

**TOEHOLDS AND TARGET MANAGEMENT OWNERSHIP**

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### **Abstract**

This paper documents new evidence concerning the role of toeholds. Toeholds relative to the target management-controlled block are increasing in entrenchment and decreasing in 'accept' recommendations. Entrenched is inferred present for target management-controlled block-holdings of less than 25 per cent of outstanding voting stock. Toeholds relative to the principal independently-owned block are increasing in the probability of acceptance or bid success but decreasing in entrenchment, but this is largely attributable to the phenomenon of larger principal shareholdings as entrenchment increases. Toehold size alone has no explanatory power. The offer price has no strategic role in an entrenchment scenario. Our findings are broadly consistent with Goldman and Qian (2005) who identify a role for toeholds when target managers are entrenched. The paper finds no evidence that either offer price or toehold deter rival bids.

## 1. Introduction

Grossman and Hart (1980) predict toeholds are always optimal in order to minimize free rider costs. These costs are higher as bidders pay a larger premium to market value of target company shares. Yet, the empirical evidence reports zero toeholds in about 40 per cent of all takeovers<sup>1</sup>. Goldman and Qian (2005) attempt to resolve the anomaly of zero toeholds by showing analytically, that small (or even zero) toeholds are optimal when target firm managers are entrenched. Entrenched managers have the option of opposing a tender offer and can reduce the likelihood of a successful takeover. In dealing with entrenched managers, bidders face the problem of how to gain board acceptance of their offer without over-compensating. A toehold increases the probability of a successful takeover by enabling a lower offer price for outstanding stock<sup>2</sup>. But Betton and Eckbo (2000) find that pre-offer acquisitions of target stock (toeholds) are a beneficial strategy to bidders only when the toehold is subsequently sold to a rival (i.e., failed first bids). Toehold acquisitions are therefore costly to bidders in the event of a failed bid where their stake cannot be disposed of profitably. Goldman and Qian (2005) predict that optimal toeholds are decreasing in target managers' ownership because higher equity ownership increases the probability that target managers will not oppose a value-increasing takeover as they approach owner-manager status. To avoid ending up with a minority interest, bidders prefer small toeholds to large toeholds, but the toehold is larger as entrenchment is stronger and synergies are higher. As a consequence, a failed bid coupled with a large toehold is value-reducing for both bidders and targets because entrenched managers are not removed. A failed strategy of acquiring a large toehold to remove entrenched managers results in a larger investment in a company whose stock is destined to underperform stocks where firms have replaced their managers (Denis and Serrano (1996)). Given a large toehold increases the probability of a successful tender offer, a failed bid

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<sup>1</sup> See, for example, Bris (2002)

<sup>2</sup> An inverse relation between bid premia and toehold size has been consistently documented in the empirical literature, as recently as Betton and Eckbo (2000).

following a large toehold acquisition implies that target managers are more entrenched than perceived when the toehold was purchased. Thus, while a large toehold increases a bidder's profits if the takeover succeeds, a large toehold may also reduce these profits if the takeover fails. A toehold increases (falls) as the private benefits (e.g., from synergies) accruing to a bidder are higher (lower). Thus, a bidder increases her toehold to the point where the marginal benefit of buying another share to achieve success is offset by the marginal cost of failing to do so. However, *cet. par.*, the benefits of removing entrenched managers are greater than those of removing non-entrenched managers, so large toeholds are optimally purchased when target managerial entrenchment exists. This leads to mutually exclusive propositions, *viz.*, when target managers are entrenched, large toeholds are acquired to maximize the gain from their removal, while small toeholds are acquired to minimize the loss from a failed takeover.

To the extent that monitoring by block-shareholders reduces the cost of managerial entrenchment (Denis and Serrano (1996)), the presence of at least one large independently-owner equity block diminishes the necessity for a large toehold. Owner-managed companies (where target management controls 25 per cent or more of the target company's outstanding voting stock) have a diminished probability of having large, independently-owner equity blocks because less monitoring is presumably needed. Targets with entrenched managers are therefore likely to exhibit one or more independently-owned equity blocks because these have been shown to be an efficient structure for monitoring. Since the presence of such block-holdings coaxes entrenched managers into accepting value-increasing tender offers, a toehold is not needed to match the equity position of target management. But when the principal independently-owned equity block (or principal shareholding) is relatively small, large toeholds are needed to defray the costs of buying out the target management position; i.e., to increase the probability of a successful bid. Further, toeholds need to approach the size of the block controlled by target management in order to have strategic value. In summary, when target managers are entrenched, an inverse relation is expected between toehold size and principal shareholdings.

We document several regularities using a sample of Australian toehold acquisitions either accompanied or followed by a bid. The mandatory bid threshold in Australia is internationally low, at 20 per cent of outstanding target stock, which means we have a high chance of observing takeover strategy/block structure interactions because a toehold cannot be large enough to determine a takeover outcome (in some cases even before a bid is announced). The first finding is that toehold size *per se* has no explanatory power. An important implication is that models focusing on toeholds without reference to concurrent block sizes, including those controlled by target management and owned by the principal independent shareholder, are likely to have incorrectly specified the role of a toehold. Second, the role of the toehold is found to differ according to whether target managers are entrenched or not. Higher levels of entrenchment predicate larger toeholds relative to block-holdings controlled by target managers as a neutralizing device. In contrast, in the absence of entrenchment the object of a toehold shifts to the principal independent shareholding, which may be seen as representing an existing rival faction. Third, while a higher offer price increases the likelihood of target board acceptance and a successful takeover, it is not effective in dealing with non-owner managers who have less incentive to accept bids emanating from value-increasing takeovers. To avoid overpayment, the evidence is that toeholds are established to neutralize block-holdings controlled by entrenched target management. Finally, we conclude that to achieve target management acceptance and/or final success, toeholds are established to neutralize principal independent shareholdings independently of entrenchment. Toeholds appear effective in counter-acting existing block-holdings whether controlled by target managers or independently-owned, rather than to deter potential rivals.

In the present paper we document empirical evidence on associations among toehold size, the initial bid premium, the degree of target management control along with the presence of principal independent shareholdings and takeover gains for takeovers characterized by positive toehold positions. Only first bids are considered because Betton and Eckbo (2000) show that

multiple-bidder contests serve principally to increase the gains to target shareholders without materially affecting takeover strategy as represented by toehold size and the bid premium.

The paper is organized as follows. The extant literature on toeholds is reviewed in the next Section and the main ideas and empirical regularities extracted. The composition of the sample is described in Section 3 along with details of the measures employed. The analysis takes place in Section 4, followed in the final Section by the summary and conclusions.

## 2. Review

Several models have been advanced in an attempt to explain why zero or quite small toeholds are acquired by bidders (especially in hostile takeovers) when significant cost savings are available from purchase of a larger portion of target company stock at a lower pre-offer price<sup>3</sup>. Only Goldman and Qian (2005) internalize the pre-offer equity ownership of target managers. Since target managers have an incentive to promote a bidding contest in their shareholders' interest, their equity block-holding (however small) may form the nucleus of a rival bidder's toehold (e.g., a 'white knight'), but this requires the rival bidder to compensate them for the lost benefits of their entrenchment. Goldman and Qian (2005) alone specify costs imposed on bidders with toeholds by entrenched target managers who oppose a tender offer. Consistent with the free rider rationale of Grossman and Hart (1980), they demonstrate that large toeholds generate profits if a takeover succeeds, but they also show that large toeholds cause losses for bidders if the takeover fails (especially when target managers reject the bid) and a rival does not emerge.

Goldman and Qian's (2004) model has two corollary arguments. The first is that the optimum toehold declines as target management's stock ownership rises. This is because a higher level of target managerial ownership increases the likelihood that a takeover will succeed (where

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<sup>3</sup> See, for example, Shleifer and Vishny (1986), Hirschleifer and Titman (1990), Burkhardt (1995), Singh (1998), and Bulow, Huang and Klemperer (1999).

target managers do not reject a bid), but it also increases the magnitude of a drop in the target's stock price following a failed bid. The second corollary is that larger toeholds are expected in targets where managers are more highly entrenched. The reason is that as the maximum level of managerial entrenchment increases, buying a toehold has a smaller impact on the success probability of the takeover and hence on target firm value if the takeover fails. Hence it is less costly to buy a larger toehold. Goldman and Qian interpret the maximum level of managerial entrenchment as a proxy for the magnitude of the agency problem facing the target firm's shareholders. It might also be expected that bidders in friendly takeovers (e.g., mergers) have no need to purchase a toehold, while bidders in hostile takeovers are expected to have large toeholds to minimize cost of acquisition. Yet the evidence suggests the opposite: many bidders in hostile offers do not have large toeholds, while some bidders in friendly mergers are observed to acquire toeholds (Burch (2001), Bates and Lemmon (2003) and Officer (2003)). Thus, a friendly *versus* hostile bid dichotomy adds little insight to the role of toeholds.

No direct evidence on the relation between toeholds and target managerial ownership has been reported. In common with the takeover models of Shleifer and Vishny (1986) and Hirshleifer and Titman (1990), Goldman and Qian (2005) show analytically that takeover premiums should be lower as toeholds increase, which is also consistent with Betton and Eckbo (2000) but contrary to Chowdry and Jegadeesh (1994) but driven by bidders' higher expected benefits. Large toeholds not only increase the probability of takeover success but also reduce the expected gain to a rival bidder without a toehold. This is consistent with theoretical prediction of Hirshleifer and Titman (1990) as well as the empirical evidence found in Walking (1985), Choi (1991), Jennings and Mazzeo (1993) and Betton and Eckbo (2000). Large toeholds therefore deter rival bids<sup>4</sup>, and cap target stock returns as a consequence. When target managerial ownership is low, toeholds have the highest deterrence value to the first bidder because potential rivals are not deterred by low target managerial ownership. As a result, target shareholders gain

less as the toehold is greater (Franks and Harris (1989), Betton and Eckbo (2000)). This result is contrary to Eckbo and Langohr (1989) and Jarrell and Poulsen (1989) who find an inverse relation, while Stulz, Walkling and Song (1990) find no relation. Bidders who acquire toeholds also face the risk of the *owner's curse*: Burkart (1995) and Singh (1998) show analytically that a single bidder with a toehold will bid more aggressively to induce an outsider to bid higher than the toeholder's private value, but at the risk of acquiring the target at a price higher than its value to the toeholder<sup>5</sup>. The empirical evidence of the impact of toeholds on target firm returns is mixed: Jarrell and Poulsen (1989) and Eckbo and Langhor (1989) report decreasing target returns, Franks and Harris (1989) report increasing returns, while Stulz, Walkling and Song (1990) report unchanged target returns. Jennings and Mazzeo (1993) report that toeholds decrease the probability of target management resistance.

Target managers who consume private benefits are found least likely to accept a tender offer when they control an intermediate equity block-holding (Shleifer and Vishny (1989); Morck, Shleifer and Vishny (1988)). The latter report that agency costs are likely highest when target managers own between 5% and 25% of the target's stock. This implies entrenchment is highest for this group relative to target managers who control smaller or larger block-holdings; in the latter case the target managers are effectively owner-managers.

Consistent with the free rider rationale of Grossman and Hart (1980), Goldman and Qian (2005) demonstrate that large toeholds generate profits if a takeover succeeds, but they also show that large toeholds cause losses for bidders if the takeover fails. Their argument does not require information asymmetry at the time of the tender offer, but a failed takeover in combination with a large toehold suggests a higher than expected level of target manager entrenchment. Failed takeovers have two consequences: bidders lose (Mikkelson and Ruback (1985), Ruback (1988), Choi (1991) and Saffedeine and Titman (1999)) and targets gain only if

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<sup>4</sup> Singh (1998), Ravid and Spiegel (1999).

target management learns from the experience or the target is subsequently acquired. Saffedine and Titman (1999) show that target company shareholders stand to gain from failed bids only if incumbent managers change their policies: absent such changes, target shareholders are better off with a successful takeover. Denis and Serrano (1996) find that target managers remaining in control after failed takeover bids impose costs on their shareholders, so entrenched managers have no incentive to change their policies without compensation for their lost private benefits<sup>6</sup>. They also find that failed takeovers in which target management retains control are characterized by ineffective block shareholder monitoring and under-perform relative to firms that replace their managers. Further, Jarrell and Poulsen (1987), Ryngaert (1988) and Malatesta and Walkling (1988) all show that anti-takeover measures result in negative stock price response. Finally, Jennings and Mazzeo (1993) find that the probability of a competing bid increases with target management resistance but does not justify the expected wealth loss due to rejection of existing bids. This body of evidence is strongly consistent with target management resistance to unwanted bids being to the detriment of target shareholders.

### **3. Sample and measures**

The present study employs a previously untested data set. Australian institutional characteristics are not dissimilar from those of the United States. The Australian threshold for toehold disclosures is also 5% of the number of outstanding voting shares, which is usually many times daily trading volume, especially for low market capitalization stocks. In both countries, large companies are similarly characterized by high concentrations of equity ownership by pension and other investment funds. However, high concentrations of equity ownership in small companies usually exist for another reason: either the chairman or the CEO effectively controls the company

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<sup>5</sup> Bulow Huang and Klemperer (1999) obtain a similar result for multiple block-holders who bid and have common values.

<sup>6</sup> Morck, Vishny and Shleifer (1988) show that agency costs of entrenchment are at a maximum for intermediate management blocks and decline as larger blocks describe owner-managers

while at the same time maintaining a sufficiently wide shareholder base to comply with listing requirements. Thus, we are able to capture many owner-manager observations that are necessary to complete the distribution of target management equity ownership. Since entrenchment costs are decreasing in target management ownership, and given that owner-managers have no incentive to reject value-increasing takeover offers, entrenchment costs for this group are assumed to be virtually zero. This is a useful advantage because entrenchment costs are not directly observed.

A further advantage of an Australian data set relates to the mandatory bid rule, which is set at 20% of outstanding target stock by statute (cited below)<sup>7</sup>. Subject to few exceptions, once a stockholding exceeds 20% the owner is required to bid for all remaining stock. Equity blocks larger than 20% are possible as long as the owner has not acquired more than 3% of the target every six months, or has acquired the block pursuant to an approved acquisition, including limited shareholder acceptances from a previous takeover bid. The effect of the 20% cap is to constrain block sizes and especially the size of a toehold, for a toehold larger than 20% is no longer a pre-bid purchase. As a consequence, a toehold *per se* is not large enough to determine the outcome of an ensuing bid, which is possible in the US where there is no limit on the size of a toehold. For instance, with a toehold of 40% a rejection of an offer by target management is unlikely to affect either the final cost of the bid or the outcome. Block-holdings (including that controlled by target managers) are then relevant in determining the final outcome of an intended takeover. Owner-managed companies with a large control block (for instance, 35% or higher) are not expected to have other blocks (because no monitoring is needed). Intending bidders need also not purchase a toehold because the probability of a value-increasing takeover being rejected is low. In contrast, the equity position of target managers in non-owner-managed (or regular) companies is typically very low. These companies are therefore expected to exhibit one or more block-holdings for

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<sup>7</sup> The corresponding percentage in the United Kingdom is 30%.

monitoring purposes; intending bidders will need to purchase toeholds to counteract the higher risk of a value-increasing bid being rejected by target managers.

Market liquidity may also impinge on the size of a toehold. Toeholds may be limited by market illiquidity prior to a bid if the buyer's valuation is not to be signaled to the market, thereby preserving the free rider cost reduction of pre-bid purchases. Bidders are therefore expected to obtain relatively more stock in thickly-traded targets at cheaper pre-bid prices than in smaller, thinly-traded stocks<sup>8</sup>. However, since the same argument can be applied to equity blocks in general, we see no need to control for dispersion caused by market liquidity.

Our sample comprises 74 takeovers or mergers of companies listed on the Australian Stock Exchange (ASX) involving a pre-acquisition toehold, from 1989 through 1998, with a preponderance of observations coming from the mid-1990s<sup>9</sup>. The toehold date is the earliest announcement date of establishment of a toehold or the first in a series of toehold acquisitions where the series subsequently triggers a disclosure. In Australia, like the U.S., substantial shareholder notices (Form 603) must be lodged with the ASX within two business days whenever a shareholder owns more than 5% of the outstanding ordinary shares of a listed company (the then *Corporations Law*, s. 710(4)). A substantial shareholder was defined by s.708 of the *Corporations Law* as a person who has a substantial shareholding, that is, an entitlement to not less than five per cent of: (a) where the voting shares are not divided into two or more classes - those voting shares; or (b) where the voting shares are divided into two or more classes - the shares in one of those classes. Material changes above 5% must also be advised. Toeholds not leading to a takeover by the toeholder were excluded, as were toeholds established at or above 20%. The Australian *Corporations Law* provided for compulsory bid at or above this threshold, so toeholds of this magnitude are qualitatively different from those below the threshold that do

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<sup>8</sup> Ravid and Spiegel (1999) also hypothesize that toeholds will be small in illiquid stocks because the threat posed by a rival bidder is diminished (their Proposition 2), but the same conclusion can be arrived at by modeling a toehold as a put which has value when a rival bidder emerges.

<sup>9</sup> The sample is believed to approach the population size.

not require a bid to be mounted<sup>10</sup>. The financial data were obtained primarily from company annual reports and the now defunct *DataDisc* service of the ASX, the latter providing copies of the initial Form 603 lodged with the ASX and the date of lodgment, which is taken as the announcement date.

The sequence of takeover events outlined in Figure 1 is not fixed but is typical of the early stages of a takeover. Following Betton and Eckbo (2000), takeover strategy is defined as the toehold acquired at  $t_0$  and the initial bid premium which is determined either at  $t_0$  or deferred until  $t_1$  if the bid is deferred. Board recommendations are not binding on shareholders, but are likely to influence uninformed investors. Target shareholders may accept an offer without waiting for the recommendation of their board, but may also decide not to sell their shares even if their board recommends acceptance (typically in expectation of entry of a rival bidder). A rival may bid without waiting for target management to decide their recommendation, but more usually a competing bid occurs after the recommendation is formally made (in a Part B or Part D statement). In determining their strategy, bidders anticipate the probabilities of (i) target shareholder acceptance ( $t_1 + 1$  day), (ii) target board acceptance ( $t_1 + \leq 14$  days), and (iii) entry of a rival bidder ( $t_2$ ). Anticipation is not error-free, but we have no reason to believe that forecast errors are not stochastic, so their expected value in a cross-section is zero. We therefore analyze the events ranging from  $t_0$  to  $t_2$  cross-sectionally. Apart from the (first) bid outcome, subsequent events including revisions to the first bid ( $t_3$ ) are beyond the scope the present paper. A takeover bid (other than an ‘on-market’ bid) must remain open for at least one month and not more than 12 months<sup>11</sup>.

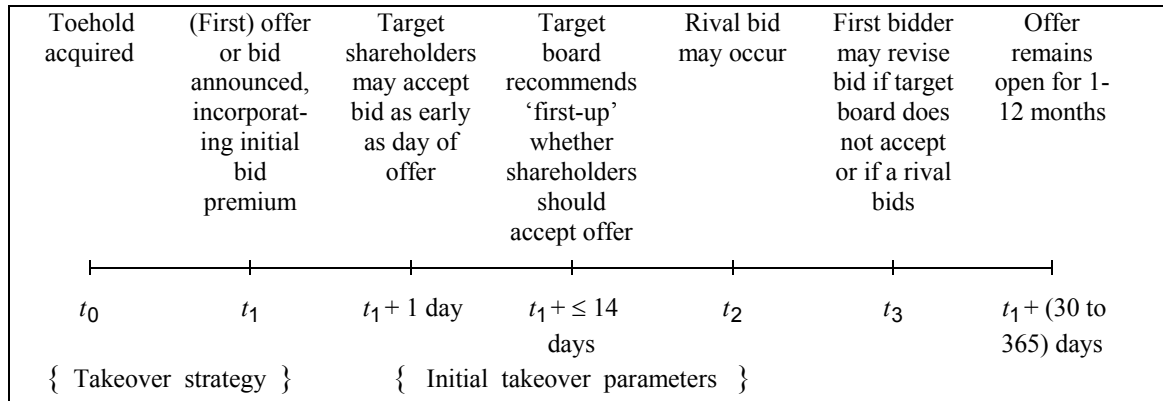
Figure 1. Typical sequence of events in early stages of a takeover

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<sup>10</sup> The *Corporations Law* provides that a shareholding can grow by up to 3% per six months beyond 20% without triggering a mandatory bid.

<sup>11</sup> s. 624(1). ‘On-market’ bids, which are rare, are extendable to a maximum of 6 months.

The illustration is for a bid (not ‘on-market’) that occurs more than ten days following purchase of a toehold; when toehold purchase and bid coincide,  $t_1$  merges with  $t_0$ .



Descriptive characteristics are presented in Table 1. Of the 88 cases sampled, 34 are accorded a target management recommendation to accept the offer, 30 bids attract a rival (including 9 of those gaining target management acceptance), while 64 (first) bids are ultimately successful. Target management recommendations are not binding on their shareholders, but are commonly believed to influence the decisions of uninformed shareholders. In the present context, ‘accept’ means unanimous acceptance of the terms of a given offer by the target board save only for abstentions due to conflict of interest; all other recommendations (including partial acceptances, any rejections and no recommendations by board members) are classified as ‘non-accept’. A successful (failed) bid is defined as one that secures at least (less than) 35 per cent of target stock, which in Australia is reckoned sufficient to exercise effective control in the absence of an even larger independently-owned block<sup>12, 13</sup>. The bidder ultimately prevails in half of the 30 bids that go to a contest. In contrast to most earlier studies, we do not find significant evidence of

<sup>12</sup> Legally, bidders in Australia have the right to return acceptances if their pre-specified minimum acceptance condition is not met, but in practice most bidders waive this right. In about one-third of cases the minimum acceptance condition was set at zero, meaning that bidders were obliged to accept any acceptances received.

<sup>13</sup> This percentage is consistent with those frequently applied in the market. The Australian Accounting Standard, AASB 1024, para. 9, defines control as “the capacity of an entity to dominate decision-making, directly or indirectly, in relation to the financial and operating policies of another entity so as to enable that other entity to operate with it in pursuing the objectives of the controlled entity”.

an inverse relation between toeholds and the (initial) bid premium ( $\rho = -.146, p = .174$ ). Firm descriptors are reported in Panel A. Firm size is measured by the book value of total assets for the first fiscal year-end following the bid date; at the median, bidding firms is roughly four times the size of target firms. Following Smith and Watts (1992), Skinner (1993) and Berger and Ofek (1995), shareholders' investment opportunities are measured by the ratio of the market value of issued ordinary shares to the book value of net assets for the first fiscal year-end following the bid date (market-to-book of equity). The figures indicate there are no marked differences in growth opportunities between bidders and targets. The standard deviation of stock returns is determined from a minimum of 36 monthly returns prior to the toehold acquisition date, suggesting little difference in total risk between the bidders and targets. The initial bid premium is calculated as  $\frac{\text{offer price}_t - \text{target stock price}_{t-3}}{\text{target stock price}_{t-3}}$ , where the target stock price is measured three trading days prior to the offer date. The intention is to measure the offer premium in relation to the stock price that was current when the terms of the offer, including the premium, were decided; this can be as recent as three trading days before the offer announcement. This reference price is considerably more recent than the 3-6 months pre-bid price used in most empirical takeover studies to eliminate any stock price runup caused by bid anticipation, thus enabling a measure of 'true' target value. However, this valuation is superfluous to our present needs because we are more interested in describing the characteristics of the bidding process around toehold acquisition, so a premium (occasionally a discount) to a recent market price is more informative. The initial bid premium we calculate is therefore interpreted as a premium (or discount) to the target's current stock price. This allows interpretation of an initial bid premium as the premium (or discount) to the target's current stock price, which in our sample (refer Panel B) has a median value just under 10 per cent and is lower than bid premia averaging 20-35 per cent in earlier studies employing a longer lead time. A toehold is a complement to the initial bid premium. Toehold size is measured as the ratio (reported as a percentage) of target stock acquired pre-bid (pursuant to the

first *Substantial Shareholder* notice) to the target's outstanding voting stock on the day the notice is lodged with the ASX, which is taken as the toehold acquisition date. In our sample, the median toehold is just under 15 per cent and is of the same order of magnitude as the size of the target management-controlled block (median 11.57 per cent) and that of the largest independent shareholder (median 13.59 per cent). The size of the target management-controlled block is the ratio (reported as a percentage) of the number of voting stock in which target company directors have a direct or indirect interest to the aggregate number of voting stock outstanding at the toehold acquisition date (refer Panel C). The size of the principal shareholding is the ratio (reported as a percentage) of the largest single stockholding excluding the toehold and the target management-controlled block to the aggregate number of voting shares outstanding at the toehold acquisition date.

Abnormal shareholder returns around toehold acquisition are determined by subtracting the expected daily return (using market model estimates) from the observed daily return, which has been adjusted for capitalization changes and dividends. The two-day  $[-1, 0]$  event window comprises the day before (day -1) and day of (day 0) the announcement, generating a two-day cumulative abnormal return. Abnormal returns are dichotomized into two sub-groups: toeholds not accompanied by a concurrent bid, and toeholds acquired when a bid is made (refer Panel D). A concurrent bid occurs on the same day a toehold is purchased or within ten days of the acquisition. Toehold purchases without a concurrent bid exhibit effectively zero  $[-1, 0]$  returns for both bidder and target, while toeholds purchased in tandem with a bid likewise show a zero abnormal return for bidders but a positive return for target shareholders (8.24 per cent). These results imply the market does not anticipate the terms of a bid when toeholds are acquired when the bid is deferred.

TABLE 1. Descriptive Statistics

A successful (failed) bid is defined as one that secures at least (less than) 35 per cent of target stock. Firm size is calculated measured by the book value of total assets for the first fiscal year-end following the bid date. Market-to-book of equity is measured by the ratio of the market value of issued ordinary shares to the book value of net assets for the first fiscal year-end following the bid date. The standard deviation of stock returns is determined from a minimum of 36 monthly returns prior to the toehold acquisition date. The

initial bid premium is calculated as  $\frac{\text{offer price}_t - \text{target stock price}_{t-3}}{\text{target stock price}_{t-3}}$ , where the target stock price is

measured three trading days prior to the offer date. Toehold size is the ratio (expressed as a percentage) of stock acquired pre-bid pursuant to the first *Substantial Shareholder* notice to the target's outstanding voting stock on the day the notice is lodged with the ASX, which is taken as the toehold acquisition date. The size of the target management-controlled block is the ratio (expressed as a percentage) of the number of voting stock in which target company directors have a direct or indirect interest to the aggregate number of voting stock outstanding at the toehold acquisition date. The principal independent shareholding is the ratio (expressed as a percentage) of the largest single stockholding excluding the toehold and the block controlled by target management to the aggregate number of voting shares outstanding at the toehold acquisition date. Abnormal stock returns are determined by subtracting the expected daily return (using market model estimates) from the observed daily return, which has been adjusted for capitalization changes and dividends. A concurrent bid occurs on the same day a toehold is purchased or within ten days of the acquisition.

	Bidders	Targets
Number of cases	88	88
Number of bids accorded a first-up target management recommendation to accept	34	
Number of bids attracting a rival	30	
Number of ultimately successful bids	64	
<i>Panel A: Firm descriptors</i>		
Firm size (\$m)		
mean	1031.4	181.8
median	136.7	32.6
standard deviation	2964.0	530.3
Market-to-book of equity		
mean	1.67	1.83
median	1.13	1.14
standard deviation	2.32	1.71
Standard deviation of monthly stock returns (percentage)		
mean	14.16	13.97
median	13.88	13.70
standard deviation	6.39	6.02
<i>Panel B: Takeover strategy</i>		
Initial bid premium (percentage)		
mean	14.41	
median	9.88	
standard deviation	20.79	
Toehold size (percentage)		
mean	13.63	
median	14.65	

standard deviation	5.47	
<i>Panel C: Initial takeover parameters</i>		
Size of target management-controlled block (percentage)		
mean		17.59
median		11.57
standard deviation		20.25
Principal independent shareholding (percentage)		
mean		16.67
median		13.59
standard deviation		13.85
<i>Panel D: Abnormal shareholder returns</i>		
Two-day [-1, 0] return at toehold acquisition without concurrent bid ( $n=38$ )		
mean	.0050	.0170
median	.0051	.0031
standard deviation	.0524	.1265
Two-day [-1, 0] return at toehold acquisitions with concurrent bid ( $n=50$ )		
mean	-.0083	.1147***
median	-.0111	.0824***
standard deviation	.0540	.1479
Two-day [-1, 0] return for toehold plus bid ( $n=88$ )		
mean	-.0061	.1220***
median	-.0111**	.0955***
standard deviation	.0651	.1865

\*\*\* Two-tail significance at the 1% level.

\*\* Two-tail significance at the 5% level.

#### 4. Analysis

The free rider cost argument of Grossman and Hart (1980) can co-exist with incentives that bidders have to adjust their takeover strategy for target management as far as our sample of positive toeholds allows. Variations in takeover strategy and toehold parameters across three state variables are documented in Table 2. The state variables are represented in binary form: target management control of voting stock above and below 25 per cent; the first-up target board

recommendation to either accept or non-accept; and emergence/non-emergence of a rival bid<sup>14</sup>. Target company management is classified as an owner-manager when the target board controls 25 per cent or more of outstanding target company voting stock; stock ownership below 25 per cent therefore includes entrenched managers. In using this classification schema we differ from Morck, Vishny and Shleifer (1988), who identify entrenchment with stock ownership commencing at 5 per cent up to 25 per cent. Entrenchment occurs when it is too costly to target shareholders to remove incumbent managers. These managers are not necessarily inefficient, but new managers can add value by accepting more risks than existing management. This agency cost can also exist at low control levels if incumbent managers adopt investment, taxation, financing or dividend policies preferred by fund managers (who often constitute the primary clientele). For instance, in the present sample the size of target management-controlled blocks and principal independent shareholdings are inversely correlated ( $\rho = -.367, p = .000$ ), which is consistent with the proposition that large outside equity blocks have a monitoring role when target managers have a low equity position (Denis and Serrano (1996)). We cannot fix the probability of entrenchment among firms with management control percentages below 25 per cent, but we obviate the need to measure entrenchment *per se*, which is problematic. For instance, entrenched managers who garner fewer growth opportunities than replacements have a higher book-to-market ratio than their replacements, but it is not possible to observe the new book-to-market with a new management teams until the transfer occurs.

Relative to owner-managers, the entrenchment-inclusive group is shown in Table 2 to be characterized by lower percentages of bids (i) accorded a first-up target board recommendation to accept (32.79 per cent *versus* 51.85 per cent) and (ii) attracting competing bids (29.51 per cent *versus* 44.44 per cent). Both inequalities are consistent with entrenchment. Target board ‘accept’ recommendations are lower when there is a rival bid; a ‘reject’ recommendation may often signal

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<sup>14</sup> Strictly, only the target management control block (at toehold) is exogenous to the takeover process; the target board recommendation and emergence of a rival bid are endogenous in the sense that the values for

an impending counter bid. Panel A shows the impact of takeover strategy. Toehold size does not differ significantly between the state variable settings, which we construe as evidence against Goldman and Qian's (2004) expectation of smaller toeholds for owner-managers. In contrast, initial bid premiums are sensitive to owner-manager/entrenchment and to a lesser degree target board acceptance/non-acceptance. Owner-managers appear able to extract a higher premium than managers in the entrenchment-inclusive group. Not surprisingly, target board 'accept' recommendations have higher initial bid premiums than 'non-accept' recommendations. A median toehold of 12.62 per cent of target outstanding stock is not high enough to deter rival bidders in  $\frac{30}{58}$  cases, nor is a bid premium of 12.34 per cent (calculated with reference to the target stock price three days before the bid). In fact, toeholds and initial bid premiums do not differ significantly across the rival bid dichotomy. Contrary to the prediction of Ravid and Spiegel (1999), the inference is that the initial toehold and offer price settings are not designed to ward off rival bidders. Strategically, toeholds are very much a one-off shot: once the toehold is acquired, 'topping up' is usually precluded because purchase triggers a run-up in the target stock price. On the other hand, an offer price can always be revised, but while there is any chance a rival may not appear it is in bidders' interest to initiate the offer at a price below full value to the bidder.

Toeholds rank in relation to the target management-controlled block and the principal independent shareholding. These blocks constitute the toehold parameters. The relevant measures are  $\ln(\text{toehold}/\text{target management-controlled block})$  and  $\ln(\text{toehold}/\text{principal independent shareholding})$ , which are reported in Panel B of Table 2. Significant differences are achieved across entrenchment and target board acceptance dichotomies, but (again) not for the rival bid dichotomy. Compared with owner-managers, the entrenchment-inclusive group is characterized by toeholds that are larger than the target management-controlled block but smaller

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each depend in part on the takeover strategy adopted.

than the principal independent shareholding<sup>15</sup>. Turning to the recommendation dichotomy, we find that ‘accept’ recommendations are characterized by toeholds that are larger than both the target management block and the principal shareholding. To a large extent, these inequalities are driven by variation in block sizes controlled by target management and the principal shareholder, for it has been shown already (refer Panel A) that toeholds do not differ significantly. With reference to entrenchment, we conclude that bidders (with toeholds) adopt different toehold strategies when dealing with non-owner managers *versus* owner-managers. Specifically, a toehold larger than the block controlled by entrenched managers is required because the probability of overpayment in this scenario is higher. Since a larger toehold confers higher cost savings, bidders can bid less as indicated by the lower bid premium (see Panel A). Conversely, smaller toeholds than the principal independent shareholding in the entrenchment-inclusive group reflect the effectiveness of principal shareholdings that (on average) exceed target management blocks and therefore lower the probability of overpayment. Our evidence clearly points to the analytical inadequacy of toeholds measured in absolute terms.

TABLE 2. Takeover strategy and toehold parameters by target management control of voting stock, target management recommendation and emergence of rival bid

Target company management is classified as an owner-manager when the target board controls 25 per cent or more of outstanding target company voting stock; stock ownership below 25 per cent includes entrenched managers. An ‘accept’ target board recommendation in relation to a bid refers to unanimous acceptance by the target board save only for abstentions due to conflict of interest; all other recommendations are classified as a recommended ‘non-accept’. Toehold size is the ratio (expressed as a percentage) of stock acquired pre-bid pursuant to the first *Substantial Shareholder* notice to the target’s outstanding voting stock on the day the notice is lodged with the ASX, which is taken as the toehold acquisition date. The size of the target management-controlled block is the ratio (expressed as a percentage) of the number of voting stock in which target company directors have a direct or indirect interest to the aggregate number of voting stock outstanding at the toehold acquisition date. The principal independent shareholding is the ratio (expressed as a percentage) of the largest single stockholding excluding the toehold and the block target management-controlled block to the aggregate number of voting shares outstanding at the toehold acquisition date. The initial bid premium is calculated as

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<sup>15</sup> A natural logarithm is taken of the ratios because some owner-manager equity blocks are very large (maximum = 80.0%) and some target management-controlled blocks are very small (smallest = 0 per cent). The log for two observations with zero some target management-controlled blocks were winsorized.

$\frac{\text{offer price}_t - \text{target stock price}_{t-3}}{\text{target stock price}_{t-3}}$ , where the target stock price is measured three trading days prior to the offer date.

	Target management control of voting stock		Target board recommendation		Rival bid	
	≥ 25% (owner-managers)	< 25% (includes entrenched managers)	Accept	Non-accept	Yes	No
	I	II	I	II	I	II
Number of cases	27	61	34	54	30	58
Percentage of offers accepted by target board	51.85	32.79	n.a.	n.a.	30.00	43.10
Percentage of offers attracting a rival bid	44.44	29.51	26.47	38.89	n.a.	n.a.
Percentage of successful offers	81.48	68.85	91.18	61.11	50.00	84.48
<i>Panel A: Takeover strategy</i>						
<i>Toehold size (percentage)</i>						
mean	12.51	14.13	13.91	13.45	12.63	14.14
median	12.60	14.90	14.95	12.89	12.62	15.02
standard deviation	5.45	5.45	6.14	5.06	4.81	5.76
<i>I less II:</i>						
<i>t</i>		1.282		.369		-1.305
<i>Mann-Whitney U</i>		670.5		864.5		720.5
<i>Initial bid premium (percentage)</i>						
mean	22.44	10.85	19.85	10.98	16.03	13.57
median	11.91	9.47	14.36	9.05	12.34	9.72
standard deviation	24.52	18.01	25.99	16.05	19.34	21.61
<i>I less II:</i>						
<i>t</i>		2.207**		1.788*		.544
<i>Mann-Whitney U</i>		604.0**		717.5*		804.0
<i>Panel B: Toehold parameters</i>						
<i>ln(toehold/target management-controlled block)</i>						
mean	-1.374	2.408	19.85	10.98	1.026	1.36
median	-1.396	1.771	14.36	9.05	.148	.32
standard deviation	.886	2.645	25.90	16.05	2.822	2.89
<i>I less II:</i>						
<i>t</i>		-9.974***		-3.124***		-.524
<i>Mann-Whitney U</i>		42.0***		590.0***		764.0
<i>ln(toehold/principal independent shareholding)</i>						
mean	.310	-.223	.190	-.217	-.099	-.039
median	.256	-.017	.248	-.048	.043	.052
standard deviation	1.078	.881	1.202	.765	1.093	.912

<i>less II:</i>			
<i>t</i>	2.229**	1.763*	-.258
<i>Mann-Whitney U</i>	531.0***	621.0**	840.0

\*\*\* Two-tail significance at the 1% level.

\*\* Two-tail significance at the 5% level.

\* Two-tail significance at the 10% level.

Two least squares regressions are reported in Table 3 in order to determine empirical associations with given takeover strategies. Interaction between a toehold and the initial bid premium can be represented by the implied cost savings, which in percentage terms is the product of the initial bid premium (percentage) and toehold size (also expressed as a percentage) divided by 100. In estimation [1] imputed cost savings for a toehold purchase are found to be strongly increasing in combined bidder and target abnormal returns summed across toehold and bid. Abnormal returns are summed because the gains recognized at toehold/bid are distributed between the bidder and the target firm. The Durbin-Watson statistic is sensitive to heteroscedasticity when the observations are pre-ordered on the explanatory variable that is likely to produce non-constant volatility (in this case, toehold size): the *d* statistic is satisfactory. The regression shows a positive underlying relation between toeholds and the gains expected from a takeover, as predicted by Grossman and Hart (1980). Entrenchment is an intervening variable: the negative sign is consistent with lower bid premiums that are characteristic of entrenched manager-inclusive group. Estimation [2] shows the results of the second stage of a two stage least squares (2SLS) regression of the initial bid premium on non-owner manager (=1), target board 'accept' recommendation (=1), the toehold relative to the principal independent shareholding and the toehold relative to the target management-controlled block, with the latter specified as the instrument. A 2SLS estimation is required because both the toehold and the initial bid premium are sensitive to the same variables. Thus, in the first stage  $\ln(\text{toehold}/\text{target management-controlled block})$  is the regressor and the instrument in the second stage regression. The initial bid premium is significantly decreasing in the toehold relative to the target management-

controlled block, so we conclude that toehold size relative to the target management block and the initial bid premium are strongly inversely related. Given the low variation in (absolute) toehold size, the source of this negative relation is in the size of the target management-controlled block, such that the target management block and the initial bid premium are in fact positively related.

TABLE 3. Analysis of takeover strategy

Cost savings (expressed as a percentage) are the product of the initial bid premium (percentage) and toehold size (also expressed as a percentage) divided by 100. The initial bid premium is calculated as  $\frac{\text{offer price}_t - \text{target stock price}_{t-3}}{\text{target stock price}_{t-3}}$ , where the target stock price is measured three trading days prior to the offer date. A successful (failed) bid is defined as one that secures at least (less than) 35 per cent of target stock. Abnormal stock returns are determined by subtracting the expected daily return (using market model estimates) from the observed daily return, which has been adjusted for capitalization changes and dividends. Target company management is classified as an owner-manager when the target board controls 25 per cent or more of outstanding target company voting stock; stock ownership below 25 per cent includes entrenched managers. Toehold size is the ratio (expressed as a percentage) of stock acquired pre-bid pursuant to the first *Substantial Shareholder* notice to the target's outstanding voting stock on the day the notice is lodged with the ASX, which is taken as the toehold acquisition date. The size of the target management-controlled block is the ratio (expressed as a percentage) of the number of voting stock in which target company directors have a direct or indirect interest to the aggregate number of voting stock outstanding at the toehold acquisition date. In the two-stage estimation  $\ln(\text{toehold}/\text{target management-controlled block})$  is the instrument. Parenthesized numbers are  $t$  values.

$n=88$	OLS	Two-stage least squares
Dependent variable:	[1] Cost savings	[2] Initial bid premium
Adjusted $R^2$	.240	.075
$F$	14.774***	8.073***
Durbin-Watson $d$	2.565	
Constant	1.777*** (3.346)	18.814*** (6.776)
$\ln(\text{toehold}/\text{target management-controlled block})$		-3.535*** (-2.841)
Non-owner manager (=1)	-1.135* (-1.885)	
Bidder <i>plus</i> target [-1, 0] abnormal returns at toehold <i>plus</i> bid	6.980*** (5.027)	

\*\*\* Two-tail significance at the 1% level.

\*\* Two-tail significance at the 5% level.

\* Two-tail significance at the 10% level.

Four logistic regressions are performed to observe the sensitivity of takeover strategy to entrenchment, rival bid and bid outcome dichotomies (refer Table 4). Estimation is by maximum likelihood technique, with coefficients on independent variables interpreted as conditional probabilities. When entrenchment is the dependent variable (non-owner manager = 1 in estimation [1]), significance is obtained only on the two relative toehold measures:  $\ln(\text{toehold}/\text{target management-controlled block})$  is positively signed, while  $\ln(\text{toehold}/\text{principal independent shareholding})$  is negatively signed. The initial bid premium is not sensitive to the entrenchment dichotomy. This implies that bidders dealing with entrenched managers rely on the toehold component of their takeover strategy. Thus, consistent with Goldman and Qian (2005), only owner-managers have an incentive to accept value-increasing bids. To avoid overpayment, bidders need another way to remove entrenched managers. We show this to be the toehold. As indicated in the discussion of Table 2, bidders facing non-owner managers (including an unknown proportion of entrenched managers) acquire large toeholds relative to the block controlled by target managers and small toeholds relative to the principal shareholding, which in cases of entrenchment is usually much larger than the target management-controlled block.

In estimation [2] the dependent variable is the target board recommendation to ‘accept’ (=1). In contrast to estimation [1] and in accord with expectations, the likelihood of target board acceptance is increasing in the offer price. This relation is robust with respect to entrenchment because the non-owner manager variable is not significant. Interestingly, both relative toehold measures are oppositely signed with respect to estimation [1]. In order to obtain target board acceptance, bidders acquire small toeholds relative to the block controlled by target managers and large toeholds relative to the principal shareholding. The implication is that a toehold is needed to neutralize the principal independent shareholder, who is a potential rival or may sell to one. In tandem with the results of estimation [1], toeholds are found to have two functions: (a) counter-

acting target management entrenchment (when it exists), and (b) increasing the probability of target board acceptance when the principal independent shareholding is substantial.

Rival bid (=1) is the dependent variable in estimation [3], but the model parameters are insignificant. Thus, there appears to be no role for toeholds in deterring entry of rivals, which is at odds with Ravid and Spiegel (1999). A toehold has a strategic role only in counter-acting a principal shareholding already present when the toehold is purchased.

Estimation [4] is a regression of a successful takeover (=1) on the same independent variables as used in the previous two estimations. The model parameters are satisfactory. The results are highly compatible with estimation [2], reflecting a strong association between bid acceptance by target boards and the final outcome. As before, the results are robust with respect to entrenchment. The likelihood of a successful takeover is increasing in the initial bid premium, for a higher offer price induces more shareholders to sell. The positive coefficient on the toehold relative to the principal shareholding is also expected because the principal shareholder must sell for a bid to succeed: as the relative size of the toehold increases, the probability of the principal shareholder selling also rises. Thus, the evidence suggests that successful takeover strategies involving toeholds involve two ingredients: (a) the initial setting of the bid premium, and (b) establishing a toehold that is increasing in the principal independently-owned block.

#### TABLE 4. Logistic regressions

Target company management is classified as an owner-manager when the target board controls 25 per cent or more of outstanding target company voting stock; stock ownership below 25 per cent includes entrenched managers. An 'accept' target board recommendation in relation to a bid refers to unanimous acceptance by the target board save only for abstentions due to conflict of interest; all other recommendations are classified as a recommended 'non-accept'. Toehold size is the ratio (expressed as a percentage) of stock acquired pre-bid pursuant to the first *Substantial Shareholder* notice to the target's outstanding voting stock on the day the notice is lodged with the ASX, which is taken as the toehold acquisition date. The size of the target management-controlled block is the ratio (expressed as a percentage) of the number of voting stock in which target company directors have a direct or indirect interest to the aggregate number of voting stock outstanding at the toehold acquisition date. The principal shareholding is the ratio (expressed as a percentage) of the largest single stockholding excluding the toehold and the target management-controlled block to the aggregate number of voting shares outstanding

at the toehold acquisition date. The initial bid premium is calculated as  $\frac{\text{offer price}_t - \text{target stock price}_{t-3}}{\text{target stock price}_{t-3}}$ , where the target stock price is measured three trading days prior to the offer date. Parenthesized numbers are Wald statistics.

$n=88$ Dependent variable:	[1] Non-owner manager (=1) $t_1$	[1A] Target board recommends 'accept' (=1) $t_1 + \leq 14$ days	[2] Rival bid (=1) $t_2$	[3] Successful takeover outcome (=1)
$\chi^2$	86.935***	17.064**	2.465	10.511**
-2 Log likelihood	21.574	100.345	110.463	92.617
Cox & Snell $R^2$	.628	.176	.028	.113
Constant	2.562* (3.188)	-1.157** (4.188)	-.134 (.073)	.371 (.443)
Initial bid premium	-.055 (1.464)	.027* (3.697)	.001 (.011)	.027* (3.014)
$\ln(\text{toehold}/\text{target management-}$ $\text{controlled block})$	4.350*** (11.107)	-.359** (6.499)	.048 (.220)	-.032 (.083)
$\ln(\text{toehold}/\text{principal}$ $\text{independent shareholding})$	-2.906*** (6.961)	.612** (4.709)	-.161 (.437)	.853*** (8.026)
Non-owner manager (=1)		.945 (1.769)	-.909 (1.873)	.685 (.851)
Successful takeover outcome (=1)	1.425 (.754)			

\*\*\* Two-tail significance at the 1% level.

\*\* Two-tail significance at the 5% level.

\* Two-tail significance at the 10% level.

## 5. Summary and conclusions

Several findings have been documented. Toehold size *per se* has no explanatory power in articulating takeover strategies. The cost savings of toeholds to bidders are decreasing in target manager entrenchment. We find strong evidence that bidders establish toeholds in cognizance of blocks controlled by target management and/or principal independent shareholders. The role of the toehold differs according to whether target managers are entrenched or not. Higher levels of entrenchment predicate larger toeholds relative to block-holdings controlled by target managers

as a neutralizing device. In contrast, in the absence of entrenchment the object of a toehold shifts to the principal independent shareholding, which may be seen as representing an existing rival faction. While a higher offer price increases the likelihood of target board acceptance and a successful takeover, it is not effective in dealing with non-owner managers who have less incentive to accept bids emanating from value-increasing takeovers. To avoid overpayment, the evidence is that toeholds are established to neutralize block-holdings controlled by entrenched target management. In general, we conclude that to achieve target management acceptance and/or final success, toeholds are established to neutralize principal independent shareholdings independently of entrenchment. Further, toeholds are used to counteract existing block-holdings whether controlled by target managers or independently-owned, rather than to deter potential rivals. In general, we conclude that while first bidders cannot match the offer price that a rival with a higher valuation can pay or that non-owner managers may demand, acquiring a large toehold relative to the block controlled by target managers in tandem with a lower offer price increases the expected value of their bid as well as lessening the risk of overpayment.

Our findings have been generated from a database of bids with toeholds. Since toeholds have been found to be valuable to bidders in dealing with entrenched target management and existing substantial shareholders, the question naturally arises whether the same bidders would alternatively have raised their offer price (and risked overpayment) if toeholds were not permitted. More pertinently, we are unable to address the question of whether zero toeholds are in fact optimal when entrenchment is not present. In short, this paper has documented empirical evidence on the role of toeholds in scenarios that have yet to be satisfactorily modeled. Specifically, the inter-relations between toeholds and block-holdings controlled by target management and those owned by outsiders need to be modeled in a way that reveals optimality from the bidder's perspective. Development of such insights has direct implications for bidding strategies and also regulators who have the power to limit or relax restrictions on toehold acquisitions.



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