LSE Public Empirical Assignment

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1 Data Cleaning

This step is documented in the Stata do-file. For data cleaning, I followed the procedure outlined in the paper. The sample restrictions applied are as follows:

1. Age between **20 and 50 years old**.
2. Not employed for less than a year in their last job.
3. Did not take up **Unemployment Insurance (UI)** within **28 days** after job loss (**Quitters**).
4. Not employed in the **construction industry**.
5. Not recalled to their prior firm.
6. Had **between 1 and 5 years of employment** in the past **five years**.

By applying these filters, we obtain the **exact sample size of 650,922**, as reported in the paper.

2 Institution Background

2.1 RD Cutoffs

Austria's severance pay and unemployment benefit system provides a structured setting for analyzing the impact of job loss policies on reemployment behavior. The system is designed around tenure-based eligibility criteria, which create clear discontinuities that allow for causal inference using a Regression Discontinuity (RD) design.

Severance pay eligibility is based on tenure length. Employees who are laid off after accumulating at least three years of tenure within a company are entitled to severance compensation. The payment is equivalent to two months' salary, made in a lump sum within one month of termination, and is exempt from taxation. Workers who quit voluntarily or are dismissed for cause are not eligible for severance pay. Since eligibility is determined by a

sharp threshold at 36 months, this policy provides an opportunity to apply an RD approach to estimate its impact on unemployment duration and job search behavior.

Austria's unemployment insurance (UI) system also follows a structured framework. Workers qualify for UI benefits if they have been employed for at least twelve months within the two years before job loss. The benefit amounts to 55 percent of the previous wage, subject to minimum and maximum limits. The waiting period before receiving benefits depends on the reason for job separation. Workers who are laid off can receive UI benefits immediately, whereas those who quit or are fired for cause must wait four weeks before collecting benefits.

A key discontinuity in UI duration arises from employment history. Workers with up to 36 months of employment in the past five years are entitled to 20 months of UI benefits. Those with more than 36 months receive 30 months. This threshold further strengthens the RD design by providing another tenure-based cutoff for analyzing the effects of UI on reemployment rates.

Once UI benefits are exhausted, workers may transition to Unemployment Assistance (UA), which provides support at approximately 38 percent of the original UI benefit level.

2.2 RD Validity

To ensure that the RD approach yields valid causal estimates, several empirical checks and robustness tests are conducted. The primary assumption behind the RD design is that workers just below and just above the severance pay and UI eligibility thresholds are comparable in all respects except for their treatment status. If this assumption holds, any observed differences in outcomes can be attributed to the effect of severance pay or UI benefits.

One way to confirm this assumption is by examining whether key worker characteristics, such as age, education, industry, and prior employment experience, remain smoothly distributed around the eligibility threshold. If no sharp changes are observed in these covariates, it strengthens the case for quasi-random assignment at the cutoff. We can observe these results from 1, 2 and 3. These figures are generated by replicating the corresponding figures in the paper.

1 demonstrated that layoff with job tenure is continuous around the cutoff, showing that there's no obvious laying off for the firm before the severance pay eligibility. To strengthen the analysis, the study also focuses on workers laid off in small firms and on cases where multiple individuals were dismissed together. These cases are harder for firm to make selection around the cutoff. The result also support the effect of severance payment. The result may not be surprising, since such strategic layoffs are illegal in Austria, and larger firms must seek approval from the Works Council before terminating employees.

2 and 3 exam the previous characteristics of these two groups. From the graph we can also observe continuity around the cutoff.

Another challenge arises from the presence of double discontinuities due to the simultaneous eligibility criteria for severance pay and UI. Since both policies introduce thresholds, their combined effects must be carefully disentangled. This is achieved by controlling for both severance pay and UI eligibility in the model and by analyzing a subsample where the two thresholds do not overlap. By focusing on workers in firms where only one policy applies at a time, the study ensures that the estimated effects are not confounded by multiple program rules.

Placebo tests further validate the identification strategy by checking for previous job loss where no severance pay was available. Without the jumps in outcomes appear at placebo cutoffs, it provides additional support for the causal interpretation of the main RD estimates.

3 Replication of RD Figures

3.1 Identification

The identification strategy in this study is based on a regression discontinuity (RD) design that exploits the eligibility rule for severance payments. Workers with a tenure of at least three years at the time of job loss are eligible to receive a lump-sum severance payment, while those with shorter tenures are not. This creates a sharp cutoff that allows for causal inference on the effect of severance pay on unemployment duration. The main outcome of interest is the duration of nonemployment, measured as the number of days between the end of the previous job and the start of the next one.

The core result is shown in Figure 4, which plots the effect of severance pay eligibility on the duration of nonemployment. A clear discontinuity is visible at the 36-month cutoff, indicating that workers eligible for severance pay tend to remain unemployed longer than those who are not. This finding is consistent with the hypothesis that receiving a lump-sum payment reduces the immediate financial pressure to search for a new job, thereby extending the job search duration.

In contrast, Figure 6 illustrates the effect of unemployment benefit duration on nonemployment. Here, the discontinuity is based on a separate rule: workers with more than 36 months of employment over the past five years are eligible for 30 months of UI benefits, while those with less are only entitled to 20 months. The figure reveals a similar jump in nonemployment duration, suggesting that extended benefits also lead to longer unemployment spells.

Taken together, these RD figures demonstrate that both severance payments and benefit extensions causally increase the duration of nonemployment. The discontinuities are sharp, the identifying assumptions are well-supported, and the findings are robust to multiple validity checks. This provides strong evidence for the behavioral response of job seekers to liquidity and incentive effects introduced by severance and UI policies.

3.2 Testing

This analysis examines whether differences in severance pay awareness between white-collar and blue-collar workers influence layoff timing near the severance eligibility threshold. The hypothesis suggests that white-collar workers, being more aware of severance policies, may be more likely to receive severance pay, potentially affecting their nonemployment duration. If employers account for this awareness, they might adjust layoff decisions differently for the two groups.

Using a regression discontinuity (RD) framework, the frequency of layoffs is analyzed by previous job tenure for white-collar and blue-collar workers. Figures **??** and 1 illustrate layoff distributions with a vertical line at the 36-month severance eligibility cutoff. The

results show no significant discontinuities at the threshold for either group, indicating that firms do not systematically alter firing decisions to avoid severance payments.

The smooth layoff trends suggest that differences in severance pay awareness do not substantially influence layoff timing. Since white- and blue-collar workers exhibit similar layoff distributions, job type does not appear to be a confounding factor in the RD design. These findings confirm the validity of using severance pay eligibility as a quasi-experimental cutoff to estimate its effect on job search duration.

4 Proportional Hazard Model

5 Proportional Hazard Model and its Application

The Cox Proportional Hazard Model is widely used in survival analysis to examine the effect of covariates on the hazard rate of an event occurring over time. In the context of severance pay and unemployment benefit extensions, this model is particularly useful in evaluating how these policies impact the duration of nonemployment. By estimating the hazard of finding a new job, the model helps capture whether severance payments and benefit extensions influence job seekers' behavior in delaying reemployment.

The primary advantage of using a proportional hazard model in this context lies in its ability to accommodate censored data. Many individuals remain unemployed beyond the observation period, and a standard linear regression would not account for this issue adequately. The Cox model handles right-censored observations naturally, allowing for more accurate estimation of the reemployment hazard. Moreover, the model does not impose a specific parametric form on the baseline hazard function, providing flexibility in assessing the impact of severance pay eligibility and UI extension. This makes it particularly useful in a regression discontinuity framework where sharp policy cutoffs define treatment and control groups.

Despite these advantages, there are several limitations to applying the Cox Proportional Hazard Model in this case. The model relies on the proportional hazards assumption, which requires that the effect of covariates on the hazard rate remains constant over time. However, severance pay and unemployment benefits may have time-varying effects, potentially violating this assumption. If individuals initially reduce their job search efforts after receiving severance pay but later intensify their search as their financial cushion diminishes, the hazard ratio would change over time. Another challenge is the potential endogeneity of severance pay eligibility. If more motivated workers tend to secure jobs before reaching the eligibility threshold, the estimated effect may be confounded by unobserved heterogeneity in worker characteristics.

6 Replication of the Hazard Model

To better understand the impact of severance pay and UI benefit extensions on job-finding hazards, we replicate the Cox Proportional Hazard Model using the empirical framework described in the paper. The model estimates the likelihood of reemployment in the early

weeks following job loss, comparing individuals eligible for severance pay or extended benefits to those who are not.

Figure 5 illustrates the effect of severance pay eligibility on the job-finding hazard. The vertical discontinuity at the 36-month threshold indicates a sharp decline in the likelihood of finding a job for those eligible for severance pay. This suggests that severance payments provide a temporary financial cushion, reducing the immediate pressure to reenter the labor market. The estimated hazard rate shows a decreasing trend post-cutoff, confirming that severance pay leads to longer unemployment durations.

Similarly, Figure 7 presents the effect of UI benefit extensions on job-finding hazards. The discontinuity at 36 months of employment in the past five years demonstrates a reduction in job-finding hazards for individuals eligible for extended UI benefits. This aligns with the hypothesis that longer benefit durations discourage rapid job searches by providing continued income support. The graphical evidence supports the main findings of the paper, reinforcing the argument that financial assistance programs influence the timing of reemployment.

The replication of these results confirms that the Cox model is well-suited for analyzing the relationship between policy interventions and job-finding rates. However, careful robustness checks are required to ensure that the proportional hazard assumption holds. Alternative specifications, such as stratified models or time-varying covariates, may be necessary to account for potential deviations from this assumption.

7 Figures

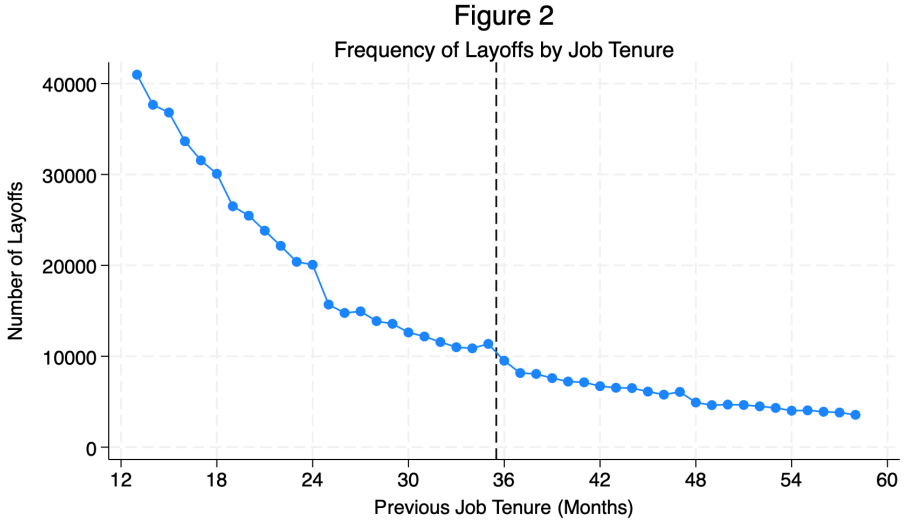

Figure 1

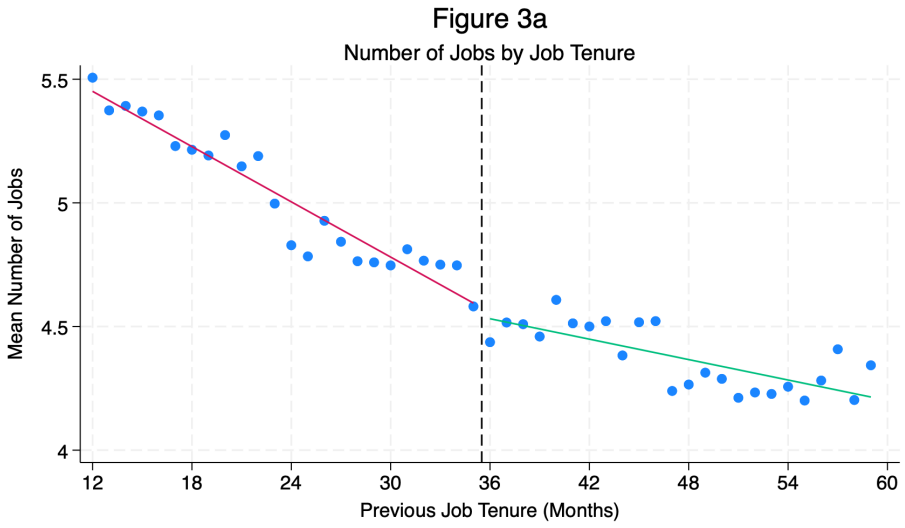

Figure 2

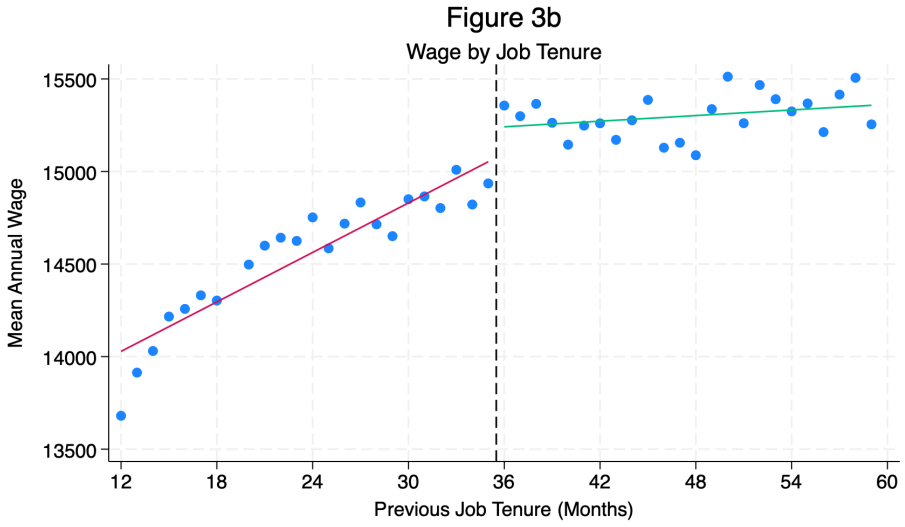

Figure 3

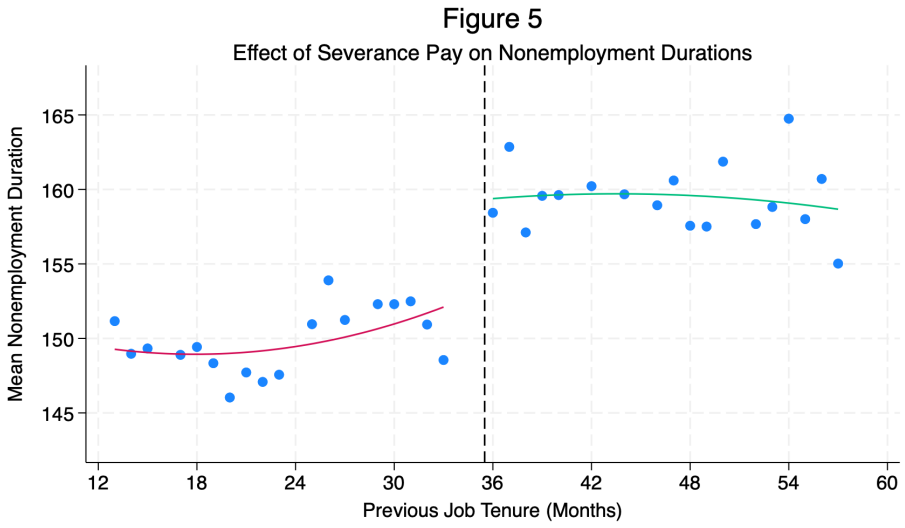

Figure 4

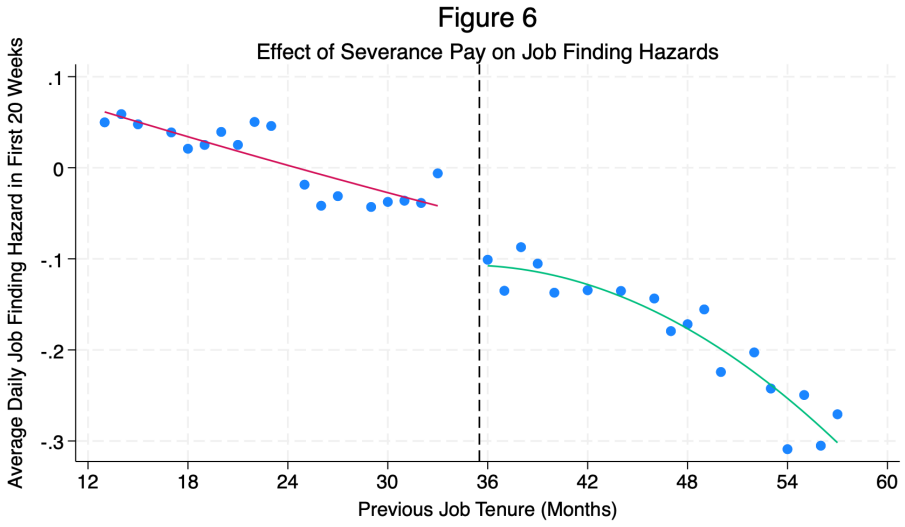

Figure 5

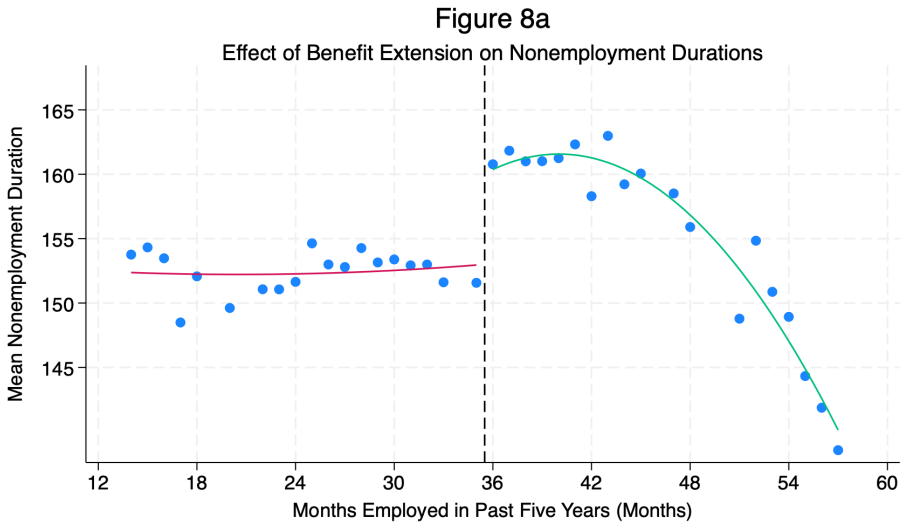

Figure 6

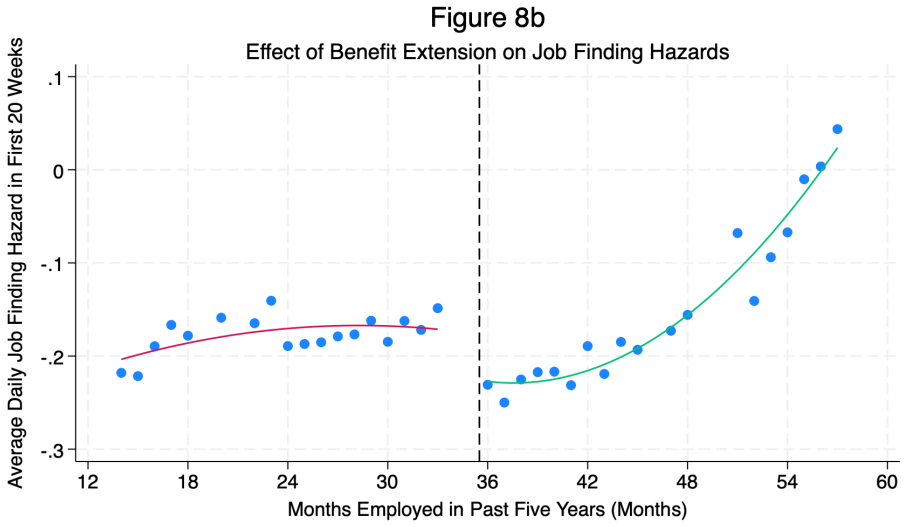

Figure 7

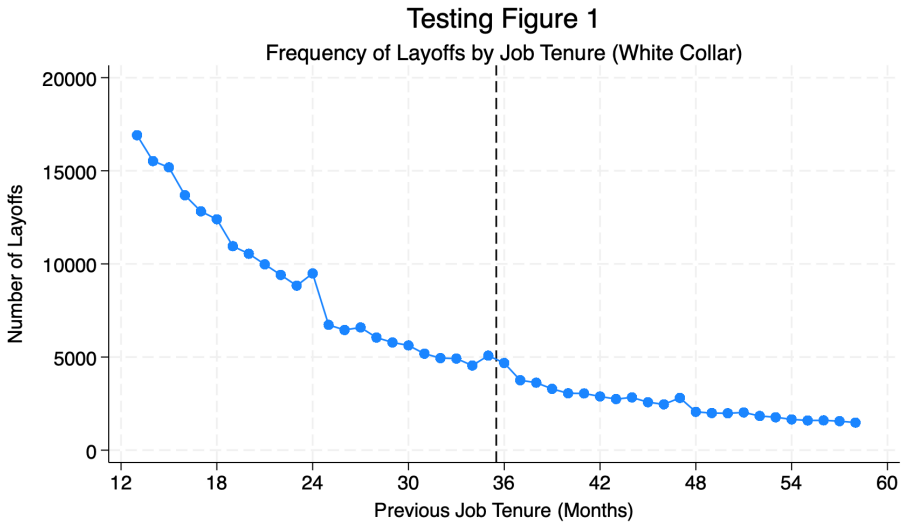

Figure 8

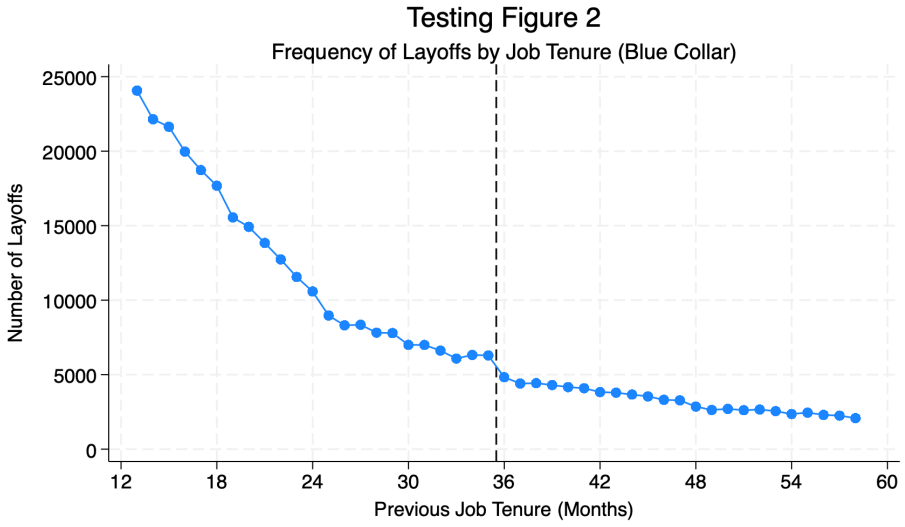

Figure 9