How do acquirers bid? A test of anchoring effect in serial takeovers

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Abstract: Studies on takeover are plenty; however, few have examined how acquirers bid in serial takeovers. We show that there is a strong relationship between two consecutive takeover bids by the same acquirer, with higher bid premium for the former and higher bid premium for the latter, and vice versa. The strength of the link between successive takeover bids varies by deal characteristics and economic environment. Our evidence suggests an anchoring effect in serial takeover bids, where each bid is not a single event unrelated to the other bids across multiple takeovers, as has often been assumed in previous studies on takeover.

Keywords: Serial takeovers; bid premium; anchoring effects

JEL: G33, G34

1. Introduction

Takeover, as an important method of capital reallocation, has been widely used by enterprises to integrate resources and implement industrial upgrading. However, significant evidence shows that acquirers earn at most non-positive returns upon bid announcement.[1] Moeller et al. (2004) have noted massive scale-of-wealth destruction in some big mergers in the late 1990s. Recently, studies exploring corporate serial takeovers have shown that successive announcement returns decline from deal to deal for an individual acquirer (Fuller et al., 2002; Billett and Qian, 2008; Aktas et al., 2009). The negative market reaction attracts considerable attention to whether the acquirers have overpaid for the targets and whether the takeover market has created value for shareholders, especially the shareholders of acquirers.

Jensen (1986) has proposed that excess cash flow accompanied by agency problems may lead management to overinvest. According to Roll (1986), managers infected with hubris may inadvertently overestimate their own capabilities, actively engage in takeovers, and consequently overpay for targets. Morck et al. (1990) and Harford et al. (2012), among others, have argued that entrenched managers may participate in value-destruction takeovers. While these studies explain acquirers' negative announcement returns from different angles, they typically treat each takeover as a single event unrelated to other bids. However, we ask the following questions: Is there any association among multiple takeover bids from the same acquirer? Does the acquirer refer to the purchase price of previous takeovers when making a series of

[1] See Jensen and Ruback (1983) and Andrade et al. (2001) for a review of takeover literature.

takeovers? Can acquirers learn from past takeovers to make better bids in future takeovers? These questions are important for understanding how managers approach takeovers and make decisions during the bidding process. However, despite the large body of literature on takeovers, only few studies have explored these questions.

This study examines how acquirers bid in serial takeovers. Our research is based on the prospect theory by Tversky and Kahneman (1974). According to the prospect theory, individuals are under cognitive pressure in situations with high uncertainty. Therefore, they use simple heuristic models instead of rational models in decision-making. Accordingly, individuals are easily impacted by previous decisions (anchor) when making decisions, and the decision results are biased toward the anchor point. Lieberman and Asaba (2006) have suggested that the complexity and uncertainty of the takeover process provide an environment for the functioning of the anchoring effect. When a company has multiple takeovers, the price paid for the previous takeover provides the most direct insight into and reference for subsequent takeovers; therefore, the price of the latter takeover is likely to be anchored in the previous takeover.

Using a sample of takeovers by Chinese companies, we examine if the anchoring effect exists in serial takeovers, and if so, how does the effect vary with deal characteristics and economic environment. Prior to the COVID-19 pandemic, in early 2020, China was the fastest growing economy in the world with GDP growth rate exceeding 6% for many years (Lai and Zhu, 2022). During this period, the Chinese government issued a number of industrial policies to improve the efficiency of market resource allocation and optimize the industrial structure through takeovers (Chen and Shih, 2008). Therefore, takeovers became a popular strategy for Chinese companies to pursue rapid growth. Accordingly, a large number of companies initiated multiple takeovers in a short period of time (Gaur et al., 2013). However, takeovers by Chinese

firms have not created significant value for the acquirers (Zhang, 2003; Bhaumik and Selarka, 2012). Moreover, Chinese acquirers' performances have declined with the number of takeovers (Wu et al., 2008), similar to their international counterparts. Thus, China provides an excellent environment for exploring how acquirers bid in serial takeovers.

First, we test if the anchoring effect exists in serial takeovers by Chinese firms. The results show that when a firm makes multiple takeovers, the bid premium for the latter takeover is significantly positively correlated with the bid premium for the previous takeover. Moreover, this association exists for both state-owned and private enterprises. Apparently, the acquirer would refer to the purchase price in the previous takeover when undertaking a series of takeovers.

Next, we test if the strength of the anchoring effect changes with the characteristics of the takeover and economic environment. The results show that the anchoring effect increases if the time interval between two takeovers is short. The anchoring effect is also strong when the industries of the two targets are the same. Conversely, the anchoring effect is weak under high levels of economic policy uncertainty. Naturally, changes in the takeover environment make people less dependent on the past.

Particularly, we find that anchoring effect has significantly been weakened after 2018. We consider the following two possible explanations: First, the Sino-US trade war that started in 2018 has put pressure on Chinese companies' takeovers, both domestic and cross-border. Therefore, Chinese companies have become cautious when pursuing takeovers. Second, COVID-19, occurred at the end of 2019, put pressure on the entire Chinese economy. Given the financial constraints, Chinese companies had to become cautious when bidding. Therefore, the tense Sino-US relationship and COVID-19, combined together, moderated the impact of the anchoring effect on takeover bids.

We test whether the anchoring effect varies with the number of acquisitions by the same acquirer. Evidence based on acquisitions from the U.S. suggests that acquirers can learn from previous bidding mistakes and make certain changes in future bids (Billett and Qian, 2008; Aktas et al., 2011). Accordingly, we expect the same response from Chinese acquirers. Surprisingly, the results show that the total number and order of takeovers have no significant impact on the role of anchoring effects in serial takeover bids. This evidence suggests that, although acquirers can accumulate more knowledge and experience from past acquisitions, this experience is less helpful for Chinese acquirers in formulating new acquisition strategies. Chinese acquirers are more persistent and aggressive in bidding compared to their U.S. counterparts, as documented in previous studies (Chen and Young, 2010; Hope et al., 2011).

We further examine whether the anchoring effect in bids is driven by the acquiring firm itself or by the management style of the CEO. If the anchoring effect is apparent in a series of acquisitions under the same CEO in the acquiring firm, then the anchoring effect would be eliminated if the acquiring firm's CEO changes. Indeed, we find that the anchoring effect mainly exists in firms without CEO turnovers. Once a firm changes its CEO, the anchoring effects substantially diminish and even disappear. Apparently, the succeeding CEO adopts different bidding strategy than the predecessor. [2]

[2] A large body of literature has shown that managers have their own style of business operation. Bertrand and Schoar (2003) have confirmed managers' idiosyncratic effect on corporate operation. Rotemberg and Saloner (2000) have constructed a model in which a CEO's "vision" bias significantly affects the firm's strategic direction. Bamber et al. (2010) have shown that disclosure style in voluntary corporate financial disclosures is associated with managerial demographic background. Cain and Mckeon (2016) have found that the level of corporate risk is associated with the CEO's personal risk-taking level. Studies have also found that CEOs' overconfident attribute often leads to corporate decision distortions (e.g., Malmendier and Tate, 2005, 2008; Campbell et al., 2011; Schrand and Zechman, 2012; Ahmed and Duellman, 2013).

Finally, we check if the anchoring effect changes over time. The results show that, for Chinese firms as a whole, the anchoring effect gradually weakens over time. This is not surprising given that the management quality and corporate governance of Chinese companies have improved over the past two decades (Gaur et al., 2013).

Our research provides new insights into how acquirers bid in takeover transactions. Previous research on takeover bids has focused on manager entrenchment issues related to agency problems (Jensen, 1986; Morck et al., 1990; Harford et al., 2012) or irrational characteristics of managers, such as overconfidence or optimism (Roll, 1986; Malmendier and Tate, 2008). Our study introduces anchoring effects into the takeover bidding process, which is rooted in the prospect theory by Tversky and Kahneman (1974). The presence of anchoring effects during takeover bids suggests that, among multiple takeovers, each takeover is not a single event unrelated to the other bids, which has often been assumed in previous takeover studies. This finding echoes that of Villalonga and McGahan (2005), who have documented that prior takeover experience leads to a higher likelihood of future completed takeovers. Baker et al. (2012) have shown that an acquirer's bidding anchors on the target's recent peak price. Our finding is also helpful in understanding the "China premium" in cross-border mergers and acquisitions. Researchers have long argued that Chinese acquirers pay higher bid premiums than their competitors in cross-border takeovers (e.g., Chen and Young, 2010; Hope et al., 2011). However, it is unclear how and why Chinese acquirers insist on bidding in this way. The anchoring effect in bids, to some extent, provides an explanation.

Our study also sheds light on the issue of acquirers' negative announcement returns in serial takeovers. Phalippou et al. (2015) have found that corporate acquisitiveness is negatively related to announcement returns. Fuller et al. (2002) and

Aktas et al. (2009), among others, have documented that successive announcement returns decline with every deal by an individual acquirer. Renneboog and Vansteenkiste (2019) have pointed out that the continuous takeover of enterprises in a short period of time is an important factor leading to poor takeover returns. Our research shows that the anchoring effect is closely related to the time interval between two bids in serial takeovers. The shorter the time interval between consecutive takeovers, the greater the anchoring effect on bids. Therefore, an implication is that managers should reasonably evaluate the timing of takeovers to avoid short-term blind continuous takeovers that can negatively impact the company's development.

The remainder of this study is organized as follows: Section 2 discusses the anchoring effect under the context of takeover transactions. Section 3 describes the statistics about the variables, sample, and research model. Section 4 presents the empirical results for the anchoring effects during takeover bids. Section 5 presents the conclusions.

2. Anchoring effect during takeover bids

Anchored thinking was originally proposed by Tversky and Kahneman (1974) in the prospect theory. According to the prospect theory, individuals use the information (anchor value) generated from previous decisions as a reference for subsequent decisions. In behavioral economics, decision-makers, lacking information or knowledge, use heuristics or simple rules to make decisions under uncertainty (Cyert and March, 1963). Thomas et al. (2001) have found that cognitive frameworks lead managers to primarily focus on past information. Gavetti (2012) has proposed that past practices can serve as templates for managers to make future decisions.

When people make decisions under uncertain circumstances, they tend to use the anchor value as the initial point for decision-making, and then continuously adjust according to the current situation. In the absence of enough cognitive resources or sufficient conscientious efforts, adjustment outcomes tend to be restricted to feasible regions around anchor values, thereby exhibiting anchoring effects (Jacowitz and Kahneman, 1995). MusSweiler and Engich (2005) have shown that the anchoring effect comes into play when the anchoring value falls within an acceptable or reasonable range and considerable effort is required to break away from it. Jacowitz and Kahneman (1995) have believed that individuals have cognitive inertia, that is, they are in a cognitively busy period or unwilling to make more efforts in adjustment, which results in insufficient adjustment based on anchor points.

Anchoring plays an important role in many important decisions. For example, Northcraft and Neale (1987) have found that real estate agents anchor their decisions on bid prices when estimating home prices, even though these brokers deny that bid prices affect their final estimates. Beggs and Graddy (2009) have shown that a painting's prior selling price (anchor), instead of its objectively estimated value, determines its subsequent selling price in an auction. In finance, George and Hwang (2004) have found that investment strategies based on 52-week highs have significantly positive returns, which is related to investors anchoring their decisions at 52-week highs.

Anchoring effects may also influence bids by acquirers in serial takeovers. First, the information asymmetry between the acquirer and target, coupled with frequent changes in financial conditions, makes it difficult to assess the value of the target company. The problem of information asymmetry in bidding is even more serious in emerging markets such as China (Hoskisson et al., 2000). Second, not considering the target value, transaction characteristics such as bargaining power and payment methods

may also have significant impact on the bidding price. Therefore, the determination of the bidding price is complex and full of uncertainties, which naturally provides a prerequisite for the anchoring effect. Consequently, when a company makes serial takeovers, the price of previous takeovers may serve as a benchmark and inform managers' future bids. Accordingly, the final bid price will be closer to the anchor point and deviate from rationality.

3. Data

3.1 Sample

The takeover data used in this study comes from the SDC Global Mergers and Acquisitions Database, and the financial data comes from the China Stock Market and Accounting Research Database (CSMAR). Officer (2007) has indicated that when the target is a listed company, the takeover premium is 15%-30% higher than that of an unlisted target. To ensure consistency in takeover premiums and given the availability of target financial data, we restrict our sample to takeovers in which the target is a public company. The first takeover of a Chinese listed company recorded in the SDC database occurred in 1993. Therefore, to obtain a complete series of takeover samples, the sample period selected in this study is 1993 to 2021.

Sample selection is based on the following criteria: (1) the acquirer and target are both from China and the target is a listed company; (2) share buybacks are not included; (3) acquirers that are natural persons or named "investor group" in the SDC database are excluded; (4) first takeovers of companies are not included; (5) data are available for all control variables used in this study. Based on the aforementioned criteria, we

obtain a total of 958 takeovers. Next, we match each takeover in this sample with the most recent prior takeover by the same firm. Therefore, takeovers with no matching premium are removed. Finally, we get a sample of 673 takeovers for this study. The specific sample selection process is shown in Panel A of Table 1.

(Insert Table 1 Here)

Panel B of Table 1 provides the year-by-year distribution of the sample. Two significant increases in sample size occurred in 2015 and 2019. Prior to 2015, the sample size in each year is within 3% of the total sample size. The largest sample size is seen from 2019 to 2021, each accounting for more than 10% of the total sample size.

3.2 Variables

3.2.1 Bid premium

We calculate bid premiums in two ways. First, following Schwert (1996) and Reuter et al. (2012), the bid premium is calculated based on target stock price. Specifically, bid premium is calculated as follows:

Premium 1= Bid price per share /target stock price four weeks before the bid announcement−1

Second, following Officer (2007) and Cheng et al. (2016), we calculate bid premium based on target net asset. Specifically, bid premium is calculated as follows:

Premium 2= Total transaction value/(target net assets× the percentage of target shares acquired) −1

3.2.2 Other variables

We examine whether the strength of the anchoring effect varies with deal characteristics and economic environment. Therefore, several other variables are included in our model, including the nature of acquirer ownership ($SOEDum$), time interval between two consecutive takeovers ($Interval$), similarity of target industry in two serial takeovers ($TargetSimilarity$), sequence and number of takeovers conducted by an acquirer ($sequence$ and $Acquisitiveness$), economic policy uncertainty (EPU), and CEO turnovers ($CEOChange$). Among them, economic policy uncertainty is represented by monthly data from the China Economic Policy Uncertainty Index jointly released by Stanford University and the University of Chicago (Baker et al., 2016); it is one of the most widely used economic policy indicators. Given that there is a certain lag in the impact of economic policy uncertainty on takeovers, we construct the economic uncertainty variable as the natural logarithm of the economic uncertainty index of the previous month for each takeover announcement date (Nguyen and Phan, 2017).

Based on previous literature (Hayward and Hambrick, 1997; Malhotra et al., 2015), our model also includes the following three types of control variables: (1) Transaction characteristic variables, including takeover attitude, payment method, takeover share, transaction type, and industry diversification (whether the acquirer's and target's industry is the same); (2) Target characteristic variables, including target size, return on

assets, and leverage ratio; (3) Fixed effect variables, including industry and year dummy variables. The definitions of variables are given in the appendix.

3.3 Model

Following Aktas et al. (2011) and Baker et al. (2012), the main testing model used in this study is as follows:

$$Premium_t = \alpha_0 + \alpha_1 Premium_{t-1} + \alpha_2 Control_t + \alpha_3 Industry_t + \alpha_4 Year_t + \varepsilon_t \quad (1)$$

where the $Premium_t$ and $Premium_{t-1}$ are the bid premiums of latter and previous takeovers in two serial takeovers, respectively. $Control_t$ includes a set of control variables, including the target's size, return on assets, leverage ratio, takeover attitude, payment method, takeover share, deal type, and industry diversification. $Industry_t$ and $Year_t$ denote industry and year fixed effects, respectively.

If α_1 is significantly positive, it indicates the existence of anchoring effect in serial takeover bidding process, with the latter takeover premium anchored on the previous takeover premium. Thus, the larger the α_1, the stronger the impact of the anchoring effect.

(Insert Table 2 Here)

Table 2 reports the descriptive statistics of the variables. The mean value of $Premium1_t$ and $Premium1_{t-1}$ are -2.59% and -3.01%, respectively. This evidence

suggests that the offer prices in serial takeovers are close to the target pre-bid stock prices.

The mean value of $Premium2_t$ and $Premium2_{t-1}$ are 4.62 and 3.69, respectively. On average, the offer price is about 400% higher than target net asset value, suggesting acquirers' overpayment for the targets.

It is worth noting that China's stock market fluctuates greatly and the prices of listed companies are generally overvalued (Morck et al., 2000). While Premium1 is based on target stock prices and suggests that the acquirer is not overpaying for the target, the evidence for Premium2, based on target net asset value, is different. In fact, this is the main reason for employing two different bid premium measures in this study.

Given the general overvaluation of the Chinese stock market, it is difficult for the target firm to accept the overvalued stock of the acquirer as payment. Accordingly, in terms of the payment method ($Payment$), 95% of transactions are completed in cash and only 5% are carried out in stocks or a combination of stocks and cash. [3]

Only 15% of the targets belonged to the same industry as the acquirer ($IndDiv$), indicating that acquirers are more inclined to diversify when making multiple takeovers. Around 59% of takeovers were initiated by state-owned enterprise acquirers ($SOEDum$). The average interval between two consecutive takeovers (*Interval*) is 0.55, that is, the average number of days between two consecutive takeovers is 550 days. On average, 13% of the sample experienced a CEO change between two consecutive takeovers (*CEOChange*).

4. Results

[3] Li et al. (2019) have examined the impact of analyst coverage on takeovers in China. Among 1,207 takeover transactions over the period 2004-2016, 94% were cash payment.

4.1 Basic results

(Insert Table 3 Here)

First, we test the association of bid premiums for two consecutive bids with model 1. Table 3 reports the regression results.[4] In Specification 1, where bid premium is calculated based on target stock prices, $Premium1_{t-1}$ is significantly positive with an estimated coefficient of 0.281 and a t-value of 9.91. In Specification 2, $Premium1_{t-1}$ is significantly positive (coefficient=0.145, t-value=4.81) after controlling for various deal and acquirer characteristics. The results are similar to those of Specification 3 and 4, where bid premium is calculated based on target net assets. Thus, consistent with our assumption, evidences demonstrate the existence of anchoring effect in serial takeovers. Therefore, the former bid price has a significant reference for the latter bid.

Next, we analyze whether the role of anchoring in serial takeovers varies with deal characteristics and economic circumstances.

4.2 Nature of acquirer ownership

Megginson and Netter (2001) have shown that SOEs receive better financial support, including preferential bank loans and government subsidies, which makes them more competitive than non-SOEs. Young et al. (2008) have argued that the

[4] To avoid outliers, in Tables 3 to 10, we delete the top and bottom 1% of each of the four main experimental variables when performing regressions: $Premium1_t$, $Premium1_{t-1}$, $Premium2_t$, and $Premium2_{t-1}$.

takeover efforts of SOEs are usually driven by political and economic goals, such as job creation and development of specific industries, whereas the takeover goals of non-SOEs mainly include profit maximization. Zhou et al. (2015) have documented significant differences in the value creation of takeover businesses by state-owned enterprises (SOEs) and non-SOEs in China. Given this evidence, we test whether there are significant differences in the anchoring effect in serial takeovers between SOEs and non-SOEs.

Accordingly, we add a dummy variable $SOEDum$ into the regression model and interact it with $Premium_{t-1}$. The regression results are reported in Table 4.

(Insert Table 4 Here)

In Specification 1, $Premium_{t-1}$ is significantly positive with an estimated coefficient of 0.151 and a t-value of 3.10. However, the interaction term $SOEDum$ *$Premium_{t-1}$ is statistically insignificant (coefficient= -0.011, t-value=-0.19). Similar results are also obtained in Specification 2, where bid premium is calculated using target net assets. Obviously, the role of anchoring is not significantly different for serial takeovers initiated by SOEs than non-SOEs. Therefore, both state-owned and private firms' takeover activities are affected by anchoring effect.

4.3 The time interval of consecutive takeovers

Anchoring arises from a reliance on information about past decisions, but not all past decisions are equally effective. Research has shown that the closer the reference information is to a decision, the more readily available it is and subsequently more likely to influence the decision (Bazerman and Moore, 2013). Anchoring is more effective for recent takeovers when there have been multiple transactions in the past (Hammond et al., 1998). Furthermore, if the time between takeovers is short, executives rely more on decisions made in the past because they have limited time to make rational decisions.

Therefore, we explore whether the anchoring effect in serial takeovers increases as the interval between bids becomes shorter. Specifically, we add a dummy variable $Interval$ and interact it with bid premium in the regression model. Table 5 presents the regression results.

(Insert Table 5 here)

In Specification 1, the interaction term $Interval * Premium1_{t-1}$ is significantly negative with an estimated coefficient of -0.065 and a t-value of -1.94. This suggests that anchoring effects decrease as the time interval between two bids increases. The result is even stronger if the bid premium is calculated based on target net asset value. In Specification 2, the interaction term $Interval * Premium2_{t-1}$ is significantly negative with an estimated coefficient of -0.486 and a t-value of -6.03.

Extending the transaction time between the two bids can effectively reduce the impact of anchoring on takeover bids.

4.4 The similarity of target industries

The strength of the anchoring effect is related to how similar subsequent decisions are to the previous decisions (Malhotra et al., 2015). If two decisions share similar characteristics, prior information appears to be more valid and provides a stronger case for the decision-maker to rely on past information. Thus, the more common features between two consecutive decisions, the stronger the anchoring to past decisions (Mussweiler and Strack, 2000). Specifically, the bidding premiums of the same industry fluctuate within a certain range, while the bidding premiums of different industries vary greatly (Laamanen, 2007). Therefore, if the industries of the two targets are the same for consecutive takeovers, executives will often anchor the subsequent offer on the previous offer and ignore the influence of other factors.

To test if target industry similarity affects the function of anchoring, we introduce a dummy variable $TargetSimilarity$ and interact it with bid premium in the regression model. Table 6 presents the regression results.

(Insert Table 6 here)

The interaction between $TargetSimilarity$ and bid premium is significantly positive in both specifications. Apparently, a high amount of similarity between the target industries of the two consecutive takeovers strengthens the role of anchoring effect in bidding.

4.5 The economic policy uncertainty

An important factor affecting the strength of the anchoring effect is the external environment in which the decision is made. On the one hand, the uncertainty of the environment means that it is difficult for individuals to predict the possible states and outcomes of decision-making. Therefore, they may rely more on past decision-making information, which can enhance the influence of the anchoring effect (Malhotra et al., 2018).

On the other hand, when the external environment is highly uncertain, the huge difference between the current decision-making environment and past environment causes people to refer to past decisions less, which may alleviate the influence of the anchoring effect on decision-making. In China, corporate takeovers must be consistent with the economic policies of the external environment. In the process of economic development, the Chinese government has frequently adjusted economic policies to support industrial development or adapt to the current global situation and market environment, which has brought uncertainty to economic policies (Cao et al., 2019). This undoubtedly has an impact on the anchoring effect in takeovers.

To check this, we used the Economic Uncertainty Index proposed by Baker et al. (2016) to measure the degree of economic uncertainty. Table 7 reports the impact of economic uncertainty on the anchoring effect in takeovers.

(Insert Table 7 here)

In Panel A, the interactions with EPU, our measure of economic uncertainty, for both bid premiums are significantly negative. For instance, in Specification 1, the estimated coefficient of $EPU \times Premium_{t-1}$ is -0.126 has a t-value of -3.61. This evidence demonstrates that economic uncertainty can significantly reduce anchoring effect in the bidding process of serial takeovers. The higher the economic uncertainty, the lesser the effect of the previous bidding on the latter bid.

To provide further evidence, we further split the sample into two parts, before and after 2018. First, the Sino-US trade war broke out in 2018, which put pressure on the takeovers of Chinese companies. Hence, Chinese companies became cautious when participating in takeovers. Second, COVID-19 occurred at the end of 2019, putting pressure on the entire Chinese economy. Chinese companies also become cautious when bidding because of cash constraints. Therefore, we predict that the anchoring effect of bids will be weaker after 2018 than before 2018.

Our prediction is confirmed by the results presented in Panel B of Table 7. The coefficients are significantly negative for the interaction term of dummy variable *Post_2018* with both bid premiums. For instance, in Specification 3, *Post_2018*$\times$ $Premium_{t-1}$ is significantly negative with an estimated coefficient of -0.201 and a t-value of -3.27. Thus, the combination of U.S.-China tensions and macroeconomic uncertainty caused by COVID-19 has significantly moderated the anchoring effect on takeover bids.

4.6 The number and sequence of serial takeovers

The total number of takeovers made by the same acquirer may affect the role of anchoring in bids. On the one hand, as the number of takeovers increases, the acquirer's experience and knowledge from past cases also increases. Therefore, they can more accurately predict the company's valuation and the synergies that can be achieved through takeovers (Ismail, 2008). Studies on acquisitions in the U.S. have suggested that acquirers can learn from previous bidding mistakes and make certain changes in future bids (Billett and Qian, 2008; Aktas et al., 2011).

On the other hand, according to the psychology literature, the above-average effect affects attribution of causality, with overconfident people attributing good outcomes to their actions and bad outcomes to luck or others' errors (Miller & Ross, 1975). Given that overconfident CEOs are less willing to admit failure and often provide biased justifications for their actions (Schumacher et al., 2020), they are less likely to learn from past mistakes. According to Roll (1986), most acquirer CEOs suffer from hubris or overconfidence in their bids. Therefore, it should be examined whether acquirer CEOs can learn from their previous bids. This is particularly true for Chinese acquirers. Studies have shown that Chinese acquirers are more persistent and aggressive in bidding compared to their international counterparts (Chen and Young, 2010; Hope et al., 2011). Therefore, how the number of takeovers affects the role of anchoring in bidding for Chinese acquirers becomes an empirical question.

To check this, we add the variable *Acquisitiveness* and interact it with the bid premium in the model. Additionally, we add the variable *Sequence* to the model to examine whether the order of each bid in serial takeovers affects anchoring. Table 8 shows the regression results. [5]

[5] Robustness checks show that the results are qualitatively unaltered if we perform the analysis with serial takeovers conducted within three years by the same acquirer. Results are

(Inert Table 8 here)

In Panel A, the interactions between *Acquisitiveness* and both bid premiums are negative but statistically insignificant. For instance, in Specification 1, the estimated coefficient of $Acquisitiveness \times Premium_{t-1}$ is -0.019 and has a t-value of -1.43. Similarly, in Panel B, the sequence versus bid premium interaction is also not statistically significant for both specifications. Obviously, the influence of anchoring effect on takeover premium does not significantly weaken with an increase in executive takeover experience. Overall, evidences suggest that managers do not learn a lot from their past takeover experience and do not move away from past bidding strategies. This evidence confirms the results of Roll (1986), who have suggested that acquirer managers are mostly influenced by overconfidence in bidding, and Schumacher et al. (2020), who have argued that overconfident CEOs are less willing to admit failure or learn from past mistakes. Apparently, knowledge and experience accumulated from past acquisitions are less helpful for Chinese acquirers in formulating new acquisition strategies.

4.7 CEO turnovers and overall management quality

The CEO plays a leadership role and has ultimate responsibility for major corporate decisions, including takeovers (Hayward and Hambrick, 1997). Meyer-Doyle et al. (2019) have shown that CEO-level factors greatly impact firm takeover behavior and

not reported here but are available upon request.

performance than firm-level factors. Jaffe et al. (2013) have found that firms consistently outperform or underperform over time only when consecutive transactions are completed by the same CEO. Thus, they have concluded that differences in takeover skills among acquirers lie within the CEO instead of acquirers as a whole. Business leaders may play a more important role in Chinese companies because they are more authoritarian and powerful than their counterparts in developed countries (Chang et al., 2015).

Based on these findings, we examine whether the anchoring effect in serial takeover bids persists only if the firm's CEO remains unchanged, and whether the strength of the anchoring effect becomes weaker if the CEO changes between consecutive takeovers.

To check this, we introduce a dummy variable *CEOChange* and interact it with bid premium in the regression model. Table 9 presents the regression results.

(Insert Table 9 here)

In Specification 1, the coefficient of $Premium1_{t-1}$ is 0.166, which has a statistically significant t-value of 5.31. This evidence suggests the existence of anchoring effects in bidding for serial takeovers conducted by the same CEO in an acquiring firm. The interaction term $CEOChange \times Premium1_{t-1}$ is significantly negative with an estimated coefficient of -0.278 and a t-value of -2.87. Therefore, the net value of the anchoring effect for consecutive takeovers conducted by different CEOs would be -0.112 (i.e., 0.166-0.278). This evidence suggests that the persistence of

anchoring effects in serial bidding is non-existent. Unsurprisingly, the succeeding CEO adopts a different bidding strategy than their predecessor.

In Specification 2, $Premium2_{t-1}$ is statistically positive (coefficient=0.469, t-value=9.06), while the interaction term $CEOChange \times Premium2_{t-1}$ is significantly negative with an estimated coefficient of -0.725 and t-value of -3.00. Therefore, the net value of anchoring effect would be -0.256 (i.e., 0.469-0.725). This again suggests that bidding strategy of a firm changes once its CEO has been replaced.

Overall, the evidence in Panel A suggests that successor CEOs adopt different bidding strategies than their predecessors.[6] Thus, the anchoring effect in successive bids is eliminated if the firm changes its CEO between successive takeovers. The evidence also confirms the results of Jaffe et al. (2013), who have suggested that differences in takeover skills among acquirers lie within the CEO instead of the acquirers as a whole.

To provide further evidence, we examine how the anchoring effect changes over time in serial takeovers by Chinese firms. Undoubtedly, the quality of management and corporate governance of Chinese companies has improved over the past few decades. Therefore, we expect anchoring effect in serial takeovers to decrease over time. As shown in Panel B of Table 9, the interaction between *Year* and bid premium is statistically negative, indicating that anchoring effect weakens over time. Therefore, our prediction is confirmed.

4.8 Alternative definition of bid premium

[6] Naturally, the longer the time between takeovers, the more likely is a CEO turnover. With this in mind, we conducted our analysis using a short-interval subsample of consecutive takeovers, that is, the time interval between two consecutive takeovers is less than three years. The results remain qualitatively unchanged.

To ensure the robustness of the results, we further verify the existence of the anchoring effect in the takeover bidding with an alternative definition of bid premium. Specifically, we obtain the predicted bid premium for each transaction using the following model:

$$Premium_t = \beta_0 + \beta_1 Control_t + \beta_2 Industry_t + \beta_3 Year_t + \delta_t \quad (2)$$

where $Premium_t$ is the bid premium for each transaction. $Control_t$ includes a set of control variables, including the target's size, return on assets, leverage ratio, takeover attitude, payment method, takeover share, deal type, and industry diversification. $Industry_t$ and $Year_t$ denote industry and year fixed effects, respectively.

The predicted bid premium obtained from model (2) is treated as rational premium, while the residual δ_t in model (2), which is the difference between actual $Premium_t$ and predicted $Premium_t$, is treated as the irrational premium for the target. The latter may be driven by the anchoring function in bidding.

Next, we test the association between the irrational premiums of former bid ($Residual\_Premium_t$) and latter bid ($Residual\_Premium_{t-1}$). The regression results are reported in Table 10.

(Insert Table 10 here)

Across all four specifications, the irrational premium $Residual\_Premium$ is

significantly positive. This suggests the existence of anchoring effects in bidding even though we adopt different approaches to calculate bid premium. [7]

5. Conclusion

This study examines the role of anchoring effects in serial takeovers. Our research is based on the prospect theory by Tversky and Kahneman (1974), which has proposed that, under conditions with high uncertainty, individuals use information from prior decisions to inform subsequent decisions.

Using a sample of takeover transactions by Chinese companies, we find strong links between consecutive takeover offers by the same acquirer. Specifically, the higher the bidding premium of the former, the higher the bidding premium of the latter, and vice versa. Our evidence suggests an anchoring effect in serial takeovers, where acquirers make a series of takeovers by referencing purchase prices from previous bids.

Further analysis shows that the strength of the anchoring effect is not significantly different between SOEs and non-SOEs. The anchoring effect also does not substantially change with the number of takeovers by the same acquirer. Nonetheless, the anchoring effect increases with the time interval between two consecutive takeovers. The anchoring effect is also strong if the industries of the two targets are the same. Conversely, when the economic policy is highly uncertain, the anchoring effect is weak. This is particularly true after 2018, when the Chinese economy was affected by the U.S.-China trade war and COVID-19.

[7] Given this alternative definition of bid premium, we also performed a robustness check on all the tests in Tables 4 to 9. The results remain qualitatively unchanged. The results are not reported here but are available upon request.

We also find that anchoring effect mainly exists in firms without CEO turnovers. Once a firm changes its CEO, the anchoring effects substantially diminish or even disappear. This suggests that the succeeding CEO adopts a different bidding strategy. Finally, anchoring effect changes over time. For Chinese firms as a whole, anchoring effect gradually weakens over time.

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Table 1
Sample selection process and yearly distribution

Panel A presents the selection process for a sample of 673 takeover deals by Chinese firms during 2002-2021. Panel B presents the distribution of the takeover transactions by year.

Panel A: Sample selection

	Remaining sample size
Takeovers by Chinese firms and target is a listed firm	8187
Exclude stock repurchases	7297
Exclude takeovers that acquirer is a natural person or named "Investor Group"	5135
Exclude the company's first takeover	1322
Control variables are available	886
Takeover premiums are available	673

Panel B: Sample distribution by year

Year	Total Sample	Ratio
2002	1	0.15%
2003	13	1.93%
2004	16	2.38%
2005	15	2.23%
2006	21	3.12%
2007	10	1.49%
2008	12	1.78%
2009	19	2.82%
2010	7	1.04%
2011	7	1.04%
2012	6	0.89%
2013	14	2.08%
2014	14	2.08%
2015	50	7.43%
2016	56	8.32%
2017	54	8.02%
2018	61	9.06%
2019	91	13.52%
2020	109	16.20%
2021	97	14.41%
Total	673	100.00%

Table 2
Descriptive statistics

This table presents the descriptive statistics for a sample of 673 takeover deals by Chinese firms during 2002-2021. Variable definitions are given in Appendix A.

Variable	Mean	Min	P25	Median	P75	Max	St.Dev.
$Premium1_t$	-2.593	-87.740	-17.508	-2.740	7.128	105.548	33.461
$Premium1_{t-1}$	-3.012	-93.506	-22.330	-1.953	4.630	175.580	42.529
$Premium2_t$	4.622	-13.195	0.355	1.574	0.000	86.206	12.571
$Premium2_{t-1}$	3.692	-16.346	0.236	1.455	0.000	66.968	10.033
Size	6.228	2.868	5.227	6.078	1.000	11.147	1.568
ROA	-1.001	-88.020	0.010	2.185	1.000	17.470	14.369
Tender	0.044	0.000	0.000	0.000	14.440	1.000	0.205
IndDiv	0.152	0.000	0.000	0.000	0.659	1.000	0.359
Attitude	0.619	0.000	0.000	1.000	0.621	2.000	0.500
Payment	0.953	0.000	1.000	1.000	5.823	1.000	0.212
AcqShare	11.387	1.020	5.000	7.485	3.000	58.830	10.172
Leverage	0.503	0.063	0.329	0.497	2.000	1.400	0.249
Interval	0.550	0.006	0.071	0.227	4.000	4.437	0.835
EPU	5.229	3.367	4.762	5.392	0.000	6.495	0.724
Acquisitiveness	3.678	2.000	2.000	3.000	1.000	14.000	2.343
Sequence	2.942	2.000	2.000	2.000	7.128	14.000	1.599
TargetSimilarity	1.126	0.000	0.000	2.000	4.630	2.000	0.958
CEOChange	0.128	0.000	0.000	0.000	0.000	1.000	0.334
SOEDum	0.589	0.000	0.000	1.000	0.000	1.000	0.492

Table 3
The anchoring effect in serial takeover bidding

This table presents the regression results for the association between bid premiums of two consecutive bids for a sample of 646 takeover deals by Chinese firms between 2002 and 2021. Definitions of variables are presented in Appendix A. T-values are provided in parenthesis. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively.

	Premium1		Premium2	
	1	2	3	4
$Premium1_{t-1}$	0.281***	0.145***		
	(9.91)	(4.81)		
$Premium2_{t-1}$			0.545***	0.434***
			(11.81)	(8.55)
Size		-0.988		-2.619***
		(-1.02)		(-6.57)
ROA		0.269***		0.028
		(2.92)		(0.75)
Tender		11.355**		5.252**
		(2.07)		(2.25)
IndDiv		2.867		2.793*
		(0.84)		(1.94)
Attitude		8.450***		-0.906
		(3.18)		(-0.82)
Payment		-25.224***		-5.051**
		(-4.40)		(-2.08)
AcqShare		0.163		-0.096*
		(1.30)		(-1.85)
Leverage		-1.851		5.880***
		(-0.35)		(2.93)
Intercept	-1.746	-36.864	2.610***	18.174
	(-1.44)	(-1.27)	(5.29)	(1.61)
Year	No	Yes	No	Yes
Industry	No	Yes	No	Yes
Observations	646	646	646	646
adj.R^2	0.126	0.323	0.188	0.284

Table 4
The impact of the nature of acquirer ownership on anchoring effect

This table tests the impact of the nature of acquirer ownership on the anchoring effect in sequential bids for a sample of 646 takeover deals by Chinese firms between 2002 and 2021. *SOEDum* is a dummy variable that equals one if the acquirer is an SEO, and zero otherwise. Definitions of other variables are presented in Appendix A. T-values are provided in parenthesis. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively.

	Premium1	Premium2
	1	2
$Premium1_{t-1}$	0.151***	
	(3.10)	
$Premium2_{t-1}$		0.340***
		(3.21)
$SOE \times Premium1_{t-1}$	-0.011	
	(-0.19)	
$SOE \times Premium2_{t-1}$		0.119
		(1.00)
SOE	1.907	-2.055*
	(0.72)	(-1.78)
Size	-0.888	-2.705***
	(-0.90)	(-6.69)
ROA	0.272***	0.025
	(2.95)	(0.66)
Tender	10.897**	5.667**
	(1.97)	(2.42)
IndDiv	2.768	2.904**
	(0.81)	(2.01)
Attitude	8.571***	-0.989
	(3.21)	(-0.89)
Payment	-25.765***	-4.748*
	(-4.44)	(-1.95)
AcqShare	0.165	-0.101*
	(1.31)	(-1.94)
Leverage	-1.452	5.335***
	(-0.27)	(2.64)
Intercept	-39.436	20.704*
	(-1.35)	(1.82)
Year	Yes	Yes
Industry	Yes	Yes
Observations	646	646
adj.R^2	0.321	0.286

Table 5
The impact of interval between two consecutive bids on anchoring effect

This table tests the impact of interval between two consecutive bids on the anchoring effect in bidding for a sample of 646 takeover deals by Chinese firms between 2002 and 2021. Interval is the number of days between two consecutive bids. Definitions of other variables are presented in Appendix A. T-values are provided in parenthesis. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively.

	Premium1	Premium2
	1	2
$Premium1_{t-1}$	0.179***	
	(5.03)	
$Premium2_{t-1}$		0.641***
		(10.70)
$Inetrval \times Premium1_{t-1}$	-0.065*	
	(-1.94)	
$Inetrval \times Premium1_{t-2}$		-0.486***
		(-6.03)
Interval	-1.242	1.208**
	(-0.79)	(2.04)
Size	-1.015	-2.243***
	(-1.04)	(-5.71)
ROA	0.268***	0.025
	(2.92)	(0.66)
Tender	10.532*	5.230**
	(1.92)	(2.31)
IndDiv	3.559	2.212
	(1.03)	(1.57)
Attitude	8.608***	-0.924
	(3.23)	(-0.86)
Payment	-25.204***	-5.320**
	(-4.40)	(-2.26)
AcqShare	0.150	-0.132**
	(1.18)	(-2.58)
Leverage	-1.527	4.878**
	(-0.29)	(2.50)
Intercept	-34.325	17.334
	(-1.19)	(1.59)
Year	Yes	Yes
Industry	Yes	Yes
Observations	646	646
adj.R^2	0.325	0.328

Table 6

The impact of the similarity of target industries on anchoring effect

This table tests the impact of similarity of target industries in two consecutive bids on the anchoring effect in bidding for a sample of 646 takeover deals by Chinese firms between 2002 and 2021. TargetSimilarity is a dummy variable that equals one if the industries of the two targets in consecutive bids are the same; it is zero otherwise. Definitions of other variables are presented in Appendix A. T-values are provided in parenthesis. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively.

	Premium1	Premium2
	1	2
$Premium1_{t-1}$	0.030	
	(0.65)	
$Premium2_{t-1}$		0.182***
		(2.60)
$TargetSimilarity \times Premium1_{t-1}$	0.090***	
	(3.16)	
$TargetSimilarity \times Premium2_{t-1}$		0.242***
		(5.12)
TargetSimilarity	3.005**	-0.759
	(2.40)	(-1.41)
Size	-0.541	-2.408***
	(-0.56)	(-6.09)
ROA	0.286***	0.040
	(3.13)	(1.06)
Tender	9.927*	5.531**
	(1.82)	(2.41)
IndDiv	2.124	2.985**
	(0.62)	(2.11)
Attitude	9.142***	-0.746
	(3.46)	(-0.69)
Payment	-27.755***	-4.433*
	(-4.86)	(-1.85)
AcqShare	0.193	-0.085*
	(1.53)	(-1.65)
Leverage	-2.011	6.135***
	(-0.39)	(3.13)
Intercept	-46.430	16.034
	(-1.61)	(1.45)
Year	Yes	Yes
Industry	Yes	Yes
Observations	646	646
adj.R^2	0.337	0.315

Table 7
The impact of the economic policy uncertainty on anchoring effect

This table tests the impact of the economic policy uncertainty on the anchoring effect in serial bids for a sample of 646 takeover deals by Chinese firms between 2002 and 2021. *EPU* is the natural logarithm of the economic uncertainty index constructed by Baker at al. (2016). *Post_2018* is a dummy variable that equals one if a bid occurred after 2018; it is zero otherwise. Definitions of other variables are presented in Appendix A. T-values are provided in parenthesis. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively.

	Panel A: EPU		Panel B: Post_2018	
	Premium1	Premium2	Premium1	Premium2
	1	2	3	4
$Premium1_{t-1}$	0.853***		0.312***	
	(4.78)		(8.54)	
$Premium2_{t-1}$		1.465***		0.579***
		(3.25)		(11.42)
$EPU \times Premium1_{t-1}$	-0.126***			
	(-3.61)			
$EPU \times Premium1_{t-2}$		-0.193**		
		(-2.16)		
EPU	5.765***	1.637**		
	(2.97)	(2.12)		
$Post\_2018 \times Premium1_{t-1}$			-0.201***	
			(-3.27)	
$Post\_2018 \times Premium1_{t-1}$				-0.718***
				(-4.96)
Post_2018			1.810	1.488
			(0.69)	(1.37)
Size	0.969	-2.203***	2.157**	-1.880***
	(0.99)	(-5.81)	(2.26)	(-5.31)
ROA	0.221**	0.0192	0.182*	0.006
	(2.31)	(0.51)	(1.89)	(0.16)
Tender	9.903*	4.836**	11.171*	4.613**
	(1.75)	(2.12)	(1.96)	(2.06)
IndDiv	0.983	1.584	1.151	1.285
	(0.28)	(1.13)	(0.32)	(0.93)
Attitude	2.717	-2.121**	3.239	-2.189**
	(1.07)	(-2.06)	(1.25)	(-2.14)
Payment	-24.20***	-4.065*	-25.59***	-4.306*
	(-4.10)	(-1.69)	(-4.26)	(-1.82)
AcqShare	-0.107	-0.128**	-0.191	-0.150***
	(-0.85)	(-2.53)	(-1.52)	(-3.06)
Leverage	-5.992	5.556***	-9.117*	4.444**
	(-1.10)	(2.79)	(-1.66)	(2.30)
Intercept	-36.165*	8.936	-11.255	16.154**
	(-1.73)	(1.13)	(-0.58)	(2.28)
Industry	Yes	Yes	Yes	Yes
Observations	646	646	646	646
adj.R^2	0.247	0.274	0.227	0.297

Table 8

Impact of the number and sequence of serial takeovers on anchoring effect

This table tests the impact of the total number of serial takeovers and sequence of each transaction on the anchoring effect in bidding for a sample of 646 takeover deals by Chinese firms between 2002 and 2021. *Acquisitiveness* is the total number of takeovers pursued by an acquirer during the sample period. *Sequence* is the sequence of each takeover by an acquirer during the sample period. Definitions of other variables are presented in Appendix A. T-values are provided in parenthesis. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively.

	Panel A: Acquisitiveness		Panel B: Sequence	
	Premium1	Premium2	Premium1	Premium2
	1	2	3	4
$Premium1_{t-1}$	0.203***		0.197***	
	(4.01)		(2.84)	
$Premium2_{t-1}$		0.452***		0.483***
		(5.24)		(5.40)
$Acquisitiveness \times Premium1_{t-1}$	-0.019			
	(-1.43)			
$Acquisitiveness \times Premium2_{t-1}$		-0.004		
		(-0.25)		
Acquisitiveness	-0.248	-0.106		
	(-0.44)	(-0.47)		
$Sequence \times Premium1_{t-1}$			-0.020	
			(-0.84)	
$Sequence \times Premium2_{t-1}$				-0.012
				(-0.65)
Sequence			0.324	-0.033
			(0.42)	(-0.10)
Size	-0.900	-2.593***	-1.016	-2.600***
	(-0.92)	(-6.45)	(-1.04)	(-6.48)
ROA	0.275***	0.030	0.272***	0.031
	(2.99)	(0.79)	(2.95)	(0.79)
Tender	11.245**	5.177**	11.542**	5.255**
	(2.05)	(2.21)	(2.10)	(2.24)
IndDiv	2.810	2.813*	2.748	2.822*
	(0.82)	(1.95)	(0.80)	(1.95)
Attitude	8.523***	-0.872	8.375***	-0.878
	(3.20)	(-0.79)	(3.14)	(-0.79)
Payment	-25.412***	-5.108**	-25.090***	-5.080**
	(-4.42)	(-2.10)	(-4.36)	(-2.09)
AcqShare	0.167	-0.098*	0.167	-0.097*
	(1.33)	(-1.87)	(1.33)	(-1.85)
Leverage	-1.666	5.885***	-1.714	5.973***
	(-0.32)	(2.92)	(-0.33)	(2.97)
Intercept	-37.627	18.492	-38.518	18.133
	(-1.30)	(1.63)	(-1.32)	(1.60)
Year	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
Observations	646	646	646	646
adj.R^2	0.323	0.281	0.322	0.282

Table 9
The impact of CEO turnovers on anchoring effect

Panel A tests the impact of CEO turnovers on the anchoring effect in serial bids for a sample of 646 takeover deals by Chinese firms between 2002 and 2021. Panel B tests how anchoring effect in serial takeovers changes over time. *CEOChange* is a dummy variable that equals one if a firm's CEO is changed between two consecutive takeovers; it is zero otherwise. *Year* indicates the year in which the takeover is announced. Definitions of other variables are presented in Appendix A. T-values are provided in parenthesis. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively.

	Panel A: CEO turnovers		Panel B: Year	
	Premium1	Premium2	Premium1	Premium2
	1	2	3	4
$Premium1_{t-1}$	0.166***		0.318***	
	(5.31)		(4.43)	
$Premium2_{t-1}$		0.469***		2.131***
		(9.06)		(6.44)
$CEOChange \times Premium1_{t-1}$	-0.278***			
	(-2.87)			
$CEOChange \times Premium2_{t-1}$		-0.725***		
		(-3.00)		
CEOChange	-4.455	2.290		
	(-1.27)	(1.45)		
$Year \times Premium1_{t-1}$			-0.012**	
			(-2.27)	
$Year \times Premium2_{t-1}$				-0.116***
				(-5.04)
Year			1.788***	0.526***
			(5.76)	(4.75)
Size	-0.883	-2.547***	-0.400	-2.720***
	(-0.91)	(-6.41)	(-0.41)	(-7.10)
ROA	0.263***	0.023	0.262***	0.040
	(2.87)	(0.62)	(2.80)	(1.08)
Tender	10.597*	5.031**	10.956**	4.986**
	(1.94)	(2.17)	(1.99)	(2.25)
IndDiv	3.263	2.696*	2.489	1.885
	(0.95)	(1.87)	(0.72)	(1.37)
Attitude	7.940***	-0.875	4.010	-1.825*
	(2.99)	(-0.80)	(1.63)	(-1.83)
Payment	-26.006***	-4.803**	-25.124***	-4.379*
	(-4.55)	(-1.99)	(-4.35)	(-1.88)
AcqShare	0.156	-0.105**	0.009	-0.106**
	(1.25)	(-2.03)	(0.07)	(-2.14)
Leverage	-2.602	5.705***	-4.819	6.709***
	(-0.50)	(2.86)	(-0.90)	(3.46)
Intercept	-34.089	17.724	-18.766	-1039.700***
	(-1.18)	(1.58)	(-0.98)	(-4.68)
Year	Yes	Yes	No	No
Industry	Yes	Yes	Yes	Yes
Observations	646	646	646	646
$adj.R^2$	0.331	0.293	0.279	0.312

Table 10
The anchoring effect in serial takeover bidding with alternative definition of bid premium

This table presents the regression results for the association of bid premiums for two consecutive bids in a sample of 646 takeover deals by Chinese firms between 2002 and 2021. Definitions of variables are presented in Appendix A. T-values are provided in parenthesis. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively.

	Residual_Premium1		Residual_Premium2	
	1	2	3	4
$Residual\_Premium1_{t-1}$	0.146***	0.165***		
	(4.50)	(4.55)		
$Residual\_Premium2_{t-1}$			0.466***	0.542***
			(9.11)	(9.30)
Size		0.223		-0.041
		(0.21)		(-0.11)
ROA		0.065		-0.018
		(0.64)		(-0.49)
Tender		-4.176		0.495
		(-0.72)		(0.21)
IndDiv		-0.862		-0.647
		(-0.23)		(-0.45)
Attitude		-1.430		0.499
		(-0.50)		(0.46)
Payment		-0.620		0.228
		(-0.11)		(0.10)
AcqShare		-0.097		0.003
		(-0.69)		(0.06)
Leverage		5.480		-0.293
		(0.96)		(-0.15)
Intercept	0.468	4.061	-0.000	1.225
	(0.43)	(0.14)	(-0.00)	(0.11)
Year	No	Yes	No	Yes
Industry	No	Yes	No	Yes
Observations	646	646	646	646
adj.R^2	0.032	0.069	0.121	0.142

Appendix A
Variable Definition

This table defines the variables used in this study, which analyzes 673 takeover deals by Chinese firms between 2002 and 2021.

Variable	Definition
Premium1$_t$	Premium for the latter bid of two serial takeovers. Premium1$_t$ equals (bid price per share /target stock price four weeks before the bid announcement−1)×100
Premium1$_{t-1}$	Premium for the former bid of two serial takeovers. Premium1$_{t-1}$ equals (bid price per share /target stock price four weeks before the bid announcement−1)×100
Premium2$_t$	Premium for the latter bid of two serial takeovers. Premium2$_t$ equals Total transaction value /(target net assets× the percentage of target shares acquired) −1
Premium2$_{t-1}$	Premium for the former bid of two serial takeovers. Premium2$_{t-1}$ equals Total transaction value/(target net assets× the percentage of target shares acquired) −1
Size	Natural logarithm of the target total assets
ROA	Target net income normalized by total assets
Leverage	Target total liabilities divided by total assets
Tender	Dummy variable that equals one if the deal type is tender offer and zero otherwise.
IndDiv	Dummy variable that equals one if the three-digits SIC code of the acquirer and the target are same and zero otherwise.
Attitude	Dummy variable that equals one if the attitude of deal is friendly and zero otherwise.
Payment	Dummy variable that equals one if the payment method of deal is cash and zero otherwise
AcqShare	The percentage of target shares traded in the takeover
SOEDum	Dummy variable that equals one if the acquirer is an SOE, and zero otherwise
Interval	Interval days of the two serial takeovers. Interval equals (the announcement date of the latter takeover − the announcement date of the former takeover)/100
TargetSimilarity	Dummy variable that equals one if the three-digits SIC code for the two targets in consecutive takeovers are the same, and zero otherwise.
Sequence	The sequence of each takeover conducted by an acquirer.
Acquisitiveness	The number of takeovers conducted by an acquirer
EPU	The natural logarithm of the Economic Uncertainty Index proposed by Baker at al. (2016) in the month prior to bid announcement
Post_2018	Dummy variable that equals one if an takeover happens after 2018, and zero otherwise
CEOChange	Dummy variable that equals one if an acquirer's CEO

	changes within two serial takeovers, and zero otherwise
Year	Year in which a takeover is announced
Industry	Three-digit SIC codes of acquirers
$Residual\_Premium1_t$	The difference between actual $Premium1_t$ and the predicted $Premium1_t$, where predicted premium is obtained by regressing bid premium on a series of control variables, industry, and year.
$Residual\_Premium1_{t-1}$	The difference between actual $Premium1_{t-1}$ and the predicted $Premium1_{t-1}$, where predicted premium is obtained by regressing bid premium on a series of control variables, industry, and year.
$Residual\_Premium2_t$	The difference between actual $Premium2_t$ and the predicted $Premium2_t$, where predicted premium is obtained by regressing bid premium on a series of control variables, industry, and year.
$Residual\_Premium2_{t-1}$	The difference between actual $Premium2_{t-1}$ and the predicted $Premium2_{t-1}$, where predicted premium is obtained by regressing bid premium on a series of control variables, industry, and year.