Job Security and Liquid Wealth

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Motivation

- Job loss comes with a large drop in income
- For unemployed workers, liquid savings are a primary source of alternative income
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- Such self-insurance mechanism might determine the nature of jobs after unemployment
- We focus on the type of employment contract

  → Are poor unemployed workers more likely to lose job security by taking on temporary jobs?

  → What are the implications for the wage cost of job loss?

This paper

- **Strategy**: Rich admin data + Unique institutional context + Event-study methodology

  → reasons for job termination to identify **exogenous job loss**: bankruptcies and economic layoffs

  → eligibility rules to lump-sum transfer upon job loss provide **exogenous variation in liquidity**

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  → reasons for job termination to identify **exogenous job loss**: bankruptcies and economic layoffs

  → eligibility rules to lump-sum transfer upon job loss provide **exogenous variation in liquidity**

- **Results**:

  1. One year after displacement, permanent employment by decreases 19%
  2. Eligibility to transfer reduces post-displacement drop in permanent employment by 9pp

     (permanent employment drops by 25% for non-eligible worker, and 16% for eligible workers)
  3. Eligibility effect twice as large among low-liquidity workers (constrained)
  4. Differences in job security explain 21% of the gap in the cost of job loss between eligible and non-eligible workers

Data

Dutch Administrative Data

- Linked **employer-employee** data (2004-2015):
  start and end date, annual wage, temporary/permanent contract, full/part-time, firm size and sector

  de jure definition of job security $\rightarrow$ whether a worker has a permanent or temporary contract

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- Household **wealth** data (2006-2015):

  liquid (savings, shares, bonds) & illiquid (real estate) assets; debt (mortgage, student debt, other)

- **Demographic** data (birth cohort, gender, migration background)

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  liquid (savings, shares, bonds) & illiquid (real estate) assets; debt (mortgage, student debt, other)
- **Demographic** data (birth cohort, gender, migration background)
- **Sample**: Full-time male workers earning a monthly wage $>$ €1000

Displaced and Non-displaced Workers

- **Displaced workers**:
  - workers who involuntarily lost their job (bankruptcies & economic layoffs) in year t
  - between 25 and 50 years old
  - with at least 3 years of tenure with their main employer
  - firm size between 10 and 500 workers

Displaced and Non-displaced Workers

- **Displaced workers**:
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  - firm size between 10 and 500 workers

- **Match** each displaced worker with a worker not displaced in year t
  - have same age and tenure with their main employer
  - belong to same sector, firm size (quintile), prior annual earnings (decile) and wealth (quintile)
  - if matched with multiple controls, one is randomly selected

- 78% of displaced workers matched $\rightarrow$ 38,925 displaced workers, 57% are bankruptcies

▸ displacement events per year

Summary Statistics: Matched Sample

	Non-displaced	Displaced
Age (years)	38.2	38.2
Migrant Background (%)	17.4	19.5
Wealth (000 Euros)		
Savings accounts	25.9	25.0
Liquid wealth	32.7	30.8
Net illiquid wealth	62.5	59.7
Job		
Tenure (years)	9.3	9.3
Annual wage (000 Euros)	42.3	42.0
Permanent contract (%)	98.9	98.8
Firm size	95.2	89.0
Industry (%)		
Manufacturing	33.8	34.1
Wholesale and retail trade	22.4	22.9
Construction	17.8	17.3
Real Estate	16.1	15.9
Transportation	5.8	5.7
Observations	38,396	38,925

▸ Non-displaced: matched vs random sample

▸ Displaced: matched vs full sample

Identifying a Causal Link

Institutional Setting

- **All** displaced workers **receive unemployment insurance**
- **But not all** displaced workers are **eligible** to **lump-sum transfer**:

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- **But not all** displaced workers are **eligible** to **lump-sum transfer**:
  - economic layoffs: if approved by employment agency, workers not eligible to transfer
  - bankruptcies: workers eligible to transfer covering any unpaid salary
- Transfer $\approx$ 1 month's salary, on average, at time of displacement graph

  this allows workers to top up unemployment insurance to 100% of prior wage for 3.5 months

$\rightarrow$ Exploit **one-time liquidity shock** as exogenous variation to liquid wealth

Empirical Framework

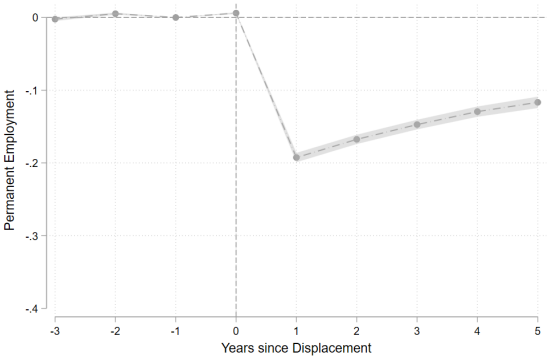
$$y_{idt} = \alpha_i + \gamma_t + \gamma_d + \sum_{j=-3}^{5} \delta_j D_{t=d+j} + \beta X_{idt} + \epsilon_{idt}$$

- y_{idt} = 1 if worker i displaced in year d is a permanent worker in year t, 0 if temporary worker
- $D_{t=d+j}$ = 1 if worker was displaced in year $t-j$
- X_{idt} = age and age^2
- $\alpha_i, \gamma_t, \gamma_d$ = individual, year and displacement-year fixed effects
- δ_{-1} normalized to zero + std. errors clustered at individual level

- δ_j = impact of displacement on permanent work j years after displacement
- Estimated separately for eligible and non-eligible: **differences** in $\delta_j \rightarrow$ **eligibility effect**

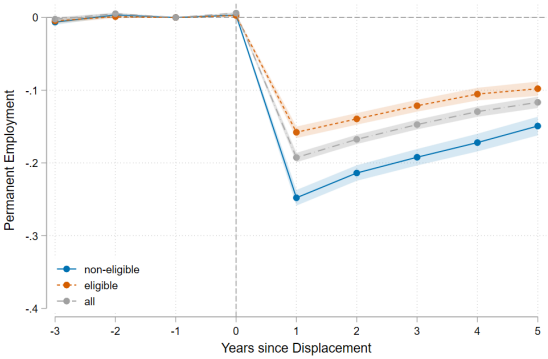
Results

Workers less likely to be in permanent jobs after displacement



- 1 year post layoff, permanent employment is 19% lower for displaced workers (relative to non-displaced)
- Effect only very gradually shrinks to 15% after 5 years

Drop in permanent employment higher for non-eligible workers



- 1 year post job loss, permanent work decreases by 25% for non-eligible versus 16% for eligible
- Difference between eligible and non-eligible persists after five years

▸ Booms vs. Recessions

Concern: Differences between eligible and non-eligible workers

	Eligible	Non-Eligible
Age (years)	37.9	38.7
Migrant Background (%)	17.8	21.7
Wealth (000 Euros)		
Savings accounts	25.4	24.5
Liquid wealth	31.7	29.7
Net illiquid wealth	62.2	56.3
Job		
Tenure (years)	9.2	9.5
Annual wage (000 Euros)	43.1	40.6
Firm size	79.2	101.8
Industry (%)		
Manufacturing	30.6	38.6
Wholesale and retail trade	23.5	22.1
Construction	17.7	17.4
Real Estate	17.1	14.3
Transportation	7.2	3.8

Robustness: Balanced sample of eligible and non-eligible workers

- *Entropy balancing* [Hainmueller, 2012]: Estimate non-negative weights for non-eligible workers such that means of weighted non-eligible sample are identical to means of eligible sample

  (pre-displacement covariates: age, migrant background, liquid and illiquid wealth, tenure, annual wage, sector)

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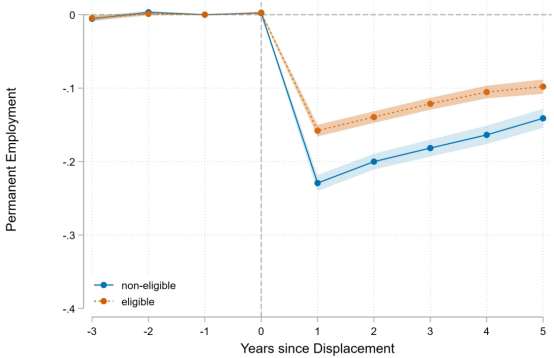

Robustness: Only separations from mass-layoffs

- Gibbons and Katz (1991): If firms can choose whom to lay off, market infers laid-off workers are of low ability
- Focus on mass-layoffs (workforce reduction $\geq$ 30%) $\rightarrow$ minimizes (even further) performance related separations

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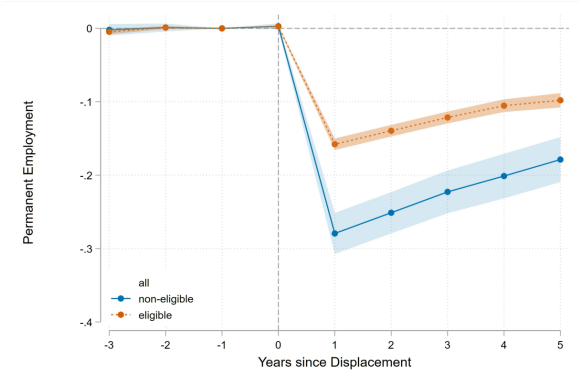
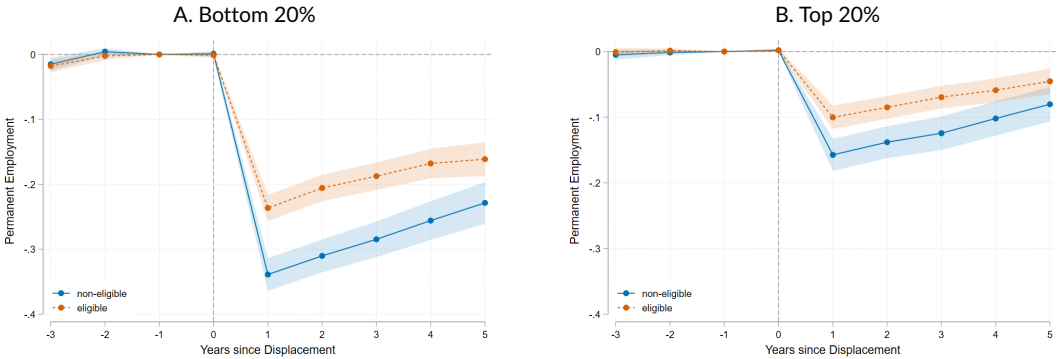


Isolating the role of liquidity

- Estimate eligibility effect for low- & high-liquidity workers
  - Liquid wealth = savings accounts + bonds + shares [Koehne and Kuhn, 2015]
  - **Low-liquidity** workers: Bottom 20% of the distribution (constrained)
  - **High-liquidity** workers: Top 20% of the distribution (unconstrained)
- Liquidity $\rightarrow$ larger eligibility effect for low-liquidity workers

  assumption: other explanations would not necessarily predict a differential effect across high- and low-liquidity workers

Eligibility effect twice as large for low-liquidity workers



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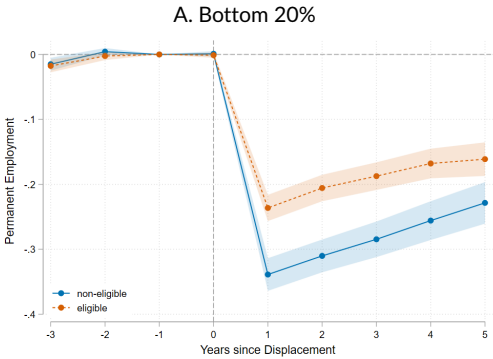

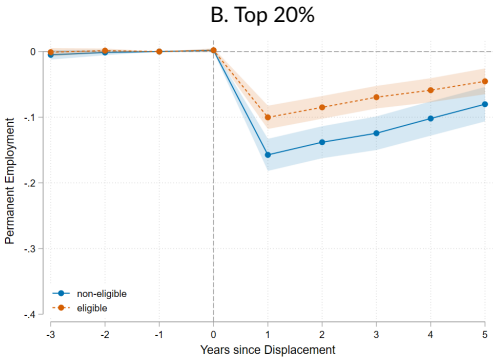

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- Difference more (less) pronounced with narrower (wider) wealth bands

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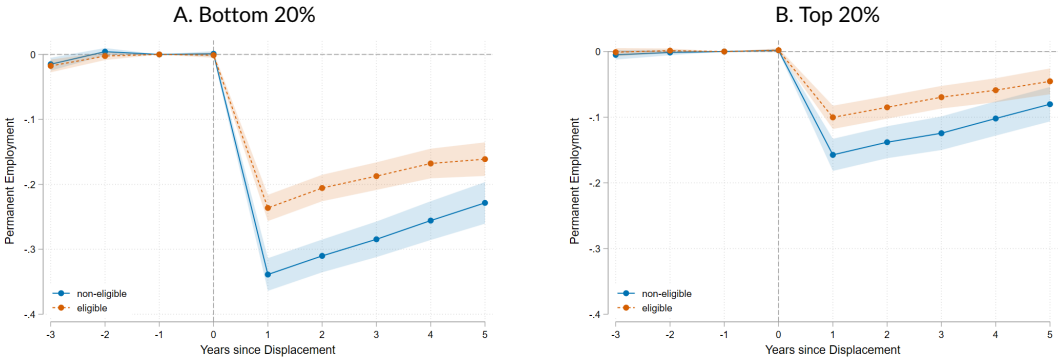
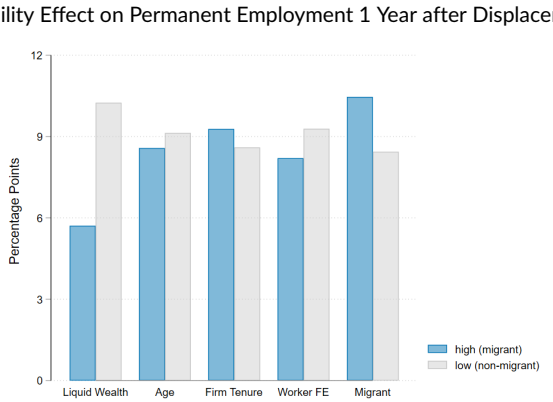


- For bottom 20%, eligibility attenuates drop in permanent employment by 10pp
- For top 20%, no differences in permanent employment within 5 years
- Difference more (less) pronounced with narrower (wider) wealth bands
- Similar effect across illiquid wealth distribution for both low- and high-liquidity

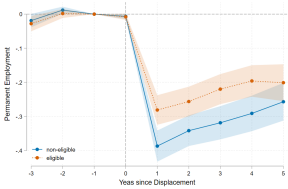
Eligibility effect does not vary across other dimensions



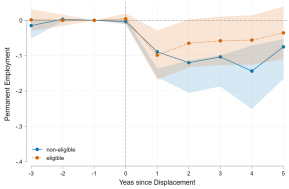
- Eligibility effect = |Δ permanent employment for non-eligible | - |Δ permanent employment for eligible |
- Size of the effect similar across old/young, low-/high-tenure, low-/high type (estimated worker fixed effects)

Differences in eligibility effect do not reflect migrant background

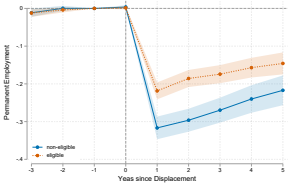
A. Low-Liquidity: Migrant



B. High-Liquidity: Migrant



C. Low-Liquidity: Non-migrant



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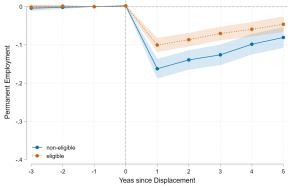

Results robust to alternative specifications

- Alternative definitions of low/high-liquidity workers:
  - only savings accounts or net liquid wealth = liquid assets - debt on credit card & other mortgages
  - liquid wealth relative to prior wage ($\approx$ how long workers can sustain previous expenditure level)
- Alternative samples:
  - no firm size restriction
  - random sample of control workers
  - only displacements between 2007 and 2010
  - include workers with more than one displacement
- Additional controls: sector fixed effects & adults adults in household

Taking Stock

- Larger impact of transfer eligibility for low-liquidity workers (constrained) $\rightarrow$ liquidity-effects

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- Potential **Mechanism**:
  - liquid-constrained workers use temporary work as a self-insurance mechanism
  - transfer alleviates liquidity-constraints $\rightarrow$ allow to prolong search and find more secure job

  $\rightarrow$ eligibility increases non-employment duration by more than 2 weeks for low-wealth (no effect for high-wealth)

▸ table

Implications for the Cost of Job Loss

Measuring the Wage Cost of Job Loss

- **Measurement:** individual-level estimate of wage loss 5y after displacement [Schmieder et al, 2023]

  estimated wage cost = change in wage for displaced worker - change in wage for matched non-displaced worker

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- 5 years after displacement, displaced workers still suffer a 14% loss in wages

- Eligibility to the lump-sum transfer attenuates wage losses in 5pp ($\approx$ 36%)

- Eligibility only attenuates losses for the low-wealth:

  bottom 20%: wage loss lower in 8pp for eligible workers;

  top 20%: no significant difference in wage loss between eligible and non-eligible

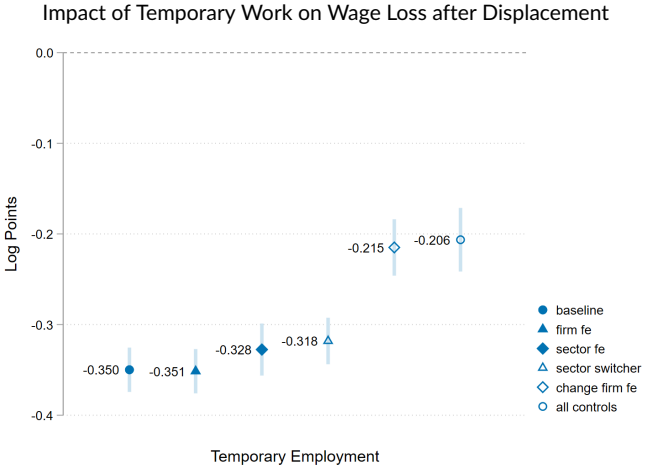
Empirical Framework

$$\Delta w_{idj} = \beta \cdot temporary_{ij} + \alpha\, switch_{ij} + \delta\, \hat{\alpha}_i + \gamma\, \hat{\psi}_{J(id)} + \xi\, \Delta\hat{\psi}_{J(id)} + \theta' X_i + \pi_1\, t + \pi_2\, t^2 + \epsilon_{ijd}$$

- Δw_{idj} = individual-level estimate of the wage loss j years after displacement
- $temporary_{ij}$ = 1 for displaced workers with temporary job j years after displacement
- $switch_{ij}$ = 1 for displaced workers that switched sectors j years after displacement
- $\hat{\alpha}_i$, $\hat{\psi}_{J(id)}$ = estimated fixed effects for worker and displacing firm
- $\Delta\hat{\psi}_{J(id)}$ = change of the firm-specific premium j years after displacement
- X_i = migrant background dummy, quadratic polynomials for age and prior job tenure

- β = difference in wage loss between workers with a temporary contract j years after displacement and those with a permanent contract

Losses in job security play a role in wage cost of displacement



- Wage loss 21% higher for displaced workers with temporary job 5 years after displacement

Decomposing the eligibility gap in wage loss

- Wage loss gap = portion explained by observables + portion unexplained (oaxaca-blinder)

  observables = **estimated worker fe**, **pre-displacement characteristics** (age, tenure, displacing firm fe) & **post-displacement outcomes** (job security, change in firm-specific premium and sector)

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	Wage Loss	Explained				Unexplained
	Gap	Job Security	Δ Firm FE	Post	Pre	Total
Full Sample	-4.97	-1.03	-2.82	-0.33	1.27	-2.06
Bottom 20%	-7.72	-1.04	-5.54	-0.21	0.78	-1.70

- Differences in job security after displacement explain 21% of wage loss gap

Sum Up

- **What we do**: Rich admin data + Unique institutional context + Event-study methodology
- **What we find**:
  1. Eligibility to transfer attenuates job security losses after displacement, but only for the low-wealth

     $\rightarrow$ Liquidity-related effects
  2. Eligible workers experience lower wage cost from displacement, partially explained by lower losses in job security
- **Takeway:** liquidity-constraints drive workers to temporary work after displacement, resulting in a more pronounced wage cost of job loss

Contribution

- **Wealth and labor market dynamics**

  Card et al. (2007); Chetty (2008); Basten et al (2014); Birinci and See (2022); Eeckhout and Sepahsalari (2022); Herkenhoff et al. (2022)

- **Scarring effect of unemployment on earnings**

  Jacobson et al. (1993); Davis and von Wachter (2011); Krolikowski (2017); Schmieder et al. (2018); Baley et al. (2022); Bertheau et al. (2022); Huckfeldt (2022); Jarosch (2022), Kayla et al (2022); Griffy (2021)

Appendix

Identifying exogenous job loss

1. **Bankruptcies**

   job terminations at firms that have been declared bankrupt by a court & date of the court ruling

2. **Economic Layoffs**

   jobs for which dismissal has been requested from the unemployment agency (UWV) due to economic reasons (80% of requests)

   Excludes: (i) terminations in which employer and employee mutually agree
   (ii) requests for termination via court

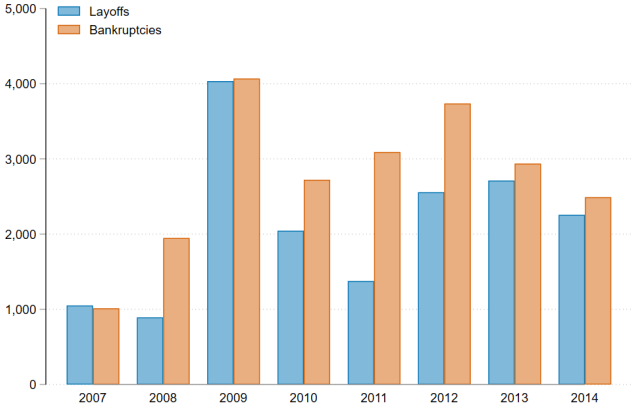
   Important: firms do not choose who they dismiss $\rightarrow$ last in first out within 10-year age groups & job type

$\rightarrow$ Both likely an exogenous shock to a worker's career, not related to their performance

back

Displaced Workers

Total per year



Back

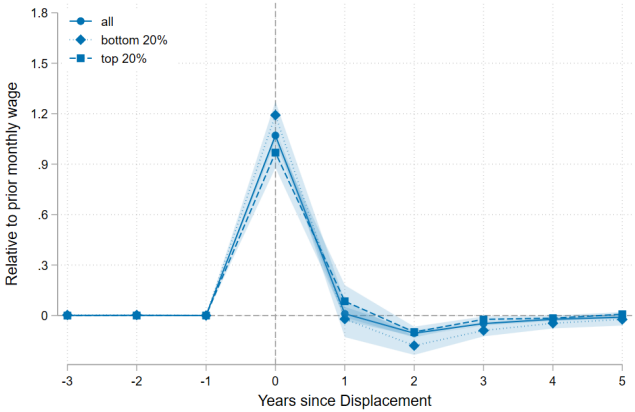
Summary Statistics: Different Samples

	Non-displaced Workers		Displaced Workers	
	Matched	Random	Matched	Full
Age (years)	38.2	38.5	38.2	38.6
Migrant Backgroumd (%)	17.5	14.7	19.5	19.3
Wealth (000 Euros)				
Savings	25.9	34.2	25.0	25.6
Liquid wealth	32.7	43.8	30.8	31.6
Net illiquid wealth	62.5	72.4	59.7	60.5
Job				
Tenure (years)	9.3	10.4	9.3	9.7
Permanent Employment (%)	98.9	99.1	98.8	98.8
Annual wage (000 Euros)	42.3	48.4	42.0	41.7
Firm size	95.2	129.5	89.0	85.8
Industry				
Manufacturing (%)	33.8	25.8	34.1	30.3
Wholesale and retail trade (%)	22.4	11.6	22.9	23.0
Construction (%)	17.8	19.6	17.3	16.3
Real Estate (%)	16.1	16.7	15.9	15.2
Transportation (%)	5.8	7.6	5.7	6.8
Observations	38,396	45,308	38,925	49,618

Back

A One-time Liquidity Shock for Eligible Workers

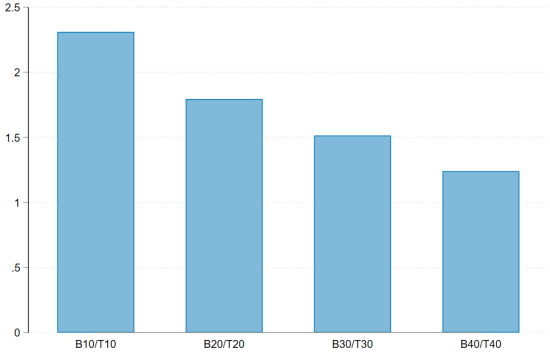
Difference in Yearly Transfers between Eligible and Non-eligible Workers



Back

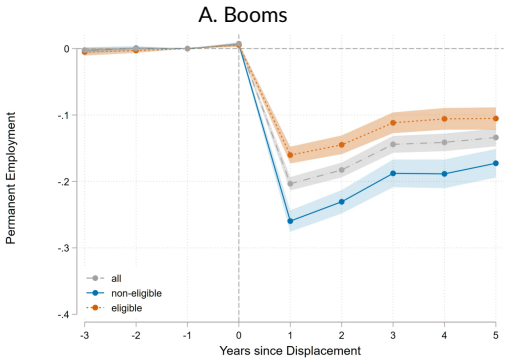
Eligibility effect more pronounced with narrower wealth bands

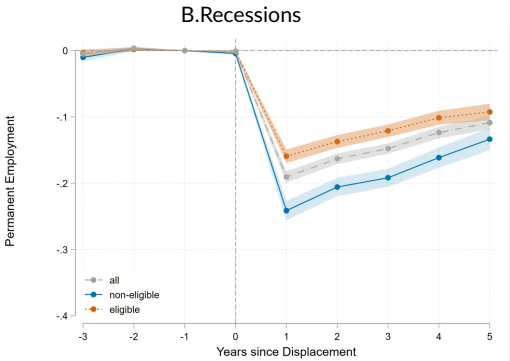
Eligibility Effect on Permanent Employment 1 Year after Displacement: Bottom vs. Top 10%, 20%, 30% and 40%



Back

Eligibility effect similar in booms and recessions

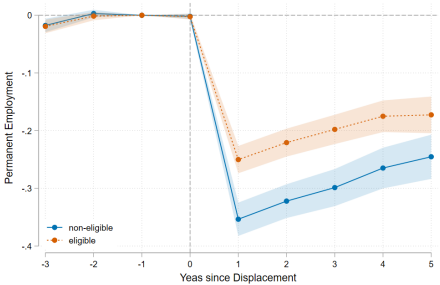




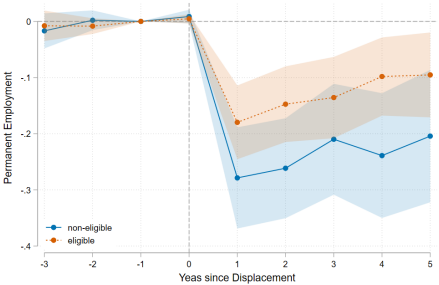
Back

Eligibility effect similar for poor and wealthy hand-to-mouth

A. Low Liquidity: Low Illiquid Wealth

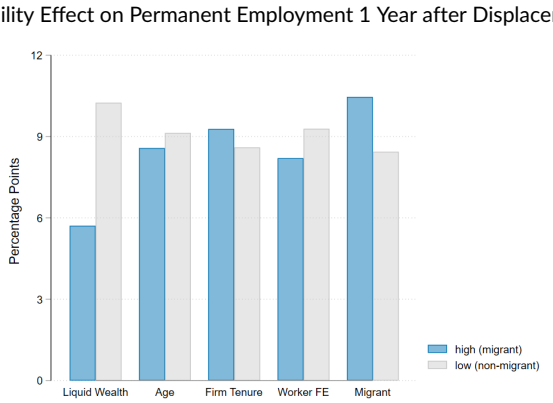


B. Low Liquidity: High Illiquid Wealth



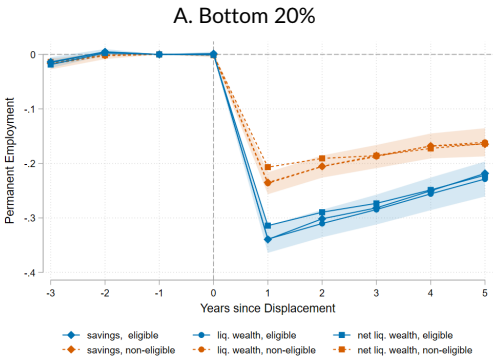
- Net Illiquid Wealth = Value of owned real estate assets minus Mortgage owed

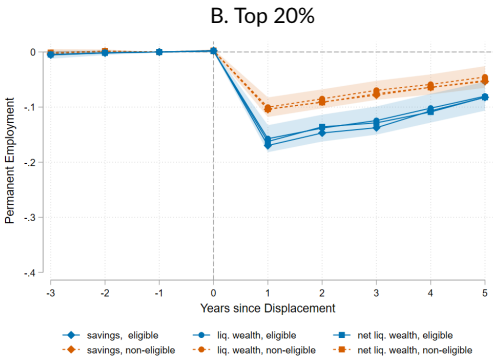
No heterogeneity in the eligibility effect in other dimensions



Back

Robustness Check: Savings Account & Net Liquid Wealth





- Net Liquid Wealth = Liquid Assets - Debt in credit cards and Other real estate mortgages

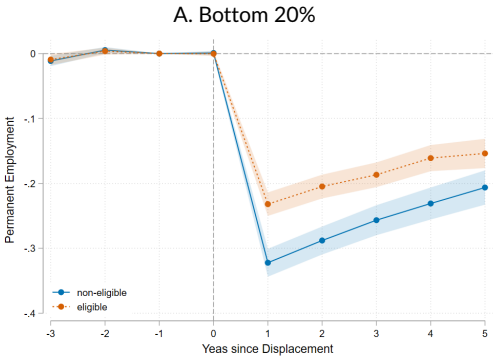
Back

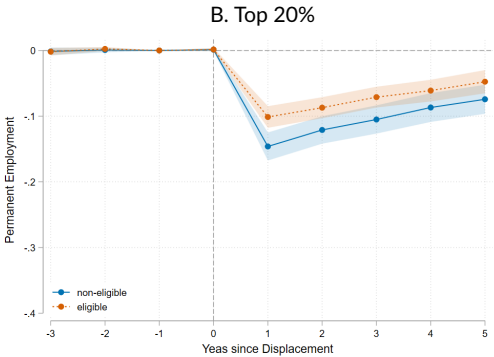
Robustness Check: Liquid Wealth relative to Prior Wage

- Sample split according to number of pre-displacement monthly salaries covered by liquid wealth

Back

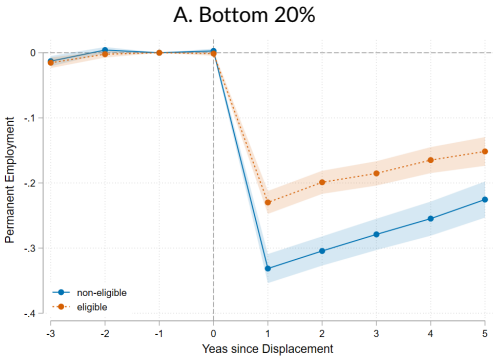
Robustness Check: No Firm Size Restriction

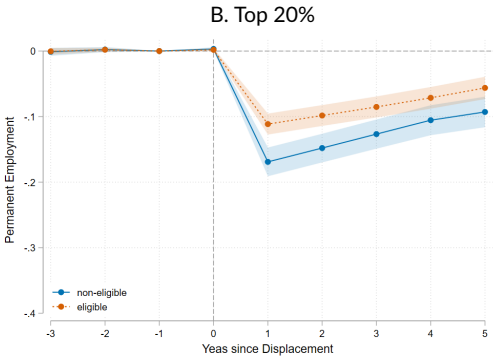




Back

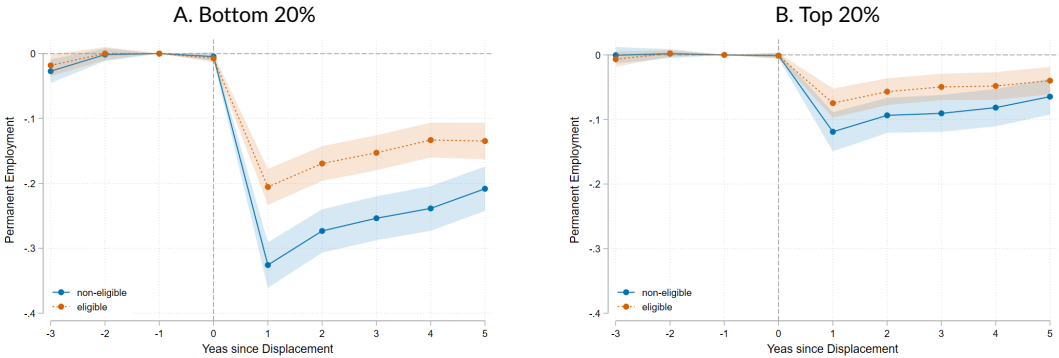
Robustness Check: Random Control Sample





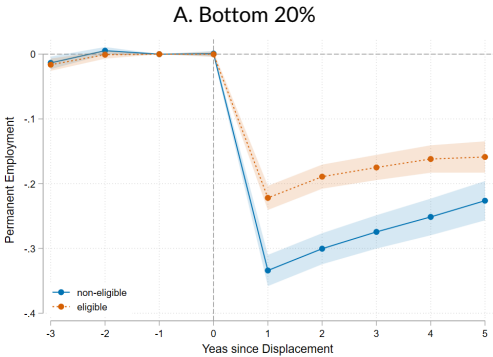
Back

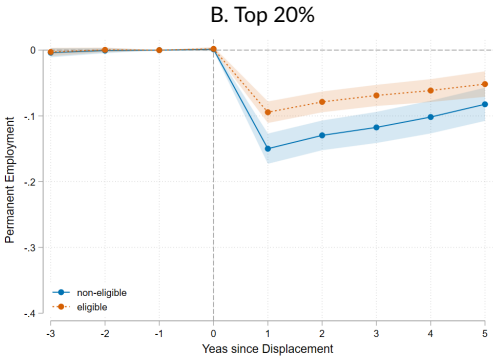
Robustness Check: Displacements between 2007 and 2010



Back

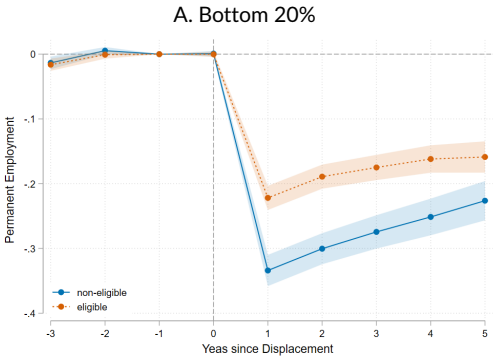
Robustness Check: Workers with More than One Displacement

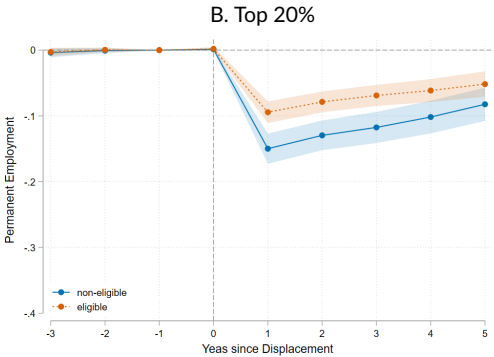




Back

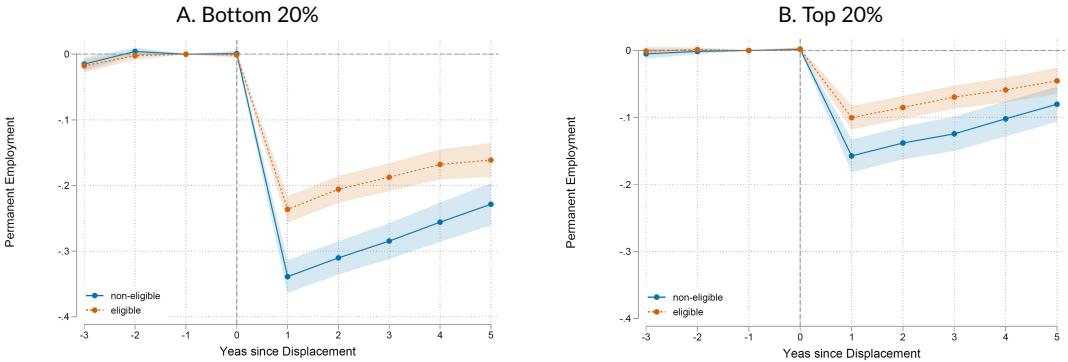
Robustness Check: Sector Fixed Effects





Back

Robustness Check: Adults in the Household



Back

The Effect of Eligibility on Duration

	Completed Duration				Cox Proportional Model			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Eligible$_i$	1.881***	2.182***			-0.058***	-0.075***		
	(0.251)	(0.254)			(0.019)	(0.019)		
Bottom 20% · Eligible$_i$			2.137***	2.137***			-0.090**	-0.082**
			(0.525)	(0.532)			(0.038)	(0.039)
Top 20% · Eligible$_i$			1.213*	1.094			-0.032	-0.021
			(0.675)	(0.675)			(0.053)	(0.053)
Controls		X		X		X		X
Observations	11,467	11,467	4,091	4,091	11,465	11,465	4,091	4,091

Back