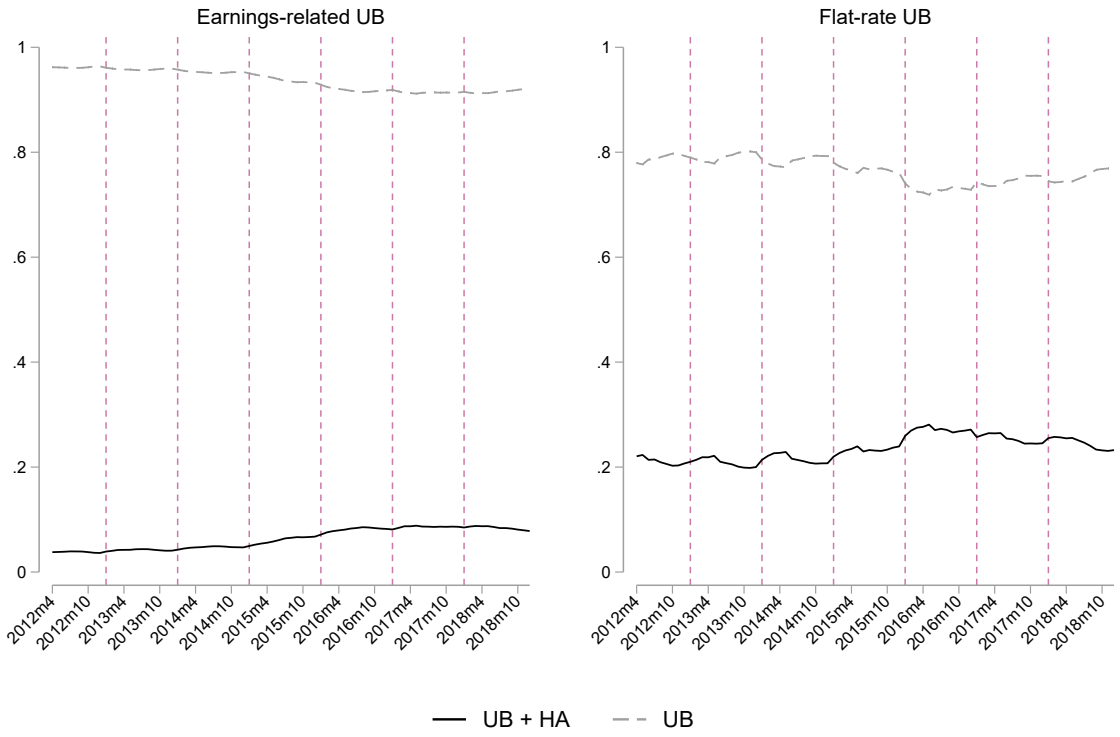


Notes: Panels A, B, C and D show the development of the share of part-time unemployed workers among all UB recipients in 2000–2021 by benefit type (earnings-related/flat-rate), gender, age group, and among recipients of earnings-related benefits by annual wage quartiles before the current benefit entitlement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

Figure A4: Distributions of part-time earnings when receiving partial UB in 2013, 2014 and 2016

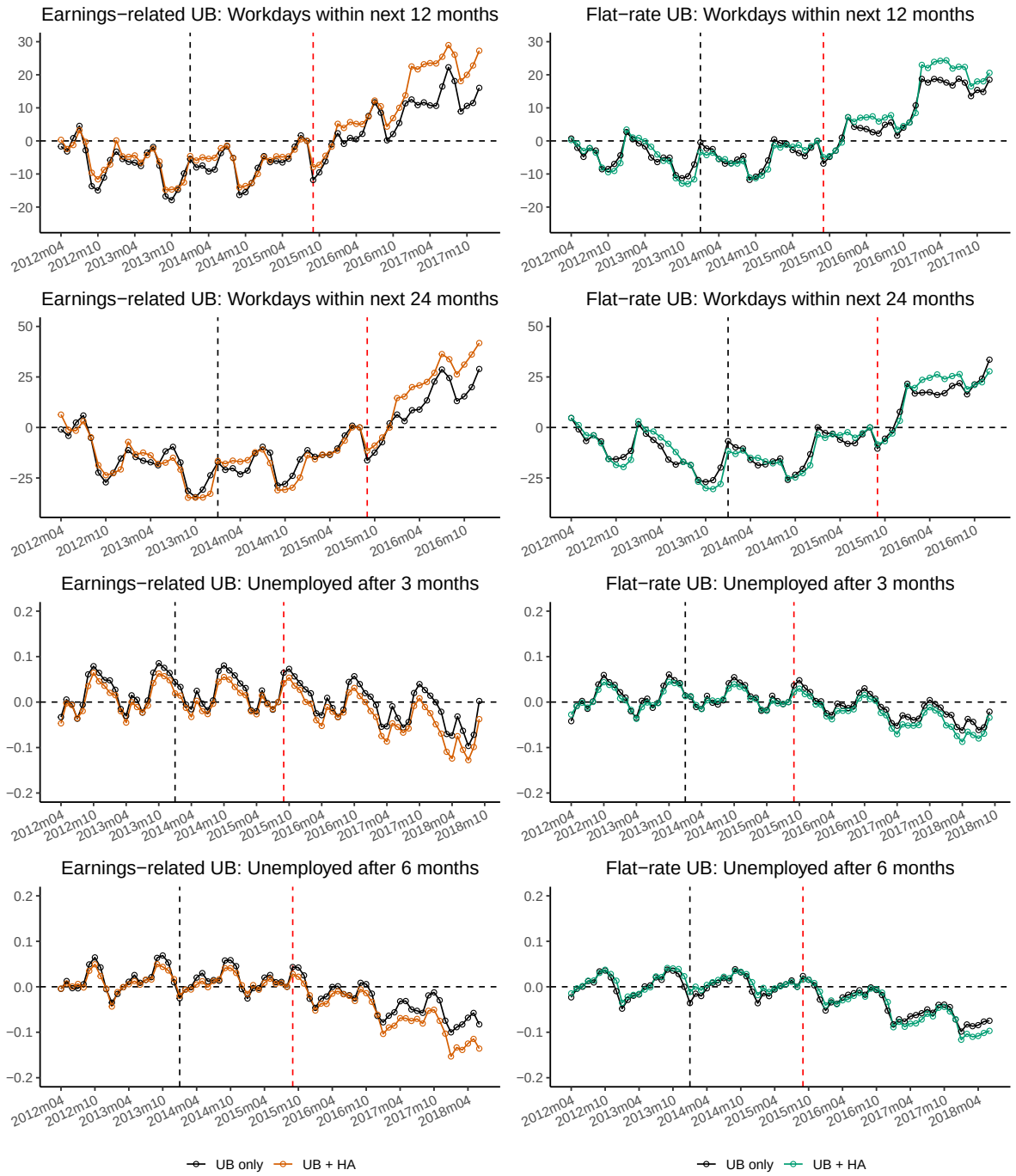
Notes: Figure shows the distributions of monthly part-time earnings when receiving partial UB for earnings-related and flat-rate unemployment benefit (UB) recipients before (2013) and after the earnings disregard reforms (2014 and 2016). The year 2015 is not included in the figure as the second reform occurred in the middle of the year (September 2015). The figure for earnings-related UB includes only those for whom we can observe earnings below the 300 euro threshold after the reforms, who comprise approximately 66% of all earnings-related UB recipients. The figure shows that the distributions have shifted slightly to the right after the earnings disregard reforms at higher income levels, and that after the reforms some unemployed individuals bunch exactly at the 300-euro monthly earnings disregard threshold, above which the benefit starts to gradually decrease.

Figure A5: Shares of treatment (UB+HA) and control (UB only) groups over time for earnings-related and flat-rate UB recipients, 2012–2018



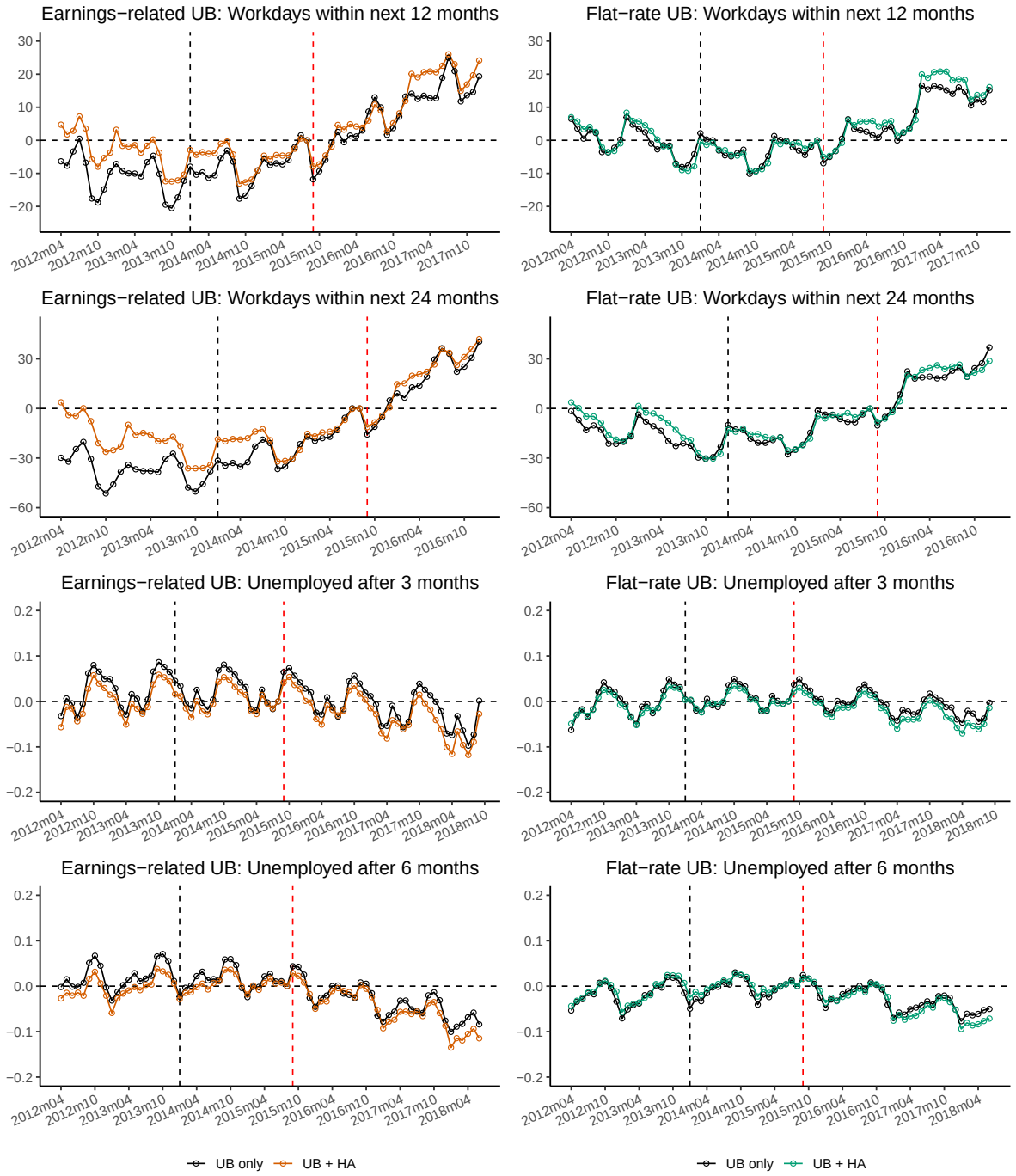
Notes: Figure presents the shares of the treatment (unemployment benefit, UB + housing allowance, HA) and control (UB only) groups for earnings-related (left-hand side) and flat-rate (right-hand side) benefit recipients each month in 2012–2018. The figure shows that changes in the shares of treatment and control groups are small over time, and not directly associated with changes in the shares of part-time workers out of all UB recipients within these groups over time (see Figure 5 in the main text). This suggests that changes in the shares of treatment and control groups are unlikely to explain our observed effects of the earnings disregard reforms on part-time working.

Figure A6: Development of longer-run employment outcomes



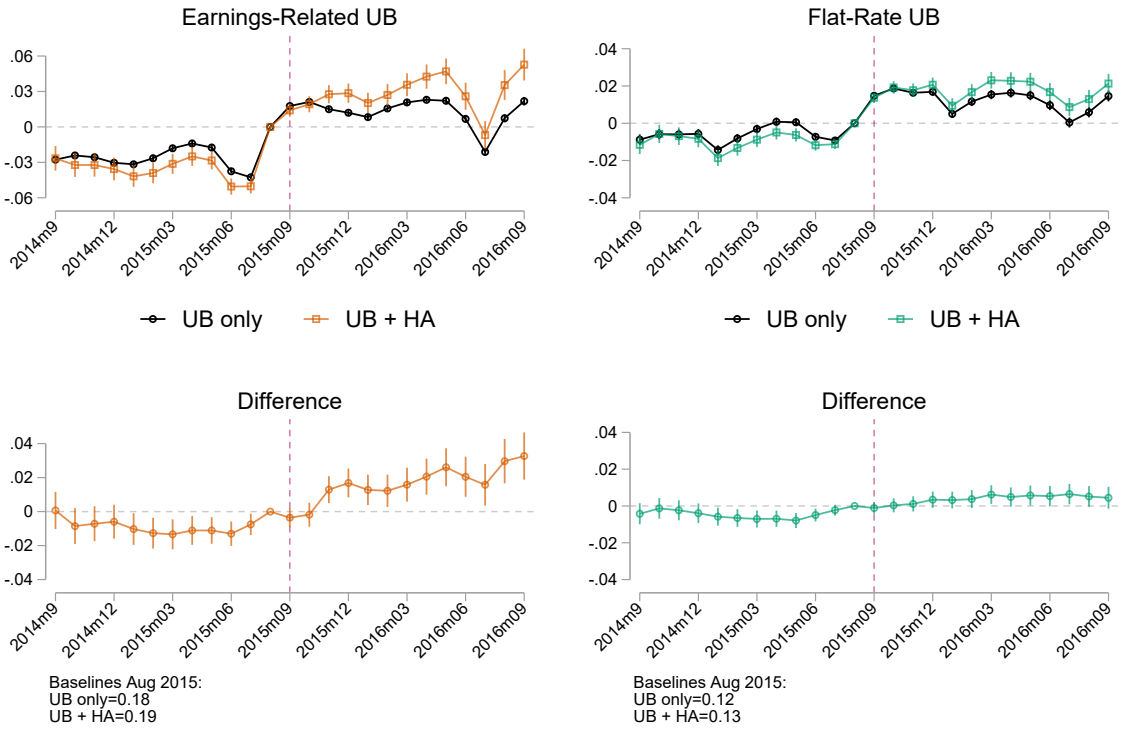
Notes: Figure plots the development of days in full-time employment within the next 12 and 24 months and the likelihood of receiving UB after 3 or 6 months for earnings-related (left-hand side) and flat-rate UB recipients (right-hand side) in April 2012–December 2018 separately for the treatment (UB + HA) and control groups (UB only), estimated by removing the pre-existing group-specific linear trends. The development is presented relative to August 2015, which is marked by zero for both groups. The baseline values for the variables are reported in Table 3 in the main text.

Figure A7: Development of longer-run employment outcomes without removing the group-specific pre-existing linear trends



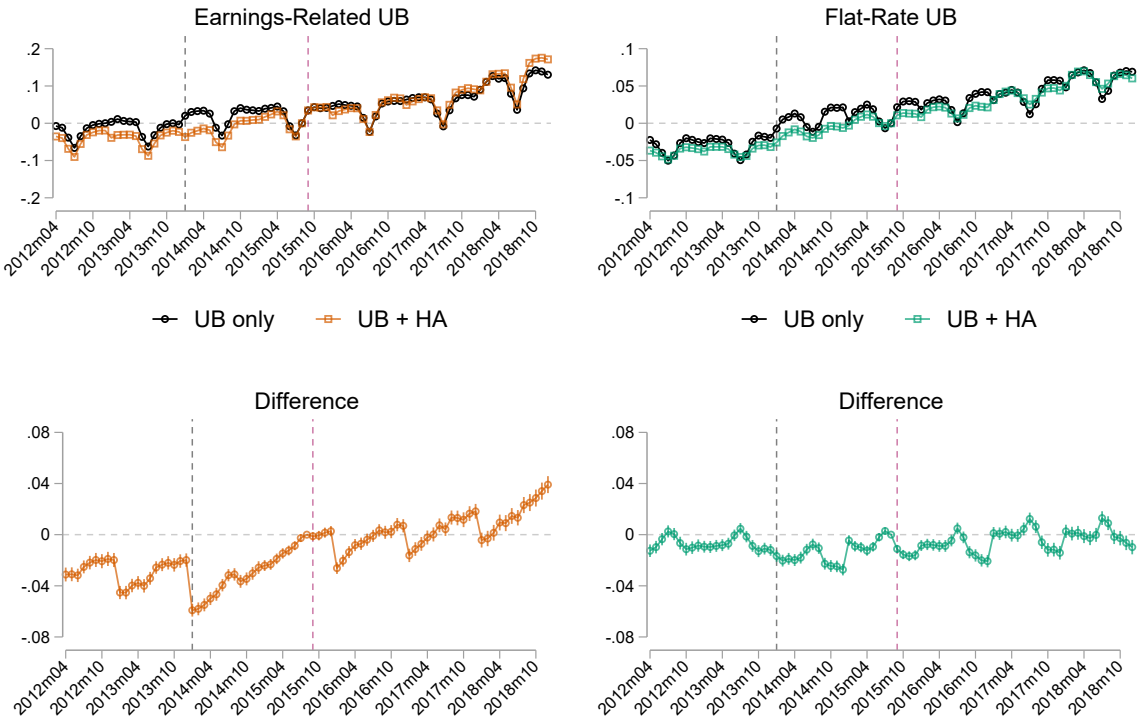
Notes: Figure plots the development of days in full-time employment within the next 12 and 24 months and the likelihood of receiving UB after 3 or 6 months for earnings-related (left-hand side) and flat-rate UB recipients (right-hand side) in April 2012–December 2018 separately for the treatment (UB + HA) and control groups (UB only), estimated without allowing for group-specific linear trends. The development is presented relative to August 2015, which is marked by zero for both groups. The baseline values for the variables are reported in Table 3 in the main text.

Figure A8: 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 out of all UB recipients for earnings-related and flat-rate UB recipients in September 2014 – September 2016, separately for those with (UB + HA) and without housing allowance (UB only). The share is presented relative to August 2015, which is denoted by zero for all groups. This analysis uses unbalanced panel data, and we define and fix the treatment and control group status based on received benefits in August and September 2015, and follow these same individuals over time in September 2014 – September 2016. The number of observations for the treatment and control groups in August 2015 are 8,717 and 122,882 for earnings-related, and 28,190 and 92,132 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 August 2015 were 18% and 19% for earnings-related UB recipients and 12% and 13% for flat-rate UB recipients without and with HA, respectively. The difference-in-differences estimate using equation (2) is 0.0224 for earnings-related UB recipients and 0.00796 for flat-rate UB recipients. Both estimates are statistically significant at the 0.1% level ($p < 0.01$)

Figure A9: Development of the share of part-time unemployed workers when 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 out of all UB recipients for earnings-related and flat-rate UB recipients in 2012–2018, separately for those with (UB + HA) and without housing allowance (UB only). The HA recipient status is based on simulation using annual income data instead of observed monthly-level HA recipients status available in the data as in the baseline analysis in the main text. The share is presented relative to August 2015, 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 August 2015 are 17% and 19% for earnings-related UB recipients, and 13% and 11% for flat-rate UB recipients without and with HA, respectively. The figure shows that the results based on simulated eligibility are qualitatively similar to our baseline analysis (Figure 5 in the main text). However, the evolution of the outcomes and responses to the 2015 reform are more noisy for simulated HA recipients, particularly among earnings-related UB recipients. This is expected as HA simulations do not account for the incomplete take-up of the benefit, which means that the treatment status is imprecisely measured in this analysis.

Tables

Table A1: Simulated eligibility for housing allowance (HA) for different groups

	Year	Housing allowance (eur)	Monthly income threshold for HA eligibility
Flat rate unemployment benefit (UB)			
Single-person households			
	2013	342.47	1800
	2014	372.96	1900
	2015	406.4	2300
Earnings related UB			
Single-person households			
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 in the main text. Table denotes the amount of HA with no earnings, and the monthly earnings threshold above which eligibility for 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
No. of children under 7 years	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	826,596	980,498	1,112,502	1,168,162	1,181,923	1,103,279	1,012,064	429,195	489,488	571,191	673,127	766,195	601,342	503,408

Notes: Table presents the descriptive characteristics each year in 2012–2018 for earnings-related unemployment benefit (UB) recipients with and without housing allowance (HA), who constitute our control and treatment groups in the analysis in the main text. Table shows the mean values, and illustrates that the characteristics of the groups have not changed significantly over our examination period.

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
No. of children under 7 years	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	826,596	980,498	1,112,502	1,168,162	1,181,923	1,103,279	1,012,064	429,195	489,488	571,191	673,127	766,195	601,342	503,408

Notes: Table presents the descriptive characteristics each year in 2012–2018 for flat-rate unemployment benefit (UB) recipients with and without housing allowance (HA), who constitute our control and treatment groups in the analysis in the main text. Table shows the mean values, and illustrates that the characteristics of the groups have not changed significantly over our examination period.

Table A4: Regression estimates for part-time work when allowing for group-specific linear trends

	Earnings related UB		Flat rate UB	
	Working part-time	Part-time earnings	Working part-time	Part-time earnings
$Treat_{it} \times Post$	0.0384***	8.406***	0.0391***	30.87
	(0.0028)	(6.343)	(0.00140)	(4.104)
Baseline control	0.183	847.2	0.115	714.7
Baseline treatment	0.192	798.1	0.125	685.9
Observations	11,327,849	1,690,963	10,640,612	1,353,005

Notes: Table presents the difference-in-differences estimates estimated using equation (2) when allowing for group-specific pre-existing linear trends 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 UB only. Standard errors clustered at the individual level are presented in parenthesis. Significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A5: Regression estimates for future full-time employment and unemployment without allowing for group-specific linear trends

	(1) Working days within next 12 months	(2) Working days within next 24 months	(3) Unemployed 3 months later	(4) Unemployed 6 months later
Panel A – Earnings-related UB				
$Treat_{it}$ x $Post_t$	-2.354***	-8.420***	-0.00331*	0.00336
	(0.673)	(1.784)	(0.00146)	(0.00206)
Baseline control	101.3	280.5	0.790	0.710
Baseline treatment	66.1	192.5	0.873	0.821
Observations	9,508,148	7,524,187	10,792,770	10,309,865
Panel B – Flat-rate UB				
$Treat_{it}$ x $Post_t$	1.819***	-2.123*	-0.0105***	-0.0130***
	(0.362)	(1.013)	(0.000726)	(0.00110)
Baseline control	59.99	173.9	0.880	0.834
Baseline treatment	43.69	130.3	0.920	0.881
Observations	8,689,011	6,707,534	9,872,287	9,293,727

Notes: Table presents the difference-in-differences estimates estimated using equation (2) for both earnings-related (Panel A) and flat-rate UB recipients (Panel B). Columns (1) and (2) show the estimates of the number of days in full-time employment within the next 12 and 24 months, and columns (3) and (4) the likelihood of receiving UB 3 and 6 months after the current month, respectively. The treatment group is those unemployed individuals with both UB and HA and the control group those with UB only. Standard errors clustered at the individual level are presented in parenthesis. Significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.