

Lindqvist, Tobias

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## Acquisition Strategies: Empirical Evidence of Outsider-Toeholds

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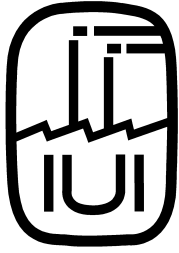
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**Acquisition Strategies: Empirical Evidence of Outsider-Toeholds**

by Tobias Lindqvist

IUI, The Research Institute of Industrial Economics  
P.O. Box 5501  
SE-114 85 Stockholm  
Sweden

# Acquisition Strategies: Empirical Evidence of Outsider-Toeholds\*

Tobias Lindqvist

IUI and Stockholm University

January 24, 2005

*Abstract:* Theoretically, cross ownership may mitigate mergers, i.e. market concentrations. Holding a share in a competing firm before the acquisition of another firm, outsider-toehold, is more profitable in some market constellations, due to the positive externality on the outsider (competing) firm when a merger occurs. The purposes of this paper are to empirically observe when US firms buy outsider-toeholds and through event-studies estimate the gains of buyers, outsider firms and competitors when firms holding outsider-toeholds merge.

*Keywords:* acquisition, antitrust, insiders' dilemma, mergers, toeholds

*JEL code:* G34, L12, L13, L41

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## 1. INTRODUCTION

Back in 1985, on September 3, the firm Petrie Stores bought a 25-percent share in Paul Harris Stores, a competitor in women's clothing in the US. On May 13 in the following year, Petrie Stores publicly announced a bid for a takeover of Lerner Stores, another firm in the industry. This announcement caused a 30 percent (abnormal) increase in the stock price of Paul Harris Stores, a firm not directly involved in the Petrie Stores – Lerner Stores deal. Why did the value of Paul Harris Stores increase? It may be due to a market concentration, increasing the producer surplus or increased expectations of becoming a target in a future Petrie Stores acquisition. Nevertheless, the value of the \$80 million firm Paul Harris Stores increased by \$24 million (30 percent) from the acquisition announcement and a quarter of that increase, \$6 million, benefited Petrie Stores. The 25 percent ownership may thus have been bought for strategic reasons in mitigating the spring acquisition of Lerner Stores, an acquisition that would otherwise not have been motivated.

In the economics literature, there exists an important obstacle to anti-competitive mergers, demonstrating that competing firms outside the merger may benefit more than the buyer and the target firm, since they gain from an increase in price but need not reduce their own output. Stigler (1950) first spelled this out, mentioning a potential coordination problem for firms since it is preferable to stay outside the merger and wait for other firms within the industry to merge. More recently, in a simultaneous acquisition game, Kamien and Zang (1993) prove the existence of a no-merger equilibrium even though a merger is profitable, i.e. the total producer surplus increases when a merger occurs. Fridolfsson and Stennek (2004) also supports a no-merger equilibrium in a setup consistent with simple Bertrand and Cournot models. This puzzle is referred to as *the insiders' dilemma*.

As the first paragraph may hint, there can be a solution to this puzzle. Lindqvist (2004) proves that for some specifications, the insiders' dilemma can be eliminated and all profitable

mergers occur in equilibrium. For this to be possible, an acquirer buys a portion of a rival firm before the acquisition of another rival firm. However, this is only necessary when the dilemma is prominent. The share held by an acquirer in a rival firm (25 percent in the initial example) is called an *outsider-toehold*.

Cross ownership among firms is common and may have many reasons. However, this paper focuses on cross ownership, i.e. outsider-toeholds, within the own industry. Firms buy a share of a rival firm to extract positive externalities from a market concentration. Table 1 presents all outsider-toeholds bought during the years 1985 to 2000 among 330 000 worldwide observations included in the Thomson Financial mergers and acquisitions database.

**TABLE 1:** Outsider-toeholds within the same industry

	<b>U.S.A.</b>	<b>World (incl. U.S.A.)</b>
<b>2-SIC (83 industries)</b>	1,429 (20 %)	10,217 (30 %)
<b>4-SIC (1021 industries)</b>	783 (11 %)	6,617 (19 %)
<b>Total</b>	7,289	34,254

Conditional on buying a share of another firm, 30 percent of these purchases occur within the same industry including observations from all over the world. Industries are defined as firms having the same 2-digit sic code. Firms are thus clustered in 83 different industries and assuming them all to be of equal size and randomly choosing target firms in which to buy outsider-toeholds, firms within the same industry would, on average, be targets slightly above one percent (1/83) of the time. A random choice of where to buy an outsider-toehold can definitely be rejected, also on the US data with 20 percent buying shares in firms within the same industry. Narrowing the definition of industries to a 4-digit sic code (with 1021 industries) makes the result even more obvious with 19 and 11 percent of the outsider-toeholds being bought within the industry for firms all over the world and US firms, respectively.

Firms holding shares in other firms are not an exceptional feature. The reasons for these cross ownerships may e.g. be investment strategies for diversifying risk or acquisition strategies such as the outsider-toehold theory in this paper or the toehold theory, where a share of the target firm is bought before an acquisition. The investment reason may be motivated, since information about the own industry is superior. In contrast diversifying risk would imply investments in other industries. Acquisition strategies may thus be stronger reasons for explaining the vast investment results within the same industry in Table 1.

The main purposes of this paper is to demonstrate the existence of outsider-toeholds, test if acquirers benefit from holding outsider-toeholds and estimate gains for merging parties with and without outsider-toeholds. Looking at US mergers and acquisitions in 1985 to 2000, event studies are used to estimate premiums from stock market reactions and regressions to search for possible variables explaining these premiums.

In Section 2, a short model description demonstrates the acquisition strategy, section 3 the testing procedures, section 4 spells out the results and section 5 concludes.

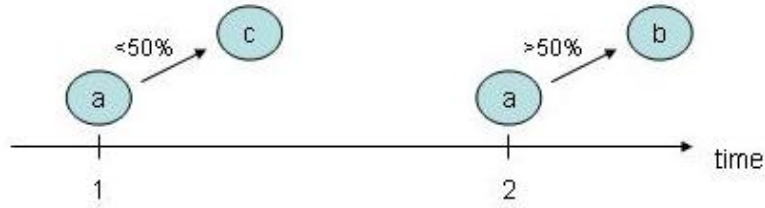
## **2. MODEL**

Consider an industry with three firms; one buyer (firm  $a$ ) and two sellers (firms  $b$  and  $c$ ). An acquisition game of two periods precedes the one period market game, where each firm initially gets a triopoly profit,  $\pi(3)$  and if two firms merge, they each get a duopoly profit,  $\pi(2)$ . Only one merger can take place and a merger to duopoly is assumed to be profitable, i.e.  $2\pi(2) > 3\pi(3)$ .

If firm  $a$  offers a bid to a seller, it must be at least the size of a triopoly profit for a seller to accept in equilibrium. A buyer would only make such an offer if this implies a higher profit than the initial triopoly profit, i.e.  $\pi(2) - \pi(3) > \pi(3)$ . This inequality is stronger

than the assumption of profitable mergers to a duopoly and some of the profitable mergers may thus not occur.

Now, consider the acquisition strategy in Figure 1. Before the acquisition takes place, the acquirer buys an outsider-toehold,  $p$ , in firm  $c$ .



**FIGURE 1:** Acquisition Strategy

For this strategy to be profitable for firm  $a$ , the following must hold:

$$\pi(2) + p\pi(2) - \pi(3) - p\pi(3) > \pi(3). \quad \text{Eq. 1}$$

In the market, firm  $a$  profits from a duopoly profit,  $\pi(2)$ , from its own firm and its holding share in the rival firm. A triopoly profit,  $\pi(3)$ , is paid in the second period of the acquisition game when firm  $b$  is acquired and a portion,  $p$ , of a triopoly profit when the outsider-toehold is bought from firm  $c$ . Rewriting Equation 1, we get  $(\pi(2) - \pi(3))(1 + p) > \pi(3)$ , which demonstrates that there always exists a  $p \in [0, 1]$  where this and the profitability inequality hold. Hence, all profitable mergers can occur in equilibrium.

Lindqvist (2004) presents a more extensive three-period model, cf. the above example with only two periods. To facilitate empirical tests, only two periods are used in this study. In both cases, however, the results are driven by the positive externality on the outsider firm, the existence of which is the main focus of this empirical paper.

Theoretically, the size of an outsider-toehold is somewhere between zero and 100 percent. However, it is necessary for a buyer not to acquire a firm in the first period, but only

buy a share of this firm. In reality, outsider-toeholds cannot be too large for an acquisition to take place and in Figure 1, the outsider-toehold is illustrated as a share less than 50 percent, which is also a necessary constraint in the empirical analysis. Although the definition of an acquisition is more complex than this simple majority rule, there may be good reasons for excluding shares larger than 50 percent, since majority ownership can have similar characteristics as an acquisition in terms of e.g. production quantities, prices and takeover decisions. In fact, holding more than 50 percent of the stock value is often not enough for taking control of a company. In the US, the so-called supermajority is applicable in many antitakeover amendments, stating that a change in control requires shareholder approval by at least a two-third vote and sometimes as much as 90 percent of the voting power. Also when countries have different voting power for different stocks, such as e.g. France and Sweden, it is possible to hold more than 50 percent of the firm value, but less than half the votes. In contrast, holding less than half of the value of a company may be considered as an acquisition if the strong voting power shares are acquired. Also in countries without different voting power shares, holding a minority of the shares may be sufficient for an acquisition if the remaining ownership structure is dispersed.<sup>1</sup> In the empirical analysis an outsider-toehold is defined as buying less than 50 percent of the stocks, holding less than 50 percent afterwards and not being defined as an acquisition in the database. An acquisition is defined as holding less than 50 percent before the deal, more than 50 percent after the deal and being defined as an acquisition in the database.

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<sup>1</sup> According to European Commission IV/M.025 - Arjomari/Wiggins Teape of February 10, 1990, an acquisition takes place if a majority of the voting rights are held. A minority of the voting rights may also be treated as an acquisition if these votes obtain a majority at the shareholders' meeting, due to the remaining votes being spread out among many small shareholders.



### 3. TESTING PROCEDURES

#### 3.1 Merger Premiums with Event Studies

To evaluate acquisition strategies, stock market reactions are used as approximations for gains from involving firms and estimations of premiums are calculated using event studies. Using stock market data has potential problems. In general, to find positive or negative reactions from the stock market in event studies, the events must be unexpected. Even if the particular event is unexpected, problems may arise in interpreting the data since investors may have other expectations that can affect stock prices in one direction or the other. Furthermore, the event itself may be endogenous and signaling something else than what should be tested.<sup>2</sup>

There are several advantages in using stock market data when studying mergers and acquisitions, such as stock market reactions also being available for blocked mergers, it is relatively easy to obtain data, evaluations are relatively independent from insiders and all long- and short-term aspects can be captured in the reactions. Despite potential problems, event studies do not seem to have any clear superior methods for evaluating events such as mergers and acquisitions, M&As.

The market model is used to estimate abnormal returns from acquisitions. For any security  $i$ , the market model is

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \quad \text{Eq. 2}$$

where  $R_{it}$  and  $R_{mt}$  are the period- $t$  returns on security  $i$  and the market portfolio, respectively, and  $\varepsilon_{it}$  is the zero mean disturbance term. S&P 500 Index is used as returns

from the market portfolio and 250 observations (trading days) to estimate parameters for each security  $i$ . Observations are based on daily closing stock prices adjusted for dividends and splits on the trading day -270 to -21, relative to the event day, i.e. day zero.

To calculate abnormal returns, an event day and an event window need to be established. In this study, two different events will be evaluated for each security, using the same estimated parameters from Equation 2. The first event day is when the purchase of an outsider-toehold is announced and the second the day of announcement of an acquisition. The assumption of ineffective markets implies including some days before and after the event day to capture possible market reactions due to e.g. insider trading before and delayed reactions after the announcement. These days (including the event day) are called the event window. The length of this window is not definite; some figures commonly used are 1, 3, 11, 21 and 41 days. What kind of event is evaluated but also efficiency in the market, e.g. availability of information, are, of course, crucial. On the one hand, a long window is preferred since the probability of capturing the entire effect then increases, but on the other hand, a short window is advocated to avoid other effects, not related to the evaluating event.

There are two strong reasons for using at least one day before and after the event day (three-day window). First, we have the “newspaper effect” which arises when announcement days are defined as when first appearing in the financial press. Since news usually has a one day delay in newspapers, the day before the event day should be included. The second is the “closing time effect” due to the closing times on stock markets. Announcements of events after the stock exchange market has closed affect stock prices at the opening time the subsequent day in an efficient market. In the US, this effect may be more prominent due to different time zones. The main reason for including more than one day after the event is slow

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<sup>2</sup> See Duso et al (2003) for an extensive discussion on problems concerning event studies for merger evaluations.

market reactions caused by e.g. weak information channels or liquidity constraints. Including more than one day before the event day is rather related to insider trading, i.e. some investors are trading on non public information. At the end of the last millennium in the computer age, information channels are likely to be strong and investors (such as large investment banks) liquid, which would favor few days of inclusion after the event. In contrast, non public information may be more difficult to conceal and larger trading volumes with larger possibilities for substantial gains may make it more tempting to trade on inside information. This supports more than one day before the event within the window. In fact, most event studies concerning M&As in the last twenty years have shown a pattern supporting these arguments.<sup>3</sup> Some days (five to ten) before the event, the stock price starts reacting but reactions more than one day after the event are rare. My belief before running any empirical tests is to include day +1 to -1 or some days before (here +5) to -1 in the event window. These two windows will be more important in the main conclusions, but other intervals will also be examined. Using the market model to measure the normal return, the sample abnormal return,  $AR_{iT}$ , is

$$AR_{iT} = R_{iT} - \hat{\alpha}_i - \hat{\beta}_i R_{mT} \quad \text{Eq. 3}$$

where  $T$  is each day in the event window. For each day, the average abnormal returns,  $\overline{AR}_T$ , of all securities are estimated and summed up over the event window, thereby forming the cumulative average abnormal return, CAAR. Standard errors from Equation 2 will be used to estimate variances in the hypothesis testing of the CAAR.<sup>4</sup> When testing for differences

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<sup>3</sup> See e.g. Bradley et al (1988) or Betton and Eckbo (2000).

<sup>4</sup> Autocorrelation does not seem to be a general problem for individual regressions. The Durbin-Watson test could not reject the null hypothesis at the 1 percent significance level of no positive autocorrelation against the alternative hypothesis of positive autocorrelation in any of the 186 regressions. However, negative autocorrelation was found in about 10 percent (18/186) of the regressions. Since regression results are aggregated, thereby diminishing the influence of individual estimations, there have been no adjustments in variances.

between two CAARs, the two standard deviations from these samples are used for calculating t-values.<sup>5</sup>

### 3.2 Data description and hypothesis testing

M&As are collected from the Thomson Financial database and firm-specific data from Compustat. Only US firms are considered during the years 1985 to 2000. As illustrated by the acquisition strategy in Figure 1, two different observations are necessary for firms to be included. In the first period, an outsider-toehold is acquired, defined as buying a share less than 50 percent and holding less than 50 percent in the target firm afterwards, not being an acquisition. In the second stage, an acquisition takes place, which is defined as holding less than 50 percent before and more than 50 percent after the deal, being an acquisition. Hence, three types of firms are involved; *buyer*, B, and *outsider-toehold* firm, O-T, in period 1 and *buyer* and *seller*, S, in period 2. All firms must belong to the same line of business, i.e. being rivals, which is defined as the same 4-digit sic code at the time of the announcement for buying an outsider-toehold (firms can change sic codes). Furthermore, all firms not directly involved in this strategy but having the same sic code in that year will also be examined, referred to as *competitors*, C. Four different types of firms are thus considered at two different events. To ensure as clean observations as possible, all three firms directly involved in the two-period-strategy must not be part of any other deal with any other firm before the announcement of the acquisition in period 2. This (as will be seen in the result section) disqualifies a vast majority of the observations in the Thomson database.

Hypotheses will be formed to test the theoretical results from Lindqvist (2004), briefly discussed in section 2. In the first period, the outsider-toehold firm may increase or may not be different from zero. If expectations about the later market concentration are considerably higher after this event, there will be an increase in value since outsider-toehold firms will

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<sup>5</sup> For a detail description of event studies and statistical interpretation, see e.g. MacKinlay (1997).

gain from this. In contrast, if there is no change in expectations, the value will be unaffected and only increase in the second period, when the acquisition occurs.

Although expectations of later acquisitions may be diffuse and not as clear as in the theoretical case, the empirical literature points at other reasons for an increase in value. In M&As, targets receive a large bid premium (20-40 percent) whereas buyers are not affected.<sup>6</sup> Hence, an outsider-toehold can be treated as a “partial” acquisition with a proportionate bidding premium. Furthermore, the share bought may be treated as a toehold by the stock market, as in the finance literature, i.e. a share of a target firm is bought before the acquisition. Grossman and Hart (1980) and Bagnoli and Lipman (1988) prove that this can be profitable for the acquirer and the outsider-toehold firm may thus be expected to become a target at a later stage.<sup>7</sup> Although expecting an increase in outsider-toehold firms, the alternative hypothesis is set as no differences rather than being larger than zero since the theoretical predictions are ambiguous. A two-sided test also requires larger t-values for significant differences and is more neutral, making the test “stronger” in this perspective.

**Target premium hypothesis:**

$$H_0 : CAAR_{O-T} = 0$$

$$H_a : CAAR_{O-T} \neq 0 .$$

Abnormal returns for buyers and competitors are assumed not to be different from zero when the outsider-toehold is bought, i.e. the expectations for a future acquisition have not changed.

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<sup>6</sup> See e.g. Franks and Harris (1989) and Bradley et al (1988).

<sup>7</sup> Buying toeholds is not rare. In the sample of Bradley et al (1988), 34 percent of the buyers held a toehold in the target when an acquisition was announced. Jennings and Mazzeo (1993) and Jarrell and Poulsen (1989) find toeholds in more than 50 percent of the acquisitions, the former also find most of them to be small (on average 3 percent). In Betton and Eckbo (2000), more than half the buyers held toeholds and the target premium was decreasing in the size of the toehold. Franks and Harris (1989) did not find any differences in target premiums with and without toeholds.

In the second stage, when the acquisition takes place, the outsider-toehold firm is expected to have a positive abnormal return, unconditional on the effect in the first period. A buyer is assumed to extract gains from the outsider-toehold to mitigate the acquisition. This is crucial, since this is what the theoretical assumption leans on. Also in this hypothesis is a two-sided test applicable.

**Outsider-toehold externality hypothesis:**

$$H_0 : CAAR_{O-T} = 0$$

$$H_a : CAAR_{O-T} \neq 0 .$$

Also in this second stage is the assumption of no effects on buyers consistent with theory. The effect on competitors is ambiguous. If markets are concentrated, a positive reaction is expected but otherwise, no effects are assumed.

The next hypothesis will test if buyers are randomly choosing outsider-toehold firms within the same industry or if these firms have different CAARs as compared to their competitors. This test also concerns the second stage.

**Outsider-toehold vs. competitor firm hypothesis:**

$$H_0 : CAAR_{O-T} = CAAR_C$$

$$H_a : CAAR_{O-T} \neq CAAR_C .$$

For the buyer, however, one more test may be necessary to further support the theoretical results. Consider no effects in the value of buyers in the two periods, but an increase in the outsider-toehold firm in the second stage. This implies that despite the external gains extracted from holding shares in a rival firm, the total value of the buyer remains unchanged. One explanation to this may be an endogenous choice of whether to buy an outsider-toehold. Firms may only use the outsider-toehold acquisition strategy when mergers are difficult and costly, i.e. when the insiders' dilemma is prominent. Lindqvist

(2004) proves that this may be valid; when the insiders' dilemma does not exist, buyers do not benefit from buying outsider-toeholds. Hence, one may expect not to observe any differences in the abnormal return from a buyer holding an outsider-toehold, as compared to one not holding any. For this to be tested, we need to extend the sample and include pure acquisitions, i.e. involving firms that do not hold any shares in other firms, and make a comparison with the buyers included in the tests above.

A buyer not holding any outsider-toehold is referred to as a *buyer of type 2*, B2, and its opponent a *seller of type 2*, S2. These acquisitions are similar to those with outsider-toeholds in all respects but the outsider-toehold existence. Hence, these firms have the same 4-digit sic code and both firms lack in transactions of shares with other firms. In that sense, it can be treated as a clean acquisition.

Comparing buyers using the outsider-toehold strategy with buyers who do not, may indicate if strategies are exogenously chosen.

**Buyer profitability hypothesis:**

$$H_0 : CAAR_B = CAAR_{B2}$$

$$H_a : CAAR_B \neq CAAR_{B2}.$$

*3.3 Regressions*

The desired effect of buying an outsider-toehold may depend on many variables not considered in the above hypothesis testing. To examine possible explanatory factors determining the CAARs for outsider-toehold firms, O-T, in the second stage when an acquisition announcement occurs, the regression in Equation 4 is run

$$CAAR_{O-T} = \beta_0 + \beta_1 T_i + \beta_2 C_i + \beta_3 S_i + u_i. \quad \text{Eq. 4}$$

Variable  $T$  is the time in years between the announcement of buying an outsider-toehold and the announcement of the acquisition. When these two events are close in time,

the externality of buying an outsider-toehold may be more profitable, since it may be easier to identify a firm generating a gain closer in time.

A concentrated market with few firms may imply larger profits for the remaining firms after a merger, since in e.g. a simple linear Cournot model, the single firm profit is decreasing and convex in the number of firms within the industry. Variable  $C$  is the number of competitors (def. as equal 4-digit sic code) in the database, used as an approximation of the number of firms within the industry for testing for decreasing profits. Variable  $S$  is the size of the outsider-toehold.

Note that the model in Lindqvist (2004) is consistent with  $\beta_0 > 0$ ,  $\beta_2 < 0$  and  $\beta_3 = 0$ . Parameter  $\beta_1$  does not affect the profits of a buyer in the model and is thus not expected to differ from zero. However, for simplicity, no discounting factor is used in the theoretical model (sec. 2 and Lindqvist (2004)) but introducing one would predict a negative sign on  $\beta_1$ .

A second regression is executed to test for possible differences between CAARs for buyers holding an outsider-toehold versus buyers who do not, i.e. B vs. B2. For buyers with outsider-toeholds (B), the CAARs from both periods are aggregated to compare with buyers only realizing an acquisition (B2). Independent variables are given in Equation 5

$$CAAR_{Buyer} = \alpha_0 + \alpha_1 A_i + \alpha_2 M_i + \alpha_3 F_i + u_i. \quad \text{Eq. 5}$$

All variables are dummies, where  $A$  is one if an acquisition takes place after the announcement, and zero otherwise. Note that CAARs are estimated at the time of the announcement and an acquisition does not necessarily occur at a later stage.  $M$  equals one if the offer is made in a multiple bidder contest, and zero otherwise. Including the number of bidding firms instead of this dummy variable may be motivated but since most bidding contests only have two firms involved in this sample, this was not considered.  $F$  will be used to compare CAARs for different firm types and is one when a buyer holds an outsider-



toehold (B), and zero otherwise (B2). All parameters are expected not to differ from zero, i.e.

$$\alpha_0 = \alpha_1 = \alpha_2 = \alpha_3 = 0.$$

## 4. RESULTS

### 4.1 Outsider-toehold results

The acquisition strategy in Figure 1 may look simple. Finding observations for empirical testing of this strategy is demanding, however, due to the two-stage game. Events such as other shares being bought or sold by any involved firm before or between the stages create noise and have thus been excluded. Hence, only pure observations are considered in the empirical tests.

All acquisitions (and sometimes mergers) studied are presented in the Appendix, Table A1. The sample includes 18 buyers (B), 36 outsider-toehold firms (O-T), 97 competitors (C) and 35 buyers without outsider-toeholds (B2). Sellers are specified for some observations in Table A1, although not included in the statistical testing.

In Table 1, CAARs for buyers, outsider-toehold firms and competitors are presented. Six different event windows have been used for each firm type but the focus, motivated in section 3.1, for the conclusions will be on -5 to +1 and -1 to +1 (bold figures in all tables) and the remaining windows are more like robustness tests. CAARs from Table 1 are plotted in Figure 2.

**TABLE 2: CAARs at the announcement of outsider-toehold**

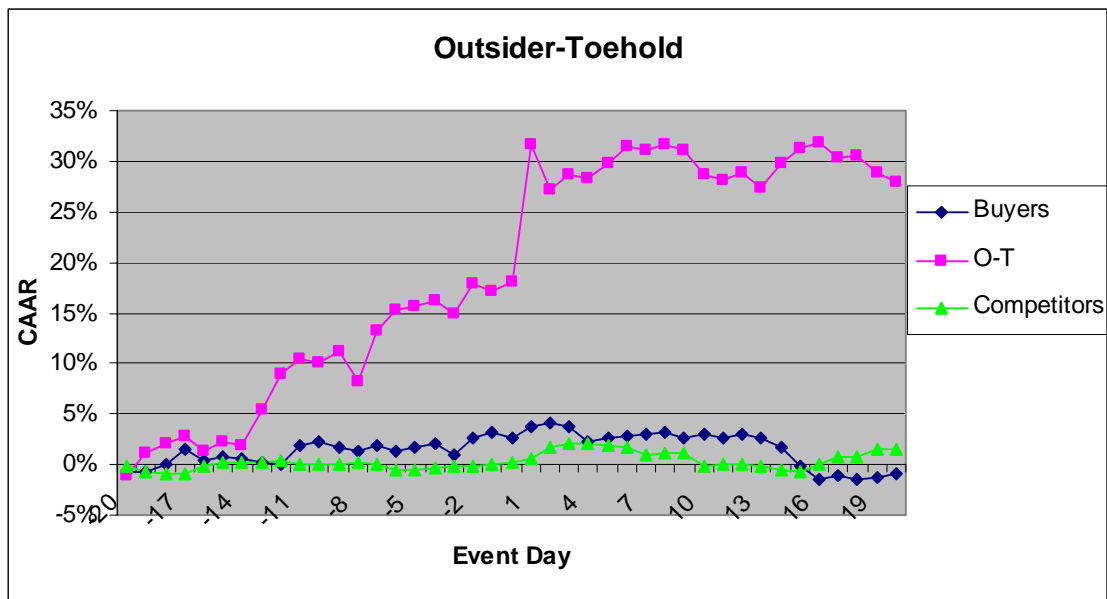
Event window	Buyers, B		Outsider-toehold firms, O-T		Competitors, C	
	CAAR	<i>t-value</i>	CAAR	<i>t-value</i>	CAAR	<i>t-value</i>
-20 to +20	-0.008	0.185	0.279**	2.281	0.016	0.740
-10 to +10	0.010	0.326	0.182**	2.080	-0.001	0.069
-5 to +5	0.013	0.580	0.146**	2.308	0.024**	2.188
<b>-5 to +1</b>	<b>0.024</b>	<b>1.313</b>	<b>0.164**</b>	<b>3.241</b>	<b>0.011</b>	<b>1.323</b>
<b>-1 to +1</b>	<b>0.011</b>	<b>0.894</b>	<b>0.138**</b>	<b>4.165</b>	<b>0.009</b>	<b>1.508</b>
Event day	-0.005	0.663	0.011	0.558	0.002	0.516

\* Significantly different from zero at the 90 percent level.

\*\* Significantly different from zero at the 95 percent level.

Firms where an outsider-toehold is bought have a significantly (95 percent level) positive response in the stock price, as indicated by Figure 2. Note that all ranges of the event window but the actual event day have a definite increasing CAAR. This can exemplify misinterpretations when not including more days around the single event day.

**FIGURE 2:** CAARs at the announcement of outsider-toehold



As illustrated by Figure 2, buyers and competitors are generally not affected by this event, although competitors show a significantly increasing CAAR for the -5 to +5 event window. However, these returns can not compare to the nearly 30 percent CAAR from outsider-toehold firms over the -20 to +20 window. Furthermore, the pattern of this CAAR is similar to reactions to target firm stock prices upon the announcement of an acquisition, i.e. without outsider-toeholds. Some days before the announcement, the stock price is increasing and a sudden shift occurs just before the event day, followed by no trend. The null hypothesis of CAARs being equal to zero for outsider-toehold firms is rejected.

**Target premium hypothesis result:** *Stock prices increase heavily for firms where an outsider-toehold is bought.*

#### 4.2 Acquisition results

Table 3 presents the results for the second stage, at the announcement of the acquisition.

**TABLE 3: CAARs at the announcement of an acquisition with outsider-toeholds**

Event window	Buyers, B		Outsider-toehold firms, O-T		Competitors, C	
	CAAR	<i>t-value</i>	CAAR	<i>t-value</i>	CAAR	<i>t-value</i>
-20 to +20	-0.114**	2.549	-0.006	0.062	-0.083**	4.293
-10 to +10	-0.058	1.606	0.020*	1.667	-0.013	0.917
-5 to +5	-0.033	1.430	0.017	0.313	-0.003	0.303
<b>-5 to +1</b>	<b>-0.020</b>	<b>1.086</b>	<b>0.040*</b>	<b>1.837</b>	<b>-0.022</b>	<b>1.618</b>
<b>-1 to +1</b>	<b>-0.027</b>	<b>1.193</b>	<b>0.042**</b>	<b>2.524</b>	<b>-0.013</b>	<b>1.479</b>
Event day	-0.018	1.624	0.027*	1.698	-0.005	1.613

\* Significantly different from zero at the 90 percent level.

\*\* Significantly different from zero at the 95 percent level.

Stock price reactions for buying and competing firms tend to decrease, but only the -20 to +20 event window differs significantly from zero. In contrast, outsider-toehold firms experience a CAAR significantly different from zero. On average, about a four-percent increase due to the acquisition announcement is found a few days around the event. This result indicates that firms holding outsider-toeholds extract external gains when realizing an acquisition and the null hypothesis of CAARs equaling zero is thus rejected.

**Outsider-toehold externality hypothesis:** *Buyers extract gains from holding an outsider-toehold when announcing an acquisition.*

The theory states that outsider-toeholds are bought in rival firms. However, many rivals with various reactions to stock prices may exist. Further analysis is necessary to examine whether firms tend to invest shares in rivals experiencing positive and relatively superior stock price reactions. Table 4 presents CAARs for buyers not holding any outsider-toehold, B2, in the second column and differences between CAARs for outsider-toehold firms and competitors in the fourth column and finally, in the sixth column, CAAR differences between buyers with and without outsider-toeholds, B-B2. Note that CAARs for buyers, B, are presented in Table 3. The two differences are also plotted in Figure 3.

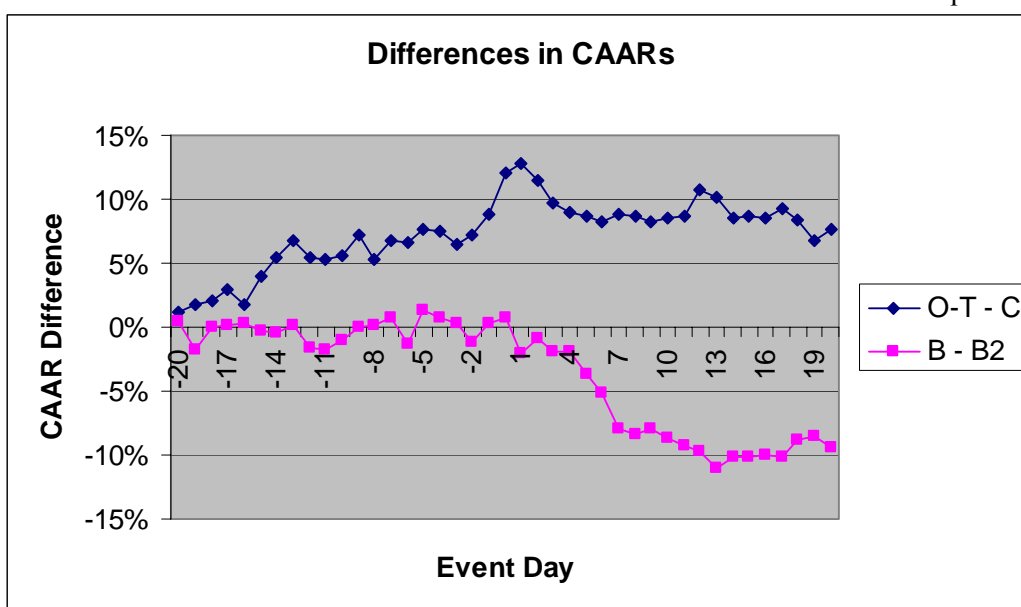
**TABLE 4:** Differences in CAARs at the announcement of an acquisition

Event window	Buyers, B2		O-T - C		B - B2	
	CAAR	t-value	CAAR	t-value	CAAR	t-value
-20 to +20	-0.020	0.332	0.076	0.730	-0.094	1.242
-10 to +10	-0.010	0.239	0.032	0.432	-0.068	1.263
-5 to +5	-0.010	0.326	0.020	0.364	-0.023	0.585
<b>-5 to +1</b>	<b>-0.013</b>	<b>0.498</b>	<b>0.061*</b>	<b>1.722</b>	<b>-0.008</b>	<b>0.242</b>
<b>-1 to +1</b>	<b>-0.018</b>	<b>1.069</b>	<b>0.055**</b>	<b>1.965</b>	<b>-0.009</b>	<b>0.437</b>
Event day	-0.022**	2.307	0.032**	1.977	0.004	0.305

\* Significantly different from zero at the 90 percent level.

\*\* Significantly different from zero at the 95 percent level.

**FIGURE 3:** Differences in CAARs at the announcement of an acquisition



CAAR differences between outsider-toehold firms and competitors are positive and significantly different from zero a few days around the event day, i.e. -5 to +1, -1 to +1 and the event day. The null hypothesis of no differences is thus rejected. Furthermore, the stock price increases for outsider-toehold firms in 26 of the 36 firms studied (72 percent).

**Outsider-toehold vs. competitor firm hypothesis:** *Buyers tend to invest outsider-toeholds in firms with a positive and, relative to its rivals, superior CAAR.*

According to the result so far, buyers extract gains from buying an outsider-toehold before making an acquisition. Hence, if the choice of holding an outsider-toehold is

exogenous, these buyers should experience a larger CAAR as compared to buyers not holding outsider-toeholds. But if the choice of buying an outsider-toehold is endogenous, we may not observe differences in CAARs. In fact, Lindqvist (2004) suggests that only when the insiders' dilemma is prominent is it necessary for buyers to hold outsider-toeholds for an acquisition to occur in equilibrium. Hence, buyers neither gain nor lose from the acquisition when holding outsider-toeholds, since this strategy is only used when mergers are difficult.

CAARs in the sixth column of Table 4 do not differ from zero and thus, the null hypothesis of equal CAARs for buyers with and without outsider-toeholds cannot be rejected. This indicates an endogenous choice of whether to buy an outsider-toehold. Furthermore, even though these differences are not significantly different from zero, they are mostly negative, thereby supporting the theory of only using outsider-toeholds when mergers are difficult.

**Buyer profitability hypothesis:** *CAARs are not significantly different from zero at the announcement of an acquisition for buyers with and without outsider-toeholds.*

#### *4.3 Regression results*

The results in the previous section indicate a positive reaction to the stock price of outsider-toehold firms at the acquisition announcement. To search for variables explaining positive CAARs, Table 5 reproduces regression results from Equation 4.

**Table 5: OLS on CAARs from outsider-toehold firms<sup>a</sup>**

Dependent Variable	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$	F-statistic	$R^2$
$CAAR_{-20/+20}$	0.3986** (2.09)	-0.0328 (-0.72)	-0.0107 (-0.74)	-1.2784 (-1.61)	2.29*	0.486
$CAAR_{-10/+10}$	0.1918** (1.99)	-0.0537** (-2.34)	0.0026 (0.35)	-0.3851 (-0.96)	3.42**	0.595
$CAAR_{-5/+5}$	0.0746 (1.01)	-0.0288* (-1.64)	0.0009 (0.16)	0.0035 (0.01)	1.89	0.448
$CAAR_{-5/+1}$	<b>0.1292*</b> <b>(1.63)</b>	<b>-0.0272*</b> <b>(-1.53)</b>	<b>0.0014</b> <b>(0.25)</b>	<b>0.0583</b> <b>(0.19)</b>	<b>1.55</b>	<b>0.399</b>
$CAAR_{-1/+1}$	<b>0.0031</b> <b>(0.05)</b>	<b>-0.0023</b> <b>(-0.16)</b>	<b>-0.0043</b> <b>(-0.94)</b>	<b>0.3895</b> <b>(1.56)</b>	<b>1.34</b>	<b>0.364</b>
$CAAR_{EventDay}$	0.0376 (0.53)	-0.0043 (-0.25)	-0.0043 (-0.80)	0.0960 (0.33)	0.33	0.124

<sup>a</sup> Ordinary least square estimators for 36 firms on  $CAAR_{o-T} = \beta_0 + \beta_1 T_i + \beta_2 C_i + \beta_3 S_i + u_i$  at the announcement date of acquisition, where  $T_i$  is the time in years between outsider-toehold and acquisition announcements,  $C_i$  the number of competitors and  $S_i$  the size of the outsider-toehold. The length of the event window determines the CAARs (cumulative average abnormal returns) for each of the six dependent variables used. One-sided tests are used for testing  $\beta_0 > 0$ ,  $\beta_1 < 0$  and  $\beta_2 < 0$  and two-sided tests for testing  $F - statistic \neq 0$  and  $\beta_3 \neq 0$  against the null hypotheses of not being different from zero (t-statistics in parentheses). White's test did not detect heteroskedasticity (highest  $nR_w^2 = 10.907 \sim \chi_9^2$  for  $CAAR_{-5/+1}$ ). Mutual correlations between variables are not significantly different from zero (highest  $|\text{corr}(T, C)| = 0.338$ ).

\* Significant at the 90 percent level.

\*\* Significant at the 95 percent level.

Different dependent variables, i.e. varying lengths of the event window, are used as a robustness test for establishing relations between variables. Bold results are somewhat more important (see the discussion in section 3.1) for general conclusions.

The constant  $\beta_0$  is positive in all regressions, but the null hypothesis of this constant equaling zero is only rejected in favor of the alternative hypothesis of a positive constant for some of the regressions. Altogether, when controlling for the variables in Equation 4, the results weakly support a positive reaction on the stock price of the outsider-toehold firm, which is consistent with theory and the hypothesis testing result in section 4.2.

Column three in Table 5 indicates a negative relation between the time between buying an outsider-toehold and making an acquisition,  $T$ , and the CAAR. The null hypothesis of parameter  $\beta_1$  equaling zero is rejected in some regressions in favor of the alternative hypothesis of a negative relation. This weakly supports the hypothesis that when firms use the outsider-toehold acquisition strategy, the time between the two events is short, whereas when much time has passed, this strategy is less pronounced.

The number of competitors,  $C$ , does not seem to affect the CAAR. A null hypothesis of  $\beta_2$  being equal to zero cannot be rejected in favor of the alternative hypothesis of a negative parameter. This contradicts theory, but the definition of a competitor in this study may not be appropriate or more observations may be needed to establish stronger results. Also for the last parameter,  $\beta_3$ , the null hypothesis of equaling zero cannot be rejected in favor of the alternative hypothesis of not being equal to zero. Hence, the share of the outsider-toehold does not seem to determine CAARs, which is consistent with theory.

**Results on CAARs for outsider-toehold firms at the acquisition announcement:**  
*Stock prices tend to increase in general but are decreasing in the time between outsider-toehold and acquisition announcements.*

Table 6 presents OLS results on buyers' CAARs at the acquisition announcement.

**Table 6:** OLS on CAARs from buyers<sup>a</sup>

Dependent Variable	$\alpha_0$	$\alpha_1$	$\alpha_2$	$\alpha_3$	F-statistic	$R^2$
$CAAR_{-20/+20}$	-0.0295 (-0.29)	0.0136 (0.12)	0.0095 (0.03)	-0.1039 (-0.86)	0.27	0.018
$CAAR_{-10/+10}$	0.0093 (0.12)	0.0016 (0.02)	-0.0756 (-0.34)	-0.0471 (-0.50)	0.19	0.013
$CAAR_{-5/+5}$	0.0504 (0.72)	-0.0885 (-1.08)	-0.0826 (-0.41)	0.0049 (0.06)	0.39	0.026
$CAAR_{-5/+1}$	<b>0.0096</b> <b>(0.19)</b>	<b>-0.0322</b> <b>(-0.56)</b>	<b>-0.0554</b> <b>(-0.39)</b>	<b>0.0256</b> <b>(0.43)</b>	<b>0.15</b>	<b>0.010</b>
$CAAR_{-1/+1}$	<b>-0.0430</b> <b>(-1.34)</b>	<b>0.0370</b> <b>(0.99)</b>	<b>-0.0024</b> <b>(-0.03)</b>	<b>0.0012</b> <b>(0.03)</b>	<b>0.38</b>	<b>0.025</b>
$CAAR_{EventDay}$	-0.0589** (2.47)	0.0539* (1.94)	0.0307 (0.45)	-0.0070 (-0.24)	1.27	0.078

<sup>a</sup> Ordinary least square estimators for 53 firms on  $CAAR_{Buyer} = \alpha_0 + \alpha_1 A_i + \alpha_2 M_i + \alpha_3 F_i + u_i$  at the announcement date of the acquisition (for buyers with outsider-toeholds, the CAAR from this announcement is also included), where  $A_i$  is a dummy variable equaling one if an acquisition occurs and zero otherwise,  $M_i$  a dummy equaling one if the offer is made in a multiple bidder contest and zero otherwise and  $F_i$  a dummy equaling one if the buyer holds an outsider-toehold and zero otherwise. The length of the event window determines the CAARs for each of the six dependent variables used (t-statistics in parentheses). White's test did not detect heteroskedasticity (highest  $nR_w^2 = 3.798 \sim \chi_4^2$  for  $CAAR_{EventDay}$ ). Mutual correlations between variables are not significantly different from zero (highest  $|\text{corr}(M, F)| = 0.326$ ).

\* Significantly different from zero at the 90 percent level.

\*\* Significantly different from zero at the 95 percent level.

The null hypothesis of a parameter equal to zero against the alternative hypothesis of not equaling zero is used for all parameters in Table 6. In fact, the null cannot be rejected for any parameter except  $\alpha_0$  and  $\alpha_1$  when using CAARs from the event day as the dependent variable. However, the event day is not sufficient for drawing conclusions and since the other regression results are insignificant and also have different signs, no general relations can be established.

Variable F is a dummy variable used to test whether buyers with outsider-toeholds,  $F=1$ , experience a larger positive reaction to the stock price than buyers without a share in another firm in the industry. However, this is not supported in the regression results from Equation 5 in Table 6, which are consistent with the conclusions from section 4.2. Note that



the definition of the CAAR is different in this section, since CAARs from both the outsider-toehold and the acquisition announcements are aggregated.

Acquisitions occurring after the announcement,  $A=1$ , and offers made in a multiple bidding contest,  $M=1$ , do not significantly affect the CAAR.

**Results on CAARs for buyers at the announcement of acquisition:** *CAARs are not different for buyers with and without outsider-toeholds.*

In general, the observations used in this section are not as many as desired. Excluding outliers may be one way of increasing the significance, particularly when having few observations. However, no outliers significantly increasing the t-statistics were found. Low  $R^2$ s (particularly in Table 6) and insignificant estimated parameters indicate that the results are somewhat weak and should not be considered to be too generalized and established without further testing on additional data.

## 5. CONCLUDING REMARKS

In the economics literature, there exists an important obstacle to anti-competitive mergers, demonstrating that competing firms outside the merger often benefit more than the buyer and the target firm, since they benefit from an increase in price but need not reduce their own output. Hence, sometimes profitable mergers do not occur in equilibrium.

Lindqvist (2004) proves that for some specifications, this puzzle may be solved if a buyer purchases a share of a rival firm before the acquisition, referred to as an outsider-toehold. The main purposes of this paper have been to demonstrate the existence of these outsider-toeholds, test if acquirers benefit from holding outsider-toeholds and estimate gains for merging parties with and without outsider-toeholds. Looking at US mergers and acquisitions in 1985 to 2000, event studies are used to estimate premiums from stock market reactions and regressions to search for possible variables explaining these premiums.

Two different stages in the acquisition strategy are examined in the event studies; the announcement of buying an outsider-toehold and the announcement of an acquisition. The results exhibit a positive cumulative average abnormal return, CAAR, for the outsider-toehold firm in the first stage. More interestingly, CAARs are also significantly positive for outsider-toehold firms in the second stage, at the announcement of an acquisition implying a positive external gain for a buyer holding an outsider-toehold. Furthermore, this CAAR is negatively related to the time between outsider-toehold and acquisition announcements, but not affected by the number of competitors and the size of the outsider-toehold. Hence, when buyers hold a share of another firm, they mitigate later acquisitions, due to a positive externality on the rival firm. In fact, buyers also tend to invest outsider-toeholds in firms with a positive and, relative to its rivals, superior CAAR.

According to these result, buyers extract gains from buying an outsider-toehold before making an acquisition. If the choice of holding an outsider-toehold is exogenous, these buyers should experience a larger CAAR as compared to buyers not holding outsider-toeholds. But if the choice of buying an outsider-toehold is endogenous, we may not observe differences in CAARs. As an example, buyers may neither gain nor lose from the acquisition when holding outsider-toeholds, since this strategy is only used when mergers are difficult. In fact, CAARs are not significantly different from zero at the announcement of an acquisition for buyers with and without outsider-toeholds. This proposes an endogenous choice of whether to buy an outsider-toehold.

This paper may have interesting policy implications; when rivals gain from a merger, this usually implies a decrease in consumer surplus. Firms using outsider-toeholds may thus be used as a signal for blocking a merger or an acquisition. In general, however, this paper has focused on clean but few observations and further studies on cross ownership are necessary to explore the implications of these phenomena.

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## APPENDIX

**Table A1: Mergers and acquisitions included in sample <sup>a</sup>**

BUYER	OUTSIDER-TOEHOLD (< 50 %)		ACQUISITION (> 50 %)	
	SELLER	DATE	SELLER	DATE
PETRIE STORES	PAUL HARRIS STORES	9-3-1985	LERNER STORES	5-13-1986
NA	ZONDERVAN CORP	9-12-1985	NA	5-5-1987
NA	COMAIR HOLDINGS INC	7-29-1986	NA	8-6-1986
NA	HORIZON BANCORP	8-22-1986	NA	12-15-1986
YOUNG (CHAS. P.) CO	PANDICK INC	12-29-1986	SORG INC	2-23-1987
NA	CALNY INC	2-17-1987	NA	1-14-1991
NA	CENERGY CORP	3-2-1987	NA	4-6-1989
NA	BUCKHORN INC DEL	3-2-1987	NA	8-3-1987
NA	US AIRWAYS GROUP INC	3-4-1987	NA	11-7-1988
DIGITAL COMMUNICATIONS ASSC	UNGERMANN-BASS INC	10-23-1987	DIGITAL TRANSMISSION SYSTEMS	12-30-1988
NA	SKYWEST INC	1-25-1988	NA	6-8-1988
NA	SABINE CORP	3-10-1988	NA	8-10-1988
NA	STANDARD MICROSYSTEMS CORP	4-7-1988	NA	6-18-1998
NA	IMAGINE FILMS ENMT INC	4-7-1988	NA	6-18-1998
NA	HERITAGE COMMUNICATIONS INC	6-13-1988	NA	5-4-1989
NA	VONS COMPANIES INC	7-18-1988	NA	8-18-1989
NA	CRYSTAL GAS STORAGE INC	9-19-1988	NA	1-11-1995
NA	SKIPPER'S INC	1-30-1989	NA	9-30-1992
NA	XILINX INC	7-27-1989	NA	12-3-1990
ADVANCED MICRO DEVICES	ECHOCATH INC -CL A	3-20-1990	NEXGEN INC	10-20-1995
VITAL SIGNS INC	NORTH AMERICAN RECYCLING SYS	6-3-1991	BIOMEDICAL DYNAMICS CORP	11-6-1991
NA	CORTEX PHARMACEUTICALS INC	7-25-1991	NA	12-3-1991
NA	CONVEX COMPUTER CORP	1-7-1992	NA	11-20-1992
NA	COMPLINK LTD	3-18-1992	NA	6-23-1992
NA	CHICAGO & NO WESTN TRANS CO	5-5-1992	NA	12-23-1992
UNION PACIFIC CORP	GENERAL COMMUNICATION -CL A	12-1-1992	SANTA FE PACIFIC CORP	6-29-1994
NA	AMERICAN MOBILE SYS	1-8-1993	NA	6-2-1993
NA	LA QUINTA MOTOR INNS - LP	4-7-1993	NA	6-9-1993
NA	RODMAN & RENSHAW CAPITAL GP	5-28-1993	NA	7-28-1993
NA	NA	7-16-1993	NA	7-7-1994
TORCHMARK CORP	KIRSCHNER MEDICAL CORP	1-17-1994	AMERICAN INCOME HOLDING INC	9-15-1994
NA	PREFERRED ENTMT INC	5-25-1994	NA	8-30-1999
NA	AMERICAN EXPLORATION CO	5-31-1994	NA	3-28-1995
NA	HAMPTON RES CORP	8-9-1994	NA	10-6-1994
NA	PLAINS PETROLEUM COMPANY	9-19-1994	NA	7-1-1999
NA	DATALOGIX INTERNATIONAL INC	9-19-1994	NA	7-1-1999
NA	YOUNKERS INC	9-20-1994	NA	11-29-1994
NA	NA	9-22-1994	NA	11-30-1994
NA	SOUTHERN PERU COPPER	10-28-1994	NA	1-3-1996
AMERICAN GENERAL CORP	COPLEY PROPERTIES INC	12-1-1994	INDEPENDENT INS GRP	10-19-1995
ASARCO INC	EASTN ENVIRONMENT SVC	4-4-1995	CYPRUS AMAX MINERALS CO	7-15-1999
NA	AMERICAN INDL PPTYS REIT	4-26-1995	NA	9-7-1995
NA	DELAWARE OTSEGO CORP	5-24-1995	NA	6-28-1995
PUBLIC STORAGE INC	COOPER & CHYAN TECH INC	11-22-1995	PUB STRG PPTYS IX	12-14-1995
CSX CORP	NORTH COAST ENERGY INC	2-13-1996	CONRAIL INC	10-15-1996
SYNOPSIS INC	NA	5-7-1996	EPIC DESIGN TECHNOLOGY	1-16-1997

			INC	
NA	PAXSON COMM CORP -CL A	9-24-1996	NA	-19971-2
MEDTRONIC INC	U S BIOSCIENCE INC	12-13-1996	PHYSIO-CONTROL INTL CORP	6-29-1998
NA	NA	12-16-1996	NA	12-26-1996
ALZA CORP	EXCITE INC	2-4-1997	SEQUUS PHARMACEUTICALS INC	10-5-1998
INTEL CORP	NA	3-19-1997	CHIPS & TECHNOLOGIES INC	7-28-1997
NA	NA	6-11-1997	NA	5-18-1998
INTL SPEEDWAY CORP -CL A	NA	7-23-1997	PENSKE MOTORSPORTS INC	5-10-1999
NEWPORT NEWS SHIPBUILDING	NA	3-18-1998	AVONDALE INDUSTRIES INC	1-19-1999
PEREGRINE SYSTEMS INC	NA	12-17-1999	HARBINGER CORP	4-5-2000
SYMANTEC CORP	NA	7-24-2000	AXENT TECHNOLOGIES INC	7-27-2000
JORGENSEN (EARLE M.) CO	-	-	TULL (J.M.) INDUSTRIES INC	3-22-1985
TOLEDO EDISON CO	-	-	CLEVELAND ELECTRIC ILLUM	6-30-1985
WEST POINT-PEPPERELL	-	-	CLUETT PEABODY & CO	7-26-1985
ONYX IMI LTD	-	-	CORVUS SYSTEMS INC	9-25-1985
PIEDMONT AVIATION INC	-	-	EMPIRE AIRLINES INC	9-25-1985
LOUISIANA GENERAL SERVICES	-	-	TRANS LOUISIANA GAS CO INC	11-4-1985
AVERY INC	-	-	UNIROYAL CHEMICAL CP	11-8-1985
DECOR CORP	-	-	ART EXPLOSION INC	1-15-1986
STV GROUP INC	-	-	GREINER ENGINEERING INC	5-6-1986
SPERRY CORP	-	-	TELEX CORP	5-8-1986
SONIC INDUSTRIES INC	-	-	CHURCH'S FRIED CHICKEN INC	2-5-1987
MORINO INC	-	-	BGS SYSTEMS INC	2-11-1988
TRANS WORLD CORP/NV	-	-	DE LAURENTIIS ENTMNT GROUP	10-5-1988
FINALCO GROUP INC	-	-	CONTINENTAL INFO SYS - OLD	1-11-1989
BIO-MEDICUS INC	-	-	HEMOTEC INC	2-2-1989
SPRINGBOARD SOFTWARE INC	-	-	SPINNAKER SOFTWARE CORP	5-3-1989
COLUMBIAN ENERGY CO -LP	-	-	MUSTANG COS INC	8-31-1989
UNITED STATES EXPLORATION	-	-	PRAIRIE PRODUCING CO	12-21-1989
HADSON ENERGY RESOURCES CP	-	-	BARUCH-FOSTER CORP	3-16-1990
MICROLOG CORP	-	-	GENESIS HEALTH VENTURES INC	10-15-1990
GREASE MONKEY HOLDING CORP	-	-	PIT STOP AUTO CENTERS INC	10-24-1990
HINGHAM INSTN FOR SAVINGS	-	-	COHASSETT SAVINGS BANK/MA	12-21-1990
PINNACLE WEST CAPITAL	-	-	TUCSON ELECTRIC POWER CO	5-22-1991
AMERICAN GENERAL FINANCE CP	-	-	PROVIDENT ENERGY TRUST	8-12-1992
GULL LABORATORIES INC	-	-	BIO-PLEXUS INC	10-2-1992
IPALCO ENTERPRISES INC	-	-	PSI RESOURCES INC	12-11-1992
NUVEEN SELECT MAT MUN FD	-	-	NUVEEN SELECT MATS MUN FD 2	7-28-1993
SPECTRANETICS CORP	-	-	ADVANCED INTERVENTIONAL SYS	10-7-1993
INTRENET INC	-	-	PST VANS INC	1-7-1994
SITE HOLDINGS INC	-	-	METROVISION OF NA	3-30-1994
NUVEEN SLCT TX FR INCM PTL 3	-	-	NUVEEN SLCT TX FR INCM PTL 4	4-20-1994
NUVEEN TEX QUAL INCM MUN FD	-	-	NUVEEN TEX PREM INCM MUN FD	6-29-1994
DAVCO RESTAURANTS INC	-	-	SOUTHERN HOSPITALITY	7-14-1994
WELLSFORD RES PROP TRUST	-	-	HOLLY RESIDENTIAL PPTYS INC	8-3-1994
SOFTWARE ETC STORES INC	-	-	BABBAGES INC	8-25-1994
HF BANCORP INC	-	-	PALM SPRINGS SVGS BK FSB	5-7-1996
NUVEEN INSD PREM INC FUND 2	-	-	NUVEEN INSD PREM INCM MUN FD	7-26-1996
DSP COMMUNICATIONS INC	-	-	PROXIM INC	10-29-1996
FCB FINL CORP	-	-	OSB FINL CORP	11-14-1996
DAKOTA MINING CORP	-	-	USMX INC	1-6-1997

STAGE STORES INC	-	-	ANTHONY (C.R.) CO -OLD	2-19-1997
ULTIMATE ELECTRONICS INC	-	-	AUDIO KING CORP	3-4-1997
MONTEREY RESOURCES INC	-	-	MCFARLAND ENERGY INC	6-17-1997
OMI CORP	-	-	MARINE TRANSPORT LINES INC	6-24-1997
HMN FINANCIAL INC	-	-	MARSHALLTOWN FINANCIAL CP	7-1-1997
POST PROPERTIES INC	-	-	COLUMBUS REALTY TRUST	8-4-1997
ELCOTEL INC	-	-	TECHNOLOGY SVC GROUP INC	8-14-1997
MARSHALL INDUSTRIES	-	-	STERLING ELECTRONICS	9-19-1997
PUTNAM MASTER INTERM INCOME	-	-	PUTNAM INTER GVT INCOME	10-9-1997
DISCOUNT AUTO PARTS INC	-	-	HI-LO AUTOMOTIVE INC	10-14-1997
TAURUS MUNI CALIF HLDGS	-	-	MUNIYIELD CALIF FD INC	11-26-1997
AMERICAS INCOME TR INC	-	-	HIGHLANDER INCOME FD INC	4-13-1998
AVIVA PETE INC -DEP	-	-	GARNET RESOURCES CORP	4-17-1998
TROPICAL SPORTSWEAR INTL CP	-	-	FARAH INC	5-4-1998
INFORMATION ADVNTGE SOFTWARE	-	-	IQ SOFTWARE CORP	6-29-1998
VERDANT BRANDS INC	-	-	CONSEP INC	7-14-1998
DIME COMMUNITY BANCSHARES	-	-	FINANCIAL BANCORP INC	7-20-1998
PITTSBURGH BREWING	-	-	INDEPENDENCE BREWING CO	7-27-1998
R & B FALCON CORP	-	-	CLIFFS DRILLING CO	8-10-1998
MESA AIR GROUP INC	-	-	CCAIR INC	8-28-1998
FIRST FINANCIAL CORP/RI	-	-	MAYFLOWER CO-OPERATIVE BK/MA	10-14-1998
SUPERIOR TELECOM INC	-	-	ESSEX INTERNATIONAL INC	10-22-1998
INTEGRATED DEVICE TECH INC	-	-	QUALITY SEMICONDUCTOR INC	11-2-1998
PROLOGIS	-	-	MERIDIAN INDL TRUST INC	11-17-1998
ARDENT SOFTWARE INC	-	-	PRISM SOLUTIONS INC	11-19-1998
SPEEDFAM-IPEC INC	-	-	INTEGRATED PROCESS EQ	11-20-1998
KALEIDOSCOPE MEDIA GROUP INC	-	-	ODYSSEY PICTURES CORP	1-27-1999
ESENJAY EXPLORATION INC	-	-	3DX TECHNOLOGIES INC	5-12-1999
FRIEDE GOLDMAN HALTER INC	-	-	HALTER MARINE GROUP INC	6-2-1999
PHARMACIA & UPJOHN INC	-	-	SUGEN INC	6-15-1999
UNION FINL BANCSHARES INC	-	-	STH CAROLINA CMNTY BNCSHRS	7-1-1999
GELTEX PHARMACEUTICALS INC	-	-	SUNPHARM CORP	8-16-1999
DELHAIZE AMERICA INC -CL A	-	-	HANNAFORD BROTHERS CO	8-18-1999
INVIVO CORP	-	-	PROTOCOL SYSTEMS INC	12-17-1999
SOUTH FINANCIAL GROUP INC	-	-	ANCHOR FINANCIAL CORP/SC	1-10-2000
BROADVISION INC	-	-	INTERLEAF INC	1-26-2000
OPENTV CORP	-	-	SPYGLASS INC	3-27-2000
WEBMETHODS INC	-	-	ACTIVE SOFTWARE INC	5-22-2000
GUILFORD PHARMACEUTICAL INC	-	-	GLIATECH INC	5-30-2000
BROADWING INC	-	-	INTERMEDIA COMMUNICATNS INC	6-8-2000
TROY FINANCIAL CORP	-	-	CATSKILL FINANCIAL CORP	6-8-2000
CEPHALON INC	-	-	ANESTA CORP	7-17-2000
SEACOAST FINL SVCS CORP	-	-	HOME PORT BANCORP INC	7-24-2000
LEVITZ FURNITURE INC -VTG	-	-	SEAMAN FURNITURE CO	8-10-2000

<sup>a</sup> "NA" is a firm not listed on any stock market and "-" is an observation without an outsider-toehold. Competitors are not specified.