Web Appendix A: Involuntary Job Separations in National Data

The table below shows the BLS reported industry-specific percentages of involuntary job separations in the United States in January 2017 (the last month of our observation period). We match the 28 companies in our sample with the closest BLS industries/subindustries using the observed company names and industry classifications. The weighted average of the percent of involuntary job separations out of the total separations is 27.3%.

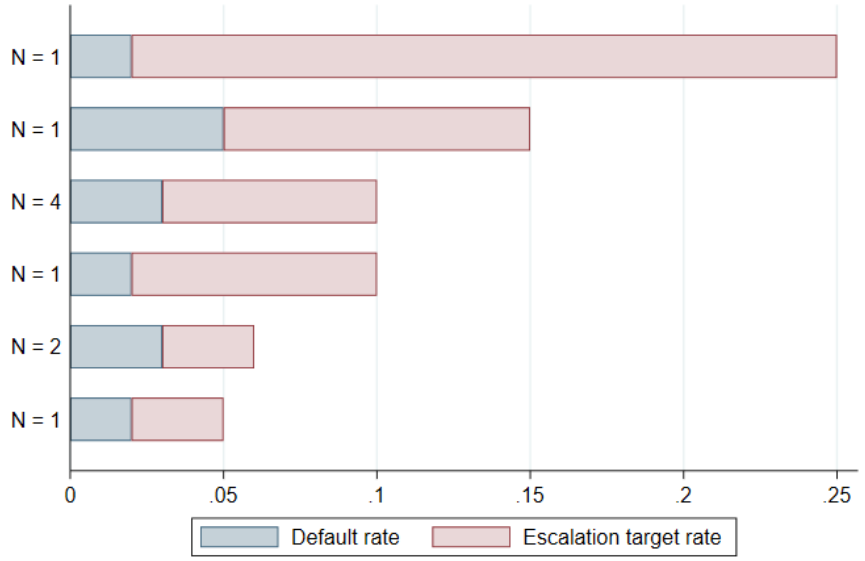
# Companies	# Terminated Employees	Industry	BLS Industry/Subindustry	Sample Weights	% Involuntary Job Separations
5	48,993	Banking & finance	Finance & Insurance	30.2%	22.6%
2	4,275	Insurance	Finance & Insurance	2.6%	22.6%
5	57,891	Retail	Retail trade	35.7%	23.1%
1	7,076	Retail	Accommodation & food services	4.4%	27.6%
2	13,017	Utilities & energy	Transportation, warehousing, & utilities	8.0%	49.0%
1	7,112	Consumer & miscellaneous products manufacturing	Manufacturing	4.4%	33.9%
1	3,055	Consumer & miscellaneous products manufacturing	Non-durable goods	1.9%	34.0%
1	5,066	Consumer & miscellaneous products manufacturing	Educational services	3.1%	37.8%
7	13,183	Diversified manufacturing	Manufacturing	8.1%	33.9%
1	1,198	Electronics & electrical	Durable goods	0.7%	33.7%
2	1,494	Food & beverage	Accommodation & food services	0.9%	27.6%

Web Appendix B: NAICS Codes for the Industries in Our Estimation Sample

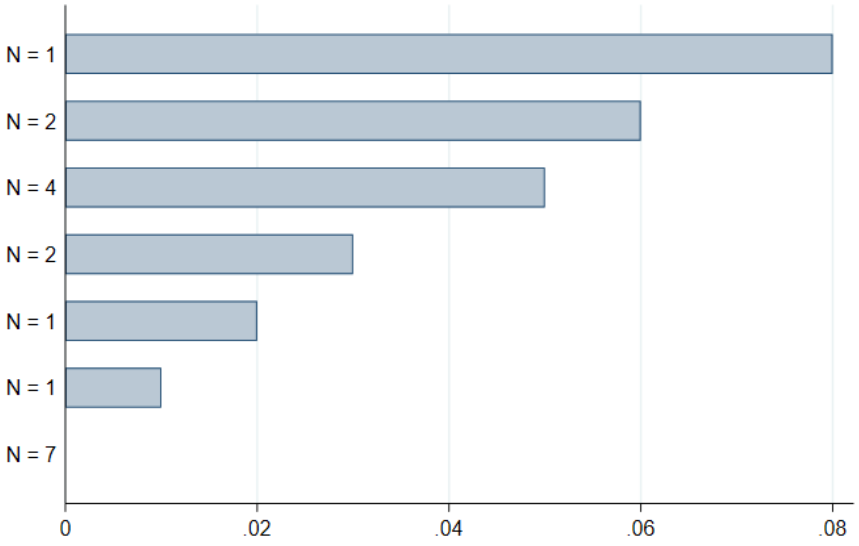
The table below shows the 8 industries in our sample and the closest NAICS and SIC identification codes associated with each one. For diversified manufacturing, we did not find a matching NAICS or SIC code. Along with the industry and state fixed effects, we also include firm size to control for the unobservables that may drive benefit plan attractiveness.

Industry	NAICS code	SIC code
Banking & finance	52	60-61
Insurance	52	63-64
Retail	44-45	52-59
Utilities & energy	22	49
Consumer & miscellaneous products manufacturing	32-33	39
Diversified manufacturing	No specific code	No specific code
Electronics & electrical	4431	5731
Food & beverage	7223-7225, 4453	54, 58

Web Appendix C1: Default Contribution Rate and Escalation Features for Plans with Auto-Escalation



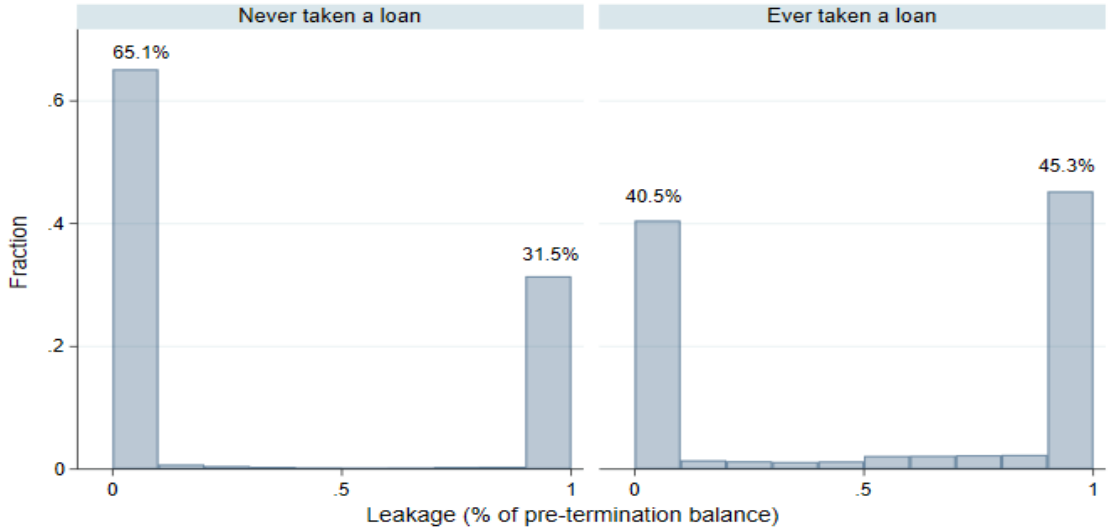
Web Appendix C2: Default Contribution Rate for Plans Without Auto-Escalation



Web Appendix D: Distribution of Key Retirement Plan Features

Match Rate (1st tier)	Match Threshold (1st tier)	Match Rate (2nd tier)	Match Threshold (2nd tier)	Effective Match at Max Threshold	# Plans	# Terminating Employees
30%	15%	-	-	30%	1	5,066
50%	5%	-	-	50%	1	253
50%	8%	-	-	50%	2	1,155
75%	6%	-	-	75%	1	7,112
100%	4%	-	-	100%	1	17,337
100%	5%	-	-	100%	6	49,348
100%	6%	-	-	100%	7	39,413
75%	3%	25%	4%	63%	1	7,076
100%	1%	50%	6%	58%	1	3,297
100%	2%	50%	4%	75%	1	1,572
100%	3%	50%	5%	80%	4	22,557
100%	3%	50%	7%	71%	1	3,127
300%	1%	100%	5%	140%	1	5,047

Web Appendix E: Histograms of Leakage Withdrawal by Loan Status

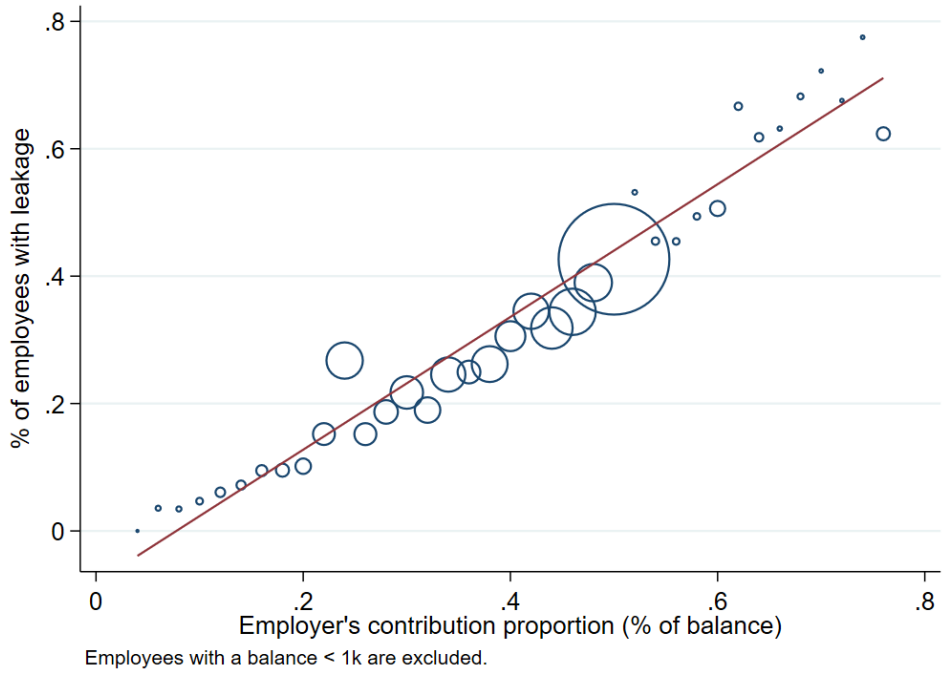


Web Appendix F: Random Effect Logistic Model on Multiple Withdrawals

	Estimate	SE	
Intercept	-2.935	1.453	*
Log income	-0.028	0.131	
Months since termination	-0.289	0.035	***
Months since last leak	0.109	0.054	*
Number of withdrawals	0.957	0.069	***
With outstanding loans	1.804	0.109	***
σ_u	1.017	0.197	
ρ	0.239	0.071	
N of obs.	974,391		
Log likelihood	-132,416		

Note: Dependent variable is whether there is cashout leakage in each month following job termination. Standard errors are clustered at the individual level.

Web Appendix G: Leakage Rate and Employer Contribution Proportion Excluding Small Balances Less Than $1,000

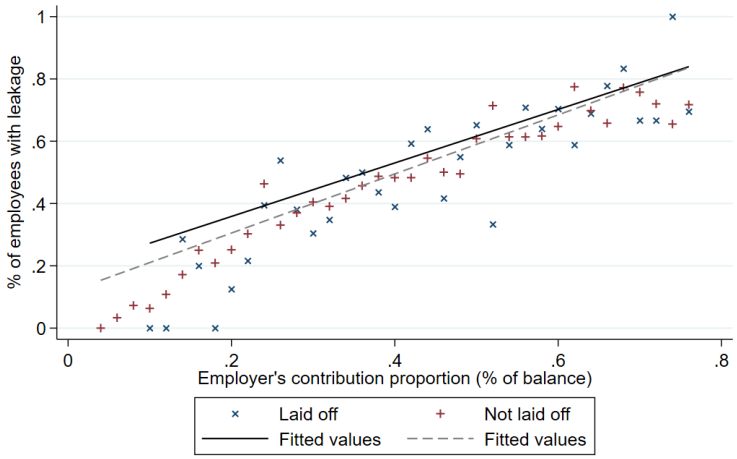


Web Appendix H: Variation in Net Turnover Rates and Contribution Rates across Industries

	Number of companies	Employee contribution rate	Match rate	Net turnover rate
Banking/Finance	5	5.4% (5.8%)	100% (-)	0.026 (0.102)
Consumer/Misc Products Mfg	3	7.1% (5.5%)	65% (26%)	0.039 (0.113)
Diversified Manufacturing	7	7.0% (5.2%)	84% (19%)	0.013 (0.243)
Electronics/Electrical	1	9.4% (8.2%)	100% (-)	0.019 (0.029)
Food & Beverage	2	7.3% (4.5%)	84% (8%)	0.019 (0.094)
Insurance	2	6.4% (4.3%)	80% (-)	0.032 (0.103)
Retail	6	5.0% (4.4%)	92% (19%)	0.009 (0.077)
Utilities/Energy	2	5.7% (3.6%)	97% (12%)	0.046 (0.061)

Note: standard deviations in the parentheses; the net turnover rate is calculated as the difference in the number of terminating employees and new hires in the current month divided by the total employees in the previous month.

Web Appendix I1: Relationship between Leakage Rate and Employee Contribution Proportion by Laid-off among Those with Below Median Income

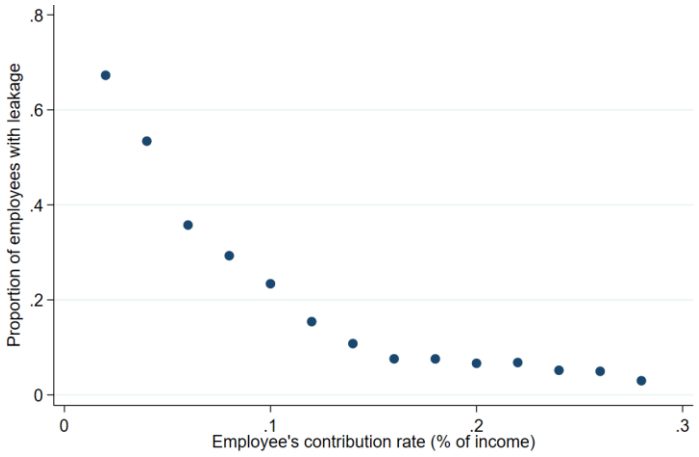


Note: The slope is insignificantly different between laidoff vs not laidoff employees (p-value=0.693)

Web Appendix I2: Relationship between Leakage Rate and Employee Contribution Proportion by Laid-off among Those with Above Median Income

Note: The slope is insignificantly different between laidoff vs not laidoff employees (p-value=0.426)

Web Appendix J: Relationship between Leakage Rate and Employee Contribution Rate



Web Appendix K: A Simulation Study

The goal of the simulation study is to show that we can recover the true parameters in a full-information approach by using instrumental variables W_1 and W_2 for endogenous variables Y_1 and Y_2 and allowing for a full variance-covariance structure without imposing any restrictions of the parameters across equations. We simulate 100,000 cross-sectional observations following the five equations below. The setting is analogous to the retirement account leakage decision in the paper. We are interested in the coefficients, β_1 and β_2, of variables Y_3 and Y_4 in the final Probit equation (Y_5). Both Y_3 and Y_4 are nonlinear functions of endogenous variables Y_1 and Y_2. Given the correlated error terms across equations, common shock enters the data-generating process of all five equations and introduces the endogeneity issue of Y_3 and Y_4 in the Probit equation of Y_5.

$$Y_1 = \alpha_0 + \alpha_1 X_1 + \alpha_2 W_1 + \varepsilon_1$$

$$Y_2 = \gamma_0 + \gamma_1 X_2 + \gamma_2 W_2 + \varepsilon_2$$

$$Y_3 = \delta_0 + \delta_1 Y_1 \times \exp(Y_2) + \delta_2 X_1 + \delta_3 X_2 + \varepsilon_3$$

$$Y_4 = \theta_0 + \theta_1 \mathrm{I}(Y_1 > X_1) + \theta_2 Y_2 + \theta_3 X_1 + \theta_4 X_2 + \varepsilon_4$$

$$Y_5^* = \beta_0 + \beta_1 Y_3 + \beta_2 Y_4 + \beta_3 X_1 + \beta_4 X_2 + \varepsilon_5, \quad Y_5 = \begin{cases} 1 & if\ Y_5^* \geq 0 \\ 0 & otherwise \end{cases}$$

where $\varepsilon \sim N(0, \Sigma)$

We show that as long as we have instrumental variables W_1 and W_2 for endogenous variables Y_1 and Y_2, respectively, we will be able to recover the true parameters using the limited-information approach, even when the endogenous variables enter the equations non-linearly. The table below shows that a limited-information approach that allows full variance-covariance error-structure across equations and uses instrumental variables can recover true parameters well. We also show that the key parameters of interest, β_1 and β_2, would be biased without correcting for endogeneity. We compare the limited-information approach with a two-stage least-square approach. We thank the review team for pointing out that the two-stage least-square approach would over-correct endogeneity coefficients in our context.

Table: Simulation Estimation Results

	True Value	Full Information	Leakage Probit Alone	Two-Stage Least-Square Approach
Employee Contribution (Y1)				
Intercept	-0.5	-0.506 (0.001)		
X1	0.5	0.502 (0.001)		
W1	0.5	0.501 (0.001)		
Log Tenure Years (Y2)				
Intercept	-1	-0.998 (0.003)		
X2	0.3	0.299 (0.002)		
W2	0.2	0.198 (0.001)		
Log Balance (Y3)				
Intercept	-3	-3.007 (0.004)		
Y1*exp(Y2)	1	1.004 (0.003)		
X1	-0.2	-0.198 (0.003)		

X2	-0.2	-0.201 (0.002)		
Employer Contribution % (Y4)				
Intercept	-2	-2.004 (0.002)		
I(Y1>X1)	-1	-0.999 (0.001)		
Y2	1	0.998 (0.003)		
X1	0.3	0.302 (0.001)		
X2	0.3	0.301 (0.001)		
Leakage or Not (Y5)				
Intercept	-2	-2.064 (0.068)	-2.162 (0.036)	-2.000 (0.073)
Log Balance	-1	-1.019 (0.014)	-1.251 (0.009)	-0.791 (0.012)
Employer Contribution %	1	1.004 (0.014)	1.199 (0.012)	0.528 (0.015)
X1	1	1.010 (0.013)	0.965 (0.010)	0.682 (0.012)
X2	1	1.008 (0.012)	0.940 (0.036)	0.615 (0.011)
Correlations among equations				
1-2	0.3	0.301 (0.003)		
1-3	0.5	0.499 (0.003)		
1-4	0.4	0.399 (0.003)		
1-5	-0.15	-0.139 (0.010)		
2-3	0.3	0.295 (0.003)		
2-4	0.2	0.200 (0.007)		
2-5	-0.08	-0.072 (0.012)		
3-4	0.4	0.395 (0.003)		
3-5	-0.3	-0.288 (0.012)		
4-5	0.3	0.307 (0.009)		

Note: Standard errors in parentheses

Web Appendix L: Robustness Checks of the Results of Leakage Decision at Job Termination

	(1) all the estimation sample		(2) all the estimation sample		(3) excluding small balance		(4) exclude age 55 +	
Employer contribution proportion	0.990	**	0.955	**	1.100	**	0.994	**
	(0.459)		(0.472)		(0.435)		(0.471)	
Log balance	-0.337	***	-0.338	***	-0.300	***	-0.338	***
	(0.020)		(0.020)		(0.026)		(0.021)	
Employer contribution proportion × Demeaned log income	0.073		/		/		/	
	(0.159)							
Employer contribution proportion × laid-off index	/		0.050		/		/	
			(0.057)					
All the other control variables	Yes		Yes		Yes		Yes	
N of obs.	162,360		162,360		140,625		150,075	

Note: (1) Standard errors clustered by company-year in parentheses; (2) * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$; (3) all the other control variables in the leakage equation (1) in Table 12 are included. They are omitted here to reserve space.