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Unemployment insurance entitlement rules and the wage effect of unemployment insurance reform

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Unemployment insurance (UI) entitlement and the wage effect of increasing the UI benefit rate*

[working paper]

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Abstract

I study the impact of unemployment insurance (UI) entitlement on the wage effect of increasing the UI benefit rate. First, I show that a standard Mortensen-Pissarides model calibrated to Austria can rationalise both large and small average wage effects depending on the rate at which UI recipients lose their entitlement while unemployed. Second, exploiting the progressive introduction of the 2001 Austrian UI reform, I find empirical support for the model-predicted difference in reemployment wages between the group of individuals who start a UI claim during the month leading up to the date of the policy change and the group of individuals who start a UI claim during the month following the date of the policy change.

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1 Introduction

Unemployment insurance (UI) extensions during the Great Recession stimulated discussions regarding the potential negative effect of making UI more generous on job creation through increased wage pressure (Hagedorn, Karahan, Manovskii, & Mitman (2013), Lalive, Landais, & Zweimüller (2015), Landais, Michaillat, & Saez (2018), Chodorow-Reich, Coglianese, & Karabarbounis (2019), Fredriksson & Söderström (2020)).[1] The proposed mechanism is that making UI more generous raises jobseekers' opportunity cost of employment, leading to higher reservation wages, increased wage pressure, lower expected profits from job creation, and ultimately a drop in job creation by potential employers and *in fine* higher equilibrium unemployment.[2]

In this paper I study the impact of UI entitlement on the effect of increasing the generosity of the UI benefit rate calculation formula on wages. With few exceptions (e.g. Jäger, Schoefer, Young, & Zweimüller (2020)), most works in this literature focus on the effects of making UI more generous by way of UI *extensions*, that is by increasing the *potential duration of UI benefit receipt*, on employment outcomes (reemployment, wages). While there is robust empirical support for an unambiguously positive effect of increasing the *potential* UI benefit duration on the *actual* nonemployment duration of unemployed individuals, the effect of actual nonemployment duration on subsequent reemployment wages is both empirically and theoretically ambiguous.[3] As a result, increasing the potential UI benefit duration may lead to both a rise or a drop in subsequent reemployment wages depending on the relative strength of the various channels. (Schmieder et al. (2016), Nekoei & Weber (2017)) When it comes to increasing the generosity of UI through the UI *benefit rate*, standard theories of wage setting suggest that the effect on reemployment wages should be unambiguously positive.[4] However, exploiting four major UI reforms in Austria, Jäger, Schoefer, Young, & Zweimüller (2020) do not find empirical support for the hypothesized effect in the case of job movers and job stayers.

In the first half of this paper, I show that the average wage effect of increasing the UI benefit rate predicted by a simple standard Mortensen-Pissarides model calibrated to Austria can be both small and large depending on the rate at which UI recipients lose their entitlement. I use *UI-eligibility* and *UI-entitlement* interchangeably to indicate whether an unemployed individual is entitled for the receipt of UI benefits or not. Many UI systems restrict access to UI by making it conditional on past employment (i.e. contribution) history, and limit the duration during which the entitlement lasts (see for instance the comparative review of UI regimes by Tatsiramos & van Ours (2014)).

In an analytical exercise, I show that when the effect on labor market conditions are assumed away, the model-predicted total wage effect for individuals *with UI entitlement* can be written as the sum of the wage effect through their unemployment income during the *current* unemployment spell and the wage effect through their unemployment income during *potential future* unemployment spells, i.e. unemployment spells after becoming employed. The *current* unemployment spell corresponds to the period of unemployment *before the individual becomes employed*, while *potential*

[1]The discussion regarding the equilibrium impact of UI has a long history and goes back to at least Ehrenberg & Oaxaca (1976).

[2]This effect goes by various names in the literature including the "macro effect", the "equilibrium effect", or the "job creation effect" of UI.

[3]In simple terms, although more time spent in nonemployment may allow for better worker-employer matching, it may also increase the potential for the negative effects associated with long-term nonemployment, such as skill depreciation and stigma, to take hold.

[4]This prediction is based on the implicit assumption that a change in the UI benefit rate has a much weaker effect on nonemployment duration than a change in the potential benefit duration of UI benefit receipt.

future unemployment spells are periods of unemployment *after the individual becomes employed*. The first component (current UI benefits effect) is positive because an increase in unemployment income during the current unemployment spell increases the value associated with remaining unemployed, which is the fallback position (equivalently threat point) of unemployed individuals during the hypothesized wage bargaining process, while it has no direct impact on the value associated with (re)employment. This mechanism makes the worker less worried about the prospect of an unsuccessful termination of wage negotiations and asks for a higher wage. Following a similar line of reasoning, one can show that the second component (potential future UI benefits effect) is negative. The reason for this is simply that an increase in unemployment income during potential future unemployment spells increases the value associated with becoming employed, while it leaves the value of remaining unemployed unchanged. Because of this, the worker cares more about the timely successful resolution of wage negotiations, and she/he is therefore more willing to accept a lower wage in order to avoid an unsuccessful termination thereof. This negative effect of future potential UI benefits on current wages was noted, for instance, by Beissinger & Egger (2004). As a result of discounting, the positive effect through UI benefits during the current spell is greater in magnitude than the negative effect through UI benefits during potential future unemployment spells. Therefore, the standard model predicts that an increase in the UI benefit rate leads unambiguously to an increase in wages in the case of workers with UI entitlement.

In contrast, in the case of unemployed individuals *without UI entitlement*, the wage effect comes exclusively from the induced increase in UI benefits during potential future unemployment spells, as their unemployment income during the current unemployment spell is not affected by the change in UI benefits. Given that employment allows individuals without UI entitlement to gain access to UI benefits that have become more generous, the implied increase in the value of becoming employed sooner pushes the hiring wage of these individuals downwards. This mechanism is reminiscent of the *entitlement effect* documented by Hamermesh (1979) in the context of job search and labor market participation.

I show that a higher UI expiration rate implies a significantly smaller predicted average wage effect of an increase in the generosity of the UI benefit calculation formula. The moderating effect of UI benefit exhaustion can be decomposed into two channels. On the one hand, for each individual, a higher UI benefit expiry rate implies that UI benefits represent a smaller share of the total expected discounted payoff associated with being or becoming unemployed. This source of attenuation has been extensively discussed by Chodorow-Reich, Coglianese, & Karabarbounis (2019) as well as Jäger, Schoefer, Young, & Zweimüller (2020). On the other hand, if UI benefit recipients lose their entitlement at a higher rate, the proportion of UI-ineligible individuals among the unemployed is likely to be higher as well, and given that the wage effect is negative for individuals without UI entitlement, the average wage effect is shifted towards negative values as a result.

In the second half of the paper, I use the progressive introduction of the 2001 Austrian UI reform to empirically test the model-predicted discontinuity in reemployment wages of unemployed individuals who started a UI benefit claim around the reform date. The reform made the UI benefit rate calculation formula more generous for individuals whose reference earnings fell within a certain interval. For UI claims *filed on or after* the 1st of January 2001, the *post-reform* UI benefit calculation rule was applicable, whereas for UI claims that were *ongoing on* the 1st of January 2001, the *pre-reform* benefit calculation rule remained valid. In the case of individuals whose reference earnings made them potential beneficiaries of the reform, losing one's job (and filing a UI claim) immediately before the reform date implied current UI benefits according to the less generous pre-reform UI benefit rule, whereas losing one's job (and filing a UI claim) immediately after the reform date implied current UI benefits according to the more generous post-reform UI benefit rule. In principle, this setting provides an ideal context for testing the theoretical prediction of the standard model. The implied *difference in reemployment wages* can be substantial given that it is *equivalent to the effect due to a difference in current UI benefits*. The reason for this can be explained using the same decomposition logic as for the average effect. For individuals who filed their UI claim immediately after the reform date, the wage effect (relative to the counterfactual of no reform) is conceptually equivalent and similar in magnitude to the wage effect for individuals with UI entitlement. Therefore, by analogy, the effect for post-reform UI claimants can be written as the sum of a current UI benefits effect and a potential future UI benefits effect. Similarly, in the case of individuals who filed a UI claim immediately before the reform date, the wage effect (relative to the counterfactual of no reform) is conceptually equivalent and quantitatively similar to the wage effect for individuals without UI entitlement. Once again, by analogy, the wage effect for pre-reform UI claimants comes exclusively from the effect through the unemployment income of these individuals during their potential future unemployment spells. In the data, controlling for seasonality using equivalently selected samples from surrounding years, I find a marginally statistically significant difference in reemployment wages in the case of the 2001 sample. The validity of the strategy rests upon the assumption that the combined "control" sample from the surrounding years constitutes an appropriate counterfactual.

The rest of the paper is organised as follows. Section 2 presents the model, Section 3 discusses the model-predicted average wage impact of increasing the UI benefit rate, Section 4 presents the model-predicted discontinuity in reemployment wages and the corresponding empirical test in the case of the 2001 Austrian UI reform.

2 Model

This section presents a simple model à la Mortensen & Pissarides (1994) with exogenous job separations. The model differs from the canonical version in that UI benefit entitlement is conditional upon prior work experience and may be lost while unemployed, UI benefits are indexed to pre-separation earnings, and the renegotiation of the wage requires the consent of both parties.

2.1 Environment

The model is in continuous time. There are two types of agents: workers and employers. Agents' horizon is infinite. All agents are risk neutral and discount future income at rate ρ.

Worker entry and exit There is a continuum of workers who make up the working population. The size of the working population is constant over time and is normalised to 1. Workers enter and exit the working population at an exogenous rate ν. While part of the working population, workers alternate between employment and unemployment.

Free entry of employers Employers find it worthwhile to enter as long as the expected discounted payoff associated with opening an unfilled vacancy is non-negative. Employers need to pay a flow cost κ to keep their vacancy open.

2.2 Employment

Worker-employer matching Worker-employer matching on the labor market is one-to-one: each employer can be matched with only one worker at a time and each worker can be matched with only one employer at a time. Match formation is governed by a standard matching function (homogeneous function of degree 1) taking as inputs the mass of unemployed workers, denoted u, and the mass of vacancies, denoted v:

$$M(u,v) = \mu \cdot u^{\eta} \cdot v^{(1-\eta)}$$

where μ is a scale parameter capturing matching efficiency, and the weight parameter η corresponds to the negative of the elasticity of the arrival rate of workers with respect to labor market tightness.

Worker arrival rate From the point of view of unmatched employers, the *arrival rate of workers* equals:

$$m(\theta) = \frac{M(u,v)}{v} = \mu \cdot \theta^{-\eta}$$

where $\theta = \frac{v}{u}$ is the labor market tightness, the ratio of the mass of vacancies to the mass of unemployed workers.

Job finding rate From the point of view of unmatched workers, the arrival rate of jobs, which in the present framework is equal to the *rate at which unemployed workers find jobs*, can be written as:

$$f = \theta m(\theta) = \frac{M(u,v)}{u}$$

Nash wage bargaining Once matched, the worker and the employer start bargaining over the wage. Immediately after the start of negotiation, the parties agree on the wage w that is given by the Nash bargaining solution. In the wage bargaining process, the worker has bargaining power $\gamma \in [0,1]$. The resulting employment contract stipulates that the employer is required to pay the worker w, the wage agreed upon, in return for the worker's labor service. Once the contract is signed, production begins. The match produces a flow output y which remains constant throughout the entire duration of the match, i.e. until separation.

Exogenous job separation into unemployment Conditional on the worker not exiting the working population, exogenous separation occurs at rate δ. In case of exogenous separation, the worker becomes unemployed.

In the absence of exogenous separation and conditional on the worker not exiting the working population, the worker and the employer remain matched as long as there is at least one feasible employment contract that makes the worker weakly better off relative to becoming unemployed and the employer weakly better off relative to firing the worker.

Wage renegotiation Renegotiation of the wage is possible in principle only if both parties agree to it. Renegotiation thus requires that one party has a credible threat to terminate the relationship under the current terms of employment.[5] In practice, the assumptions of the model imply that there is *no renegotiation in equilibrium*.

[5] In line with the plausibility arguments regarding employment contracts by Malcomson (1999), wage renegotiation requires the consent of both parties.

2.3 Unemployed workers' payoff

Unemployment flow amenity payoff (a) Irrespective of their income, workers get a flow payoff, denoted a, when unemployed.[6]

Income flow when UI-ineligible unemployed (z) In addition to their flow amenity payoff, workers ineligible for UI benefits receive a flow income, denoted z.[7] Upon entering the working population, workers become part of the pool of workers who are not entitled for UI benefit receipt. Upon exogenous separation from their employer, workers become entitled for UI benefits b and simultaneously lose access to their exogenous unemployment income flow z.[8] Symmetrically, when unemployed workers stop receiving UI benefits due to UI benefit expiry, they simultaneously regain access to their exogenous unemployment income flow z.

UI policy regimes Let UI policy regimes be indexed by p. Each UI policy regime is characterised by a *benefit rate calculation formula* $b_p(.)$ and an expiration rate ξ_p, the *rate at which UI-eligible workers lose their entitlement* for UI benefit receipt. UI benefits are a linear function of the wage w^r the worker had immediately before her/his previous separation:

$$b_p(w^r) = b_p(0) + \frac{\partial b_p}{\partial w^r} \cdot w^r$$

where the base component $b_p(0)$ and the UI indexation parameter $\frac{\partial b_p}{\partial w^r}$ are constant for a each policy regime p.

2.4 Worker groups in equilibrium

Worker groups indexed by number of spells since gaining UI-eligibility For each individual worker, let unemployment spells be indexed according to the number of unemployment spells the individual has had since gaining eligibility to UI benefits. Let u_n denote the mass of UI-eligible unemployed workers who are in their n-th unemployment spell since gaining eligibility for UI benefits and let u_0 denote the mass of unemployed workers who are not entitled to receive UI benefits. Furthermore, let the employment spells take on the index of the unemployment spell that immediately precedes them, i.e. let e_n stand for the mass of employed workers who have had n unemployment spells since gaining eligibility to UI benefits.

Flows across worker groups The various flows from and to the various worker subgroups are depicted in the figure below:

[6] This flow payoff can be negative due to factors like stigma or human capital depreciation, but can also be positive if free time away from declared employment is highly valuable (e.g. for individuals with informal employment opportunities or people with young children or elderly relatives to look after).

[7] This can be interpreted as income unrelated to UI (minor employment, social assistance, family allowance, disability allowance, etc.).

[8] In order to avoid complications arising from wage renegotiations induced by the updating of benefits during an employment spell, benefits are assumed to be updated upon exogenous separation.

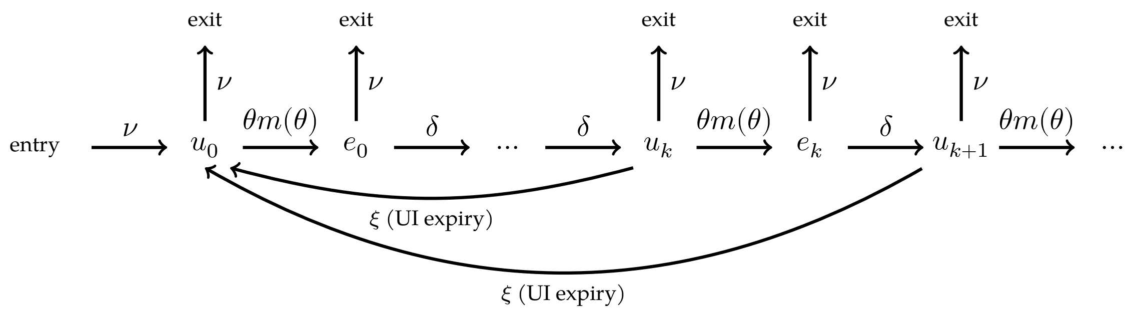

Figure 1: Labor market transitions from and to the various worker groups with the terms next to the arrows corresponding to the instantaneous transition rates

Stationary equilibrium conditions In equilibrium, all worker group sizes are fixed such that:

- the total inflow into UI-ineligible unemployment (entry of workers; UI-eligible unemployed workers losing UI-entitlement) equals the total outflow from UI-ineligible unemployment (workers transitioning to non-participation; unemployed workers finding jobs):

$$\underbrace{\nu}_{\text{worker entry}} + \underbrace{\xi_p \cdot (u_p - u_{0,p})}_{\text{UI benefit expiry}} = \underbrace{\nu \cdot u_{0,p}}_{\text{worker exit}} + \underbrace{\theta_p m(\theta_p) \cdot u_{0,p}}_{\text{job finding}}$$

- the total inflow into UI-eligible unemployment (employed workers separating into unemployment) equals the total outflow from UI-eligible unemployment (workers transitioning to non-participation; unemployed workers finding jobs; UI-eligible unemployed workers losing UI-entitlement):

$$\underbrace{\delta \cdot e_{(n-1),p}}_{\text{separation}} = \underbrace{\nu \cdot u_{n,p}}_{\text{worker exit}} + \underbrace{\theta_p m(\theta_p) \cdot u_{n,p}}_{\text{job finding}} + \underbrace{\xi_p \cdot u_{n,p}}_{\text{UI benefit expiry}}$$

- the total inflow into employment (unemployed workers finding jobs) equals the total outflow from employment (exogenous separation into unemployment; workers transitioning to non-participation):

$$\underbrace{\theta_p m(\theta_p) \cdot u_{n,p}}_{\text{job finding}} = \underbrace{\nu \cdot e_{n,p}}_{\text{worker exit}} + \underbrace{\delta \cdot e_{n,p}}_{\text{separation}}$$

The explicit formulas for the worker group sizes in equilibrium are presented in Appendix B.

2.5 Value function equations in equilibrium

In equilibrium, the agents' expected discounted flow values associated with being in a given state take on a simple analytical form.

Workers' flow value when unemployed The worker's expected discounted flow value associated with being unemployed and receiving unemployment benefits b can be written as:

$$\rho \cdot U_p(b) = b + a + \underbrace{\theta_p m(\theta_p) \cdot \left[E_p(\phi_p(b)) - U_p(b)\right]}_{\text{finding a job}} + \underbrace{\xi_p \cdot \left[U_p(z) - U_p(b)\right]}_{\text{benefit expiry}} + \underbrace{\nu \cdot \left[0 - U_p(b)\right]}_{\text{exiting the workforce}}$$

Workers' flow value when employed The worker's expected discounted flow value associated with being employed at wage w writes:

$$\rho \cdot E_p(w) = w + \underbrace{\delta \cdot \left[U_p(b_p(w)) - E_p(w)\right]}_{\text{separation}} + \underbrace{\nu \cdot \left[0 - E_p(w)\right]}_{\text{exiting the workforce}}$$

Employers' flow profits associated with a filled job The free entry of employers means that employers enter the market (equivalently create vacancies) as long as doing so gives them non-negative expected discounted profits. As a result, in equilibrium, the expected discounted value associated with an unfilled vacancy equals zero ($V = 0$). Given this and the assumed exogeneity of separations and worker exits, the employer's expected discounted flow profits when employing a worker at wage w do not depend on the policy regime p and are equal to:

$$\rho \cdot J(w) = y - w + \underbrace{\delta \cdot [V - J(w)]}_{\text{separation}} + \underbrace{\nu \cdot [0 - J(w)]}_{\text{worker exit}}$$

Employers' flow profits associated with an unfilled vacancy The employer's expected discounted flow profits associated with an unfilled vacancy can be written as:

$$\rho \cdot V = -\kappa + \underbrace{m(\theta_p) \cdot \left[\mathbb{E}_p\left[J(\phi_p(b))\right] - V\right]}_{\text{worker arrives}}$$

2.6 Wages in equilibrium

Individual wage function Since wages are determined according to Nash wage bargaining, the wage as a function of the worker's (potential) unemployment income flow b maximises the bargaining-power-weighted geometric average of the parties net gains from agreement:[9]

$$\phi_p(b) = \arg\max_w \left[J(w) - V\right]^{1-\gamma} \left[E_p(w) - U_p(b)\right]^{\gamma}$$

Given the many simplifying assumptions, the individual's wage is linearly separable in match productivity (y) and current unemployment benefits (b). The closed-form expression for the wage function and its derivation are presented in Appendix A.

Equilibrium expected wage Given the absence of productivity shocks, in equilibrium, no wage renegotiation takes place, and the equilibrium expected wage, denoted w_p, is the same as the expected hiring wage. The equilibrium expected hiring wage is linearly separable in match productivity (y), unemployment income of UI-ineligibles (z), and unemployment amenity (a). The equilibrium expected wage and its derivation are presented in Appendix C.

2.7 Labor market equilibrium

A stationary market equilibrium under UI policy regime p is characterised by the following three conditions:

(1) the size of each worker group is constant over time;

[9] In accordance with the generalised Nash bargaining solution (Binmore, Rubinstein, & Wolinsky, 1986).

(2) the average (hiring) wage w_p is constant over time;

(3) the labor market tightness θ_p is constant over time and satisfies the labor demand equation. The labor demand is given by the employers' free entry condition ($V = 0$):

$$\frac{\kappa}{m(\theta_p)} = \frac{y - w_p}{\rho + \nu + \delta}$$

3 Model-predicted average wage effect

In what follows, I use the model presented in the previous section to calculate the model-predicted the average wage effect and discuss the underlying mechanisms.

3.1 Numerical results

I calibrate the model described in Section 2 using Austrian social security data and calculate the predicted effect of an increase in the UI benefit rate. In all cases, I report the change in the average wage in terms of the change in average UI benefits (a measure of the change in UI generosity).[10] I report averages including all individuals as well as separately for the group of UI-eligible and for the group of UI-ineligible individuals. the *partial effect*, i.e. when the effect on labor market conditions (labor market tightness, job finding and worker arrival rates) are assumed away, as well as for the *total effect*:

$$\text{Partial Effect} = \frac{\mathbb{E}\left[w \middle| p_1, \theta_{p_0}\right] - \mathbb{E}\left[w \middle| p_0, \theta_{p_0}\right]}{\mathbb{E}\left[b \middle| p_1, \theta_{p_0}\right] - \mathbb{E}\left[b \middle| p_0, \theta_{p_0}\right]} \qquad \text{Total Effect} = \frac{\mathbb{E}\left[w \middle| p_1, \theta_{p_1}\right] - \mathbb{E}\left[w \middle| p_0, \theta_{p_0}\right]}{\mathbb{E}\left[b \middle| p_1, \theta_{p_1}\right] - \mathbb{E}\left[b \middle| p_0, \theta_{p_0}\right]}$$

Calibration The labor market transition rates (at daily frequency) are estimated based on a random sample drawn from the population of individuals aged between 25 and 55 in 2001 with available social security records of employment/unemployment. The corresponding estimates are displayed in Table 21 in Appendix E. Existing estimates for the labor share and the labor market tightness are explicitly targeted and the values of four parameters (time discount rate ρ, worker bargaining power γ, matching elasticity η, separations as a share of total employment outflow $\frac{\delta}{\delta+\mu}$) are assigned arbitrarily based on available estimates (where applicable). The values of all remaining parameters are set according to the implied figures as well as some regularity conditions. The choice of the parameter values is described with more details in Appendix D. The list of all parameters and their values are displayed in Table 20.

Results Table 1 reports the partial and total average wage effects for two values of the UI-expiration rate ξ (estimated value 0.0047 and zero). The change in the grand mean wage among all workers is predicted to lie between 3% ($\xi = 0.0047$) and 30% ($\xi = 0$) of the change in average UI benefits. However, these overall figures hide the stark variation in the effect according to UI-eligiblity. For UI-ineligibles, the wage effect is negative ranging from between -5% ($\xi = 0.0047$) to -40% ($\xi = 0$). When restricting the focus to UI-eligible workers, the wage effect ranges from 18% ($\xi = 0.0047$) to 56% ($\xi = 0$). Common to all figures is the strong moderating effect of UI expiry, which corroborates the theoretical findings of both Chodorow-Reich, Coglianese, & Karabarbounis (2019) and Jäger,

[10]This measure for the wage effect is similar in vein to the average wage-benefit sensitivity used by Jäger, Schoefer, Young, & Zweimüller (2020).

Schoefer, Young, & Zweimüller (2020). The figures are similar in magnitude to the wage-benefit sensitivities predicted by the calibrated simple model of Jäger, Schoefer, Young, & Zweimüller (2020).

	All	UI-eligibles	UI-ineligibles
$\xi = 0.0$ $\left(\frac{u_0}{u} = 0.37, \quad \frac{w_{p0}}{y} = 0.66\right)$			
Partial Effect	0.293	0.562	-0.194
Total Effect	0.179	0.506	-0.407
$\xi = 0.0047$ $\left(\frac{u_0}{u} = 0.61, \quad \frac{w_{p0}}{y} = 0.6\right)$			
Partial Effect	0.0323	0.191	-0.0473
Total Effect	0.0297	0.189	-0.05

Table 1: Predicted change in the average wage in terms of the predicted change in average UI benefits

3.2 Analytical insights

To rationalise the signs and relative magnitudes of the numerical results reported above, some simple decompositions are in order.

3.2.1 *Current* versus *future* UI benefits effect

I start by writing the total wage effect as the sum of the effect through unemployment income during the current unemployment spell and the effect through unemployment income during potential future unemployment spells.

In the context of Nash wage bargaining, the worker cares about the value associated with becoming employed at the current wage in excess of the value she/he would derive from remaining unemployed.

On the one hand, the comparison between the value associated with becoming employed and the value associated with remaining unemployed implies that, all else equal, the negotiated *wage depends positively on the value associated with remaining unemployed*. This is the case simply because if remaining unemployed becomes more valuable, the worker's bargaining position improves and she/he would ask for a higher wage. If UI-eligible individuals experience a rise in their potential UI benefits during the current unemployment spell as a result of an increase in the UI benefit rate, the expected discounted value associated with remaining unemployed becomes more valuable through the induced increase in current unemployment income. As a result, the wage effect through *current* unemployment income is unambiguously *positive*.

On the other hand, the comparison between the value associated with becoming employed and the value associated with remaining unemployed implies that, all else equal, the negotiated *wage depends negatively on the value associated with becoming employed* since the worker is more willing to accept a lower wage if employment is made more desirable by means other than the wage itself. All individuals experience a rise in their potential UI benefits during future unemployment spells due to the increase in the UI benefit rate. Given that the expected discounted value associated with being or becoming employed at a given wage rate increases as a result of the induced rise in potential future unemployment income, the wage effect through potential *future* unemployment income is unambiguously *negative*.

For a given value of unemployment spell rank n, the partial wage effect can be written as the sum of the *positive* wage effect through *current* unemployment income and the *negative* wage effect through potential *future* unemployment income:

$$\underbrace{\mathbb{E}\left[\phi_{p_1}(b_{n,p_1})\,\middle|\,\theta_{p_0}\right] \;-\; \phi_{p_0}(b_{n,p_0})}_{\text{overall partial effect}} \;=\; \underbrace{\phi_{p_0}(b_{n,p_1}) \;-\; \phi_{p_0}(b_{n,p_0})}_{\substack{\text{partial effect through} \\ \textit{current}\text{ unemployment income} \\ >0}} \;+\; \underbrace{\mathbb{E}\left[\phi_{p_1}(b_{n,p_1})\,\middle|\,\theta_{p_0}\right] \;-\; \phi_{p_0}(b_{n,p_1})}_{\substack{\text{partial effect through} \\ \textit{potential future}\text{ unemployment income} \\ <0}}$$

Special case To get an idea of the relative magnitudes of the two effects, consider the special case in which UI benefits are not indexed to previous earnings such that the unemployment income under policy regime p for an unemployed individual with unemployment spell rank n is:

$$b_{n,p} = \begin{cases} z & \text{if } n = 0 \quad [\textit{without}\text{ UI entitlement}] \\ b_p & \text{if } n > 0 \quad [\textit{with}\text{ UI entitlement}] \end{cases}$$

With this simplifying assumption, the partial effect through the change in *future* unemployment income can be written analytically as the effect through the change in *current* unemployment income of UI-eligible individuals multiplied by a term whose value falls in the interval $(-1, 0)$:

$$\underbrace{\left[\mathbb{E}\left[\phi_{p_1}(b_{n,p_1})\,\middle|\,\theta_{p_0}\right] \;-\; \phi_{p_0}(b_{n,p_1})\right]}_{\substack{\text{partial effect through} \\ \textit{potential future}\text{ unemployment income}}} \;=\; \overbrace{\left(-\,\frac{\delta}{\rho+\nu+\delta+\theta_{p_0}\cdot m(\theta_{p_0})\cdot\gamma}\right)}^{\in(-1,0)} \cdot \underbrace{\left[\phi_{p_0}(b_{p_1}) \;-\; \phi_{p_0}(b_{p_0})\right]}_{\substack{\text{partial effect for UI-eligibles through} \\ \text{their } \textit{current}\text{ unemployment income}}} \tag{1}$$

where the partial effect through the change in *current* unemployment income of UI-eligibles (term on the right-hand side) takes the following simple analytical form:

$$\phi_{p_0}(b_{p_1}) \;-\; \phi_{p_0}(b_{p_0}) \;=\; (1-\gamma)\cdot\frac{\rho+\nu+\delta}{\rho+\nu+\xi_{p_1}+\theta_{p_0}\cdot m(\theta_{p_0})\cdot\gamma}\cdot\left[b_{p_1}-b_{p_0}\right] \;>\; 0 \tag{2}$$

3.2.2 UI-eligibles versus UI-ineligibles

The numerical results in Table 1 clearly show that the wage effects for UI-eligibles and UI-ineligibles are of the opposite sign. Given the decomposition into current and future benefits effect, it is straightforward to show analytically the stark difference in terms of the sign of the wage effect between the two groups.

In the case of individuals with UI entitlement ($n > 0$), the change in the UI benefit rate affects both their unemployment income during the current unemployment spell and their unemployment income during potential future unemployment spells. The analytical expression in equation (1) for the special case without indexation makes it very clear that the wage effect through current unemployment income dominates in absolute terms. The wage effect is therefore *positive for UI-eligibles*. In the special case without indexation, the partial effect for individuals with UI entitlement corresponds to:

$$\mathbb{E}\left[\phi_{p_1}(b_{p_1})\middle|\theta_{p_0}\right] \;-\; \phi_{p_0}(b_{p_0}) \;>\; 0$$

Given that the contemporaneous unemployment income of unemployed individuals without UI-entitlement ($n = 0$) is assumed unrelated to the UI benefit rules ($b_{0,p_1} = b_{0,p_0} = z$), it is not affected by a change in the way the UI benefit rate is calculated. The wage effect *for UI-ineligibles* corresponds to the *negative* wage effect through potential future unemployment income only. In the special case without indexation, the partial effect for individuals without UI entitlement corresponds to:

$$\mathbb{E}\left[\phi_{p_1}(z)\middle|\theta_{p_0}\right] \;-\; \phi_{p_0}(z) \;<\; 0$$

3.2.3 Moderating effect of UI benefit expiry

The numerical results in Table 1 clearly indicate that a higher UI expiration rate (ξ) is associated with smaller wage effects.

The analytical expression in equation (2) for the special case of no indexation confirms that a higher UI benefit expiry rate (ξ) implies a smaller wage effect through current unemployment income. Furthermore, considering the analytical expression in equation (1), the attenuation carries over to the wage effect through potential future unemployment income as well. In both cases, the mechanism is simply that the higher the rate at which UI recipients lose their entitlement, the smaller the weight forward-looking individuals attach to UI benefits when considering their total expected discounted income associated with being unemployed.

The average partial wage effect can be written as a weighted average of the positive average partial wage effect for UI-eligibles and the negative average partial wage effect for UI-ineligibles:

$$\underbrace{\mathbb{E}\left[w\middle|p_1,\theta_{p_0}\right]-\mathbb{E}\left[w\middle|p_0,\theta_{p_0}\right]}_{\text{average partial effect}} \;=\; \left(1-\left(\frac{u_0}{u}\right)_{p_0}\right)\cdot\underbrace{\left[\mathbb{E}\left[w\middle|n>0,p_1,\theta_{p_0}\right]-\mathbb{E}\left[w\middle|n>0,p_0,\theta_{p_0}\right]\right]}_{\substack{\text{average partial effect for UI-eligibles}\\ >\;0}} \;+$$

$$+\;\left(\frac{u_0}{u}\right)_{p_0}\cdot\underbrace{\left[\mathbb{E}\left[w\middle|n=0,p_1,\theta_{p_0}\right]-\mathbb{E}\left[w\middle|n=0,p_0,\theta_{p_0}\right]\right]}_{\substack{\text{average partial effect for UI-ineligibles}\\ <\;0}}$$

where the *share of UI-ineligibles* among the unemployed can be written explicitly as:

$$\left(\frac{u_0}{u}\right)_{p_0} \;=\; 1-\frac{\theta_{p_0}\cdot m(\theta_{p_0})\cdot\delta}{(\nu+\delta)\cdot(\nu+\theta_{p_0}\cdot m(\theta_{p_0})+\xi_{p_0})}$$

The above formula confirms that not only does a higher rate of UI benefit expiry (ξ) mean a smaller wage effect in absolute terms for each individual, it also implies that the share of individuals without UI entitlement among the unemployed is higher, which pushes the average partial wage effect towards negative values since the wage effect for individuals without UI entitlement is negative.

4 Empirical test of a model-predicted discontinuity

4.1 The 2001 Austrian UI reform

Austria introduced a change to its UI benefit calculation formula progressively starting on the 1st of January 2001:[11]

- For UI claims before the 1st of January 2001, UI benefits were calculated based on *gross* monthly earnings according to a table defining the basic amount for each income bin.
- For claims starting after the 1st of January 2001, UI benefits were based on *net* earnings with a 55% (60% below a certain level of earnings) net replacement rate.

The biggest relative increase in benefits concerned workers with gross monthly reference earnings between 10,000 and 20,000 Austrian Schillings (ATS) (between €700 and €1450).[12] Figure 2a plots the gross monthly UI replacement rate for this group according to the 2000 rule as well as according to the 2001 rule. For this group, the gross replacement rate varies from 0.43 to 0.48 before the reform and between 0.42 and 0.5 after the reform.

4.2 Model-predicted discontinuity in reemployment wages

Using a decomposition that is essentially the same as the one introduced in Section 3.2.1, it can be shown that the model predicts a discontinuity in reemployment wages as a function of the UI claim start (equivalently job loss) date around the reform date, the size of which is equivalent to the wage effect of the policy change through current unemployment income.

4.2.1 Equivalence with the wage effect through current unemployment income

Consider the progressive introduction of a policy change to UI benefit rate calculation from p_0 to p_1 ($b_{p_0} < b_{p_1}$) at $\mathrm{T}_{\text{reform}}$ such that UI benefits associated with a UI claim starting at $\mathrm{T}_{\text{job loss}}$ are:

$$b\left(\mathrm{T}_{\text{job loss}}\right) = b_{p_0} + \mathbb{1}\left[\mathrm{T}_{\text{job loss}} > \mathrm{T}_{\text{reform}}\right] \cdot (b_{p_1} - b_{p_0})$$

The wage effect (relative to the counterfactual of no policy change) for an individual if her/his *UI claim starts immediately before the reform date* $\mathrm{T}_{\text{reform}}$ comes exclusively from the change in UI benefits during potential future unemployment spells (i.e. unemployment spells after reemployment):[13]

$$\lim_{\mathrm{T}_{\text{job loss}} \to \mathrm{T}_{\text{reform}}} \mathbb{E}\left[\Delta\tilde{w} \middle| \mathrm{T}_{\text{job loss}} < \mathrm{T}_{\text{reform}}\right] \;=\; \underbrace{\tilde{\phi}_{p_1}(b_{p_0}, \mathrm{T}_{\text{reform}}) \;-\; \phi_{p_0}(b_{p_0})}_{\substack{\text{effect through future unemployment income} \\ \text{if } \mathrm{T}_{\text{job loss}} = \mathrm{T}_{\text{reform}}}} \;<\; 0 \tag{3}$$

where $\tilde{\phi}_p(b, t)$ is the expected reemployment wage if the UI policy is p, the individual's current UI

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[11] Both before and after the reform, the reference earnings were the average of the previous calendar year for claims starting in the second half of the year and the average of the penultimate calendar year for claims starting in the first half of the year. This means that for workers with sufficient earnings in 1999, there is no change in reference earnings on the 1st of January 2001.

[12] 1 euro is equivalent to 13.7603 Austrian Schillings

[13] Note that the tilde is warranted because there is a transition path.

benefits are equal to b, and the job loss date is t. The wage effect in this case is similar in magnitude to the wage effect for UI-ineligible individuals discussed in Section 3.2.

The wage effect (relative to the counterfactual of no policy change) for the same individual if her/his *UI claim begins immediately after the reform date* $\mathrm{T}_{\text{reform}}$ is the sum of the wage effect through the change in UI benefits during potential future unemployment spells and the wage effect through the change in UI benefits during the current unemployment spell:[14]

$$\lim_{\mathrm{T}_{\text{job loss}} \to \mathrm{T}_{\text{reform}}} \mathbb{E}\left[\Delta\tilde{w} \,\middle|\, \mathrm{T}_{\text{job loss}} > \mathrm{T}_{\text{reform}}\right] = \underbrace{\tilde{\phi}_{p_1}(b_{p_1}, \mathrm{T}_{\text{reform}}) - \tilde{\phi}_{p_1}(b_{p_0}, \mathrm{T}_{\text{reform}})}_{\substack{\text{effect through } \textit{current} \text{ unemployment income} \\ \text{if } \mathrm{T}_{\text{job loss}} = \mathrm{T}_{\text{reform}}}} + \underbrace{\tilde{\phi}_{p_1}(b_{p_0}, \mathrm{T}_{\text{reform}}) - \phi_{p_0}(b_{p_0})}_{\substack{\text{effect through } \textit{potential future} \text{ unemployment income} \\ \text{if } \mathrm{T}_{\text{job loss}} = \mathrm{T}_{\text{reform}}}} \quad (4)$$

The wage effect in this case is comparable in magnitude to the wage effect for UI-eligible individuals discussed in Section 3.2.

The *difference* between the wage effect for post-reform UI-claimants (4) and pre-reform UI-claimants (3) identifies the wage effect through the change in UI benefits during the *current* unemployment spell:

$$\lim_{\mathrm{T}_{\text{job loss}} \to \mathrm{T}_{\text{reform}}} \left[\mathbb{E}\left[\Delta\tilde{w} \,\middle|\, \mathrm{T}_{\text{job loss}} > \mathrm{T}_{\text{reform}}\right] - \mathbb{E}\left[\Delta\tilde{w} \,\middle|\, \mathrm{T}_{\text{job loss}} < \mathrm{T}_{\text{reform}}\right]\right] = \underbrace{\tilde{\phi}_{p_1}(b_{p_1}, \mathrm{T}_{\text{reform}}) - \tilde{\phi}_{p_1}(b_{p_0}, \mathrm{T}_{\text{reform}})}_{\substack{\text{effect through } \textit{current} \text{ unemployment income} \\ \text{if } \mathrm{T}_{\text{job loss}} = \mathrm{T}_{\text{reform}}}}$$

Given that the future benefits effect is negative, the current benefits effect exceeds the total effect (relative to the counterfactual) for individuals losing their job after the reform.

4.2.2 Predicted size

Using the model from Section 2, I approximate the predicted difference in reemployment wages between the group of individuals who lose their job just after the reform and the group of workers who lose their job just before the reform by simulating labor market histories of individuals.[15,16] I increase the UI benefit rate indexation parameter for all new UI claims starting after the chosen reform cutoff date. I gather data for separations occurring in ± 50 days around the reform cutoff and compute the ratio of the difference in average wages across the two groups to the difference of average benefits (calculated at separation) across the two groups:

$$\frac{\mathbb{E}\left[w \,\middle|\, \mathrm{T}_{\text{job loss}} \geq \mathrm{T}_{\text{reform}}\right] - \mathbb{E}\left[w \,\middle|\, \mathrm{T}_{\text{job loss}} < \mathrm{T}_{\text{reform}}\right]}{\mathbb{E}\left[b \,\middle|\, \mathrm{T}_{\text{job loss}} \geq \mathrm{T}_{\text{reform}}\right] - \mathbb{E}\left[b \,\middle|\, \mathrm{T}_{\text{job loss}} < \mathrm{T}_{\text{reform}}\right]}$$

Results Table 2 plots the predicted values of the above ratio in the simulation exercise. The ratio of the difference in the average reemployment wage to the difference in the UI benefit calculated at

[14] $\lim_{\mathrm{T}_{\text{job loss}} \to \mathrm{T}_{\text{reform}}} \mathbb{E}\left[\Delta\tilde{w} \,\middle|\, \mathrm{T}_{\text{job loss}} > \mathrm{T}_{\text{reform}}\right] = \tilde{\phi}_{p_1}(b_{p_1}, \mathrm{T}_{\text{reform}}) - \phi_{p_0}(b_{p_0})$

[15] I simulate labor market transitions (including wages and benefits) of a a working population of 1k individuals for 1k days. Then I change the policy to p_1 (which is assumed to come as a surprise for all individuals) such that p_1 applies when calculating the benefits of new separators while the benefits of those already on claim are unaffected. I approximate the transition dynamics in the following 730 days based on two approximation methods. I repeat each simulation exercise 10 times and average the results.

[16] The first approximation method assumes that workers form static expectations about the job finding rate (i.e. the current job finding rate will remain valid forever). This yields a slower convergence to the new equilibrium than rational expectations. The second approximation method assumes that, after the policy change, workers (mistakenly) take the new equilibrium job finding rate as the relevant job finding rate. This method results in a faster convergence to the new equilibrium than rational expectations.

separation ranges from 0.2 to 0.3 with the estimated UI expiry rate ($\xi = 0.0065$) and from 0.7 to 0.9 when the UI benefits never expire ($\xi = 0$). The two approximation methods yield relatively similar predictions. Like the average wage effect, the predicted discontinuity varies significantly with the value of the UI expiration rate. I conclude that the model predicts a discontinuity in the average reemployment wage that is between 20% and 100% of the discontinuity in average UI benefits.

	Assuming static expectations about the evolution of the job finding rate	Using the post-reform equilibrium job finding rate
$\xi = 0.0 \ \left(\frac{u_0}{u} = 0.41, \quad \frac{w_{p0}}{y} = 0.64\right)$	0.735	0.77
$\xi = 0.0065 \ \left(\frac{u_0}{u} = 0.56, \quad \frac{w_{p0}}{y} = 0.6\right)$	0.245	0.261

Table 2: Predicted value of $\frac{\mathbb{E}\left[w \,\middle|\, \mathrm{T}_{\text{job loss}} \geq \mathrm{T}_{\text{reform}}\right] - \mathbb{E}\left[w \,\middle|\, \mathrm{T}_{\text{job loss}} < \mathrm{T}_{\text{reform}}\right]}{\mathbb{E}\left[b \,\middle|\, \mathrm{T}_{\text{job loss}} \geq \mathrm{T}_{\text{reform}}\right] - \mathbb{E}\left[b \,\middle|\, \mathrm{T}_{\text{job loss}} < \mathrm{T}_{\text{reform}}\right]}$ when calibrated for the analysis sample

4.3 Empirical test

4.3.1 Analysis sample

The analysis sample for testing the model-predicted discontinuity is restricted to workers with at least one UI benefit spell starting within the analysis period defined as a symmetric window around the 1st of January with bandwidths ranging from 1 to 50 days.

In order to control for seasonality-related unobserved differences between individuals who start their UI claim at the end of the year and individuals who start their claim at the beginning of the year, observations from the surrounding years (1999, 2000, 2002, 2003, 2004), selected based on equivalent criteria[17], are used as a sort of ”control” group. The quotation marks are warranted because there are individuals who are present in multiple samples, as it is clear from Tables 10b and 10a. Given the overlaps across the sample-years, each time I report results both when including and when excluding observations that involve individuals who are present in multiple sample-years.

I report summary statistics for each of the four Pre/Post $\times$ Reform/Control groups in Tables 3 and 4 and for each of the six sample-years (1999, 2000, 2001, 2002, 2003, 2004) in Tables 5 and 6. Furthermore, I compare the four Pre/Post $\times$ Reform/Control groups in terms of the distribution across the twenty sectors of occupation at reemployment in Tables 7 and 8 and in terms of the distribution across the seven states (Bundesländer) of Austria at reemployment in Tables 9a and 8. All these comparisons are carried out using a bandwidth of 40 days around the 1st of January.[18] Finally, I plot the distribution of the UI benefit claim starting week between the reform and control samples

[17] In the case of reference earnings, the criterion is based on the reference earnings quantiles.

[18] For the same comparisons with a bandwidth of 20 days around the 1st of Januray, see Appendix G.1 (Tables: 22, 23, 24, 25, 26, 27, 28a, 28b).

in Figure 3. All these comparisons reveal a high degree of similarity between the reform and control samples along various observed dimensions. This does not come as a surprise for at least three reasons. The first reason is obviously the common sample selection procedure. The second reason is that many individuals show up in multiple sample-years (recall once again Table 10 on the overlaps between the various sample-years). The third reason, which is closely related to the second, is that seasonal workers are very likely over-represented among UI claimants.[19] Table 11 shows that using the conservative definition of Del Bono & Weber (2008) for seasonal jobs, more than 20-25% of individuals in each sample-year is hired for a seasonal job when re-entering employment.

4.3.2 Discontinuity in UI benefits

Figure 2b plots the Pre/Post difference in predicted average benefits by gross reference earnings between individuals who start theor for the 2001 sample as well as its grand mean. The discontinuity in predicted UI benefits varies significantly with reference earnings up to 700 ATS ($\approx$ 50 EUR) and the grand mean lies somewhere between 300 and 400 ATS ($\approx$ 25 EUR). These figures are taken as the real-world equivalent of the discontinuity in current UI benefits.

4.3.3 Difference-in-Differences estimation

The empirical specification for estimating the discontinuity in wages resembles the one used in a discrete difference-in-differences analysis:

$$\mathrm{W}_i^{\text{reemployment}} = \beta_0 + \beta_{\mathrm{P}} \cdot \text{Post}_{\mathrm{T}_{\text{claim start}}(i)} + \beta_{\mathrm{R}} \cdot \text{Reform}_{\text{Sample}(i)} + \beta_{\mathrm{P}\times\mathrm{R}} \cdot \text{Post}_{\mathrm{T}_{\text{claim start}}(i)} \cdot \text{Reform}_{\text{Sample}(i)} + \mathbf{X}_i'\zeta + \epsilon_i \quad (5)$$

where Post is an indicator for the UI claim starting on or after the 1st of January of the sample year:

$$\text{Post}_{\mathrm{T}_{\text{claim start}}(i)} = \begin{cases} 1 & \text{if } \mathrm{T}_{\text{claim start}}(i) \geq \text{January 1st} \\ 0 & \text{if } \mathrm{T}_{\text{claim start}}(i) < \text{January 1st} \end{cases}$$

and Reform is an indicator for the sample being the 2001 sample:

$$\text{Reform}_{\text{Sample}(i)} = \begin{cases} 1 & \text{if } \text{Sample}(i) = 2001 \\ 0 & \text{if } \text{Sample}(i) \neq 2001 \end{cases}$$

In the vector of covariates **X**, I include earnings (from two years before the sample year) used as reference earnings for the prediction of UI benefits in Figure 2 ; an indicator for white-collar employment; an indicator for Austrian citizenship in the reference year (Y-2); an indicator for gender interacted with a cubic polynomial of age and a cubic polynomial of the number of employment days during the 18 months preceding the UI benefit claim; time-to-entry fixed effects (3 categories); sector fixed effects (20 categories); state (Bundesland) fixed effects (7 categories).

I estimate the parameters of the econometric model in equation (5) using OLS. Given the overlaps across the samples reported in Table 10, I perform the estimation both with the inclusion of

[19] This is further corroborated by: the high proportion of individuals working in the construction and hospitality sectors that are both characterised by the high degree of seasonality in their yearly employment fluctuations (Del Bono & Weber, 2008); and the low number of displaced workers in the sample when using the definition of job displacement by Schmieder, von Wachter, & Heining (2022) and the method developed by Fink, Segalla, Weber, & Zulehner (2010) to identify establishment entries and exits in the Austrian social security records.

observations associated with individuals who are part of multiple sample-years as well as when excluding all such observations from the analysis.[20] I also carry out a placebo exercise using the sample-years 2000 and 2002 as placebo treatment and the remaining sample-years (1999, 2003, 2004) as placebo control.

Results Tables 12 and 13 show the estimates using the full specification (5) for coefficients β_{P}, β_{R}, $\beta_{\text{P}\times\text{R}}$, and the coefficient on reference earnings by bandwidth, with the corresponding placebo estimates being shown in Tables 14 and 15. Figures 4a and 4b provide an overview of the Difference-in-Differences estimates using the same specification as before, with an overview of the corresponding placebo estimates in Figures 5a and 5b.

When including all observations in the analysis (even observations on individuals who are present in multiple sample-years), the point estimates suggest a positive difference in the average wage that is similar in magnitude to the predicted difference in average benefits. The estimates are, however, noisy and are only marginally statistically significantly different from zero when the bandwidth is about 20 days. Although not statistically significant, the difference between the baseline estimates and the placebo estimates point towards a positive effect.

When excluding observations that involve individuals who are present in multiple sample-years, the point estimates grow in size by a factor of two, often exceeding the model-predicted maximal size of the earnings discontinuity (based on the change in average UI benefits). The estimates are still noisy but become statistically significantly different from zero when the bandwidth is about 20 days and marginally statistically significantly different from zero otherwise. Regarding the corresponding placebo exercise, apart from a slight shift in the point estimates towards positive values, the estimates remain statistically indistinguishable from zero. Although the way in which individuals are excluded from the analysis may be regarded as *ad hoc* and conducive to bias[21] due to differential exclusion patterns across treatment and control, the difference in the estimates across the main analysis and the placebo exercise, while not to be taken at face value, are broadly consistent with a positive effect.

Robustness The results are robust to using various specifications (Tables 16 and 17)[22] and do not vary much when leaving out one sample year from the control sample (Tables 18 and 19).

4.4 Threats to identification

Despite the noisiness of the estimates, the results seem to be in line with the theoretical predictions of the standard model. In what follows, I discuss some potential mechanisms that could invalidate the identification strategy.

[20] When including observations on individuals who appear in multiple sample-years, I report standard errors that are robust to clustering at the individual level, which lead to a slight increase in standard errors.

[21] However, one could also argue that when carrying out the analysis with the inclusion of all observations, the presence of individuals in multiple sample years is itself a source of bias. The reason is that clustering of standard errors at the individual level is no substitute for individual fixed effects, but with the small number of individuals appearing in multiple sample-years and the small total number of observations, individual fixed effects become impractical.

[22] I report the corresponding estimates for the placebo exercise in Appendix G.2 (Tables 29 and 30).

Ongoing differential trends The identification strategy is valid only if there are no ongoing differential trends unrelated to the reform in 2001. Put differently, the estimates are meaningful only if there are no systematic Pre/Post differences in the year 2001 that are unrelated to the reform (e.g. related to the business cycle).

Manipulation The most likely issue is manipulation or selection into treatment, as both the individual and, to some extent, the UI administration can manipulate the starting day of the UI claim, especially during the days leading up to the 1st of January. Manipulation invalidates the strategy as it is unknown in what way those who self-select themselves differ from those who do not. One may argue that self-selection is made somewhat challenging due to the relatively late adoption of the reform as well as the heterogeneous effect of the reform by reference earnings level shown in Figure 2. However, the density plot for the starting week of the UI benefit claim in Figure 3 indicates a very slight shift around the 1st of January 2001 (relative to control years) from dates around end-of-2000 towards dates around beginning-of-2001.[23]

Selection into reemployment Other potential concerns include worker heterogeneity and labor market effects that are not taken into account in the model and that may affect selection into reemployment for instance. One such element that is completely absent from the model is duration dependence: Schmieder, von Wachter, & Bender (2016) find a positive effect of UI generosity on unemployment duration, which in turn translates into lower reemployment wages due to human capital depreciation. I try to reduce the consequences of duration dependence by the inclusion of indicators for time-to-reemployment bins and restricting the sample to individuals who are reemployed in year Y+1 (the year following the sample year) at the latest.

5 Conclusion

This paper finds that a standard Mortensen-Pissarides model calibrated using Austrian social security data can accommodate both large and small average wage effects induced by an increase in the UI benefit rate depending on the rate at which benefit recipients lose their entitlement due to the termination of their potential benefit duration. I show that a higher UI expiration rate via the corresponding (anticipated) loss of entitlement significantly attenuates the effect by reducing the importance of UI benefits in the total expected discounted income flow associated with unemployment and by increasing the number of unemployed individuals without UI entitlement, for whom the wage effect is negative.

The progressive introduction of the 2001 Austrian UI reform offers an *a priori* ideal case for testing a model-predicted discontinuity in wages due to an increase in the UI benefit rate. The difference between the average reemployment wage of those starting a UI claim just after the reform and the average reemployment wage of those starting their UI claim just before the reform is predicted to be equivalent to about 20% to 100% of the reform-induced average difference in current UI benefits across the two groups. The point estimates from a difference-in-differences regression for the average discontinuity in reemployment wages turns out to be of similar magnitude as the discontinuity in average benefits, but the estimates remain noisy and only marginally statistically significantly different from zero. The identification strategy is valid only if there are no system-

[23]The use of a regression discontinuity design, the ideal identification strategy, is made meaningless due to low number of UI claims starting just around.

atic Pre/Post differences in reemployment wages in the sample-year 2001 that are unrelated to the reform and the Pre/Post differences in the sample-years used as control provide an appropriate counterfactual.

APPENDIX

A Individual wage determination in equilibrium

A.1 Equilibrium individual wage function

The wage as a function of current unemployment income can be written as a bargaining-power-weighted average of match productivity y and the reservation wage:

$$\phi_p(b) = \gamma \cdot y + (1-\gamma) \cdot \underbrace{\hat{\phi}_p(b)}_{\substack{\text{reservation}\\ \text{wage}}}$$

where the worker's reservation wage is a weighted average of the match productivity and lowest feasible productivity given the worker's (potential) unemployment income:[24]

$$\hat{\phi}_p(b) = \underbrace{\frac{\partial \hat{\phi}_p}{\partial y}}_{=\frac{\theta_p m(\theta_p)\cdot\gamma}{\rho+\nu+\delta+\theta_p m(\theta_p)\cdot\gamma}} \cdot y + \left(1 - \frac{\partial \hat{\phi}_p}{\partial y}\right) \cdot \underbrace{\hat{y}_p(b)}_{\substack{\text{lowest}\\ \text{feasible}\\ \text{productivity}}}$$

The lowest feasible productivity is

$$\hat{y}_p(b) = \frac{B_p(b) + (1-\Omega_p)\cdot\Lambda_p \cdot \left[b - b_p(0)\right]}{1 + (1-\Omega_p)\cdot\Lambda_p \cdot \frac{\partial b_p}{\partial w^r}}$$

where the flow expected discounted payoff of an unemployed individual with benefits b is

$$B_p(b) = (1-\Omega_p)\cdot[a+b] + \Omega_p \cdot [a+z]$$

with the weight due to UI benefit exhaustion being

$$\Omega_p = \frac{\xi_p}{\rho + \nu + \xi_p + \theta_p m(\theta_p)\cdot\gamma}$$

and the coefficient on future unemployment income being

$$\Lambda_p = \frac{\delta}{\rho + \nu + \theta_p m(\theta_p)\cdot\gamma}$$

[24] This model nests the canonical Mortensen-Pissarides model with exogenous job separations when $\xi_p = 0$ and $\frac{\partial b_p}{\partial w^r} = 0$. In that special case, the lowest feasible worker type is simply equal to current unemployment income b. In that case, one obtains the wage-benefit sensitivity term in Jäger, Schoefer, Young, & Zweimüller (2020):

$$\phi_p'(b)\Big|_{\xi_p=0,\, \frac{\partial b_p}{\partial w^r}=0} = (1-\gamma)\cdot\left(1 - \frac{\partial \hat{\phi}_p}{\partial y}\right)$$

A.2 Derivations of equations (1) and (2) in the special case without benefit indexation

When UI benefits are not indexed to pre-separation earnings $\left(\frac{\partial b_p}{\partial w^r}=0\right)$, the lowest feasible productivity becomes:

$$\hat{y}_p(b) = (1-\Omega_p)\cdot[a+b] + \Omega_p\cdot[a+z] + (1-\Omega_p)\cdot\Lambda_p\cdot\left[b-b_p\right]$$

To arrive at equation (2), consider a reform which changes the UI policy from p_0 to p_1. The partial wage effect through *current* unemployment income for individuals with UI entitlement can be written as:

$$\begin{aligned}
\phi_{p_0}\left(b_{p_1}\right)-\phi_{p_0}\left(b_{p_0}\right) &= (1-\gamma)\cdot\left(1-\frac{\partial\hat{\phi}_{p_0}}{\partial y}\right)\cdot\left[\hat{y}_{p_0}\left(b_{p_1}\right)-\hat{y}_{p_0}\left(b_{p_0}\right)\right] \\
&= (1-\gamma)\cdot\underbrace{\left(1-\frac{\partial\hat{\phi}_{p_0}}{\partial y}\right)}_{\frac{\rho+\nu+\delta}{\rho+\nu+\delta+\theta_{p_0}m(\theta_{p_0})\cdot\gamma}}\cdot\overbrace{\left(1-\Omega_{p_0}\right)}^{\frac{\rho+\nu+\theta_{p_0}m(\theta_{p_0})\cdot\gamma}{\rho+\nu+\xi_{p_0}+\theta_{p_0}m(\theta_{p_0})\cdot\gamma}}\cdot\underbrace{\left(1+\Lambda_{p_0}\right)}_{\frac{\rho+\nu+\delta+\theta_{p_0}m(\theta_{p_0})\cdot\gamma}{\rho+\nu+\theta_{p_0}m(\theta_{p_0})\cdot\gamma}}\cdot\left[b_{p_1}-b_{p_0}\right] \\
&= (1-\gamma)\cdot\frac{\rho+\nu+\delta}{\rho+\nu+\xi_{p_0}+\theta_{p_0}m(\theta_{p_0})\cdot\gamma}\cdot\left[b_{p_1}-b_{p_0}\right]
\end{aligned}$$

To get equation (1), consider the same policy change from p_0 to p_1, in which case the partial wage effect through potential *future* unemployment income can be written as:

$$\begin{aligned}
\mathbb{E}\left[\phi_{p_1}\left(b_{n,p_1}\right)\middle|\,\theta_{p_0}\right]-\mathbb{E}\left[\phi_{p_0}\left(b_{n,p_1}\right)\middle|\,\theta_{p_0}\right] &= (1-\gamma)\cdot\left(1-\frac{\partial\hat{\phi}_{p_0}}{\partial y}\right)\cdot\left[\hat{y}_{p_1}\left(b_{n,p_1}\right)-\hat{y}_{p_0}\left(b_{n,p_1}\right)\right] \\
&= (1-\gamma)\cdot\left(1-\frac{\partial\hat{\phi}_{p_0}}{\partial y}\right)\cdot\left(1-\Omega_{p_0}\right)\cdot\left(-\Lambda_{p_0}\right)\cdot\left[b_{p_1}-b_{p_0}\right] \\
&= \frac{-\delta}{\rho+\nu+\delta+\theta_{p_0}m(\theta_{p_0})\cdot\gamma}\cdot\left[\phi_{p_0}\left(b_{p_1}\right)-\phi_{p_0}\left(b_{p_0}\right)\right]
\end{aligned}$$

A.3 Derivation of the equilibrium individual wage function

A.3.1 Nash bargaining first-order condition

Given the assumption of free entry ($V=0$) at equilibrium, the bargained wage solves the following maximisation problem:

$$\phi_p(b) = \arg\max_w\,[J(w)]^{1-\gamma}\left[E_p(w)-U_p(b)\right]^{\gamma}$$

The first-order condition of the above maximisation problem is equivalent to:[25]

$$\gamma\cdot\frac{\frac{\partial E_p}{\partial w}(\phi_p(b))}{E_p(\phi_p(b))-U_p(b)}+(1-\gamma)\cdot\frac{\frac{\partial J}{\partial w}(\phi_p(b))}{J(\phi_p(b))}=0$$

[25] $(1-\gamma)\cdot\left(-\frac{\frac{\partial J}{\partial w}(\phi_p(b))}{\frac{\partial E_p}{\partial w}(\phi_p(b))}\right)\cdot\left[E_p(\phi_p(b))-U_p(b)\right]=\gamma\cdot J(\phi_p(b))$

Given that the expected discounted profits of the employer can simply be written as in the canonical Mortensen-Pissarides model with exogenous separations:

$$J(w) = \frac{y - w}{\rho + \nu + \delta}$$

The Nash bargaining first-order condition becomes:

$$\gamma \cdot \frac{\partial E_p}{\partial w}(\phi_p(b)) \cdot \left[y - \phi_p(b)\right] = (1-\gamma) \cdot \left[E_p(\phi_p(b)) - U_p(b)\right]$$

Given the simplifying assumptions of the model, the functions $\phi_p(.)$, $E_p(.)$, and $U_p(.)$ take on a linearly separable form such that the partial derivatives $\frac{\partial E_p}{\partial w}$, $\frac{\partial E_p}{\partial y}$, $\frac{\partial U_p}{\partial w}$, $\frac{\partial U_p}{\partial y}$, $\frac{\partial \phi_p}{\partial b}$, $\frac{\partial \phi_p}{\partial y}$ are all constant in equilibrium.

A.3.2 Bargained wage and the worker's reservation wage

Let $\hat{\phi}_p(b)$ be the reservation wage of a worker with current (potential) unemployment income b such that the worker is indifferent between being employed and being unemployed:

$$E_p(\hat{\phi}_p(b)) = U_p(b)$$

By linear separability, the Nash bargaining first-order condition can be rearranged to write the bargained wage as a bargaining-power-weighted average of the match productivity and the reservation wage:[26]

$$\phi_p(b) = \gamma \cdot y + (1-\gamma) \cdot \hat{\phi}_p(b) \qquad (\phi_p)$$

A.3.3 Partial effects of income terms

The worker's value of unemployment as a function of benefits b can be rewritten as:

$$\left(\rho + \nu + \xi_p\right) \cdot U_p(b) = a + b + \xi_p \cdot U_p(z) + \theta_p m(\theta_p) \cdot \underbrace{\frac{\partial E_p}{\partial w} \cdot \gamma \cdot \left[y - \hat{\phi}_p(b)\right]}_{=E_p(\phi_p(b)) - U_p(b)}$$

The partial effect of benefits on the worker's value of unemployment:

$$\left(\rho + \nu + \xi_p\right) \cdot \frac{\partial U_p}{\partial b} = 1 - \theta_p m(\theta_p) \cdot \frac{\partial E_p}{\partial w} \cdot \gamma \cdot \frac{\partial \hat{\phi}_p}{\partial b}$$

The worker's value of employment as a function of the wage w can be rewritten as:

$$(\rho + \nu + \delta) \cdot E_p(w) = w + \delta \cdot U_p(b_p(w))$$

The partial effect of the wage w on the worker's value of employment satisfies:

$$(\rho + \nu + \delta) \cdot \frac{\partial E_p}{\partial w} = 1 + \delta \cdot \frac{\partial U_p}{\partial b} \cdot \frac{\partial b_p}{\partial w^r} = \frac{1}{\Psi_p} = -\frac{\frac{\partial E_p}{\partial w}}{\frac{\partial J}{\partial w}}$$

[26]Using the reservation wage and linear separability, one can rewrite the worker's net gain as:

$$E_p(w) - U_p(b) = \frac{\partial E_p}{\partial w} \cdot \left[w - \hat{\phi}_p(b)\right]$$

Implicit differentiation of the indifference condition for the worker's reservation wage $E_p(\hat{\phi}_p(b)) = U_p(b)$ with respect to benefits b yields:

$$\frac{\partial E_p}{\partial w} \cdot \frac{\partial \hat{\phi}_p}{\partial b} = \frac{\partial U_p}{\partial b}$$

As result, the partial effect of current benefits of the worker on her/his value of unemployment in closed form becomes:

$$(\rho + \nu + \xi_p) \cdot \frac{\partial U_p}{\partial b} = \frac{\rho + \nu + \xi_p}{\rho + \nu + \xi_p + \theta_p m(\theta_p) \cdot \gamma}$$

such that the relative partial effect of a change in the wage on the employer's expected discounted payoff in terms of the same change on the worker's expected discounted payoff can be written as:

$$\Psi_p = -\frac{\frac{\partial J}{\partial w}}{\frac{\partial E_p}{\partial w}} = \frac{\rho + \nu + \xi_p + \theta_p m(\theta_p) \cdot \gamma}{\rho + \nu + \xi_p + \theta_p m(\theta_p) \cdot \gamma + \delta \cdot \frac{\partial b_p}{\partial w^r}}$$

A.3.4 Partial effects of productivity

The partial effect of productivity y on the worker's value of employment satisfies:

$$\frac{\partial E_p}{\partial y} = \frac{\delta}{\rho + \nu + \delta} \cdot \frac{\partial U_p}{\partial y}$$

The partial effect of productivity on the worker's value of unemployment satisfies:

$$(\rho + \nu) \cdot \frac{\partial U_p}{\partial y} = \frac{\partial E_p}{\partial w} \cdot \theta_p m(\theta_p) \cdot \gamma \cdot \left[1 - \frac{\partial \hat{\phi}_p}{\partial y}\right]$$

Implicit differentiation of the indifference condition for the worker's reservation wage $E_p(\hat{\phi}_p(b)) = U_p(b)$ with respect to productivity y yields:

$$\frac{\partial E_p}{\partial w} \cdot \frac{\partial \hat{\phi}_p}{\partial y} = \frac{\partial U_p}{\partial y}$$

As a result, the partial effect of productivity on the reservation wage can be written as:

$$\frac{\partial \hat{\phi}_p}{\partial y} = \frac{\theta_p m(\theta_p) \cdot \gamma}{\rho + \nu + \delta + \theta_p m(\theta_p) \cdot \gamma}$$

A.3.5 Closed-form expressions for the worker's reservation wage and the lowest feasible productivity

Evaluating the worker's value of employment at $w = \hat{\phi}_p(b_p(0))$ and using the indifference condition for the worker's reservation wage, one gets:[27]

$$(\rho + \nu) \cdot U_p(b_p(0)) = \frac{\hat{\phi}_p(b_p(0))}{\Psi_p}$$

[27] $(\rho + \nu) \cdot U_p(b_p(0)) = \hat{\phi}_p(b_p(0)) + \delta \cdot \left[U_p(b_p(\hat{\phi}_p(b_p(0)))) - U_p(b_p(0))\right]$

Rewriting the worker's value of unemployment to get:

$$(\rho+\nu)\cdot U_p(b) = a + b + \xi_p \cdot \left[U_p(z) - U_p(b)\right] + \theta_p m(\theta_p)\cdot \frac{\partial E_p}{\partial w}\cdot\gamma\cdot\left[y - \hat{\phi}_p(b)\right]$$

Then evaluating the above equation at $b = z$ and developing yields the following expression for the difference between the value of unemployment with unemployment income b and the value of unemployment with unemployment income z (following UI benefit exhaustion):

$$\left(\rho+\nu+\xi_p\right)\cdot\left[U_p(b) - U_p(z)\right] = b - z - \theta_p m(\theta_p)\cdot\frac{\partial E_p}{\partial w}\cdot\gamma\cdot\left[\hat{\phi}_p(b) - \hat{\phi}_p(z)\right]$$

After many rearranging steps, one can arrive bring the worker's flow value when unemployed into a more compact form:[28]

$$(\rho+\nu)\cdot U_p(b) = B_p(b) + \frac{\theta_p m(\theta_p)\cdot\gamma}{\rho+\nu+\delta}\cdot\frac{1}{\Psi_p}\cdot\left[y - \hat{\phi}_p(b)\right]$$

where Ω_p is a weight capturing the effect of UI entitlement after benefit exhaustion and $B_p(b)$ is the expected discounted flow value associated with being unemployed (taking into account UI benefit exhaustion):

$$\Omega_p = \frac{\xi_p}{\rho+\nu+\xi_p+\theta_p m(\theta_p)\cdot\gamma} \quad \text{and} \quad B_p(b) = (1-\Omega_p)\cdot[a+b] + \Omega_p\cdot[a+z]$$

Evaluating at $b = b_p(0)$, then using that $\hat{\phi}_p(b_p(0)) = \Psi_p\cdot(\rho+\nu)\cdot U_p(b_p(0))$ yields:

$$\hat{\phi}_p(b_p(0)) = \frac{\partial\hat{\phi}_p}{\partial y}\cdot y + \left(1 - \frac{\partial\hat{\phi}_p}{\partial y}\right)\cdot\Psi_p\cdot B_p(b_p(0))$$

where $\frac{\partial\hat{\phi}_p}{\partial y} = \frac{\theta_p m(\theta_p)\cdot\gamma}{\rho+\nu+\delta+\theta_p m(\theta_p)\cdot\gamma}$.

Given that $\hat{\phi}_p(b)\Big|_{y=\hat{y}_p(b)} = \hat{y}_p(b)$ by the employer's zero profit condition, the worker's reservation wage can be written as a weighted average of match productivity y and the lowest feasible productivity $\hat{y}_p$:

$$\hat{\phi}_p(b) = \frac{\partial\hat{\phi}_p}{\partial y}\cdot y + \left(1 - \frac{\partial\hat{\phi}_p}{\partial y}\right)\cdot\hat{y}_p(b)$$

And by the same token, when $b = b_p(0)$, then the lowest feasible worker type becomes:

$$\hat{y}_p(b_p(0)) = \Psi_p\cdot B_p(b_p(0))$$

Furthermore given that the partial effect of unemployment benefits on the lowest feasible worker type is:

$$\frac{\partial\hat{y}_p}{\partial b} = \frac{\frac{\partial\hat{\phi}_p}{\partial b}}{1-\frac{\partial\hat{\phi}_p}{\partial y}} = \frac{\frac{\partial U_p}{\partial b}}{\frac{\partial E_p}{\partial w}\cdot\left(1-\frac{\partial\hat{\phi}_p}{\partial y}\right)} = \frac{(1-\Omega_p)\cdot(1+\Lambda_p)}{1+(1-\Omega_p)\cdot\Lambda_p\cdot\frac{\partial b_p}{\partial w^r}}$$

[28] $\xi_p\cdot\left[U_p(z) - U_p(b)\right] = \omega_p\cdot[z-b] + \theta_p m(\theta_p)\cdot\frac{\partial E_p}{\partial w}\cdot\gamma\cdot\left[-\omega_p\cdot[\hat{\phi}_p(z) - \hat{\phi}_p(b)]\right]$ where $\omega_p = \frac{\xi_p}{\rho+\nu+\xi_p}$

where:

$$\Lambda_p = \frac{\delta}{\rho + \nu + \theta_p m(\theta_p) \cdot \gamma}$$

The lowest feasible type takes the following form in the most general case (within the present framework):

$$\hat{y}_p(b) = \frac{B_p(b) + (1 - \Omega_p) \cdot \Lambda_p \cdot \left[b - b_p(0)\right]}{1 + (1 - \Omega_p) \cdot \Lambda_p \cdot \frac{\partial b_p}{\partial w^r}}$$

Equivalently, if $\frac{\partial b_p}{\partial w^r} > 0$, then the lowest feasible productivity can be written as a weighted average of the current average flow value of unemployment and the implied pre-separation wage:

$$\hat{y}_p(b) = \Psi_p \cdot B_p(b) + \left(1 - \Psi_p\right) \cdot \underbrace{w_p^r(b)}_{\text{implied pre-separation wage}}$$

where:

$$\Psi_p = -\frac{\frac{\partial J}{\partial w}}{\frac{\partial E_p}{\partial w}} = \frac{1}{1 + (1 - \Omega_p) \cdot \Lambda \cdot \frac{\partial b_p}{\partial w^r}} \quad \text{and} \quad w_p^r(b) = \frac{b - b_p(0)}{\frac{\partial b_p}{\partial w^r}}$$

B Worker groups in equilibrium

In a stationary equilibrium:

- the inflows into ineligible unemployment equal the outflows from ineligible unemployment:

$$\underbrace{\nu}_{\text{worker entry}} + \underbrace{\xi_p \cdot (u_p - u_{0,p})}_{\text{UI benefit expiry}} = \underbrace{\nu \cdot u_{0,p}}_{\text{worker exit}} + \underbrace{\theta_p m(\theta_p) \cdot u_{0,p}}_{\text{job finding}}$$

- the inflows into UI-eligible unemployment equal the outflows from UI-eligible unemployment:

$$\underbrace{\delta \cdot e_{(n-1),p}}_{\text{separation}} = \underbrace{\nu \cdot u_{n,p}}_{\text{worker exit}} + \underbrace{\theta_p m(\theta_p) \cdot u_{n,p}}_{\text{job finding}} + \underbrace{\xi_p \cdot u_{n,p}}_{\text{UI benefit expiry}}$$

- the inflows into employment equal the outflows from employment:

$$\underbrace{\theta_p m(\theta_p) \cdot u_{n,p}}_{\text{job finding}} = \underbrace{\nu \cdot e_{n,p}}_{\text{worker exit}} + \underbrace{\delta \cdot e_{n,p}}_{\text{separation}}$$

As a result, the unemployment rate is:

$$\frac{u_p}{u_p + e_p} = \frac{\nu + \delta}{\nu + \delta + \theta_p m(\theta_p)}$$

And the share of unemployed in their n-th unemployment spell after gaining eligibility for UI benefits:

$$\frac{u_{n,p}}{u_p} = \left(1 - \Xi_p\right) \cdot \left(\Xi_p\right)^n \quad \text{where} \quad \Xi_p = \frac{\theta_p m(\theta_p) \cdot \delta}{(\nu + \delta) \cdot (\nu + \theta_p m(\theta_p) + \xi_p)}$$

C Average wage in equilibrium

C.1 Wage distribution

Given that match productivity y, unemployment income in case of not receiving UI benefits z, and unemployment amenity a are common to all workers and constant over time, in equilibrium, the wage as well as UI benefits are both functions of n, the number of times a worker has been employed following the last unemployment spell during which she/he was unemployed without entitlement for UI benefit receipt. Let $w_{n,p}$ be the equilibrium wage of workers who have had precisely n unemployment spells since the last time they gained entitlement for UI benefit receipt:

$$w_{n,p} = \phi_p(b_p(w_{(n-1),p}))$$

C.2 Stable unique fixed point of the equilibrium wage function

Let ϕ_p^* be a fixed point given worker type defined as follows:

$$\phi_p^* = \phi_p(b_p(\phi_p^*))$$

By linear separability, developing yields:

$$\phi_p^* = \frac{\phi_p(b_p(0))}{1 - \Upsilon_p} \quad \text{where} \quad \Upsilon_p = \frac{\partial \phi_p}{\partial b} \cdot \frac{\partial b_p}{\partial w^r}$$

By linear separability, the bargained wage with available benefits b is equal to:

$$\phi_p(b) = \phi_p^* + \frac{\partial \phi_p}{\partial b} \cdot \left[b - \left(b_p(0) + \frac{\partial b_p}{\partial w^r} \cdot \phi_p^* \right) \right]$$

Developing further, the bargained wage can be written as a weighted average of the fixed point wage ϕ_p^* and the virtual reference wage w_p^r implied by the worker's available benefits b:

$$\phi_p(b) = \left(1 - \Upsilon_p\right) \cdot \phi_p^* + \Upsilon_p \cdot w_p^r(b) \quad \text{where} \quad w_p^r(b) = \frac{b - b_p(0)}{\frac{\partial b_p}{\partial w^r}}$$

As a result, it is the case that the n-th wage is:

$$w_{n,p} = \begin{cases} \left(1 - \Upsilon_p\right) \cdot \phi_p^* + \Upsilon_p \cdot w_{(n-1),p} & \text{if } n > 0 \\ \left(1 - \Upsilon_p\right) \cdot \phi_p^* + \Upsilon_p \cdot w_p^r(z) & \text{if } n = 0 \end{cases}$$

Iterating, one obtains that:

$$w_{n,p} = \left[1 - \left(\Upsilon_p\right)^{(n+1)}\right] \cdot \phi_p^* + \left(\Upsilon_p\right)^{(n+1)} \cdot w_p^r(z)$$

And since $\Upsilon_p < 1$:

$$\lim_{n \to \infty} w_{n,p} = \phi_p^*$$

C.3 Average equilibrium wage

The average wage in equilibrium under policy regime p can thus be written as:

$$
\begin{aligned}
w_p &= \sum_{n=0}^{\infty}\left(\frac{u_{n,p}}{u_p}\right)\cdot w_{n,p} \\
&= \sum_{n=0}^{\infty}\left[\left(1-\Xi_p\right)\cdot\left(\Xi_p\right)^n\right]\cdot w_{n,p} \\
&= \sum_{n=0}^{\infty}\left[\left(1-\Xi_p\right)\cdot\left(\Xi_p\right)^n\right]\cdot\left[1-\left(\Upsilon_p\right)^{(n+1)}\right]\cdot\phi_p^* + \sum_{n=0}^{\infty}\left[\left(1-\Xi_p\right)\cdot\left(\Xi_p\right)^n\right]\cdot\left(\Upsilon_p\right)^{(n+1)}\cdot w_p^r(z)
\end{aligned}
$$

The equilibrium average wage can thus be written as the weighted average of the stationary wage ϕ_p^* and the pre-separation wage $w_p^r(z)$ implied by z:

$$
w_p = \left(\frac{1-\Upsilon_p}{1-\Upsilon_p\cdot\Xi_p}\right)\cdot\phi_p^* + \left(\frac{\Upsilon_p-\Upsilon_p\cdot\Xi_p}{1-\Upsilon_p\cdot\Xi_p}\right)\cdot w_p^r(z)
$$

where:

$$
\Xi_p = \frac{\theta_p m(\theta_p)\cdot\delta}{(\nu+\delta)\cdot(\nu+\theta_p m(\theta_p)+\xi_p)}\ ,\quad \Upsilon_p = \frac{\partial\phi_p}{\partial b}\cdot\frac{\partial b_p}{\partial w^r}\ ,\quad \phi_p^* = \phi_p(b_p(\phi_p^*))\ ,\quad b_p(w_p^r(z)) = z
$$

C.4 Average equilibrium wage of UI-eligible workers

$$
\begin{aligned}
\mathbb{E}\left[w_{n,p}|n>0\right] &= \sum_{n=1}^{\infty}\left(\frac{u_{n,p}}{u_p-u_{0,p}}\right)\cdot w_{n,p} \\
&= \sum_{n=1}^{\infty}\left[\left(1-\Xi_p\right)\cdot\left(\Xi_p\right)^{(n-1)}\right]\cdot w_{n,p} \\
&= \sum_{n=1}^{\infty}\left[\left(1-\Xi_p\right)\cdot\left(\Xi_p\right)^{(n-1)}\right]\cdot\left[1-\left(\Upsilon_p\right)^{(n+1)}\right]\cdot\phi_p^* \ + \\
&+ \ \sum_{n=1}^{\infty}\left[\left(1-\Xi_p\right)\cdot\left(\Xi_p\right)^{(n-1)}\right]\cdot\left(\Upsilon_p\right)^{(n+1)}\cdot w_p^r(z) \\
&= \left(\frac{1-(\Upsilon_p)^2}{1-\Upsilon_p\cdot\Xi_p}\right)\cdot\phi_p^* + \left(\frac{(\Upsilon_p)^2-(\Upsilon_p)^2\cdot\Xi_p}{1-\Upsilon_p\cdot\Xi_p}\right)\cdot w_p^r(z)
\end{aligned}
$$

D Computational details

D.1 Choice of the baseline parameter values

Time discount rate The daily time discount rate is set to $\rho = 0.0001$ corresponding to an annual discount rate of about 3.5%. In robustness checks I try 0.00001 and 0.001 as well.

Transition rates The daily employment inflow (f_{p_0}) and outflow ($\nu + \delta$) rates are based on the daily transition rates calculated from the data. Given that I cannot separately estimate the employment outflow rate into non-participation ν and the employment outflow rate into unemployment δ, only a lower bound[29] for the latter (δ_{min}), my baseline assumption is that $\frac{2}{3}$ of the total employment outflow is into unemployment: $\delta = 0.9 \cdot (\delta + \nu)$. In robustness checks I try two extreme alternatives: $\delta = \delta_{\text{min}}$ and $\delta = 0.9 \cdot (\delta + \nu)$.

Target labor share The target labor share of income under the pre-reform policy regime is set to $\frac{w_{p_0}}{y} = 0.6$ in the baseline calibration.[30] The two alternative values for the labor share that I use in robustness checks are 0.4 and 0.8.

Matching elasticity I set the value of the elasticity of matching with respect to the mass of unemployed workers to $\eta = 0.8$ at baseline. While the point estimate of Christl (2020) based on Austrian data over the period 2004-2016 is slightly above this value, the papers surveyed by Petrongolo & Pissarides (2001) report values that are closer to 0.5. The two alternative values used as part of robustness checks are 0.5 and 0.9.

Labor market tightness The tightness under the old policy regime is set to $\theta_{p_0} = 0.1$ at baseline. This value corresponds to the estimate by Christl (2020) around the year 2004 based on vacancies registered with the Austrian public employment agency (AMS). Since the baseline figure of 0.1 is computed while ignoring vacancies that are not registered, the alternative values used for robustness checks include 1 and 5.

Worker bargaining power I set the baseline value of the worker's bargaining weight to $\gamma = 0.1$. I use $\gamma = 0.01$ and $\gamma = 0.2$ when checking the robustness of the model's predictions.

D.2 Indirectly assigned parameter values

Flow vacancy costs Once the directly set parameter values are assigned, I calculate the implied flow vacancy costs in terms of flow productivity using the equilibrium labor demand condition under the old policy rule:

$$\frac{\kappa}{y} = \left(1 - \frac{w_{p_0}}{y}\right) \cdot \left(\frac{f_{p_0}}{\rho + \nu + \delta}\right) \cdot \left(\frac{1}{\theta_{p_0}}\right)$$

[29] This estimate is based on separations into unemployment with actual unemployment benefit receipt. The resulting estimate is between one third and one half of the total employment outflow rate.

[30] This value matches the share of labor compensation as a share of GDP based on data compiled by the St. Louis Fed. Source: University of Groningen and University of California, Davis, Share of Labour Compensation in GDP at Current National Prices for Austria [LABSHPATA156NRUG], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/LABSHPATA156NRUG, August 22, 2022.

Matching efficiency coefficient Similarly, I get the implied value of the matching efficiency coefficient using the definition of the matching function under the old policy rule:

$$\mu = \frac{f_{p_0}}{(\theta_{p_0})^{1-\eta}}$$

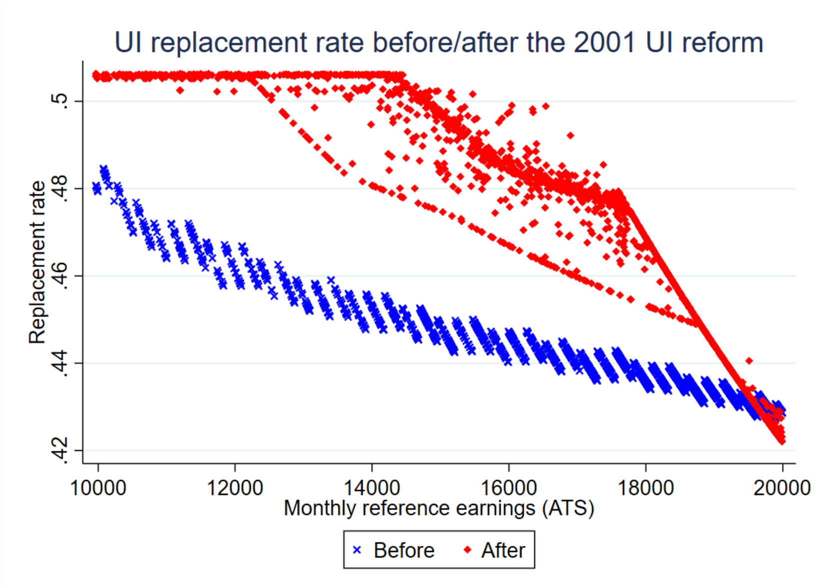
Unemployment income when UI-ineligible (z) and unemployment amenity payoff (a) I simultaneously set the value of the flow unemployment income of UI-ineligible workers (z) and the flow unemployment amenity payoff (a) to meet two objectives:

- the flow unemployment income is non-negative $(z \geq 0)$;
- the flow unemployment income does not exceed the value of UI-benefits the individual can get.

E Tables and Figures

E.1 The effect of the 2001 Austrian UI reform on the UI benefit rate

(a) *Gross monthly UI replacement rate by reference earnings (in Austrian Schillings) according to the UI policy rule in 2000 [before] and the UI policy rule in 2001 [after]*



(b) *Predicted average absolute benefit change by reference earnings (in Austrian Schillings)*

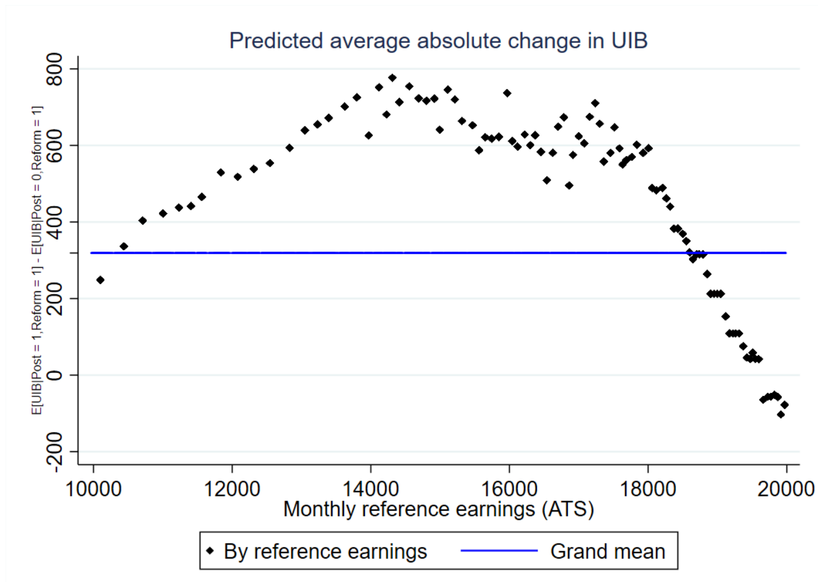


Figure 2

E.2 Summary statistics for the analysis sample (bandwidth = 40 days)

Table 3: Summary statistics by group (Pre/Post × Reform/Control) [bandwidth = 40 days]
Including observations that involve individuals who are present in multiple years

	Reform = 0		Reform = 1	
	Post = 0	Post = 1	Post = 0	Post = 1
Female	.441 (0.496) [0; 1]	.468 (0.499) [0; 1]	.487 (0.500) [0; 1]	.483 (0.500) [0; 1]
Age	38.4 (8.437) [24; 56]	38.9 (8.445) [25; 56]	38.3 (8.658) [24; 56]	39.1 (8.183) [25; 56]
Austrian (Y-2)	.545 (0.498) [0; 1]	.629 (0.483) [0; 1]	.514 (0.500) [0; 1]	.624 (0.485) [0; 1]
Earnings (Y-2)	16,948 (2,683) [10,005; 21,533]	16,616 (2,836) [10,014; 21,523]	16,715 (2,579) [9,965; 19,991]	16,308 (2,676) [9,975; 19,991]
Earnings (reemployment)	19,262 (5,620) [4,549; 53,940]	19,131 (6,213) [4,549; 55,385]	18,807 (5,610) [4,640; 52,496]	18,963 (6,069) [4,755; 47,880]
White-collar job	.107 (0.309) [0; 1]	.16 (0.367) [0; 1]	.129 (0.336) [0; 1]	.159 (0.365) [0; 1]
Emp. days in 18m before UIB spell	390 (103.294) [0; 549]	419 (102.278) [0; 549]	389 (104.658) [0; 550]	416 (102.288) [0; 550]
Time to entry	83.6 (107.120) [1; 1885]	93.3 (97.456) [1; 1150]	85.1 (107.776) [1; 1058]	90.7 (89.199) [1; 759]
Number of obs.	6,680	5,293	1,344	1,198

Table 4: Summary statistics by group (Pre/Post × Reform/Control) [bandwidth = 40 days]
Excluding all observations that involve individuals who are present in multiple years

	Reform = 0		Reform = 1	
	Post = 0	Post = 1	Post = 0	Post = 1
Female	.42 (0.494) [0; 1]	.402 (0.490) [0; 1]	.46 (0.499) [0; 1]	.417 (0.493) [0; 1]
Age	37.7 (8.455) [24; 56]	37.7 (8.521) [25; 56]	37.5 (8.712) [24; 56]	38.2 (8.293) [25; 56]
Austrian (Y-2)	.569 (0.495) [0; 1]	.645 (0.478) [0; 1]	.54 (0.499) [0; 1]	.64 (0.480) [0; 1]
Earnings (Y-2)	16, 926 (2, 743) [10, 005; 21, 531]	16, 687 (2, 892) [10, 014; 21, 523]	16, 688 (2, 629) [9, 965; 19, 991]	16, 216 (2, 761) [9, 975; 19, 985]
Earnings (reemployment)	19, 636 (6, 118) [4, 549; 53, 940]	19, 728 (6, 915) [4, 549; 53, 940]	19, 234 (6, 312) [4, 640; 52, 496]	19, 739 (6, 856) [4, 755; 47, 880]
White-collar job	.0977 (0.297) [0; 1]	.15 (0.357) [0; 1]	.121 (0.327) [0; 1]	.149 (0.356) [0; 1]
Emp. days in 18m before UIB spell	383 (107.357) [0; 549]	411 (111.196) [0; 549]	384 (109.771) [0; 550]	406 (112.587) [0; 550]
Time to entry	91.9 (110.243) [1; 965]	99.8 (111.421) [1; 1150]	96.4 (119.987) [1; 1058]	99.3 (106.944) [1; 759]
Number of obs.	4,668	3,475	906	726

Table 5: Summary statistics by sample year [bandwidth = 40 days]
Including observations that involve individuals who are present in multiple years

Sample year	Y = 1999 (control)	Y = 2000 (control)	Y = 2001 (reform)	Y = 2002 (control)	Y = 2003 (control)	Y = 2004 (control)
Female	.442 (0.497) [0; 1]	.457 (0.498) [0; 1]	.485 (0.500) [0; 1]	.471 (0.499) [0; 1]	.443 (0.497) [0; 1]	.451 (0.498) [0; 1]
Age	37.8 (8.380) [24; 56]	38.2 (8.332) [24; 56]	38.7 (8.448) [24; 56]	39 (8.450) [24; 56]	39.2 (8.420) [24; 56]	39.3 (8.567) [24; 56]
Austrian (Y-2)	.555 (0.497) [0; 1]	.556 (0.497) [0; 1]	.566 (0.496) [0; 1]	.578 (0.494) [0; 1]	.601 (0.490) [0; 1]	.637 (0.481) [0; 1]
Earnings (Y-2)	16, 265 (2, 381) [10, 288; 19, 382]	16, 279 (2, 552) [10, 005; 19, 618]	16, 523 (2, 632) [9, 965; 19, 991]	16, 830 (2, 649) [10, 192; 20, 355]	17, 280 (2, 938) [10, 147; 21, 010]	17, 665 (3, 074) [10, 187; 21, 533]
Earnings (reemployment)	18, 499 (5, 270) [4, 549; 49, 700]	18, 791 (5, 615) [4, 549; 50, 600]	18, 880 (5, 831) [4, 640; 52, 496]	19, 400 (6, 194) [4, 755; 52, 496]	19, 719 (6, 069) [4, 841; 53, 940]	19, 924 (6, 323) [4, 966; 55, 385]
White-collar job	.118 (0.323) [0; 1]	.12 (0.325) [0; 1]	.143 (0.350) [0; 1]	.141 (0.348) [0; 1]	.133 (0.339) [0; 1]	.146 (0.354) [0; 1]
Emp. days in 18m before UIB spell	401 (104.652) [0; 549]	402 (103.546) [0; 549]	402 (104.409) [0; 550]	403 (103.269) [0; 549]	405 (103.040) [0; 549]	405 (104.753) [0; 549]
Time to entry	91.3 (104.978) [1; 1018]	84.4 (93.773) [1; 903]	87.7 (99.476) [1; 1058]	90.7 (109.232) [1; 1157]	88.2 (105.931) [1; 1521]	84.4 (101.707) [1; 1885]
Number of obs.	2,757	2,682	2,542	2,327	2,131	2,076

Table 6: Summary statistics by sample year [bandwidth = 40 days]

Excluding all observations that involve individuals who are present in multiple years

Sample year	Y = 1999 (control)	Y = 2000 (control)	Y = 2001 (reform)	Y = 2002 (control)	Y = 2003 (control)	Y = 2004 (control)
Female	.404 (0.491) [0; 1]	.416 (0.493) [0; 1]	.441 (0.497) [0; 1]	.431 (0.495) [0; 1]	.397 (0.490) [0; 1]	.414 (0.493) [0; 1]
Age	37.3 (8.482) [24; 56]	37.3 (8.317) [24; 56]	37.8 (8.532) [24; 56]	38 (8.506) [24; 56]	38.1 (8.452) [24; 56]	38 (8.660) [24; 56]
Austrian (Y-2)	.571 (0.495) [0; 1]	.583 (0.493) [0; 1]	.585 (0.493) [0; 1]	.596 (0.491) [0; 1]	.62 (0.485) [0; 1]	.655 (0.476) [0; 1]
Earnings (Y-2)	16, 390 (2, 385) [10, 288; 19, 382]	16, 313 (2, 623) [10, 005; 19, 618]	16, 478 (2, 698) [9, 965; 19, 991]	16, 834 (2, 729) [10, 192; 20, 355]	17, 313 (3, 049) [10, 147; 21, 010]	17, 612 (3, 166) [10, 187; 21, 531]
Earnings (reemployment)	19, 022 (5, 722) [4, 549; 49, 700]	19, 398 (6, 220) [4, 549; 50, 600]	19, 459 (6, 562) [4, 640; 52, 496]	19, 979 (7, 075) [4, 755; 52, 496]	20, 186 (6, 725) [4, 841; 53, 940]	20, 167 (6, 801) [4, 966; 52, 635]
White-collar job	.112 (0.315) [0; 1]	.112 (0.315) [0; 1]	.134 (0.340) [0; 1]	.127 (0.334) [0; 1]	.12 (0.325) [0; 1]	.135 (0.342) [0; 1]
Emp. days in 18m before UIB spell	397 (107.448) [0; 549]	395 (109.960) [0; 549]	394 (111.518) [0; 550]	394 (112.128) [0; 549]	394 (110.325) [0; 549]	397 (110.643) [0; 549]
Time to entry	98.4 (115.349) [1; 1018]	90.5 (101.403) [1; 903]	97.7 (114.344) [1; 1058]	103 (121.267) [1; 1150]	96.2 (111.434) [1; 835]	88 (103.256) [1; 1008]
Number of obs.	2,057	1,824	1,632	1,452	1,351	1,459

Table 7: Sector of reemployment [bandwidth = 40 days]

Including observations that involve individuals who are present in multiple years

	Reform = 0		Reform = 1	
	Post = 0	Post = 1	Post = 0	Post = 1
Accommodation and food service activities	38.9%	26.4%	39.5%	24.7%
Activities of extraterritorial organisations and bodies	0.0%	0.0%	0.0%	0.0%
Activities of households as employers; undifferentiated goods - and services - producing activities of households for own use	0.0%	0.3%	0.2%	0.0%
Administrative and support service activities	14.2%	13.5%	14.0%	14.2%
Agriculture, forestry and fishing	3.5%	2.5%	2.0%	3.2%
Arts, entertainment and recreation	1.0%	1.2%	1.3%	1.3%
Construction	9.8%	16.1%	9.2%	17.6%
Education	4.0%	1.2%	4.3%	1.2%
Electricity, gas, steam and air conditioning supply	0.0%	0.1%	0.0%	0.0%
Financial and insurance activities	0.2%	0.2%	0.0%	0.3%
Human health and social work activities	0.9%	0.8%	0.8%	1.1%
Information and communication	0.3%	0.5%	0.3%	0.3%
Manufacturing	5.0%	9.5%	5.0%	9.4%
Mining and quarrying	0.1%	0.3%	0.0%	0.3%
Other services activities	1.2%	1.4%	1.1%	1.7%
Professional, scientific and technical activities	0.9%	1.4%	0.4%	1.6%
Public administration and defence; compulsory social security	3.8%	4.8%	3.6%	4.1%
Real estate activities	0.4%	0.6%	0.3%	0.4%
Transporting and storage	10.9%	9.8%	12.2%	9.9%
Water supply; sewerage; waste managment and remediation activities	0.2%	0.4%	0.3%	0.3%
Wholesale and retail trade; repair of motor vehicles and motorcycles	4.6%	9.1%	5.5%	8.5%
Number of obs.	6,680	5,293	1,344	1,198

Table 8: Sector of reemployment [bandwidth = 40 days]
Excluding all observations that involve individuals who are present in multiple years

	Reform = 0		Reform = 1	
	Post = 0	Post = 1	Post = 0	Post = 1
Accommodation and food service activities	34.7%	20.7%	34.9%	18.1%
Activities of extraterritorial organisations and bodies	0.0%	0.0%	0.0%	0.0%
Activities of households as employers; undifferentiated goods - and services - producing activities of households for own use	0.0%	0.2%	0.2%	0.0%
Administrative and support service activities	16.9%	16.7%	16.7%	18.4%
Agriculture, forestry and fishing	2.4%	1.5%	1.1%	2.1%
Arts, entertainment and recreation	1.0%	1.0%	1.5%	1.3%
Construction	12.0%	18.4%	12.6%	19.8%
Education	3.0%	1.3%	3.1%	1.4%
Electricity, gas, steam and air conditioning supply	0.0%	0.1%	0.0%	0.0%
Financial and insurance activities	0.2%	0.2%	0.0%	0.4%
Human health and social work activities	1.2%	1.2%	1.1%	1.5%
Information and communication	0.4%	0.6%	0.3%	0.3%
Manufacturing	5.9%	10.0%	5.5%	9.8%
Mining and quarrying	0.1%	0.4%	0.0%	0.1%
Other services activities	1.1%	1.1%	0.8%	2.0%
Professional, scientific and technical activities	1.0%	1.7%	0.6%	1.8%
Public administration and defence; compulsory social security	3.8%	5.1%	3.9%	3.8%
Real estate activities	0.4%	0.5%	0.0%	0.4%
Transporting and storage	11.1%	9.7%	11.8%	9.7%
Water supply; sewerage; waste managment and remediation activities	0.2%	0.6%	0.4%	0.4%
Wholesale and retail trade; repair of motor vehicles and motorcycles	4.4%	9.1%	5.4%	8.7%
Number of obs.	4,668	3,475	906	726

Table 9: State (Bundesland) of reemployment [bandwidth = 40 days]

(a) *Including observations that involve individuals who are present in multiple years*

	Reform = 0		Reform = 1	
	Post = 0	Post = 1	Post = 0	Post = 1
Unknown	0.7%	0.6%	0.5%	0.3%
Burgenland	1.9%	4.1%	1.9%	4.5%
Kärnten	10.5%	14.5%	10.2%	13.8%
Niederösterreich	9.8%	16.9%	8.3%	17.3%
Oberösterreich	12.0%	16.4%	12.8%	18.4%
Salzburg	14.7%	7.3%	14.4%	7.3%
Steiermark	9.7%	16.5%	9.6%	16.3%
Tirol	27.5%	10.5%	26.6%	9.5%
Vorarlberg	4.0%	1.4%	5.7%	1.3%
Wien	9.3%	11.8%	10.0%	11.4%
Number of obs.	6,680	5,293	1,344	1,198

(b) *Excluding all observations that involve individuals who are present in multiple years*

	Reform = 0		Reform = 1	
	Post = 0	Post = 1	Post = 0	Post = 1
Unknown	0.7%	0.7%	0.4%	0.4%
Burgenland	1.8%	3.6%	2.2%	3.9%
Kärnten	10.2%	12.8%	9.7%	11.7%
Niederösterreich	10.7%	16.7%	9.7%	16.8%
Oberösterreich	13.5%	17.1%	14.7%	19.8%
Salzburg	13.5%	7.5%	13.0%	8.1%
Steiermark	10.3%	14.6%	11.3%	13.2%
Tirol	24.2%	10.6%	21.9%	9.5%
Vorarlberg	3.8%	1.8%	5.4%	1.9%
Wien	11.3%	14.5%	11.7%	14.6%
Number of obs.	4,668	3,475	906	726

Table 10: Overlaps between the yearly samples

(a) Bandwidth = 20 days

	1999	2000	2001	2002	2003	2004
2004	58	64	89	107	135	950
2003	74	82	118	151	1,033	
2002	82	112	147	1,092		
2001	110	134	1,168			
2000	136	1,228				
1999	1,214					

(b) Bandwidth = 40 days

	1999	2000	2001	2002	2003	2004
2004	142	166	247	310	379	2,076
2003	192	207	331	399	2,131	
2002	235	326	439	2,327		
2001	333	422	2,542			
2000	450	2,682				
1999	2,757					

Table 11: Share of individuals whose reemployment job is *seasonal* using the conservative criterion of Del Bono & Weber (2008)

(a) *Including observations that involve individuals who are present in multiple years*

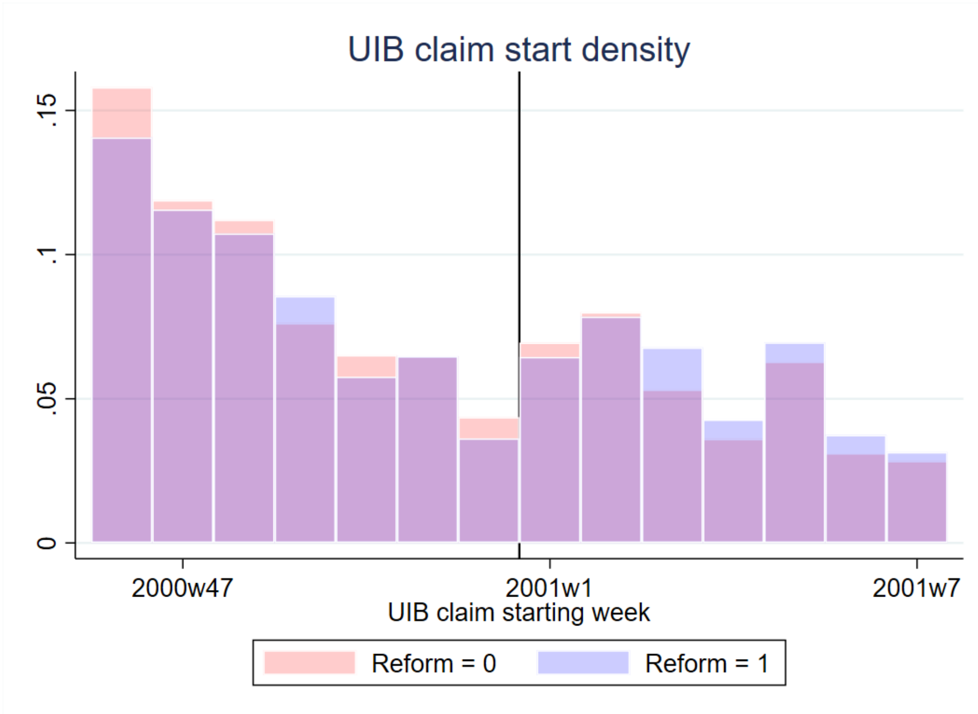
Bandwidth	10 days	20 days	30 days	40 days	50 days
1999	23.2%	23.9%	23.1%	22.9%	21.6%
2000	22.4%	23%	23.7%	23.7%	22.5%
2001	27.2%	26.7%	25.6%	24.5%	23.2%
2002	26.7%	25.7%	25.2%	25.4%	23.6%
2003	27.7%	27.3%	26.6%	27%	23.8%
2004	26.7%	24.3%	23.5%	23.4%	22.1%

(b) *Excluding all observations that involve individuals who are present in multiple years*

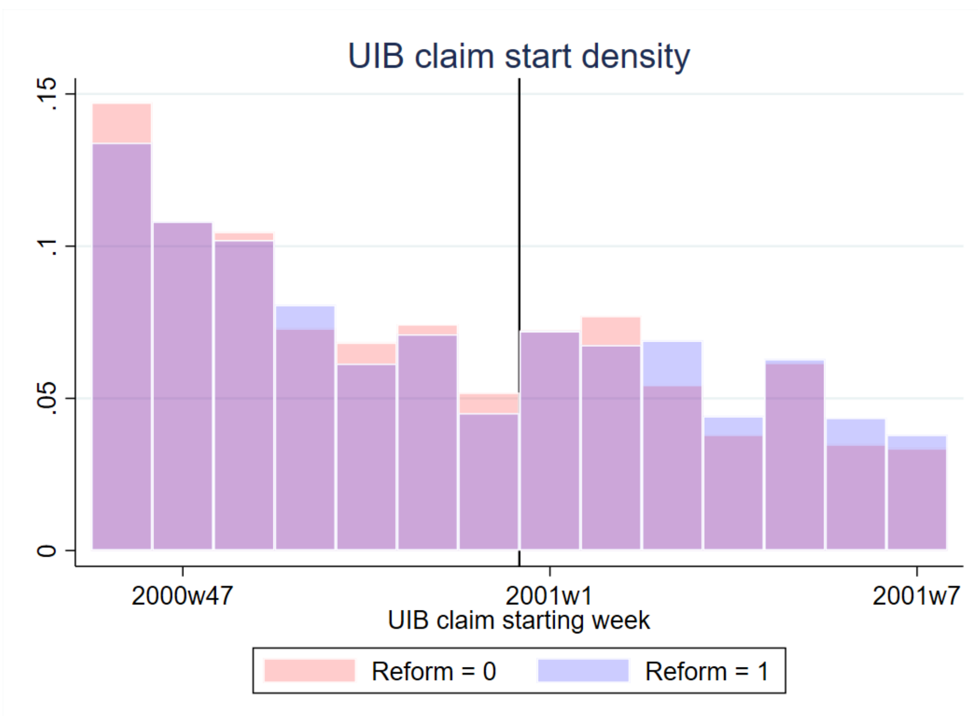
Bandwidth	10 days	20 days	30 days	40 days	50 days
1999	18.2%	18.8%	19.3%	19.2%	18.3%
2000	15.9%	16.1%	17.1%	17.7%	17.8%
2001	16.4%	16.9%	17.8%	18%	18.2%
2002	17.4%	18.1%	18.8%	19.4%	19.6%
2003	21.4%	20.8%	20.1%	21.4%	19.6%
2004	19.6%	17.6%	17.5%	18.6%	19.2%

Figure 3: UI benefit claim starting week density

(a) *Including observations that involve individuals who are present in multiple years*



(b) *Excluding all observations that involve individuals who are present in multiple years*



E.3 Difference-in-Differences estimation of the discontinuity in reemployment earnings

E.3.1 Difference-in-Differences estimates for the full specification (equation (5)) for different bandwidths

Table 12: Difference-in-Differences estimation by bandwidth
Including observations that involve individuals who are present in multiple years

	Dependent variable: Earnings (reemployment)				
Bandwidth	10 days	20 days	30 days	40 days	50 days
UIB claim starts Post = 0 Post = 1	22 Dec - 31 Dec 1 Jan - 10 Jan	12 Dec - 31 Dec 1 Jan - 20 Jan	2 Dec - 31 Dec 1 Jan - 30 Jan	22 Nov - 31 Dec 1 Jan - 9 Feb	12 Nov - 31 Dec 1 Jan - 19 Feb
Post	−300.94 (251.13)	−249.26 (155.21)	−188.77 (125.72)	−182.73 (104.76)	−88.39 (93.23)
Reform	−84.95 (498.34)	−561.30 (260.61)	−231.59 (193.26)	−205.53 (139.72)	−238.24 (103.87)
Post × Reform	89.88 (575.54)	615.25 (333.04)	296.69 (266.96)	287.93 (212.21)	334.96 (184.41)
Earnings (Y-2)	0.54 (0.05)	0.59 (0.03)	0.60 (0.02)	0.66 (0.02)	0.71 (0.02)
Controls	Yes	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	Yes	Yes	Yes
Bundesland FE	Yes	Yes	Yes	Yes	Yes
Number of obs.	3,029	6,619	9,747	14,368	19,585
Adjusted R^2	0.26	0.28	0.27	0.28	0.28

Table 13: Difference-in-Differences estimation by bandwidth

Excluding all observations that involve individuals who are present in multiple years

	Dependent variable: Earnings (reemployment)				
Bandwidth	10 days	20 days	30 days	40 days	50 days
UIB claim starts Post = 0 Post = 1	 22 Dec - 31 Dec 1 Jan - 10 Jan	 12 Dec - 31 Dec 1 Jan - 20 Jan	 2 Dec - 31 Dec 1 Jan - 30 Jan	 22 Nov - 31 Dec 1 Jan - 9 Feb	 12 Nov - 31 Dec 1 Jan - 19 Feb
Post	−341.23 (276.26)	−207.81 (181.36)	−186.95 (152.83)	−197.82 (134.41)	−86.21 (124.42)
Reform	−285.39 (547.89)	−702.53 (301.93)	−262.61 (246.11)	−156.84 (191.25)	−123.99 (159.16)
Post × Reform	338.83 (657.62)	987.03 (406.85)	656.50 (352.09)	586.07 (300.47)	534.44 (274.05)
Earnings (Y-2)	0.46 (0.05)	0.50 (0.04)	0.51 (0.03)	0.58 (0.02)	0.62 (0.02)
Controls	Yes	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	Yes	Yes	Yes
Bundesland FE	Yes	Yes	Yes	Yes	Yes
Number of obs.	2,470	4,978	7,019	9,644	12,166
Adjusted R^2	0.24	0.27	0.25	0.26	0.26

E.3.2 PLACEBO Difference-in-Differences estimates by bandwidth using observations from sample years (2000, 2002) as placebo treatment and observations from sample years (1999, 2003, 2004) as placebo control

Table 14: PLACEBO Difference-in-Differences estimation by bandwidth
Including observations that involve individuals who are present in multiple years

	Dependent variable: Earnings (reemployment)				
Bandwidth	10 days	20 days	30 days	40 days	50 days
UIB claim starts Post = 0 Post = 1	22 Dec - 31 Dec 1 Jan - 10 Jan	12 Dec - 31 Dec 1 Jan - 20 Jan	2 Dec - 31 Dec 1 Jan - 30 Jan	22 Nov - 31 Dec 1 Jan - 9 Feb	12 Nov - 31 Dec 1 Jan - 19 Feb
Post	−108.06 (322.99)	−238.03 (201.92)	−222.42 (158.76)	−257.18 (130.96)	−142.71 (115.51)
Reform	549.01 (385.94)	158.57 (221.64)	114.32 (156.80)	69.67 (115.65)	11.66 (86.34)
Post × Reform	−634.84 (469.15)	−106.69 (290.85)	11.94 (231.31)	96.28 (186.04)	103.39 (163.15)
Earnings (Y-2)	0.55 (0.05)	0.59 (0.03)	0.62 (0.03)	0.68 (0.02)	0.72 (0.02)
Controls	Yes	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	Yes	Yes	Yes
Bundesland FE	Yes	Yes	Yes	Yes	Yes
Number of obs.	2,505	5,466	8,048	11,857	16,240
Adjusted R^2	0.26	0.28	0.27	0.28	0.28

Table 15: PLACEBO Difference-in-Differences estimation by bandwidth

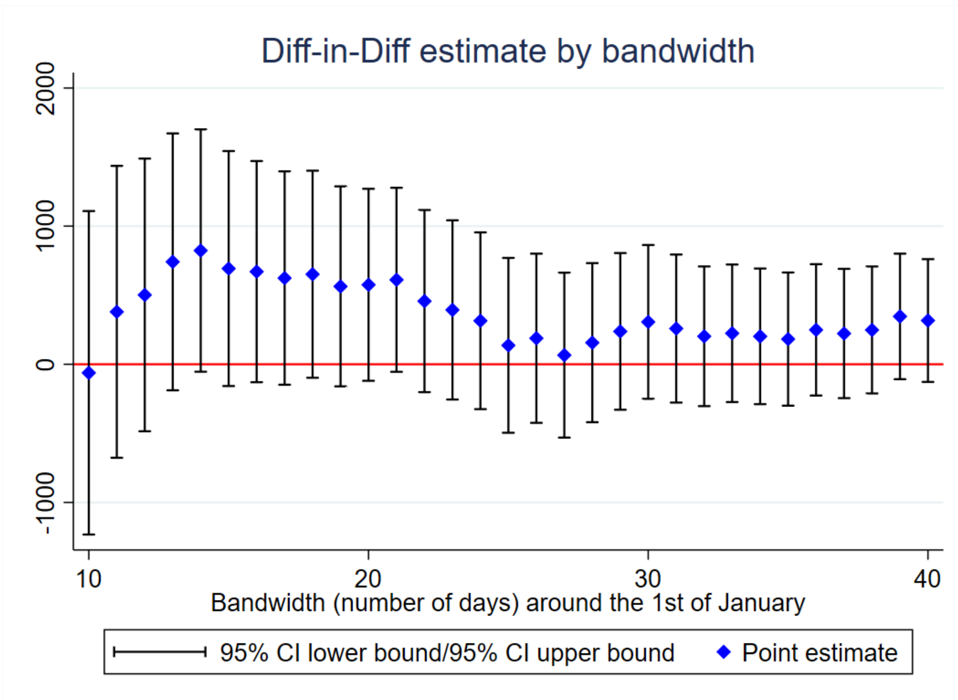
Excluding all observations that involve individuals who are present in multiple years

	Dependent variable: Earnings (reemployment)				
Bandwidth	10 days	20 days	30 days	40 days	50 days
UIB claim starts Post = 0 Post = 1	22 Dec - 31 Dec 1 Jan - 10 Jan	12 Dec - 31 Dec 1 Jan - 20 Jan	2 Dec - 31 Dec 1 Jan - 30 Jan	22 Nov - 31 Dec 1 Jan - 9 Feb	12 Nov - 31 Dec 1 Jan - 19 Feb
Post	−183.22 (355.32)	−229.53 (236.39)	−264.11 (192.85)	−299.24 (167.70)	−153.12 (153.28)
Reform	587.37 (434.00)	287.08 (258.54)	260.60 (195.24)	210.29 (153.70)	190.57 (128.28)
Post × Reform	−545.07 (542.52)	5.69 (359.93)	123.23 (300.87)	158.36 (257.39)	100.02 (234.98)
Earnings (Y-2)	0.48 (0.06)	0.51 (0.04)	0.54 (0.03)	0.61 (0.03)	0.64 (0.02)
Controls	Yes	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	Yes	Yes	Yes
Bundesland FE	Yes	Yes	Yes	Yes	Yes
Number of obs.	2,055	4,131	5,852	8,040	10,213
Adjusted R^2	0.24	0.26	0.25	0.26	0.26

E.3.3 Overview of Difference-in-Differences estimates by bandwidth

Figure 4: Difference-in-Differences estimates by bandwidth (OLS estimates for $\beta_{P\times R}$ in equation (5))

(a) *Including observations that involve individuals who are present in multiple years*



(b) *Excluding all observations that involve individuals who are present in multiple years*

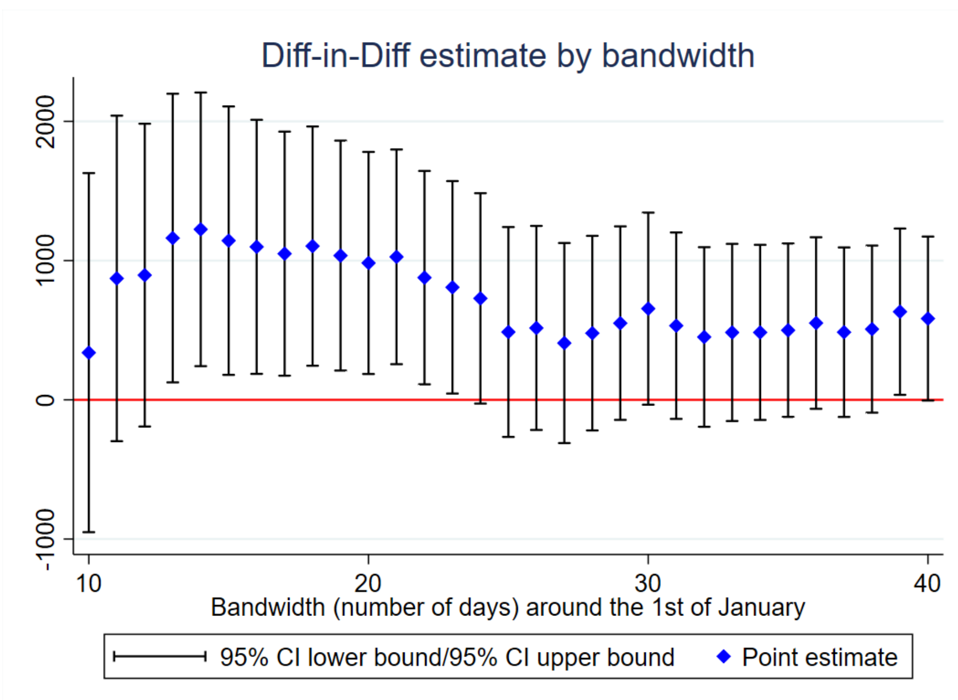
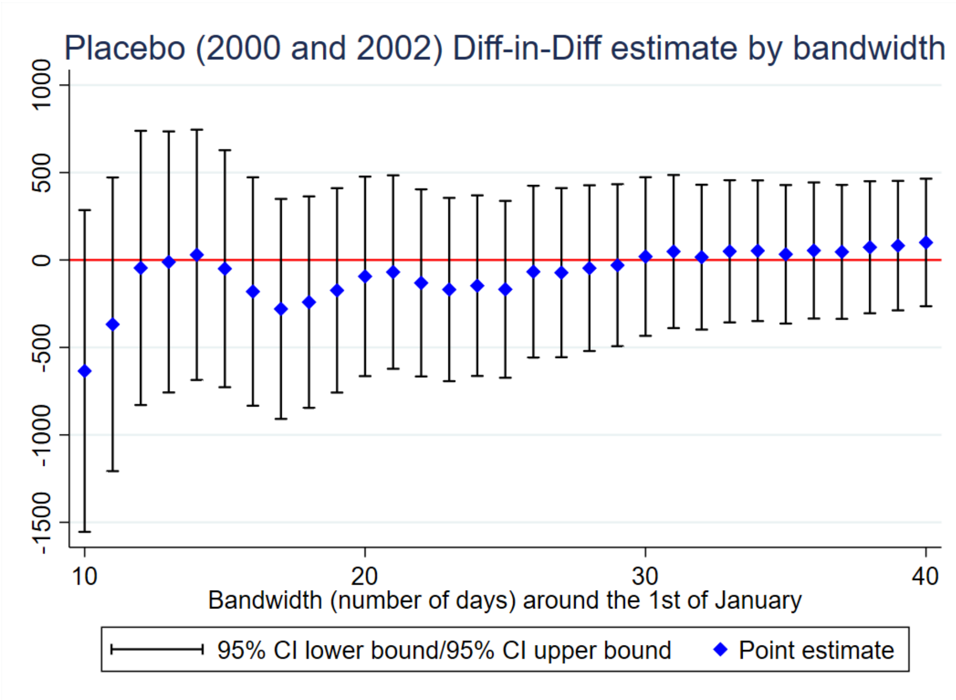
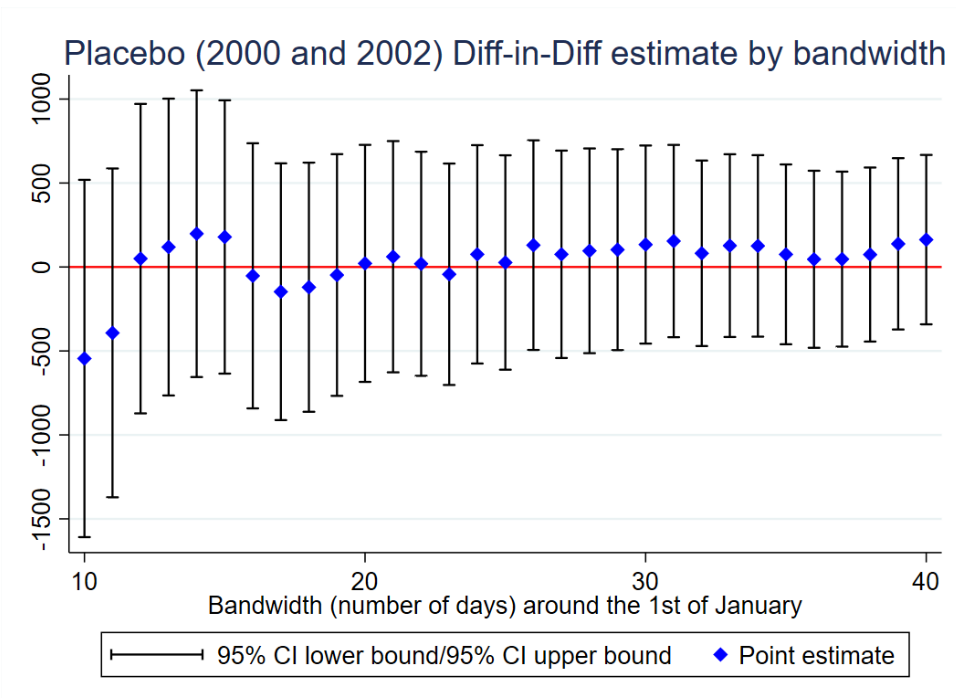


Figure 5: PLACEBO Difference-in-Differences estimates by bandwidth using observations from sample years (2000, 2002) as placebo treatment and observations from sample years (1999, 2003, 2004) as placebo control

(a) *Including observations that involve individuals who are present in multiple years*



(b) *Excluding all observations that involve individuals who are present in multiple years*



E.3.4 Difference-in-differences estimation varying main covariates Estimating variants of equation (5) using OLS

Table 16: Difference-in-differences estimation varying main control variables
Including observations that involve individuals who are present in multiple years

	Dependent variable: Earnings (reemployment)					
	(1)	(2)	(3)	(4)	(5)	(6)
Post	−212.22	−181.15	−181.94	−266.28	−238.03	−238.26
	(222.80)	(213.23)	(213.66)	(210.70)	(201.92)	(202.36)
Reform	−169.77	157.80	111.90	−145.20	158.57	117.85
	(242.66)	(236.40)	(236.71)	(226.40)	(221.64)	(221.77)
Post × Reform	−87.51	−30.34	−25.89	−143.71	−106.69	−103.90
	(317.24)	(306.89)	(307.32)	(299.97)	(290.85)	(291.14)
Earnings (Y-2)		0.64			0.59	
		(0.03)			(0.03)	
Log(Earnings (Y-2))			9796.21			9039.12
			(536.73)			(522.89)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Sector FE	No	No	No	Yes	Yes	Yes
Bundesland FE	No	No	No	Yes	Yes	Yes
Number of obs.	5,517	5,517	5,517	5,466	5,466	5,466
Adjusted R^2	0.15	0.22	0.22	0.21	0.28	0.27

Table 17: Difference-in-differences estimation varying main control variables
Excluding all observations that involve individuals who are present in multiple years

	Dependent variable: Earnings (reemployment)					
	(1)	(2)	(3)	(4)	(5)	(6)
Post	−282.40	−236.04	−227.98	−291.53	−256.78	−249.56
	(254.14)	(246.05)	(246.40)	(239.69)	(232.95)	(233.29)
Reform	−41.76	246.25	208.85	−31.51	224.95	193.12
	(276.80)	(270.62)	(270.92)	(258.23)	(254.24)	(254.37)
Post × Reform	91.53	125.86	120.54	30.12	44.28	37.36
	(378.05)	(368.04)	(368.43)	(358.11)	(350.12)	(350.34)
Earnings (Y-2)		0.58			0.51	
		(0.04)			(0.04)	
Log(Earnings (Y-2))			8849.93			7814.63
			(625.87)			(608.55)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Sector FE	No	No	No	Yes	Yes	Yes
Bundesland FE	No	No	No	Yes	Yes	Yes
Number of obs.	4,334	4,334	4,334	4,288	4,288	4,288
Adjusted R^2	0.15	0.20	0.20	0.22	0.26	0.26

E.3.5 Difference-in-Differences estimation robustness
Leaving out one sample year from control sample

Table 18: Difference-in-Differences estimation robustness
Leaving out one sample year from control sample
Including observations that involve individuals who are present in multiple years

	Dependent variable: Earnings (reemployment)				
Leave-out-year	1999	2000	2002	2003	2004
Post	−368.71	−222.13	−207.03	−111.23	−315.61
	(178.78)	(179.77)	(170.12)	(169.86)	(165.33)
Reform	−819.36	−578.20	−491.26	−420.36	−518.54
	(267.85)	(267.73)	(265.33)	(266.82)	(264.36)
Post × Reform	725.74	602.87	594.53	513.49	659.33
	(342.76)	(342.68)	(339.48)	(339.64)	(338.36)
Earnings (Y-2)	0.56	0.61	0.59	0.59	0.57
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Controls	Yes	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	Yes	Yes	Yes
Bundesland FE	Yes	Yes	Yes	Yes	Yes
Number of obs.	5,414	5,404	5,536	5,595	5,680
Adjusted R^2	0.28	0.28	0.29	0.28	0.27

Table 19: Difference-in-Differences estimation robustness
Leaving out one sample year from control sample
Excluding all observations that involve individuals who are present in multiple years

	Dependent variable: Earnings (reemployment)				
Leave-out-year	1999	2000	2002	2003	2004
Post	−309.15 (212.32)	−198.85 (210.95)	−169.65 (197.55)	−33.35 (197.73)	−315.82 (195.59)
Reform	−996.32 (311.86)	−719.83 (311.47)	−591.46 (305.61)	−520.02 (308.01)	−702.33 (306.86)
Post × Reform	1092.49 (421.24)	986.89 (418.65)	983.59 (412.78)	813.46 (414.00)	1061.96 (414.72)
Earnings (Y-2)	0.47 (0.04)	0.53 (0.04)	0.52 (0.04)	0.50 (0.04)	0.48 (0.04)
Controls	Yes	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	Yes	Yes	Yes
Bundesland FE	Yes	Yes	Yes	Yes	Yes
Number of obs.	4,004	4,043	4,209	4,247	4,256
Adjusted R^2	0.27	0.26	0.28	0.28	0.26

E.4 Model calibration

Table 20: Baseline parameter values used in model calibration and simulations

Arbitrarily set (targeted) values		
	General Sample	Analysis Sample
θ_{p_0} [targeted labor market tightness]	0.135	0.135
$\widehat{\left(\frac{w_{p_0}}{y}\right)}$ [targeted labor share]	0.6	0.6
ρ [time discount rate]	0.0001	0.0001
γ [worker bargaining power]	0.1	0.1
η [matching elasticity]	0.9	0.9
$\frac{\delta}{\delta+\mu}$ [separation rate divided by employment outflow rate]	0.67	0.67
Estimated values		
	General Sample	Analysis Sample
f_{p_0} [job finding rate]	0.00716	0.0173
δ_{min} [lower bound on separation rate]	0.000427	0.00366
$(\delta + \mu)$ [total employment outflow rate]	0.00135	0.00707
$\hat{\xi}$ [est. UI expiration rate]	0.0047	0.0065
Indirectly assigned (implied) values		
	General Sample	Analysis Sample
δ [separation rate]	0.000905	0.00474
ν [working population renewal rate]	0.000445	0.00233
μ [matching efficiency]	0.00875	0.0211
$\frac{\kappa}{y}$ [vacancy cost share]	14.6	7.15
$\frac{a}{y}$ [unemployment amenity share]	0.103	0.203
$\frac{z}{y}$ [UI-ineligible unemployment income share]	0.213	0.218

Table 21: Average daily transition rates (based on 1997-2003)

	Sample from the population (*)	Sample used in the analysis (**)
employment outflow rate $(\delta + \nu)$	.00135 (.0012)	.00707 (.00495)
job separation lower bound (δ_{min})	.000427 (.000469)	.00366 (.00323)
employment inflow rate (f)	.00716 (.00856)	.0173 (.0188)
UI benefit expiration rate (ξ)	.0047 (.00288)	.0065 (.00483)
Avg. number of obs.	35,607	13,707

(*) Random sample drawn from the population of individuals who are between 25 and 55 in 2001.
(**) Sample used for the analysis about the effect of the 2001 UI reform.

F Institutional context and data

F.1 Unemployment insurance (UI) benefits in Austria

Workers in Austria are eligible to receive UI benefits after having been employed subject to UI contributions for at least 52 weeks in the last two years at baseline.

The basic amount of UI benefits is calculated based on previous earnings (subject to unemployment insurance). The replacement rate is around 40-50% of gross earnings for earners below the benefit ceiling corresponding to the maximum contribution basis. Depending on the number of dependents in the household, UI-claimants may also be eligible for family allowance up to a cap. The potential benefit duration of UI benefits is a function of age and tenure within some period before the claim is made and varies between 20 weeks and 78 weeks. The Austrian unemployment insurance scheme allows for partial UI receipt in case the earnings of the unemployed individual are below a certain threshold with such earnings being deducted from the UI benefits of the UI benefit recipient.

After the exhaustion of UI benefits, unemployed individuals may apply for means-tested unemployment assistance benefits that are about 90% of previous UI benefits.

F.2 Wage setting

In Austria, most workers of the private sector are covered by sectoral wage agreements which are the outcome of centralised collective bargaining and which determine sectoral wage floors. However, wages exhibit large variation across individuals working in the same sector and individual-level bargaining is prevalent.

F.3 Data

The data used in the present paper are from the Austrian Labor Market Database (https://arbeitsmarktdatenbank.at/) originating from matched employer-employee social security records collected for administrative purposes.

Variables on individuals include gross yearly earnings (contribution bases used to calculate basic benefit amounts) and associated employment duration for each establishment, labor market/ lifecycle spells that are relevant for social insurance (e.g. unemployment, health, parental leave, maternity leave, pension etc.), and a restricted set of demographic attributes (nationality, birth year, gender etc.). No information is reported on marital status, number of dependents, education levels, hours of work etc.

Information on establishments includes location and industry code.

References

Beissinger, T., & Egger, H. (2004). Dynamic Wage Bargaining If Benefits Are Tied to Individual Wages. *Oxford Economic Papers*, *56*(3), 437–460. Retrieved from https://www-jstor-org.acces-distant.sciences-po.fr/stable/3488924

Binmore, K., Rubinstein, A., & Wolinsky, A. (1986). The Nash Bargaining Solution in Economic Modelling. *The RAND Journal of Economics*, *17*(2), 176–188. Retrieved from https://www-jstor-org.acces-distant.sciences-po.fr/stable/2555382

Chodorow-Reich, G., Coglianese, J., & Karabarbounis, L. (2019). The macro effects of unemployment benefit extensions: A measurement error approach. *Quarterly Journal of Economics*, *134*(1), 227-279. Retrieved from https://academic.oup.com/qje/article-pdf/134/1/227/27494543/qjy018.pdf (Replication folder.)

Christl, M. (2020). A beveridge curve decomposition for austria: did the liberalisation of the austrian labour market shift the beveridge curve? *Journal for Labour Market Research*, *54*(1), 1–15.

Del Bono, E., & Weber, A. (2008). Do wages compensate for anticipated working time restrictions? evidence from seasonal employment in austria. *Journal of Labor Economics*, *26*(1), 181–221. Retrieved from http://www.jstor.org/stable/10.1086/522070

Ehrenberg, R., & Oaxaca, R. (1976). Unemployment insurance, duration of unemployment, and subsequent wage gain. *American Economic Review*, *66*(5), 754-66. Retrieved from https://EconPapers.repec.org/RePEc:aea:aecrev:v:66:y:1976:i:5:p:754-66

Fink, M., Segalla, E., Weber, A., & Zulehner, C. (2010, April). *Extracting Firm Information from Administrative Records: The ASSD Firm Panel* (NRN working papers No. 2010-04). The Austrian Center for Labor Economics and the Analysis of the Welfare State, Johannes Kepler University Linz, Austria. Retrieved from https://ideas.repec.org/p/jku/nrnwps/2010_04.html

Fredriksson, P., & Söderström, M. (2020). The equilibrium impact of unemployment insurance on unemployment: Evidence from a non-linear policy rule. *Journal of Public Economics*, *187*, 104199. Retrieved from https://www.sciencedirect.com/science/article/pii/S0047272720300633 doi: https://doi.org/10.1016/j.jpubeco.2020.104199

Hagedorn, M., Karahan, F., Manovskii, I., & Mitman, K. (2013, October). *Unemployment Benefits and Unemployment in the Great Recession: The Role of Macro Effects* (NBER Working Papers No. 19499). National Bureau of Economic Research, Inc. Retrieved from https://ideas.repec.org/p/nbr/nberwo/19499.html

Hamermesh, D. S. (1979). Entitlement effects, unemployment insurance and employment decisions. *Economic Inquiry*, *17*(3), 317-332. Retrieved from https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1465-7295.1979.tb00532.x doi: 10.1111/j.1465-7295.1979.tb00532.x

Jäger, S., Schoefer, B., Young, S., & Zweimüller, J. (2020, 05). Wages and the Value of Nonemployment*. *The Quarterly Journal of Economics*. Retrieved from https://doi.org/10.1093/qje/qjaa016 (qjaa016) doi: 10.1093/qje/qjaa016

Lalive, R., Landais, C., & Zweimüller, J. (2015, December). Market Externalities of Large Unemployment Insurance Extension Programs. *American Economic Review*, *105*(12), 3564-3596. Retrieved from https://ideas.repec.org/a/aea/aecrev/v105y2015i12p3564-96.html

Landais, C., Michaillat, P., & Saez, E. (2018, May). A macroeconomic approach to optimal unemployment insurance: Theory. *American Economic Journal: Economic Policy*, *10*(2), 152-81. Retrieved from https://www.aeaweb.org/articles?id=10.1257/pol.20150088 doi: 10.1257/pol.20150088

Malcomson, J. M. (1999). Individual employment contracts. In O. Ashenfelter & D. Card (Eds.), *Handbook of labor economics* (1st ed., Vols. 3, Part B, p. 2291-2372). Elsevier. Retrieved from https://EconPapers.repec.org/RePEc:eee:labchp:3-35

Mortensen, D. T., & Pissarides, C. A. (1994). Job Creation and Job Destruction in the Theory of Unemployment. *The Review of Economic Studies*, *61*(3), 397–415. Retrieved from https://www-jstor-org.acces-distant.sciences-po.fr/stable/2297896

Nekoei, A., & Weber, A. (2017). Does extending unemployment benefits improve job quality? *American Economic Review*, *107*(2), 527–61.

Petrongolo, B., & Pissarides, C. A. (2001, June). Looking into the black box: A survey of the matching function. *Journal of Economic Literature*, *39*(2), 390-431. Retrieved from https://www.aeaweb.org/articles?id=10.1257/jel.39.2.390 doi: 10.1257/jel.39.2.390

Schmieder, J. F., von Wachter, T., & Bender, S. (2016). The Effect of Unemployment Benefits and Nonemployment Durations on Wages. *The American Economic Review*, *106*(3), 739–777. Retrieved from https://www-jstor-org.acces-distant.sciences-po.fr/stable/43821469

Schmieder, J. F., von Wachter, T. M., & Heining, J. (2022, June). *The Costs of Job Displacement over the Business Cycle and Its Sources: Evidence from Germany* (NBER Working Papers No. 30162). National Bureau of Economic Research, Inc. Retrieved from https://ideas.repec.org/p/nbr/nberwo/30162.html

Tatsiramos, K., & van Ours, J. C. (2014). Labor Market Effects of Unemployment Insurance Design. *Journal of Economic Surveys*, *28*(2), 284-311. Retrieved from https://onlinelibrary.wiley.com/doi/abs/10.1111/joes.12005 doi: 10.1111/joes.12005

G Supplementary material: additional tables and figures

G.1 Summary statistics for the analysis sample (bandwidth = 20 days)

Table 22: Summary statistics by group (Pre/Post × Reform/Control) [bandwidth = 20 days]
Including observations that involve individuals who are present in multiple years

	Reform = 0		Reform = 1	
	Post = 0	Post = 1	Post = 0	Post = 1
Female	.304 (0.460) [0; 1]	.45 (0.498) [0; 1]	.347 (0.477) [0; 1]	.463 (0.499) [0; 1]
Age	38.2 (8.476) [24; 56]	38.8 (8.490) [25; 56]	38 (8.458) [24; 56]	39.3 (8.133) [25; 56]
Austrian (Y-2)	.624 (0.484) [0; 1]	.635 (0.481) [0; 1]	.558 (0.497) [0; 1]	.609 (0.488) [0; 1]
Earnings (Y-2)	16, 919 (2, 708) [10, 005; 21, 528]	16, 640 (2, 823) [10, 014; 21, 523]	16, 758 (2, 603) [9, 966; 19, 980]	16, 407 (2, 623) [9, 993; 19, 987]
Earnings (reemployment)	20, 057 (6, 285) [4, 549; 53, 940]	19, 298 (6, 217) [4, 549; 53, 940]	19, 233 (6, 234) [4, 640; 45, 649]	19, 207 (6, 116) [4, 755; 44, 400]
White-collar job	.0992 (0.299) [0; 1]	.148 (0.355) [0; 1]	.108 (0.310) [0; 1]	.141 (0.348) [0; 1]
Emp. days in 18m before UIB spell	385 (107.395) [0; 549]	419 (103.494) [0; 549]	388 (109.310) [0; 550]	420 (97.728) [62; 550]
Time to entry	92.9 (114.197) [1; 1330]	93.6 (97.620) [1; 1150]	90.5 (115.088) [1; 741]	92.1 (91.310) [1; 730]
Number of obs.	2,338	3,179	464	704

Table 23: Summary statistics by group (Pre/Post × Reform/Control) [bandwidth = 20 days]
Excluding all observations that involve individuals who are present in multiple years

	Reform = 0		Reform = 1	
	Post = 0	Post = 1	Post = 0	Post = 1
Female	.292 (0.455) [0; 1]	.39 (0.488) [0; 1]	.339 (0.474) [0; 1]	.395 (0.489) [0; 1]
Age	37.6 (8.471) [24; 56]	37.9 (8.609) [25; 56]	37.7 (8.531) [24; 56]	38.3 (8.256) [25; 56]
Austrian (Y-2)	.623 (0.485) [0; 1]	.655 (0.476) [0; 1]	.535 (0.499) [0; 1]	.63 (0.483) [0; 1]
Earnings (Y-2)	16,956 (2,710) [10,005; 21,528]	16,732 (2,903) [10,014; 21,523]	16,824 (2,580) [9,966; 19,978]	16,487 (2,633) [10,073; 19,976]
Earnings (reemployment)	20,406 (6,520) [4,549; 53,940]	19,863 (6,788) [4,549; 53,940]	19,437 (6,521) [4,640; 45,649]	20,039 (6,575) [4,755; 44,400]
White-collar job	.0938 (0.292) [0; 1]	.145 (0.352) [0; 1]	.0971 (0.297) [0; 1]	.138 (0.345) [0; 1]
Emp. days in 18m before UIB spell	380 (110.565) [0; 549]	411 (111.871) [0; 549]	386 (112.782) [0; 550]	411 (107.142) [62; 550]
Time to entry	98.7 (115.881) [1; 945]	98.1 (108.993) [1; 1150]	97.4 (122.208) [1; 741]	96.1 (105.410) [1; 730]
Number of obs.	1,909	2,267	381	479

Table 24: Summary statistics by sample year [bandwidth = 20 days]
Including observations that involve individuals who are present in multiple years

Sample year	Y = 1999 (control)	Y = 2000 (control)	Y = 2001 (reform)	Y = 2002 (control)	Y = 2003 (control)	Y = 2004 (control)
Female	.367	.396	.417	.413	.39	.374
	(0.482)	(0.489)	(0.493)	(0.493)	(0.488)	(0.484)
	[0; 1]	[0; 1]	[0; 1]	[0; 1]	[0; 1]	[0; 1]
Age	37.8	37.8	38.8	38.8	39.5	39
	(8.346)	(8.318)	(8.283)	(8.578)	(8.471)	(8.654)
	[24; 56]	[24; 56]	[24; 56]	[24; 56]	[24; 56]	[24; 56]
Austrian (Y-2)	.601	.616	.589	.625	.641	.682
	(0.490)	(0.486)	(0.492)	(0.484)	(0.480)	(0.466)
	[0; 1]	[0; 1]	[0; 1]	[0; 1]	[0; 1]	[0; 1]
Earnings (Y-2)	16, 223	16, 099	16, 546	16, 760	17, 259	17, 750
	(2, 400)	(2, 598)	(2, 620)	(2, 647)	(2, 906)	(3, 055)
	[10, 291; 19, 382]	[10, 005; 19, 618]	[9, 966; 19, 987]	[10, 192; 20, 355]	[10, 148; 21, 010]	[10, 187; 21, 528]
Earnings (reemployment)	18, 830	19, 178	19, 217	19, 716	20, 138	20, 526
	(5, 787)	(6, 133)	(6, 160)	(6, 438)	(6, 252)	(6, 616)
	[4, 549; 49, 700]	[4, 640; 48, 300]	[4, 640; 45, 649]	[4, 841; 47, 897]	[4, 966; 53, 940]	[5, 076; 52, 635]
White-collar job	.114	.121	.128	.134	.127	.145
	(0.318)	(0.326)	(0.334)	(0.340)	(0.333)	(0.353)
	[0; 1]	[0; 1]	[0; 1]	[0; 1]	[0; 1]	[0; 1]
Emp. days in 18m before UIB spell	403	404	408	404	409	403
	(107.959)	(104.423)	(103.635)	(107.124)	(104.000)	(108.996)
	[0; 549]	[0; 549]	[0; 550]	[0; 549]	[48; 549]	[0; 549]
Time to entry	96.9	89.5	91.5	95.2	94.8	90.1
	(109.330)	(96.341)	(101.380)	(113.792)	(104.114)	(100.117)
	[1; 1018]	[1; 815]	[1; 741]	[1; 1150]	[1; 1330]	[1; 1008]
Number of obs.	1,214	1,228	1,168	1,092	1,033	950

Table 25: Summary statistics by sample year [bandwidth = 20 days]
Excluding all observations that involve individuals who are present in multiple years

Sample year	Y = 1999 (control)	Y = 2000 (control)	Y = 2001 (reform)	Y = 2002 (control)	Y = 2003 (control)	Y = 2004 (control)
Female	.322 (0.468) [0; 1]	.367 (0.482) [0; 1]	.37 (0.483) [0; 1]	.382 (0.486) [0; 1]	.332 (0.471) [0; 1]	.321 (0.467) [0; 1]
Age	37.5 (8.524) [24; 56]	37.1 (8.332) [24; 56]	38 (8.379) [24; 56]	37.9 (8.674) [24; 56]	38.6 (8.504) [24; 56]	37.9 (8.691) [24; 56]
Austrian (Y-2)	.609 (0.488) [0; 1]	.632 (0.483) [0; 1]	.588 (0.492) [0; 1]	.632 (0.483) [0; 1]	.648 (0.478) [0; 1]	.693 (0.462) [0; 1]
Earnings (Y-2)	16, 388 (2, 382) [10, 291; 19, 382]	16, 206 (2, 645) [10, 005; 19, 618]	16, 637 (2, 613) [9, 966; 19, 978]	16, 780 (2, 703) [10, 192; 20, 355]	17, 362 (2, 987) [10, 148; 21, 010]	17, 771 (3, 162) [10, 187; 21, 528]
Earnings (reemployment)	19, 329 (6, 086) [4, 549; 49, 700]	19, 749 (6, 426) [4, 640; 48, 300]	19, 773 (6, 554) [4, 640; 45, 649]	20, 305 (7, 061) [4, 841; 47, 897]	20, 673 (6, 814) [4, 966; 53, 940]	20, 859 (7, 030) [5, 076; 52, 635]
White-collar job	.109 (0.312) [0; 1]	.12 (0.325) [0; 1]	.12 (0.325) [0; 1]	.122 (0.328) [0; 1]	.12 (0.326) [0; 1]	.141 (0.348) [0; 1]
Emp. days in 18m before UIB spell	398 (111.615) [0; 549]	396 (109.101) [0; 549]	400 (110.304) [0; 550]	395 (114.891) [0; 549]	400 (111.809) [48; 549]	394 (115.053) [0; 549]
Time to entry	101 (116.675) [1; 1018]	92.1 (101.677) [1; 694]	96.6 (113.093) [1; 741]	103 (122.582) [1; 1150]	101 (109.020) [1; 835]	95.1 (110.376) [1; 1008]
Number of obs.	983	945	860	777	739	732

Table 26: Sector of reemployment [bandwidth = 20 days]
Including observations that involve individuals who are present in multiple years

	Reform = 0		Reform = 1	
	Post = 0	Post = 1	Post = 0	Post = 1
Accommodation and food service activities	17.5%	26.9%	18.8%	24.9%
Activities of extraterritorial organisations and bodies	0.0%	0.0%	0.0%	0.0%
Activities of households as employers; undifferentiated goods - and services - producing activities of households for own use	0.1%	0.3%	0.4%	0.0%
Administrative and support service activities	21.1%	13.6%	21.2%	13.9%
Agriculture, forestry and fishing	5.4%	2.7%	2.6%	3.4%
Arts, entertainment and recreation	1.1%	1.1%	1.8%	0.7%
Construction	16.9%	17.0%	16.2%	19.4%
Education	3.6%	1.2%	4.8%	0.7%
Electricity, gas, steam and air conditioning supply	0.1%	0.1%	0.0%	0.0%
Financial and insurance activities	0.1%	0.1%	0.0%	0.3%
Human health and social work activities	1.1%	0.7%	0.7%	1.1%
Information and communication	0.6%	0.4%	0.4%	0.3%
Manufacturing	7.4%	9.1%	6.1%	9.2%
Mining and quarrying	0.3%	0.3%	0.0%	0.3%
Other services activities	1.2%	1.4%	0.4%	1.7%
Professional, scientific and technical activities	1.3%	1.2%	1.1%	1.4%
Public administration and defence; compulsory social security	4.5%	4.7%	5.0%	4.2%
Real estate activities	0.6%	0.6%	0.4%	0.6%
Transporting and storage	12.2%	9.5%	14.2%	10.1%
Water supply; sewerage; waste managment and remediation activities	0.2%	0.3%	0.4%	0.4%
Wholesale and retail trade; repair of motor vehicles and motorcycles	4.7%	8.8%	5.3%	7.3%
Number of obs.	2,338	3,179	464	704

Table 27: Sector of reemployment [bandwidth = 20 days]
Excluding all observations that involve individuals who are present in multiple years

	Reform = 0		Reform = 1	
	Post = 0	Post = 1	Post = 0	Post = 1
Accommodation and food service activities	16.7%	20.9%	18.4%	17.6%
Activities of households as employers; undifferentiated goods - and services - producing activities of households for own use	0.1%	0.2%	0.5%	0.0%
Administrative and support service activities	23.0%	16.1%	22.9%	17.4%
Agriculture, forestry and fishing	4.1%	1.6%	1.6%	2.3%
Arts, entertainment and recreation	1.2%	1.1%	2.1%	0.8%
Construction	18.4%	19.0%	18.7%	22.2%
Education	2.4%	1.3%	2.9%	0.8%
Electricity, gas, steam and air conditioning supply	0.1%	0.1%	0.0%	0.0%
Financial and insurance activities	0.1%	0.1%	0.0%	0.2%
Human health and social work activities	1.3%	1.0%	0.8%	1.7%
Information and communication	0.5%	0.5%	0.3%	0.2%
Manufacturing	8.2%	9.7%	6.4%	8.5%
Mining and quarrying	0.3%	0.4%	0.0%	0.4%
Other services activities	1.0%	0.9%	0.3%	1.5%
Professional, scientific and technical activities	1.3%	1.5%	1.3%	1.7%
Public administration and defence; compulsory social security	4.8%	5.3%	5.3%	4.7%
Real estate activities	0.7%	0.6%	0.3%	0.6%
Transporting and storage	11.3%	10.1%	12.8%	11.9%
Water supply; sewerage; waste managment and remediation activities	0.3%	0.4%	0.5%	0.6%
Wholesale and retail trade; repair of motor vehicles and motorcycles	4.4%	9.1%	4.8%	6.8%
Number of obs.	1,909	2,267	381	479

Table 28: State (Bundesland) of reemployment [bandwidth = 20 days]

(a) *Including observations that involve individuals who are present in multiple years*

	Reform = 0		Reform = 1	
	Post = 0	Post = 1	Post = 0	Post = 1
Unknown	0.8%	0.6%	1.1%	0.3%
Burgenland	3.3%	4.6%	3.4%	4.8%
Kärnten	12.8%	14.9%	11.0%	15.1%
Niederösterreich	14.8%	17.4%	10.8%	16.3%
Oberösterreich	15.7%	15.7%	16.6%	18.6%
Salzburg	10.4%	7.1%	11.6%	7.8%
Steiermark	12.6%	16.7%	11.4%	15.9%
Tirol	15.6%	11.2%	17.2%	9.8%
Vorarlberg	2.4%	1.4%	3.2%	1.4%
Wien	11.7%	10.4%	13.6%	9.9%
Number of obs.	2,338	3,179	464	704

(b) *Excluding all observations that involve individuals who are present in multiple years*

	Reform = 0		Reform = 1	
	Post = 0	Post = 1	Post = 0	Post = 1
Unknown	0.9%	0.7%	1.3%	0.4%
Burgenland	2.8%	3.9%	2.9%	3.3%
Kärnten	11.8%	13.4%	10.0%	12.9%
Niederösterreich	14.5%	18.0%	11.0%	16.9%
Oberösterreich	16.9%	16.4%	17.6%	19.6%
Salzburg	10.6%	7.7%	12.3%	8.6%
Steiermark	13.0%	14.8%	11.5%	13.8%
Tirol	14.6%	11.2%	15.7%	10.0%
Vorarlberg	2.6%	1.5%	3.4%	1.7%
Wien	12.3%	12.5%	14.2%	12.7%
Number of obs.	1,909	2,267	381	479

G.2 PLACEBO Difference-in-differences estimation varying main covariates: estimating variants of equation (5) using OLS with observations from sample years (2000, 2002) as placebo treatment and observations from sample years (1999, 2003, 2004) as control

Table 29: PLACEBO Difference-in-Differences estimation varying main control variables
Including observations that involve individuals who are present in multiple years

	Dependent variable: Earnings (reemployment)					
	(1)	(2)	(3)	(4)	(5)	(6)
Post	−212.22	−181.15	−181.94	−266.28	−238.03	−238.26
	(222.80)	(213.23)	(213.66)	(210.70)	(201.92)	(202.36)
Reform	−169.77	157.80	111.90	−145.20	158.57	117.85
	(242.66)	(236.40)	(236.71)	(226.40)	(221.64)	(221.77)
Post × Reform	−87.51	−30.34	−25.89	−143.71	−106.69	−103.90
	(317.24)	(306.89)	(307.32)	(299.97)	(290.85)	(291.14)
Earnings (Y-2)		0.64			0.59	
		(0.03)			(0.03)	
Log(Earnings (Y-2))			9796.21			9039.12
			(536.73)			(522.89)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Sector FE	No	No	No	Yes	Yes	Yes
Bundesland FE	No	No	No	Yes	Yes	Yes
Number of obs.	5,517	5,517	5,517	5,466	5,466	5,466
Adjusted R^2	0.15	0.22	0.22	0.21	0.28	0.27

Table 30: PLACEBO Difference-in-Differences estimation varying main control variables
Excluding all observations that involve individuals who are present in multiple years

	Dependent variable: Earnings (reemployment)				
Bandwidth	10 days	20 days	30 days	40 days	50 days
UIB claim starts Post = 0 Post = 1	 22 Dec - 31 Dec 1 Jan - 10 Jan	 12 Dec - 31 Dec 1 Jan - 20 Jan	 2 Dec - 31 Dec 1 Jan - 30 Jan	 22 Nov - 31 Dec 1 Jan - 9 Feb	 12 Nov - 31 Dec 1 Jan - 19 Feb
Post	−183.22 (355.32)	−229.53 (236.39)	−264.11 (192.85)	−299.24 (167.70)	−153.12 (153.28)
Reform	587.37 (434.00)	287.08 (258.54)	260.60 (195.24)	210.29 (153.70)	190.57 (128.28)
Post × Reform	−545.07 (542.52)	5.69 (359.93)	123.23 (300.87)	158.36 (257.39)	100.02 (234.98)
Earnings (Y-2)	0.48 (0.06)	0.51 (0.04)	0.54 (0.03)	0.61 (0.03)	0.64 (0.02)
Controls	Yes	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	Yes	Yes	Yes
Bundesland FE	Yes	Yes	Yes	Yes	Yes
Number of obs.	2,055	4,131	5,852	8,040	10,213
Adjusted R^2	0.24	0.26	0.25	0.26	0.26

G.3 Model-predicted average wage effect varying the parameter values

Table 31: Average wage effect varying ρ

Calibration: $\rho = 0.0001$, $\frac{\kappa}{y} = 14.6$, $\mu = 0.0107$, $\frac{a}{y} = 0.103$, $\frac{z}{y} = 0.213$			
$\xi = 0.0$ $\left(\frac{u_0}{u} = 0.37, \quad \frac{w_{p0}}{y} = 0.66\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.293	0.562	-0.194
Total Effect	0.179	0.506	-0.407
$\xi = 0.0047$ $\left(\frac{u_0}{u} = 0.61, \quad \frac{w_{p0}}{y} = 0.6\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.0323	0.191	-0.0473
Total Effect	0.0297	0.189	-0.05

Calibration: $\rho = 1.0e-5$, $\frac{\kappa}{y} = 15.6$, $\mu = 0.0107$, $\frac{a}{y} = 0.0883$, $\frac{z}{y} = 0.213$			
$\xi = 0.0$ $\left(\frac{u_0}{u} = 0.37, \quad \frac{w_{p0}}{y} = 0.67\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.285	0.552	-0.194
Total Effect	0.164	0.493	-0.42
$\xi = 0.0047$ $\left(\frac{u_0}{u} = 0.61, \quad \frac{w_{p0}}{y} = 0.6\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.0307	0.183	-0.0448
Total Effect	0.0282	0.181	-0.0474

Calibration: $\rho = 0.001$, $\frac{\kappa}{y} = 9.03$, $\mu = 0.0107$, $\frac{a}{y} = 0.19$, $\frac{z}{y} = 0.215$			
$\xi = 0.0$ $\left(\frac{u_0}{u} = 0.37, \quad \frac{w_{p0}}{y} = 0.65\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.358	0.637	-0.177
Total Effect	0.284	0.597	-0.313
$\xi = 0.0047$ $\left(\frac{u_0}{u} = 0.61, \quad \frac{w_{p0}}{y} = 0.6\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.0544	0.264	-0.0602
Total Effect	0.051	0.261	-0.0636

Table 32: Average wage effect varying γ

Calibration: $\gamma = 0.1$, $\frac{a}{y} = 0.103$, $\frac{z}{y} = 0.213$			
$\xi = 0.0 \ \left(\frac{u_0}{u} = 0.37, \quad \frac{w_{p0}}{y} = 0.66\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.293	0.562	-0.194
Total Effect	0.179	0.506	-0.407
$\xi = 0.0047 \ \left(\frac{u_0}{u} = 0.61, \quad \frac{w_{p0}}{y} = 0.6\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.0323	0.191	-0.0473
Total Effect	0.0297	0.189	-0.05

Calibration: $\gamma = 0.01$, $\frac{a}{y} = 0.364$, $\frac{z}{y} = 0.215$			
$\xi = 0.0 \ \left(\frac{u_0}{u} = 0.37, \quad \frac{w_{p0}}{y} = 0.63\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.124	0.498	-1.21
Total Effect	0.103	0.482	-1.25
$\xi = 0.0047 \ \left(\frac{u_0}{u} = 0.61, \quad \frac{w_{p0}}{y} = 0.6\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	-0.0484	0.151	-0.152
Total Effect	-0.0476	0.152	-0.152

Calibration: $\gamma = 0.2$, $\frac{a}{y} = -0.0438$, $\frac{z}{y} = 0.0$			
$\xi = 0.0 \ \left(\frac{u_0}{u} = 0.37, \quad \frac{w_{p0}}{y} = 0.69\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.253	0.45	0.00888
Total Effect	0.0512	0.375	-0.403
$\xi = 0.0047 \ \left(\frac{u_0}{u} = 0.61, \quad \frac{w_{p0}}{y} = 0.6\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.0623	0.183	0.00357
Total Effect	0.055	0.177	-0.00406

Table 33: Average wage effect varying η

Calibration: $\eta = 0.8$, $\frac{\kappa}{y} = 14.6$, $\mu = 0.0107$, $\frac{a}{y} = 0.103$, $\frac{z}{y} = 0.213$			
$\xi = 0.0$ $\left(\frac{u_0}{u} = 0.37, \quad \frac{w_{p0}}{y} = 0.66\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.293	0.562	-0.194
Total Effect	0.179	0.506	-0.407
$\xi = 0.0047$ $\left(\frac{u_0}{u} = 0.61, \quad \frac{w_{p0}}{y} = 0.6\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.0323	0.191	-0.0473
Total Effect	0.0297	0.189	-0.05
Calibration: $\eta = 0.5$, $\frac{\kappa}{y} = 14.6$, $\mu = 0.0195$, $\frac{a}{y} = 0.103$, $\frac{z}{y} = 0.213$			
$\xi = 0.0$ $\left(\frac{u_0}{u} = 0.37, \quad \frac{w_{p0}}{y} = 0.66\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.293	0.562	-0.194
Total Effect	-0.142	0.359	-1.06
$\xi = 0.0047$ $\left(\frac{u_0}{u} = 0.61, \quad \frac{w_{p0}}{y} = 0.6\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.0323	0.191	-0.0473
Total Effect	0.0238	0.184	-0.056
Calibration: $\eta = 0.9$, $\frac{\kappa}{y} = 14.6$, $\mu = 0.00875$, $\frac{a}{y} = 0.103$, $\frac{z}{y} = 0.213$			
$\xi = 0.0$ $\left(\frac{u_0}{u} = 0.37, \quad \frac{w_{p0}}{y} = 0.66\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.293	0.562	-0.194
Total Effect	0.242	0.537	-0.289
$\xi = 0.0047$ $\left(\frac{u_0}{u} = 0.61, \quad \frac{w_{p0}}{y} = 0.6\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.0323	0.191	-0.0473
Total Effect	0.0311	0.19	-0.0485

Table 34: Average wage effect varying $\frac{\delta}{\delta+\nu}$

Calibration: $\delta = 0.000905$, $\nu = 0.000445$, $\frac{a}{y} = 0.103$, $\frac{z}{y} = 0.213$			
$\xi = 0.0$ $\left(\frac{u_0}{u} = 0.37, \quad \frac{w_{p0}}{y} = 0.66\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.293	0.562	-0.194
Total Effect	0.179	0.506	-0.407
$\xi = 0.0047$ $\left(\frac{u_0}{u} = 0.61, \quad \frac{w_{p0}}{y} = 0.6\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.0323	0.191	-0.0473
Total Effect	0.0297	0.189	-0.05

Calibration: $\delta = 0.000427$, $\nu = 0.000923$, $\frac{a}{y} = 0.113$, $\frac{z}{y} = 0.215$			
$\xi = 0.0$ $\left(\frac{u_0}{u} = 0.37, \quad \frac{w_{p0}}{y} = 0.62\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.112	0.478	-0.0762
Total Effect	0.0681	0.452	-0.129
$\xi = 0.0047$ $\left(\frac{u_0}{u} = 0.61, \quad \frac{w_{p0}}{y} = 0.6\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.0132	0.178	-0.0216
Total Effect	0.0122	0.177	-0.0227

Calibration: $\delta = 0.00122$, $\nu = 0.000135$, $\frac{a}{y} = 0.0964$, $\frac{z}{y} = 0.212$			
$\xi = 0.0$ $\left(\frac{u_0}{u} = 0.37, \quad \frac{w_{p0}}{y} = 0.72\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.455	0.638	-0.302
Total Effect	0.315	0.615	-0.869
$\xi = 0.0047$ $\left(\frac{u_0}{u} = 0.61, \quad \frac{w_{p0}}{y} = 0.6\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.0476	0.202	-0.0648
Total Effect	0.0436	0.198	-0.069

Table 35: Average wage effect varying the targeted labor market tightness

Calibration: $\theta_{p_0} = 0.135$, $\frac{\kappa}{y} = 14.6$, $\mu = 0.0107$, $\frac{a}{y} = 0.103$, $\frac{z}{y} = 0.213$			
$\xi = 0.0$ $\left(\frac{u_0}{u} = 0.37, \quad \frac{w_{p_0}}{y} = 0.66\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.293	0.562	-0.194
Total Effect	0.179	0.506	-0.407
$\xi = 0.0047$ $\left(\frac{u_0}{u} = 0.61, \quad \frac{w_{p_0}}{y} = 0.6\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.0323	0.191	-0.0473
Total Effect	0.0297	0.189	-0.05

Calibration: $\theta_{p_0} = 1.0$, $\frac{\kappa}{y} = 1.98$, $\mu = 0.00716$, $\frac{a}{y} = 0.103$, $\frac{z}{y} = 0.213$			
$\xi = 0.0$ $\left(\frac{u_0}{u} = 0.37, \quad \frac{w_{p_0}}{y} = 0.66\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.293	0.562	-0.194
Total Effect	0.179	0.506	-0.407
$\xi = 0.0047$ $\left(\frac{u_0}{u} = 0.61, \quad \frac{w_{p_0}}{y} = 0.6\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.0323	0.191	-0.0473
Total Effect	0.0297	0.189	-0.05

Calibration: $\theta_{p_0} = 5.0$, $\frac{\kappa}{y} = 0.395$, $\mu = 0.00519$, $\frac{a}{y} = 0.103$, $\frac{z}{y} = 0.213$			
$\xi = 0.0$ $\left(\frac{u_0}{u} = 0.37, \quad \frac{w_{p_0}}{y} = 0.66\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.293	0.562	-0.194
Total Effect	0.179	0.506	-0.407
$\xi = 0.0047$ $\left(\frac{u_0}{u} = 0.61, \quad \frac{w_{p_0}}{y} = 0.6\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.0323	0.191	-0.0473
Total Effect	0.0297	0.189	-0.05

Table 36: Average wage effect varying the targeted labor share

Calibration: $\widehat{\left(\frac{w_{p0}}{y}\right)} = 0.6$, $\frac{\kappa}{y} = 14.6$, $\mu = 0.0107$, $\frac{a}{y} = 0.103$, $\frac{z}{y} = 0.213$			
$\xi = 0.0$ $\left(\frac{u_0}{u} = 0.37, \quad \frac{w_{p0}}{y} = 0.66\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.293	0.562	−0.194
Total Effect	0.179	0.506	−0.407
$\xi = 0.0047$ $\left(\frac{u_0}{u} = 0.61, \quad \frac{w_{p0}}{y} = 0.6\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.0323	0.191	−0.0473
Total Effect	0.0297	0.189	−0.05

Calibration: $\widehat{\left(\frac{w_{p0}}{y}\right)} = 0.4$, $\frac{\kappa}{y} = 21.9$, $\mu = 0.0107$, $\frac{a}{y} = -0.0239$, $\frac{z}{y} = 0.0$			
$\xi = 0.0$ $\left(\frac{u_0}{u} = 0.37, \quad \frac{w_{p0}}{y} = 0.51\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.375	0.585	0.0138
Total Effect	0.137	0.47	−0.522
$\xi = 0.0047$ $\left(\frac{u_0}{u} = 0.61, \quad \frac{w_{p0}}{y} = 0.4\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.0777	0.22	0.00484
Total Effect	0.0715	0.215	−0.00169

Calibration: $\widehat{\left(\frac{w_{p0}}{y}\right)} = 0.8$, $\frac{\kappa}{y} = 7.32$, $\mu = 0.0107$, $\frac{a}{y} = 0.375$, $\frac{z}{y} = 0.285$			
$\xi = 0.0$ $\left(\frac{u_0}{u} = 0.37, \quad \frac{w_{p0}}{y} = 0.85\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.228	0.515	−0.291
Total Effect	0.14	0.497	−0.497
$\xi = 0.0047$ $\left(\frac{u_0}{u} = 0.61, \quad \frac{w_{p0}}{y} = 0.8\right)$	All	UI-eligibles	UI-ineligibles
Partial Effect	0.00863	0.171	−0.0723
Total Effect	0.00786	0.17	−0.0731