How Do PE Buyouts Affect Employee Pension Plans

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INTRODUCTION

Private equity (PE) firms become an increasingly important investor in the economic landscape nowadays. Despite increasing strength, the impact of a PE buyout on employees, an important stakeholder group, is a topic of debate in existing literature.

Research has found that PE firms can improve operations, working conditions, and workplace safety, leading to job creation and overall positive outcomes (e.g., Bernstein and Sheen (2016), Cohn et al. (2021)).

On the other hand, PE buyout can lead to layoffs, wage cuts, and reduced work-life balance, as labor cost optimization is a key strategy for these firms (e.g., Gornall, et al. (2021)).

Little attention has been paid to the impact of a PE buyout on defined benefit (DB) plans.

RESEARCH QUESTIONS

What happens to employees' pension plans after PE buyout? More specifically whether the target firms:

1. Are more likely to terminate or freeze the DB plans after the PE buyout
2. Change the actuarial assumptions after the PE buyout
3. Change the contributions to DB plans and DC plans after the PE buyout
4. Change asset allocation of the PA after the PE buyout

DATA

- **DB plan data:** Form 5500, 1999-2021 (except 2008)
- **PE deals:** Pitchbook Data, 1999-2021
- **Firm fundamentals:** S&P 500 CapitalIQ

The sample consists of 25,596 U.S. firms with 30,774 DB plans spanning from 1999 to 2021. Within this time frame, I identified 1,149 deals in the U.S. involving 1,622 DB plans.

METHOD

- To analyze the research question, I use a stacked difference-in-difference framework, following Callaway and Sant'Anna (2020), Gornall et al. (2021), and Sheen et al. (2021)
- Each cohort covers **six** years before and six years after the buyout year
- In each cohort, the treated group contains the firms that are acquired by PE firms in the year t, and the control group consists of the firms that are never acquired and the firms that are acquired six years later

SPECIFICATION

- For the termination/freeze analysis, I estimate the following equation:
  - $Y_{i,j,c} = \beta Treat_{j,c} + X'_{i,j,c}\lambda_1 + X'_{j,c}\lambda_2 + \gamma_{c,I} + \varepsilon_{i,j,c}$,
- For the pension characteristics and asset allocation analysis, I estimate the following equation:
  - $Y_{i,j,c,t} = \beta Treat_{j,c} \times Post_{c,t} + X'_{i,j,c,t}\lambda_1 + X'_{j,c,t}\lambda_2 + \theta_{c,I,t} + \delta_{c,i} + \varepsilon_{i,t}$

Y: Dependent variables

$Treat_{j,c}$: Dummy variable equal to one when the firm j is acquired by a PE firm

$Post_{c,t}$: Dummy variable equal to one when it is after the buyout

$\gamma_{c,I}$: Cohort by industry fixed effects

$\theta_{c,I,t}$: Cohort by industry by year fixed effects

$\delta_{c,i}$: Cohort by plan (firm) fixed effects

$\varepsilon_{i,j,c}$, $\varepsilon_{i,t}$: Standard errors are clustered at firm level

RESULTS

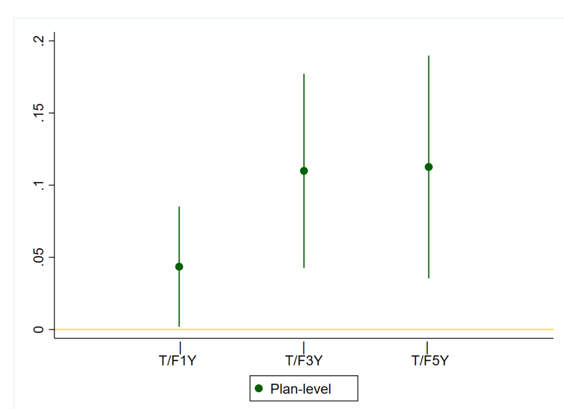

Figure 1. *Plan-level termination/freeze analysis*

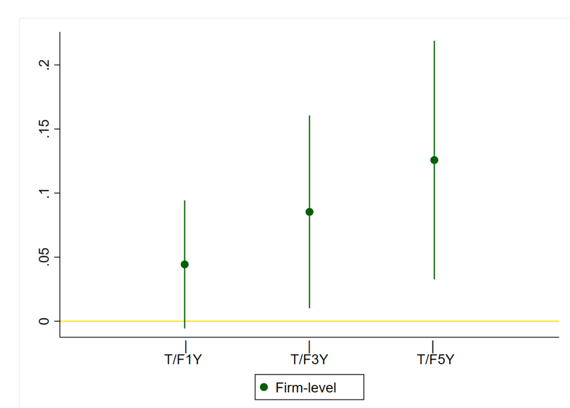

Figure 2. *Firm-level termination/freeze analysis*

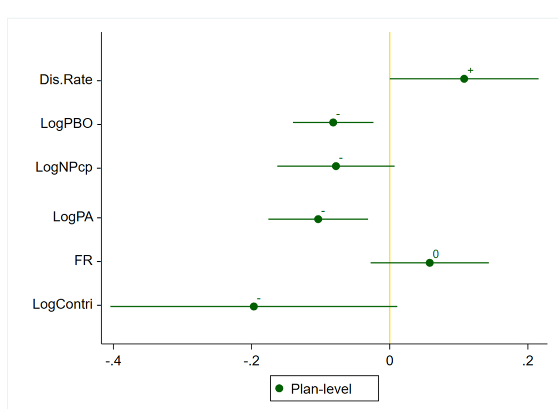

Figure 3. *Plan-level pension characteristics*

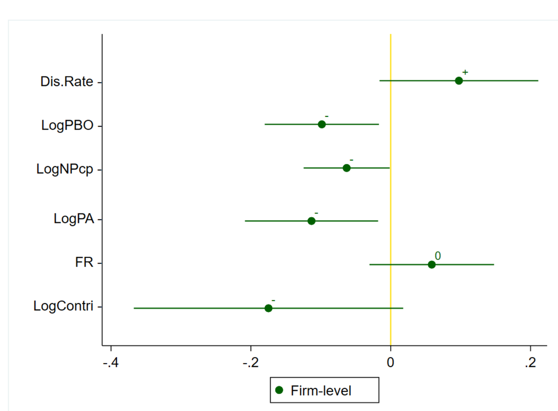

Figure 4. *Firm-level pension characteristics*

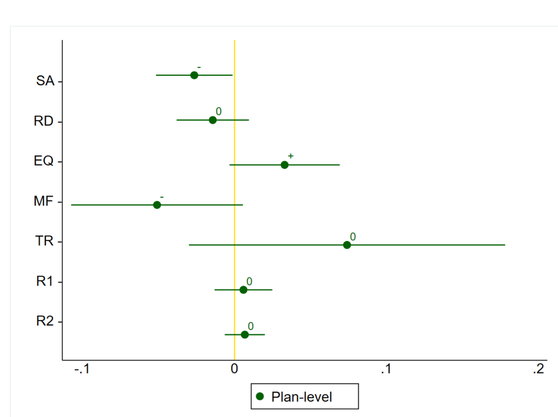

Figure 5. *Plan-level asset allocation*

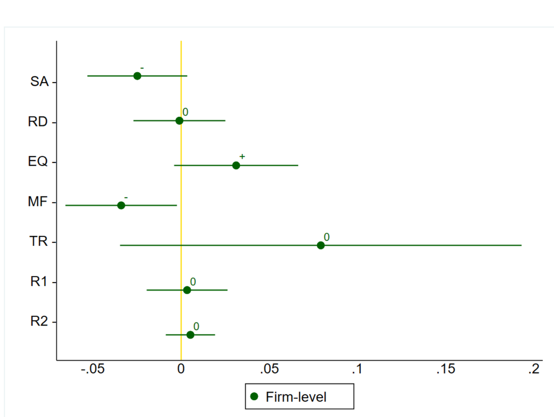

Figure 6. *Firm-level asset allocation*

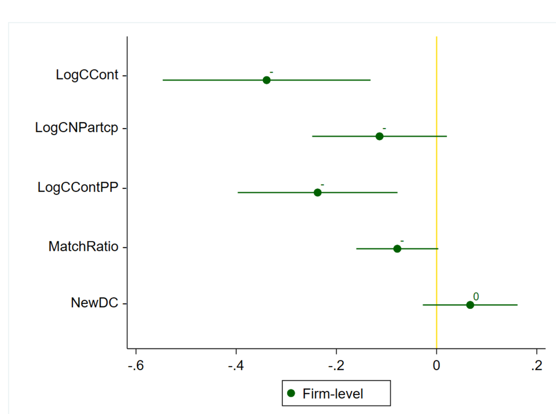

Figure 7. *Firm-level DC*

KEY FINDINGS

After the buyout:

- PE-backed firms are **12.4% more** likely to terminate/freeze their DB plans within five years.
- The discount rate **increases** by **0.13 percentage point** after the buyout at both plan and firm level (**12.5%** of the sample St.d).
- The liability of pension plan (PBO) **drops** by **6.4%** at the plan level and **7.6%** at the firm level.
- The number of participants **drops** by **6.3%** at the plan level, and **4.5%** at the firm level.
- The pension asset (PA) **drops** by **7.5%** at the plan level, and **10.2%** at the firm level, and the contribution **drops** by **22.2%** at the plan level and **29.7%** at the firm level.
- The funding ratio (FR) is **unaffected**.
- The proportion of safe assets **drops** by **3%** at both plan and firm level, and the proportion of mutual funds **drops** by **5.1%** at the plan level and **3.4%** at the firm level.
- The allocation to equity **increases** by **3%** at both plan and firm level

KEY FINDINGS (CONT'D)

After the buyout:

- The returns are **unaffected**
- The contributions to DC plans **drops** by **33.9%**, the contribution per participant **drops** by **23.7%,** and the match ratio **drops** by **0.078** percentage points
- The probability of establishing new DC plan is **unaffected**

MA VS. PE

To compare the impact of the PE buyout and MA deals, I add the dummy variable equal to one when the firms is the target of the MA to the termination/freeze analysis, and the interaction between the Post and the MA dummy variable to all other analysis. The F-test comparison of coefficient estimates yields:

- PE buyouts exert a **more** pronounced influence on the decision to terminate or freeze Defined Benefit plans than M&A deals do.
- PE buyouts have a **more** substantial effect on discount rates, Projected Benefit Obligation (PBO), funding ratios, and contributions compared to M&A deals.
- Asset allocation trends diverge post-transaction: PE buyouts are associated with a portfolio shift towards equity and away from safe assets, whereas M&A deals correlate with an increase in safer asset holdings and a reduction in riskier debts.

ROBUSTNESS

There is no obvious pretrend before the buyout, and the results are consistent when:

- Using various time window
  - Using shorter time window, including 4 and 5 years around the buyout year
- Using Mahalanobis distance matched sample/ entropy balanced sample
  - The measure is computed based on an analysis of PE's target choice decision and using expense ratio and the natural logarithm of pension asset, number of participants, pension age, total firm assets, and total sales in the pre-buyout year

CONCLUSION

- PE buyout may harm the employee's post-retirement benefit: higher probability of termination/freeze at both plan level and firm level
- PE-backed firms squeeze the pension for less cash outflows and more liquidity: lower contribution, lower PA, lower PBO, but higher discount rates. The loss of benefits from DB plans is not made up by the DC plans
- PE buyout may lead to a potential gambling behavior: with higher bankruptcy risk introduced by the PE buyout, higher proportion of PA is invested on risky assets, but the performance is not improved significantly

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