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White Knights, Hostile Takeovers and Shareholders' Interests

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摘 要

敵意併購在第 4 波的併購風潮相當盛行。目標公司面對敵意併購的威脅必須思考如何來對付。其中引進白衣武士 (盟友) 來扮演友善併購者是一種防禦方法之一。然而這種做法是否符合股東利益極大化或是與管理者利益鞏固假說，這是值得探討的議題。本研究以 1980 至 2007 年間所發生的 323 件敵意併購中，依據有無引進白衣武士，並將有引進白衣武士的子樣本中再分成由白衣武士成功併購與原敵意併購者贏得併購等共分三群來研究，結果發現白衣武士的救援事實上無法支持股東利益假說；同時結果也顯示交易條件並沒有顯著有利於目標公司。

【關鍵字】敵意併購、白衣武士、管理者利益鞏固假說

Abstract

The unique characteristic of the Fourth Merger Wave plays a significant role in hostile mergers. Firms that become targets of a hostile bid need to resist actively their raiders. For these targeted firms, seeking a friendly bidder or a white knight is an alternative approach to hostile acquirer attacks. However, it is uncertain if this move corresponds to the "shareholder interest hypothesis" or the "management entrenchment hypothesis." This paper examines these two competing hypotheses by analyzing data gathered from 323 global events of successful hostile takeovers covering the period 1980-2007, the focus of which is on the utilization of white knights against hostile takeovers. The collected sample is divided into three case groups: successful white knights, successful hostile bidders competing with white knights, and successful hostile bidders without white knights. Results show that the managerial entrenchment hypothesis is more appropriate compared with the shareholder interest hypothesis. From a conceptual perspective, this suggests that dealings can benefit target firms. Nevertheless, the results may also be insignificant.

【Keywords】white knight, hostile takeover, managerial entrenchment hypothesis

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1. Introduction

The unique characteristic of the Fourth Merger Wave (1984-1989) plays a significant role in hostile mergers, resulting in significant changes in the corporate control of markets. Numerous defense strategies are available for firms to defend themselves against unsolicited takeover attempts. However, the motivations and effectiveness of adopting such strategies are subject to suspicion. When reading financial newspapers, the reader was often exposed to articles discussing the topic on hostile takeovers. For example, "How Microsoft Could Go Hostile" was a headline for an article in The New York Times in 2008 that depicted Microsoft's "bear hug letter" to Yahoo, which was designed to put up an unsolicited takeover notice with the message that the latter company was no longer safe. Another article, "Gant inquest for white knight," told the story of the Swedish company Gant's search for a third party (i.e., a white knight) to resist a hostile takeover by Maus Fréres. However, the basic question is "will the move be able to create more shareholder wealth when management seeks the aid of a white knight"? White knights usually make an offer with more favorable terms, as opposed to original hostile bidders. The favorable terms may come in the form of a higher premium price, but management may also require the white knight to promise not to cut up the company and to lay off its hands on management and some employees. The two competing hypothesis (i.e., shareholder interest and management entrenchment hypotheses) are always examined for validity in consideration of antitakeover defenses, given that the evidence from the various effects of shareholder wealth in relation to antitakeover defense is inconclusive (Maheswaran & Pinder, 2005).

In the paper, we study whether seeking a white knight as an antitakeover defense can increase shareholder interest. If white knight solicitation stimulates hostile bidders to raise premiums in order to ensure their success, and if effect of the solicitation announcement is significantly positive, then it supports the shareholder interest hypothesis. However, companies sometimes find it difficult to find a willing bidder who will agree to such restrictive terms. The target company may be compromised if it gives a white knight the best deal possible (i.e., in order to deflect the hostile bidder). Nevertheless, the white knight helps the incumbent management maintain its control. If this is the case, then it supports the managerial entrenchment hypothesis.

The proliferation of financial buyers in the acquisition markets started in the 1980s. What seems to have particularly galvanized public opinion are the aggressive tactics of financial investors. Financial investors who are active in purchasing operating companies are referred to as "corporate raiders." Moreover, business professionals seeking advantage

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through changes in corporate control were portrayed as slick "Gordon Geckos," "destroyers of wealth," or worse. This why further investigation to examine whether attributes of acquirers in hostile takeover events affect deal structures and shareholders ' interests is important.

Based on the above arguments, this paper examines whether adopting a white knight can increase shareholder interest. The structure of this paper is as follows. Section 2 reviews related literature. Section 3 describes the methodology including the sample selection and the research models. Section 4 presents and discusses the result, and Section 5 concludes this paper.

2. Literature Review

Why do firms install or adopt antitakeover defenses? Will these defenses really benefit the company's shareholders? The critical challenge for executives is to determine-in anticipation of attacks on their firm-which defense strategies are in the best interest of the stockholders. Some studies reveal that taking a white knight is one of the most effective takeover defenses (Holl & Kyriazis, 1997b; Schoenberg & Thornton, 2006).

Agency costs (Jensen & Meckling, 1976) are mitigated by the takeover market that creates a check on management, which cannot be replicated by incentive mechanisms. The takeover market is one mechanism that places checks on both incompetent decision-making as well as managerial shirking. Since the takeover market is a critical component in our "institutions of capitalism" (Rediker & Seth, 1995), antitakeover provisions need to be scrutinized carefully by agency theorists.

The adoption of antitakeover defenses effectively creates a long-term contract with incumbent managements and may encourage them to make effective decisions, which can function for the best interest of stockholders in the long run (Knoeber, 1986; Cooke, Luther, & Pearson, 1998). Generally, resistance is associated with wealth gains and a lowering of the probability of bid success (Holl & Kyriazis, 1997a; Rose, 2005). The finding that executives may use takeover defenses either to entrench themselves or to boost bid premiums for shareholders was found to be limited (Schoenberg & Thronton, 2006). Hence, information content dispatched to ward off acquirers may be concerned in this lack of support for this view on managerial motivation.

Empirical support for the "managerial entrenchment" perspective has been provided by a number of U.S. studies, which have generally confirmed that introduction of antitakeover amendments by a company leads to negative results in a firm's share price

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(Jarrell & Poulsen, 1987). According to the managerial entrenchment view, antitakeover provisions protect inefficient incumbent managements that may indulge in shirking responsibilities and in maintaining short time-horizons, resulting in a present-value loss for the firm.

A review of white knight literature from various dimensions shows different outcomes from the inferences above. The synergy viewpoint posits that if white knights overbid then the shareholders of target companies should experience higher acquisition gains in white knight acquisitions (Smiley & Stewart, 1985; Carroll, Griffith, & Rudolph, 1999; Niden, 1993; Lefanowicz & Robinson, 2000). White knights pay significantly higher premiums. This may result from overbidding, unrelated industry acquirers, who win the bidding contests due to the weak information obtained on the true value of target firms (Flanagan & O'Shaughnessy, 2003). On the other hand, from the welfare viewpoint, gainers (targets and hostile bidders) can potentially compensate losers (white knights) (Banerjee & Owers, 1992). However, when a white knight and a hostile bidder get into a "bidding war," the results are usually inconclusive (Banerjee & Owers, 1996). For example, white knights can become black knights, to the detriment of incumbent management (Wright, 1997).

Deal design (deal structure and its characteristics) is an important factor on the success of mergers. Numerous studies reveal that diverse deal designs convey some noticeable information (Travlos, 1987; Datta, Pinches, & Narayanan, 1992; Faccio & Masulis, 2005). Studies of takeovers in the hostile environment of the 1980s have shown a negative relation between target shareholder control and takeover premiums (Moeller, 2005; Antoniou, Arbour, & Zhao, 2008).

Since the 1980s, the use of acquisition deals has increased as a strategy among investment bankers. Among their many strategic and financial advisory roles, investment bankers negotiate acquisition premiums. Studies have found support for agency conflicts between acquirers and their bankers, in which bankers become associated with payment of higher acquisition premiums. Findings indicate that the presence of bankers of acquiring firms, along with transaction-specific attributes, can affect acquisition premiums (Porrini, 2006). Moreover, previous studies revealed that financial buyers are more likely to initiate takeovers of inefficient firms, and this finding shows that takeovers by financial buyers play a potentially beneficial role in the efficient allocation of corporate assets in the U.S. economy (Duggal & Millar, 1999).

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3. Data and Methodology

The study covers global hostile takeover events that were announced between January 1980 and December 2007. The initial sample was obtained from the Securities Data Corporation (SDC) Mergers and Acquisitions database; security return data and contemporary market index were obtained from the Center for Research and Security Prices (CRSP) and Thomson Datastream. To be included in the final sample, following conditions should be satisfied:

1. The mergers have been completed successfully.
2. Announcement date of the merger is available on SDC.
3. Among the subsequent events after the announcement, acquirers who are white knights or hostile bidders can be identified.
4. Sufficient data on share price are available for both acquirers and targets.
5. Deal structure information (shareholdings, payment method, and initial bidding price) can be found in the SDC database.
6. Investor characteristics (industry, country, and investor type) are all available for all acquirers.

The final sample consists of 323 hostile takeover events. Furthermore, we divide these acquirers into three groups under two scenarios:

Scenario 1: When a white knight competes with the hostile acquirer

Group 1 (G1): White knight wins the bid

Group 2 (G2): Hostile acquirer wins the bid

Scenario 2: Only the hostile acquirer bids

Group 3 (G3): Hostile acquirer wins and closes the deal

By classifying the initial sample into three groups, comparison of some meaningful aspects between them will be clearer based on their special characteristics.

We use the SDC measure of hostility, in which a bid is characterized as hostile if the takeover bid is unsolicited by the target firm's management. All other bids are characterized as friendly by SDC. Different measures of hostility were used in the past studies (Morck, Shleifer, & Vishny, 1989; Maheswaran & Pinder, 2005).

3.1 Descriptive Statistics

Table 1 presents the distribution of the sample by country and year, conditional on the characteristics of acquirers. Panel A of Table 1 presents the country distribution of the sample. Among the groups, most acquirers are from the U.S. and UK; Australian acquirers

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appear in Group 3. Panel B exhibits the sample year distribution. It indicates that white knights appeared abundantly in the late 1980s. Although hostile takeover activities increased in 1990, target firms seemingly no longer showed preference for the white knight defense.

From the literature evidence, *Deal Design* (*deal structure and its characteristics*) do affect acquirer returns. Table 2 presents the sample description of deal structure and deal characteristics for each group. Panel A demonstrate the patterns of deal structures of the three groups. Four key variables are defined as the following:

(1) Average shareholdings: To avoid information leakages and currency difference, it is defined as the percentage share of outstanding shares acquired by the successful acquirer (Porrini, 2006).

(2) Premium: It is defined as the resulting value from dividing the difference between the initial bid and the market price of the target firm at t = -5 by the target firm market price at t = -5, where announcement date is set to t= 0.

(3) Bidding price differences between white knights and hostile bidders: Only exists in Group 1 and is computed as the bidding price difference between the bids of the hostile acquirer and white knight divided by the hostile acquirer's bidding price.

(4) Average percentage of each payment method: It means the percentage of each payment used in the deal. Three forms of payment are cash, stock, and others.

The first grouping (G1), wherein a successful white knight gains almost 100% of the outstanding shares of target company, shows support for the managerial entrenchment theory. Incumbent managements generally desire to protect their positions by reducing the likelihood of any hostile takeover, and they strive to grab as many shares as possible when faced with hostile bidders. By negotiating with white knights, management teams can achieve such goals more quickly. Second, data show that successful acquirers use cash as main payment method to complete a takeover deal, no matter whether the acquirer is a white knight or a hostile bidder. Note that successful hostile bidders (G2) employ *"Other"* payment much more than the other two groups. A conjecture exists when white knights are also present in bidding competitions, and when hostile bidders use this unique payment structure to achieve final success; 29.50% of winning acquirers use this form of payment. In contrast, *"Other"* forms of payment might not be popular options for white knights, with only 7.39% of firms in Group 1 using this form of payment. The highest premiums are paid by acquirers in Group 3. In contrast, white knights do not usually benefit shareholders because they pay the least premiums to shareholders. Consistent with previous speculations,

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the introduction of white knights to the acquisitions arena just shows proof for the managerial entrenchment hypothesis.

Panel B provides deal characteristics for each sample group. The first issue is whether diversification creates value. The results are inconclusive for this (Shelton, 1988; Maquieira, Megginson, & Nail, 1998). The variable "*Focus*" represents whether the acquirers and targets are in the same industry, whereas "*Diversified*" indicates that both are not. Second, Moeller and Schlingemann (2005) states that stock return and operating performance are negatively associated with an increase in both global and industrial diversification. We found that most hostile takeover acquisitions have almost equally intra-industry and inter-industry characteristics. The *Domestic* attribute indicates that acquirers and their targets are in the same country, whereas *Cross border* indicates a cross-border deal. The evidence shows that most of the successful hostile takeover events are domestic rather than cross border deals. Third, because of the unique participation of financial buyers in the acquisition markets, we also analyze whether different types of acquirers affect returns. The *Financial buyer* attribute includes investment bankers and private investors. On the other hand, *Corporate buyer* means acquirers from all industries rather than exclusive to the financial industry. In this study, we found a strongly diverse distribution in acquirer-investor types. The number of financial buyers is far less compared with corporate buyers; nevertheless, this huge difference is partly due to data availability of financial buyers, as some of them are private investors.

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Table 1 Sample distribution

Panel A. Sample distribution by country

Country	G1		G2		G3	
	No. of observations	Percentage	No. of observations	Percentage	No. of observations	Percentage
Australia	3	0.043	2	0.053	33	0.153
Austria	0	0.000	0	0.000	1	0.005
Belgium	0	0.000	1	0.026	1	0.005
Bermuda	3	0.043	0	0.000	0	0.000
Brazil	0	0.000	0	0.000	1	0.005
Canada	7	0.100	3	0.079	13	0.060
France	1	0.014	1	0.026	3	0.014
Germany	1	0.014	0	0.000	1	0.005
Hong Kong	1	0.014	0	0.000	0	0.000
Ireland-Rep	0	0.000	0	0.000	3	0.014
Italy	0	0.000	0	0.000	1	0.005
Japan	3	0.043	0	0.000	3	0.014
Luxembourg	0	0.000	1	0.026	0	0.000
Malaysia	0	0.000	0	0.000	1	0.005
Netherlands	2	0.029	0	0.000	3	0.014
New Zealand	0	0.000	0	0.000	3	0.014
Norway	0	0.000	0	0.000	1	0.005
Portugal	0	0.000	0	0.000	1	0.005
South Africa	0	0.000	0	0.000	1	0.005
Spain	0	0.000	0	0.000	1	0.005
Sweden	1	0.014	1	0.026	4	0.019
Switzerland	1	0.014	0	0.000	1	0.005
United Kingdom	2	0.029	6	0.158	24	0.112
United States	45	0.643	23	0.605	115	0.535
Total	70	1.000	38	1.000	215	1.000
Panel B Sample distribution by year						
1980	0	0.000	0	0.000	0	0.000
1981	0	0.000	0	0.000	10	0.047
1982	0	0.000	0	0.000	6	0.028
1983	0	0.000	1	0.026	7	0.033
1984	0	0.000	0	0.000	4	0.019
1985	7	0.100	4	0.105	6	0.028
1986	4	0.057	3	0.079	10	0.047
1987	7	0.100	3	0.079	12	0.056

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1988	10	0.143	10	0.263	12	0.056
1989	7	0.100	2	0.053	9	0.042
1990	1	0.014	1	0.026	1	0.005
1991	0	0.000	0	0.000	1	0.005
1992	0	0.000	0	0.000	6	0.028
1993	0	0.000	0	0.000	5	0.023
1994	0	0.000	2	0.053	11	0.051
1995	4	0.057	3	0.079	19	0.088
1996	1	0.014	2	0.053	18	0.084
1997	6	0.086	1	0.026	10	0.047
1998	8	0.114	0	0.000	12	0.056
1999	1	0.014	0	0.000	17	0.079
2000	8	0.114	2	0.053	6	0.028
2001	1	0.014	0	0.000	3	0.014
2002	0	0.000	1	0.026	3	0.014
2003	0	0.000	1	0.026	3	0.014
2004	0	0.000	0	0.000	5	0.023
2005	2	0.029	1	0.026	11	0.051
2006	3	0.043	1	0.026	5	0.023
2007	0	0.000	0	0.000	3	0.014
Total	70	1.000	38	1.000	215	1.000

This table summarizes country and time series distributions of the 323 acquirer samples within a 28-year period (January 1980 to December 2007). The samples are classified into three groups: Group 1-successful white knights; Group 2-successful hostile bidders in competition with white knights; Group 3-successful hostile bidders without white knights. The samples are collected from SDC based on the assumption that deal structures, deal characteristics, and returns are all available in SDC, Datastream, or CRSP.

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Table 2 Sample description of deal structure and deal characteristics for each group

	G1	G2	G3
Panel A Deal structure			
Average shareholding	95.57%	89.89%	77.61%
Premium	0.15	0.32	0.51
Bidding price differences between white knights and hostile bidders	0.14	none	none
Average percentage of each payment method			
Forms of Payment			
Cash	71.30%	57.59%	69.01%
Other	7.39%	29.50%	14.66%
Stock	21.30%	12.88%	15.52%
Panel B Deal characteristics			
Industry			
Focused	36/70	20/38	109/215
Diversified	34/70	18/38	106/215
Country			
Cross border	14/70	6/38	39/215
Domestic	56/70	32/38	176/215
Investor Type			
Corporate buyer	66/70	32/38	208/215
Financial buyer	4/70	6/38	7/215

This table reports deal structures and deal characteristics for each sample group. The sample comprises 323 takeovers that were announced over the period of 1980-2007. Panel A presents the deal characteristics: *Average shareholdings* is the percentage shares of outstanding shares acquired by successful acquirers. Premium could be obtained by dividing the difference between the initial bid price and the target market price at t=-5 by the target price at t=-5. *Bidding price differences between white knights and hostile bidders* is computed by subtracting hostile acquirers' bidding price from the bidding price submitted by white knights, and then divided this difference by hostile acquirers' bidding price. Average percentage of each payment method denotes the percentage of each payment method used by the succeeded acquirers in one deal event. Panel B presents deal characteristics. There are three classifications in Panel B: *Industry*: Focus shows that the acquirers and targets are from the same industry; *Diversified* denotes that both are not. *Country: Domestic* indicates that acquirers and their targets are in the same country; *Cross border* indicates a cross border deal. *Investor type: Corporate buyer* means that the acquirers are from all industries except the financial industry; *Financial buyers* includes investment bankers plus private investors.

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3.2 Methodology

To evaluate the announcement effect for each group, standard event study method is employed. If the announcement effects are significant, the deal design may have factors that lead to implications for examining the two competing hypotheses, then further study should be done to examine the relationship between the deal announcement effect and deal designs of each group. Finally, this paper also provides the special attributes for acquirer types. Furthermore, whether participation of financial buyers in the acquisition markets partly result from differences in deal design also provides an interesting topic for scrutiny.

We estimate daily abnormal returns for each group over 100 days, centered on the bid announcement date, [-150, -50], using the modified market model, where market return is the return on World-Datastream Market price index. We choose the event windows [-1,1] and [-2,2] to capture the wealth effect on target company shareholders. Average abnormal return (AAR) and Cumulative abnormal return (CAR) $[t_1, t_2]$ will be computed, and results are presented in Table 3.

The weakness of event study is that we cannot simultaneously control for deal design, which can affect a target management's decision to seek a white knight. Therefore, we run a regression to determine the impact of white knights on returns of the targets. Model details are presented in the next section.

4. Results Analysis and Discussions

4.1 Announcement Effect

Table 3 presents the bid announcement effect on returns over different event windows for each group. It also provides inter-group comparisons. The left half of Table 3 shows mean values test of the cumulated abnormal return (CAR) for each group, and all are significantly negative. The fifth column presents the equality tests of the mean (*one-factor ANOVA*) among the groups, and they are not statistically different. This implies that white knights are unable to create wealth for target shareholders; their experiences also do not largely differ from those of the hostile bidders. This is consistent with the managerial entrenchment hypothesis, that is, white knight solicitation is indeed a device at the discretion of the managerial team that neglects shareholder interest and for which the agency problem might be a concern.

Tukey's HSD test is used to examine the comparisons of CAR between the two groups. The results show that the inter-group comparisons are all insignificantly different. In addition, the mean differences are all negative, except for the *Difference* (G1-G2) at [-1,1], which

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means that shareholders of a company wherein white knights take over actually experience the most negative returns compared with those of companies wherein hostile bidders succeed, albeit insignificantly. This result does not support shareholder interest hypothesis.

Table 3 Analysis of CAR for target firms

CAR	Mean of CAR				Difference between groups		
	G1	G2	G3	F-statistics	G_{12}	G_{23}	G_{13}
[-1,1]	-0.0547 (0.000)***	-0.0551 (0.000)***	-0.0259 (0.000)***	0.133 (.875)	0.00036 (1.000)	-0.02917 (0.935)	-0.02882 (0.899)
[-2,2]	-0.0570 (0.000)***	-0.0488 (0.000)***	-0.0482 (0.000)***	0.005 (.995)	-0.00825 (0.998)	-0.00062 (1.000)	-.00887 (0.995)

This table reports CAAR [-1,1] and CAAR [-2,2] around the announcement (day 0) of a takeover. Abnormal returns are estimated using a modified market model with R_{mt}, the return on World-Datastream Market price index. The estimation window is [-150,-50]. The left half of this table shows equality tests of the mean (one-factor ANOVA) determining whether returns obtained by these groups are statistically different. The right half of this table shows mean comparisons of CAAR between-group by using Tukey's HSD because of equality of variance in CAARs. P-values of statistics are reported in parentheses. *, **, and *** denote significance at the 1%, 5%, and 10% levels, respectively.

4.2 Deal Structures Comparisons

Table 4 presents the mean values of shareholdings and premiums for each sample group. One-factor ANOVA is employed to test the equality of the mean among the groups. The results show that they are all strongly significant. In order to get more details from this significant outcome, we use Dunnett's T3 to conduct multiple comparisons because of the variance inequality in deal structures.

Table 4 Analysis of deal structures

Deal structure	Mean				Difference between groups		
	G1	G2	G3	F-statistics	G_{12}	G_{23}	G_{13}
Shareholdings	97.57%	89.89%	77.61%	15.785 (.000)**	7.68% (0.003)***	12.28% (0.000)***	19.95% (0.000)***
Premiums	0.155	0.319	0.511	2.961 (.053)*	-0.164 (0.170)	-0.193 (0.296)	-0.356 (0.001)***

This table presents the mean values of shareholdings and premiums for the sample groups. The left half of the table measures the mean tests (one-factor ANOVA). The right half of the table shows the results of inter-group comparisons in deal structures using Dunnett's T3 due to variance inequality in deal structures. The p-values are placed in parentheses. *, **, and *** denote significance at the 1%, 5%, and 10% levels, respectively.

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Table 4 shows that shareholdings obtained by white knights (Group 1) are the highest among the three groups, while premium is at the lowest. The result is consistent with known implications of managerial entrenchment hypothesis. By introducing white knights into the acquisition competition, managers could effectively protect their positions from being taken over by unsolicited acquirers. The *Difference* (G2-G3) is significant at the 1% level, too. This suggests that hostile bidders put more effort in grabbing as many shares as possible when facing challenges from white knights. Finally, the significant value in the *Difference* (G1-G3) demonstrates that white knights generally gain far more shares in takeover activities, probably because they are invited, with the advantage of possessing inside information and the target company's formal consent. Furthermore, the test of equality on the mean values of the premiums of three groups shows significant difference at 10% level. We also found the mean *difference* (G1-G3) with a p-value 0.001, showing that white knights pay far less than what hostile bidders pay. Although *Difference* (G1-G2) and *Difference* (G2-G3) do not diverge too much, the mean differences are indeed all negative. White knight bids are the least among the three groups, demonstrating that shareholders could not benefit from adopting the white knight device in order to defeat hostile bidders where premium values are concerned. Again, this finding is contrary to the view of the shareholder interest hypothesis.

4.3 Regression and Results

To determine the impact of deal design (deal structure and deal characteristics) on CARs for each group, we estimate the following regression over two event windows [-1,1] and [-2,2]:

Model 1: $CAR_i = \beta_0 + \beta^* \, deal\ structure_i + \varepsilon_i$ (1)

Model 2: $CAR_i = \beta_0 + \beta^* \, deal\ structure_i + \gamma^* \, deal\ characteristic_i + \varepsilon_i$ (2)

The independent variables of the deal structure in Model 1 are defined in Table 1. Model 2 incorporates the deal characteristics as control variables to obtain a pure interpretation on their patterns. Three dummies are used for the deal structure factor. Industry is the first dummy variable that takes the value of 1 if targets and acquirers are from the same industry and 0 if otherwise. Country is the second dummy variable that takes the value 1 if targets and acquirers are in different countries and 0 if otherwise. Investor type is the third dummy variable that takes the value of 1 if the acquirer is a corporate buyer and 0

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if a financial buyer. We choose the short event windows [-1,1] and [-2,2] because market response is assumed immediately after the announcement of the bid and in order to reduce noise in our analysis.

Table 5 provides the CAR regression results. We found that both deal structure and deal characteristics cannot be well explained in Group 1 and Group 3, which both have low R-squared results, and any independent variable is insignificant with the target CARs at the level of 10%. This suggests that deal structures are not significant factors in explaining CARs, albeit the deal structures of the different groupings have wide variations. After adding deal characteristics to the regression model, its power of explanation still does not show much improvement, with R-squared values ranging from 0.006 to 0.029. However, in the regression results over the event window event [-2,2], the variable "Other" is significant at 10% level with a negative sign, which means that if hostile bidders face competition from white knights, the sole option-linked payment would decrease their returns, confirming the preliminary results in Table 2. Upon considering cross-border acquisitions, we found that this factor depresses returns on both event windows. This implies that it is not a wise move for hostile bidders to execute takeover action from abroad when target firm managers try to introduce a white knight to the competition. In addition, the *Investor type* also exhibits significance at 10% level in CAR [-1,1]. This implies that corporate buyers have the advantage in pursuing hostile takeovers even with the presence of white knights.

4.4 Endogenous Checks and 2SLS Results

As the changes in shareholdings and premiums tend to have an effect on each other contemporaneously (i.e., they are demonstrated in the same acquisition event), the differences of deal structures among the three groups are strongly significant. Two-stage least squares (2SLS) test is employed to solve this potential simultaneous equation bias problem by reducing the possibility of biased ordinary least squares (OLS) coefficient estimates. Two sets of simultaneous equations are as follows:

Model 3:

$$CAR_i = \beta_0 + \beta_i * Shareholdings_i + \varepsilon_i \quad (3)$$

$$Shareholdings = \delta_0 + \delta_i * premiums_i + \varepsilon_i \quad (4)$$

Model 4:

$$CAR_i = \beta_0 + \beta_i * premiums_i + \varepsilon_i \quad (5)$$

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$$Premiums_i = \delta_0 + \delta_i^* Shareholdings_i + \varepsilon_i \quad (6)$$

Table 6 shows the 2SLS results. All of the coefficients are insignificant. Therefore, no endogenous bias exists in this study.

4.5 Acquirer Attributes

Do the different attributes of acquirers affect CARs? Due to the sample size problem, nonparametric statistical test is used. As defined in the previous section, the *Financial buyers* attribute includes investment bankers plus private investors, and *Corporate buyers* refers to acquirers from all industries. Table 7 provides the results, and they indicate that deal structures between these two types of acquirer attributes do not significantly diverge. In short, acquirer attributes do not have effects on deal structures, using one-factor ANOVA for *Corporate buyers* and Kruskal Wallis test for *Financial buyers*. We also test for mean equality to examine whether deal structures of these groups are statistically different. The left half of Table 7 provides the results.

First, shareholdings have strongly significant differences between groups for both *Corporate buyers and Financial buyers*, with p-values of <0.001 and 0.039, respectively. However, the values do not indicate which groups are responsible for the difference. Therefore, multiple comparison methods are further required.

Dunnett's T3 measure is used for *Corporate buyers* attribute because of variance inequality in deal structures, and both Mann-Whitney and Wilcoxon tests are conducted for *Financial buyers* (see right half of Table 7). Testing for only *Corporate buyers* result in significant difference at 1% level for all of the combinations. The results are similar with intergroup comparisons. Testing for only *Financial buyers*, *Difference* (*G1-G2*) and *Difference* (*G1-G3*) are still significant under 1% and 10% level, respectively, but *Difference* (*G2-G3*) does not show significant value. This implies that whether hostile bidders are challenged by white knights or not, their acquired shareholdings are not affected. Financial hostile buyers might be concerned more about profitability than control rights in target firms. Nevertheless, white knights still gain the most shares among acquirers in hostile takeover events, which again correspond with the implications of managerial entrenchment hypothesis.

Second, the equality test of mean values in premiums is performed for each group. For *Corporate buyers*, this is significant, which is under the 10% level (p-value is 0.071), but not for *Financial buyers*. When considering only *Corporate buyers*, the outcome is the same

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with what we have obtained in the previous section, which presents a significant mean difference in premiums paid by Group 1 and Group 3. Corporate white knights pays the least compared with hostile bidders. Thus, shareholders benefits in the form of stock returns do not improve, even with the introduction of white knights. *Financial buyers* tell an entirely distinct story on premiums. The mean differences are all insignificant and negative. This is a conventional reflection of financial buyer investment attributes. In other words, for this kind of investor, it makes no difference to shareholders whether to accept white knights or hostile bidders in a hostile bidding competition.

Table 5 Regression analysis

	Model 1		Model 2	
Panel A: Group1	**CAAR(-1,1)**	**CAAR(-2,2)**	**CAAR(-1,1)**	**CAAR(-2,2)**
Intercept	0.004	0.057	0.198	0.332
	(0.993)	(0.925)	(0.747)	(0.624)
Shareholdings	-0.002	-0.003	-0.002	-0.002
	(0.705)	(0.645)	(0.787)	(0.714)
Premium	0.015	0.027	0.008	0.005
	(0.958)	(0.931)	(0.979)	(0.988)
Bidding price difference	0.090	0.158	0.034	0.108
	(0.815)	(0.713)	(0.934)	(0.815)
Cash	0.183	0.204	0.164	0.182
	(0.160)	(0.156)	(0.220)	(0.216)
Other	0.173	0.298	0.204	0.364
	(0.703)	(0.553)	(0.677)	(0.500)
Stock	0.150	0.068	0.144	0.062
	(0.389)	(0.724)	(0.418)	(0.749)
Industry			-0.084	-0.107
			(0.438)	(0.369)
Country			0.022	0.003
			(0.884)	(0.984)
Investor type			-0.198	-0.261
			(0.387)	(0.301)
R-squared	0.043	0.051	0.065	0.080
F statistics	0.470	0.564	0.461	0.583
p-value	0.828	0.757	0.895	0.806
Increased R-squared	none	none	0.022	0.029

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Panel B: Group2				
Intercept	0.409	1.189	0.544	2.112*
	(0.544)	(0.274)	(0.442)	(0.061)
Shareholdings	-0.002	-0.009	-0.008	-0.021
	(0.808)	(0.486)	(0.379)	(0.120)
Premium	-0.105	-0.173	0.085	0.096
	(0.554)	(0.541)	(0.677)	(0.761)
Cash	-0.292	-0.288	-0.211	-0.142
	(0.224)	(0.452)	(0.380)	(0.702)
Other	-0.318	-0.636*	-0.275	-0.572
	(0.182)	(0.098)	(0.242)	(0.121)
Stock	-0.222	-0.3	-0.248	-0.256
	(0.532)	(0.598)	(0.475)	(0.633)
Industry			-0.007	-0.105
			(0.968)	(0.702)
Country			-0.397*	-0.871**
			(0.099)	(0.023)
Investor type			0.389*	0.207
			(0.091)	(0.555)
R-squared	0.092	0.147	0.229	0.319
F statistics	0.649	1.105	1.079	1.700
p-value	0.664	0.377	0.405	0.141
Increased R-squared	none	none	0.137	0.172
Panel C: Group3				
Intercept	0.105	0.156	0.183	0.26
	(0.424)	(0.408)	(0.428)	(0.433)
Shareholdings	0.000	-0.001	0.000	-0.002
	(0.408)	(0.353)	(0.417)	(0.339)
Premium	0.007	0.027	0.007	0.025
	(0.781)	(0.472)	(0.805)	(0.505)
Cash	-0.069	-0.135	-0.062	-0.133
	(0.471)	(0.329)	(0.523)	(0.345)
Other	-0.150	-0.140	-0.151	-0.144
	(0.246)	(0.452)	(0.245)	(0.441)
Stock	-0.024	-0.033	-0.034	-0.049
	(0.870)	(0.874)	(0.817)	(0.814)
Industry			0.067	0.107
			(0.341)	(0.292)

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Country			-0.042	-0.017
			(0.650)	(0.900)
Investor type			-0.111	-0.154
R-squared			(0.570)	(0.585)
F statistics	0.010	0.012	0.016	0.018
p-value	0.415	0.495	0.413	0.468
Increased R-squared	0.838	0.780	0.912	0.878
	none	none	0.006	0.006

This table reports regression analysis of acquirer returns on variables for deal structures and deal characteristics. The cumulative average abnormal returns for the [-1,1] and [-2,2] period surrounding the announcement day serve as the dependent variable in each regression model. Model (1) concerns the relationship between cumulated average abnormal return and deal structures. Independent variables in Model (1) are as follows: *Shareholdings*, the percentage share of outstanding shares acquired by successful acquirers; *Premiums*, the ratio of the difference between the initial bid price and the target market price 5 days prior to the announcement to the target price 5 days prior to the announcement; *Bidding price difference*, the ratio of the difference between the bidding price submitted by white knights and hostile acquirer's bidding price to hostile acquirer's bidding price. *Cash, Other*, and *Stock* are all dummy variables have a value of 1 if acquirers use one of them as the sole payment method in an event, and a value of 0 if acquirers use a mix of them as the compensation structure. Model (2) adds deal characteristics as the control variables for the original model. Deal characteristics are expressed using dummy variables: *Industry*, with a value of 1 if targets and acquirers are in the same industry, or 0 otherwise; *Country*, with a value of 1 if targets and acquirers are in different countries, or 0 if otherwise; *Investor type*, with a value of 1 if acquirer is corporate buyer, and 0 indicates financial buyer.

The p-values of the regression coefficients are reported in parentheses.

*, **, and *** denote significance at the 1%, 5%, and 10% levels, respectively.

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Table 6 Two-stage least square regressions

	G1		G2		G3	
Variables	**CAAR(-1,1)**	**CAAR(-2,2)**	**CAAR(-1,1)**	**CAAR(-2,2)**	**CAAR(-1,1)**	**CAAR(-2,2)**
			Model 3			
Intercept	1.146	0.403	0.981	2.438	-0.646	-2.352
	(0.867)	(0.957)	(0.454)	(0.265)	(0.783)	(0.638)
Shareholdings	-0.012	-0.005	0.012	-0.028	0.008	0.030
	(0.861)	(0.950)	(0.428)	(0.255)	(0.791)	(0.645)
R-squared	0.000	0.000	0.018	0.036	0.000	0.001
F statistics	0.031	0.004	0.642	1.336	0.070	0.213
p-value	0.861	0.950	0.428	0.255	0.791	0.645
			Model 4			
Intercept	0.204	0.270	0.055	0.184	0.200	0.319
	(0.750)	(0.725)	(0.679)	(0.409)	(0.696)	(0.692)
Premiums	-1.674	-2.114	-0.347	-0.732	-0.441	0.717
	(0.685)	(0.668)	(0.324)	(0.212)	(0.657)	(0.642)
R-squared	0.002	0.003	0.027	0.043	0.001	0.001
F statistics	0.166	0.185	1.001	1.617	0.198	0.211
p-value	0.685	0.668	0.324	0.212	0.657	0.646

p-values of statistics are reported in parentheses. *, **, and *** denote significance at the 1%, 5%, and 10% levels, respectively.

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Table 7 Analysis of deal structures across investor types

Deal structure	Full sample	Mean G1	G2	G3	Difference between groups F-statistics (or Chi-square)	Difference (G1-G2)	Difference (G2-G3)	Difference (G1-G3)
Shareholdings								
Corporate Buyer	83.16%	97.42%	89.58%	77.64%	14.162***	7.84%***	11.94%***	19.78%***
					(0.000	(0.010)	(0.001)	(0.000)
Financial Buyer	87.47%	100.00%	91.55%	76.81%	6.492**	8.45%***	14.74%	23.19%*
					(0.039)	(0.010)	(0.945)	(0.073)
Difference	-4.31%	-2.58%	-1.97%	0.83%				
	(0.539)	(0.641)	(0.707)	(0.947)				
Premiums								
Corporate Buyer	0.402	0.155	0.270	0.501	2.664*	-0.115	-0.231	-0.346***
					(0.071)	(0.484)	(0.181)	(0.001)
Financial Buyer	0.578	0.155	0.579	0.819	3.647	-0.424	-0.240	-0.664
					(0.161)	(0.257)	(0.366)	(0.109)
Difference	-0.176	-0.000	-0.309	-0.319				
	(0.522)	(0.998)	(0.163)	(0.530)				

These tables present the mean values of shareholdings and premiums of the sample on groups and different deal structure items; these three groups are further classified based on the criterion of investor type. To compare deal structures of *Corporate buyers* to those of *Financial buyers*, independent-samples T-test is employed; results could are on the left half of this table vertically. The left half of this table shows equality tests of the mean (one-factor ANOVA for Corporate buyers; Kruskal Wallis test for *Financial buyers*.) determining whether deal structures demonstrated by these groups are statistically different. The right half of this table shows between-group comparisons of deal structures, using Dunnett's T3 for *Corporate buyers* because of inequality of variance in deal structures and both Mann-Whitney and Wilcoxon tests for *Financial buyers*.

P-values of statistics are reported in parentheses. *, **, and *** denote significance at the 1%, 5%, and 10% levels, respectively.

5. Conclusion

In this paper, we examine the wealth effect on target shareholders when the managements of target firms seek the help of white knights by using a global sample of hostile acquisitions. We found that adopting the white knight defense does not benefit shareholder interest of target firms. Therefore, the evidence does not support the shareholder interest hypothesis.

Similarly and consistent with management entrenchment hypothesis, we find that deal

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structure is unrelated to either the control premium or the likelihood that white knights will pay a high premium. The paper provides evidence that the white knight defense does not make any improvement in shareholder wealth at all, and this strategy maybe just a reflection on the hubris and selfishness of the management. Only one interesting matter to mention is that white knights acquire substantially higher outstanding shares in target firms. Deal structures might not be as significant as imagined to explain CARs, but they constitute a core area for investigating the manifestations of the competing two hypotheses.

Finally, on acquirer attributes, we found that financial white knights gain the most shares and pay the least. Generally, results on corporate buyers are almost identical with those from pure comparisons of the original three groups.

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