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# Hedge Fund Activism and Capital Structure

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AFA 2019 Annual Meeting, Atlanta, Georgia

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## Abstract

Using a comprehensive pooled sample of hedge fund activism spanning over two decades (1994-2014) in the U.S., and firms matched on observable characteristics by closest propensity scores, we study whether hedge fund activists influence the capital structures of targeted firms to create value. We find that over-levered firms are more likely to be targeted. We further document that there is a significant positive association between firms' distance away from the target leverage and their likelihood of being targeted by an activist hedge fund when the firm is over-levered. However, when the firm is under-levered, such relation is negative, indicating that activists also value financial flexibility. Moreover, in a difference-in-differences set-up, when compared to a propensity score-matched cohort, we find that the firms reduce the distance from their long-run target capital structure post-hedge fund activist intervention when the firm is over-levered but not when they are under-levered. Our findings are broadly consistent with the dynamic trade-off models of capital structure, where adjustment costs and financial flexibility considerations play a key role and provide empirical evidence on the positive impact of hedge fund activists on their investee firms' capital structures. Such findings are not driven by asset sales, wealth transfer from bondholders to stockholders, or enhancing dividends via leverage, and are robust to alternative explanations such as mechanical mean reversion of leverage and hedge funds' stock picking skills.

## Research Questions and Findings

### 1. When Do Most Hedge Fund Activist Interventions Take Place?

**Finding** - Hedge funds intervene when firms' capital structures are away from their long-run estimated targets (both above and below), with nearly 47% firms above their long-run estimated target leverage and nearly 53% firms below.

### 2. Is the Target Firm's Deviation from the Optimal Leverage Correlated with the Likelihood of the Firm Being Targeted by an Activist Hedge Fund, after Controlling for other Firm Characteristics?

**Finding** - Over-levered firms are more likely to be targeted as compared to under-levered firms. We further document that there is a significant positive association between firms' distance away from the target leverage and their likelihood of being targeted by an activist hedge fund when the firm is over-levered. However, when the firm is under-levered, such relation is negative, indicating that activists also value financial flexibility. Such results are also robust to the use of year, industry and firm fixed effects that control for unobserved heterogeneities across time, industries and firms.

### 3. Do Hedge Fund Activists Influence Capital Structures of Targeted Firms? More Specifically, How does Leverage Subsequently Evolve Post-Intervention?

**Finding** - In a difference-in-differences set-up, as compared to a propensity score-matched cohort, we find that post-activism intervention, the distance between the actual leverage and the target leverage reduces for firms that are over-levered, while the distance between the actual leverage and the target leverage increases for firms that are under-levered. This asymmetric behavior indicates that while on the one hand hedge-fund activists try to push their investee firms toward the optimal capital structure to maximize shareholder value, on the other hand, they also value financial flexibility.

### 4. Is there Any Correlation Between Cumulative Abnormal Returns (CARs) and Excess Leverage (both positive and negative) of the Targeted Firms?

**Finding** - There is a significant, positive abnormal jump in stock price on the announcement of hedge fund activism campaigns that target firms with sub-optimal capital structure. Furthermore, the CAR is significantly greater when a firm's leverage is farther away from its estimated target leverage in the case when the firms are over-levered but not when they are under-levered. Such findings could imply that the markets also perceive debt capacity, which represents a primary source of financial flexibility, as valuable, which is consistent with the multivariate results.

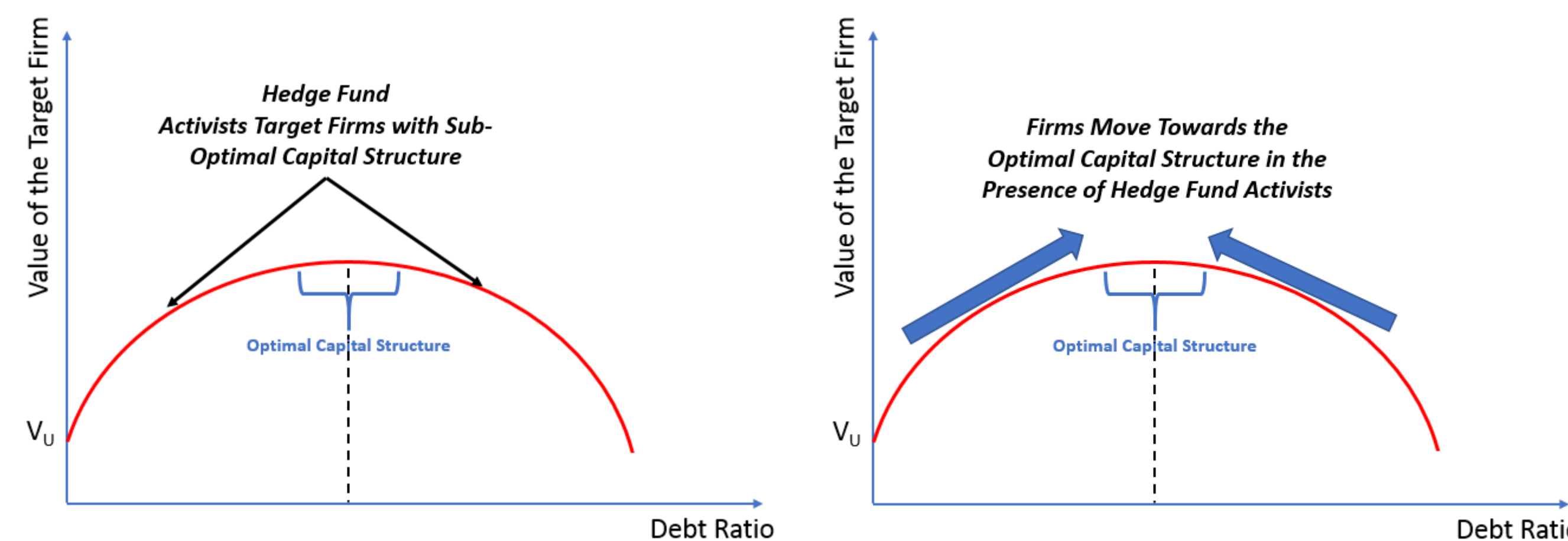
### 5. What are the Channels Through which Changes in Leverage are Made?

**Finding** - On splitting the sample into above or below the long-run target leverage at the time of intervention, we find that there is a significant reduction in the short-term debt among the firms that are under-levered, and a significant reduction in the long-term debt post-intervention for over-levered firms. Moreover, we find that post-intervention, there are no significant changes in the long-term debt ratings, debt maturity, debt issuance, and bond returns for the targeted firms as compared to their propensity score-matched sample. In other words, we do not find evidence on the wealth transfer story, where hedge fund activists do not create wealth but simply transfer wealth from bondholders to stockholders.

## Anecdotal/Survey Motivation

- 68% of institutional investors give suboptimal capital structure a score of 4 or 5 out of 5 as one of the main triggers for shareholder engagement (McCahery et al., JF, 2016).
- One of the common reasons cited in "Item 4 - Purpose of Transaction" in a Schedule 13D filing are the matters related to capital structure of the targeted firm.
- Other common demands of hedge fund activists that impact capital structure include demands related to excess cash, dividends/share repurchases, equity issuance, restructuring debt, etc.

## Theoretical Motivation and Hypotheses



**H1 (Value-Creation Hypothesis):** All else equal, hedge-fund activists intervene when the target firm's capital structure is in sub-optimal condition, and the firms' distance away from the estimated target capital structure is positively associated with the likelihood of hedge fund's intervention.

**H2 (Hedge-Fund Impact Hypothesis):** All else equal, firms reduce the distance from their long-run estimated target leverage post-hedge fund activism.

## Empirical Methodology

### I. Empirical Approach for Computing Long-Run Target Leverage

- A double-sided tobit regression model censored at 0 and 1, following the extant literature (Harford, Klasa, and Walcott (JFE, 2009); Denis and McKeon (RFS, 2012)):  $ML_{it} = \alpha + \beta_1[Med\ Ind\ ML]_{it-1} + \beta_2[M/B]_{it-1} + \beta_3[FA/TA]_{it-1} + \beta_4[OUTA]_{it-1} + \beta_5[\ln(TA)]_{it-1} + \epsilon_{it}$
- The factors on the right hand side of the above regression are the five most reliable factors (median industry market leverage, market-to-book ratio, asset tangibility, profitability, and size) to explain leverage in the empirical literature in capital structure.

### II. Multivariate Analyses with Fixed Effects in a Difference-in-Differences Set-Up, with a Propensity-Score Matched Sample

- We use a propensity score-matched sample, where we first match on industry and year and then choose the closest propensity score matched firm (with replacement) based on characteristics such as firm size, market-to-book, return on assets (ROA) which have been found in the literature to be associated with the probability of firms being targeted (Brav et al., JFE, 2018).
- Various fixed-effects (year, firm, Industry) have been used to control for unobservable characteristics.

### III. Test for Causality

- Following Brav et al., (JFE, 2018), we analyze Schedule 13G to Schedule 13D switchers to rule out the possibility that hedge fund activists are simply good stock pickers, and do not play any active role in influencing the capital structures of the targeted firms.

## Main Results

### I. Likelihood of Firms being Targeted by Activism

	Full Sample	Leverage > Target	Leverage < Target
<b>Dummy (leverage &gt; target)</b>	0.256** (0.115)		
<b>Distance from Target</b>		1.292** (0.614)	-3.042*** (1.078)

#### Key Takeaways:

- Firms with leverage above the estimated target more likely to be targeted by hedge fund activists, as compared to firms with below-target leverage.
- Among the firms with above-target leverage, the probability of being a target of an activist hedge fund increases for a firm, the farther it is from its long-run estimated leverage.
- Among the firms with below-target leverage, the likelihood of being targeted by an activist hedge fund is negatively and significantly associated with its distance from the target.

### II. Change in Leverage (Distance between Actual and Target) Post-Activism

	Leverage > Target	Leverage < Target
<b>Activism</b>	0.047*** (0.017)	-0.003 (0.005)
<b>Post-Activism</b>	0.018*** (0.006)	-0.000 (0.002)
<b>Activism x Post</b>	-0.043** (0.022)	0.013** (0.006)

#### Key Takeaways:

- Post-intervention, there is a significant reduction in distance between the actual and the target leverage for the over-levered firms.
- However, for under-levered firms, post-intervention, there is an increase in the distance between the actual and the target leverage.

## III. Cross-sectional Variations in CARs around Activism Announcement

	(-2, +2)	(-5, +5)	(-20, +20)
<b>Distance from Target</b>	0.051** (0.025)	0.100*** (0.038)	0.143** (0.066)
<b>Dummy (Leverage &gt; Target)</b>	0.012* (0.006)	0.020** (0.009)	0.049*** (0.017)

#### Key Takeaways:

- CARs are positively and significantly associated with the distance measure from the estimated long-run target leverage.
- There is a positive and significant association between positive excess leverage dummy and the CARs in all the three windows of (-2, +2), (-5, +5) and (-20, +20), indicating an asymmetry in market's response to announcements of hedge fund activism campaigns, depending on the where the target firm stands with respect to its optimal leverage.

## Databases Used

- ❑ Firm Level Return and Volatility: CRSP
- ❑ Firm Level Accounting Data: Compustat
- ❑ Institutional Ownership Data: Thomson's 13f Filings
- ❑ Data on Analyst Following: I/B/E/S
- ❑ Bond Return Data: FINRA TRACE
- ❑ Credit Rating: Capital IQ
- ❑ Hedge Fund Activism Data: Schedule 13D, Schedule 13G, Internet Searches

## Robustness Tests

- ❖ Results stay qualitatively similar when matching is done with versus without replacement (bias:variance trade-off).
- ❖ Results are robust to using different specifications to estimate long-run target leverage.
- ❖ Results are robust to the use of book leverage instead of market leverage. Using book leverage, segregates the impact of mean reversion by removing an upward drift in market equity value due to hedge fund activist intervention announcements.
- ❖ Event study results which are consistent with the main multivariate results make it even harder to argue that such market reactions are a product of mechanical mean reversion in leverage.

## CONCLUSION

Using a comprehensive sample of 3,292 hedge fund activism campaigns by 540 unique hedge fund activists during the time-period 1994 to 2014, and propensity score-matched sample, we find that activist hedge funds are significantly more likely to target firms that have sub-optimal capital structures. We further find that over-levered firms are more likely to be targeted and when a firm is over-levered, there is a significant positive relation between a firm's distance away from the long-run estimated target capital structure and their likelihood of being targeted by an activist hedge fund. Such a relation is negative when the firm is under-levered. Furthermore, we find that post-activism intervention, the distance between actual and target leverage reduces for over-levered firms, but increases for under-levered firms. These indicate that activist hedge funds also value financial flexibility or cushion, perhaps to meet the unexpected needs of investments.

We also provide evidence that such findings are not driven by asset sales, wealth transfer from bondholders to shareholders, the mechanical mean reversion of leverage or activist hedge fund's stock-picking skills. Such results contribute to the ongoing debate in the academic and policy circles on the valuation and real impacts of activist hedge funds and try to resolve the ambiguity on the ex-ante leverage characteristics and the ex-post impact on activists' intervention on the leverage of targeted firms. While analyzing the change in investment and payout policies post-activism, we find that there is no significant change in investment and dividend payments. However, there is a significant increase in share repurchase for under-levered firms, post-intervention.

Finally, we exploit a legal feature of activist hedge funds switching from passive to active ownership (13G to 13D switches) to address the endogeneity concerns to some degree. We find that the market response as positive price reaction is significantly stronger for 13G to 13D switchers, indicating a causal relation between hedge fund activists' intervention and a firm's movement towards estimated long-term target leverage.

## ACKNOWLEDGEMENTS

We are grateful to Matt Billett, Craig Holden, Charles Trzcinka for their helpful comments. We are also grateful to Wei Jiang for providing data on non-public hedge fund activism campaigns. We thank seminar participants at Kelley School of Business, Indiana University, for their discussions. We thank the organizers of American Finance Association (AFA), South Western Finance Association (SWFA), and Eastern Finance Association (EFA) for including our paper in their 2019 annual meetings, respectively.

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