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Abstract

This study examines the wealth effects of hidden addition acquisitions, i.e., stock financed acquisitions by S&P 500 acquirers of non-S&P 500 targets. These acquisitions result in a re-balancing of the S&P 500, causing the acquirer's weight in the index to increase. The authors classify the acquisitions as either "immediate" or "delayed" based on when the rebalancing occurs. The paper finds that the initial acquirer wealth effect at the announcements of these deals is significantly negative. However, these firms experience a reversal in abnormal returns in the post-announcement period resulting in overall non-significant abnormal returns, with the post-announcement abnormal returns significantly positive in immediate hidden additions. The authors find that both the overall return and post announcement return are positively correlated with the size of the deal. The authors find that the reversal in large deals is statistically and economically significantly positive, indicating possible profitable opportunities for even uninformed traders. The article investigates the effect of size and timing of returns to provide information for profitable trading opportunities in these deals.

Introduction

The literature about the wealth effects of acquisitions on acquirers is well developed. Early studies report negative stock market reactions to acquirers on the announcements of acquisitions (Asquith, Bruner & Mullins, 1983; Jensen & Ruback, 1983; Jarrell, Brickley & Netter, 1988). More recent studies find subsets of acquisitions that are beneficial to the acquirers, such as those by small acquirers and deals that involve cash payment, private targets, subsidiaries and friendly transactions (Moeller, Schlingemann & Stulz, 2004; Chang, 1998; Ang & Kohers, 2001; Fuller, Netter & Stegemoller, 2002; Draper & Paudyal, 2006; Travlos, 1987; Andrade, Mitchell & Stafford, 2001; Goergen & Renneboog, 2004). Large sample evidence provided by Netter, Stegemoller, and Wintoki (2011) reinforces the prior results for large public firms involved in acquisitions. Netter et al. (2011) also document that equity deals for public targets result in negative returns for the acquirer on average, but generate positive acquirer returns when the target does not have a stock price in the CRSP database[1].

In this paper we merge this line of inquiry with studies that have examined the effect of additions to stock indices, specifically the S&P 500, to expand our understanding of the wealth effects associated with acquisitions. An extensive body of research has documented positive wealth effects for firms that are added to the S&P 500 index. Inclusion in the S&P 500 index generates positive abnormal returns (Shleifer, 1986; Jain, 1987; Harris & Gurel, 1986;

Dhillon & Johnson, 1991; Denis, McConnell, Ovtchinnikov & Yu, 2003; Elliott & Warr, 2003; Elliott, Ness, Walker & Wan, 2006). These positive abnormal returns are attributed to increased demand by index tracking funds that seek to minimize tracking error (e.g., Pruitt & Wei, 1989). Mitchell, Pulvino and Stafford (2004) attest that 8.5% of the total value of the S&P 500 is held by index funds and that changes in the composition of the index can result in price pressure due to fund indexers rebalancing their portfolios.

Mitchell et al. (2004) extend the price pressure rationale for firms that are added to the S&P 500 to firms that are already included in the index, but have an increase in their weight. When the weight of an included firm is substantially increased, indexers increase their holdings of that firm, resulting in price pressure from the extra demand. One way the weight of an S&P 500 listed firm can increase in the index is through a hidden addition acquisition. A hidden addition acquisition is a deal where an S&P 500 listed firm acquires a non-S&P 500 firm and finances the deal wholly or partially with equity. In these deals, the market value of the acquirer increases, so its weight in the S&P 500 increases because the index is market value-weighted. Mitchell et al. (2004) document that hidden addition acquisitions experience a price increase in the days prior to the merger completion that partially reverses over time, a price pattern that is not observed with other types of acquisitions[2]. The authors interpret their results as evidence of downward sloping short-run demand curves for stocks, supporting the price pressure hypothesis.

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[1] Analogous to the Moeller et al. (2004) finding of positive returns for small acquirers, since the firms not listed on CRSP are more likely to be small.

[2] However, Elliott and Warr (2003) associate return reversal to incidence of additions to the S&P 500 index.

Hidden addition acquisitions are interesting because two conflicting forces are at play. They are equity financed acquisitions by large firms, which previous research has found to result in negative short-run returns (Netter et al., 2011). However, they increase the weight of the acquirer in the S&P 500, which previous research suggests would result in temporary positive returns due to portfolio rebalancing of tracking funds (Mitchell et al., 2004). Another important issue is that, unlike the situation where a firm is added to the S&P 500, the index rebalancing is not immediately announced in a hidden addition acquisition. Any price pressure effect resulting from such acquisitions will accumulate as market participants realize that the acquisition is a hidden addition and rebalancing of the index is forthcoming.

We extend Mitchell et al. (2004) by examining the market response to hidden addition acquisitions from the announcement of the acquisition through the completion date. We also look for evidence of price pressure occurring shortly after the announcement date and shortly before the merger completion date. Share price increases are observed in the days prior to the merger completion date in Mitchell et al. (2004). We conjecture that price pressure due to portfolio rebalancing will offset the negative effects associated with acquisition announcement for large firms acquiring large targets in equity deals. The S&P index rule states that in situations where a firm's number of shares outstanding changes by 5% or more, rebalancing must be done as soon as reasonably possible (Standard & Poor's Financial Services LLC, 2012). Otherwise, the index is rebalanced at its regular quarterly rebalancing on the third Friday of March, June, September or December. Therefore, we separate hidden addition acquisitions into two types, what we call "immediate" and "delayed" hidden additions. Immediate hidden addition acquisitions are characterized by the larger deals that meet the 5% threshold, which we theorize will have a greater rebalancing effect.

We find that announcement returns for both immediate and delayed hidden addition acquisitions are significantly negative and are similar to returns found for large acquirer equity deals in previous studies (Moeller et al., 2004). A significant reversal occurs for immediate hidden additions after the announcement day, with a non-significantly positive overall abnormal return for the time period from the day before the announcement to the day after the deal is closed. We observe significantly positive abnormal returns for the period that extends from one day after the announcement until one day after

the deal is completed for immediate hidden additions, a period that is 108 days on average. We find that the majority of this return occurs 2 to 4 days after the announcement and 2 to 3 days before the completion of the deal with a 2.12% return in the ten days before the completion. The delayed nature of the positive effect suggests that these returns could be realized by even uninformed investors, i.e. investors who trade only on post-event publicly available information. We also find that the overall abnormal return from the day before the announcement to the day after the completion is significantly positively correlated with the size of the deal measured by the number of new shares issued. This finding along with results of previous studies indicates that equity financed acquisitions by large firms are bad for the acquirer, except when they are very large firms and very large deals.

The paper is organized as follows. Section 1 outlines the sample selection and describes the sample of hidden addition acquisitions. Section 2 discusses research related to hidden addition acquisitions and develops hypotheses. The research method is described in section 3. The empirical results are discussed in section 4, followed by the conclusion.

1. Sample selection and description

1.1. Sample selection. We develop our sample from the Securities Data Company (SDC) database of all completed U.S. domestic acquisitions from 1980 through 2008[1]. We filter the sample and retain deals that have at least some form of equity financing. Next, we search the S&P 500 index composition on Datastream to identify which of these deals involved an S&P 500 member acquirer and a non-S&P 500 target at the announcement date of the acquisition. This process results in 268 deals, which we characterize as hidden addition acquisitions. We are able to find price information for 259 of these acquisitions. We scan the CRSP files to determine which of these acquisitions results in an increase of 5% or more in the number of shares outstanding for the acquirer. We find 105 deals that meet the 5% threshold and categorize these as "immediate" hidden addition acquisitions and 154 with less than a 5% increase and categorize these as "delayed" hidden additions.

1.2. Descriptive statistics. Table 1 shows summary statistics for hidden addition acquisitions and compares these deals to all the acquisitions in the SDC database that are not hidden additions. The average

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[1] The substantial M&A omissions in the SDC database prior to 1988 reported by Netter et al. (2011) should not have any significant impact on our analysis since we focus on a sample of large acquirers, which are types of firms least likely excluded from the database.

transaction value for hidden additions is significantly higher than non-hidden additions ($1.8 billion versus $225 million, p-value = 0.001) with a significantly lower average relative size (16.4% versus 33.4%, p-value = 0.001). The observation of larger deals but lower relative deal size for hidden additions likely reflects the fact that these acquirers are some of the largest firms in the U.S. sample hidden additions acquire a significantly higher proportion of public targets (57.1% versus 16.9%, p-value = 0.001). There are no pure cash deals for hidden additions by definition. There is a significantly higher proportion of equity in payment for hidden additions (53.5% versus 24.0%, p-value = 0.001), a finding that is partially due to the fact that there are no pure cash deals.

Table 1. Descriptive statistics

This table reports the descriptive statistics for publicly traded firms that made acquisitions from 1980 through 2008, and are reported in the SDC database. The information is recorded separately for hidden addition acquisitions – the acquisition of a non-S&P 500 target by a S&P 500 firm, and non-addition acquisitions, which incorporates all other acquisitions reported in the database. Transaction value is in millions U.S. dollars. Relative size is the transaction value divided by the acquirer's market capitalization at the announcement date. A conglomerate deal occurs when the target is in a different two digit SIC code. The p-values are reported in parenthesis.

Variable	Hidden addition acquisitions	Non-addition acquisitions
Transaction value	$1,836	$225[a] (0.001)
Relative size	0.1644	0.3338[a] (0.001)
Competed deals	0.0224	.0070[c] (0.090)
Days to completion	108.4	68.63[a] (0.001)
Cash in payment (%)	9.934	48.10[a] (0.001)
Equity in payment (%)	81.58	35.98[a] (0.001)
Pure cash deals (%)	0.0	42.29[a] (0.001)
Pure equity deals (%)	53.46	24.03[a] (0.001)
Hostile deals (%)	1.12	0.13% (0.124)
Tender offers (%)	3.36	2.18 (0.288)
Conglomerate deals (%)	65.30	59.33[b] (0.048)
Public target (%)	57.09	16.91[a] (0.001)
Private target (%)	30.22	51.67[a] (0.001)
Subsidiary target (%)	12.69	31.42[a] (0.001)
N	268	16,521

Notes: [a]Significant at the 1 percent level. [b]Significant at the 5 percent level. [c] Significant at the 10 percent level.

2. Prior studies and hypotheses

Hidden addition acquisitions are made by large firms and are deals in which the method of payment increases the acquirer's number of shares outstanding. Our sample of hidden addition acquisitions is characterized by large acquirers, equity deals, low relative size and a high proportion of public targets. The extant literature asserts that the short-run reaction to acquisition announcements depends on acquirer and target characteristics as well as on deal characteristics. We focus on studies that document announcement period returns for acquisitions with characteristics similar to hidden addition acquisitions. Moeller et al. (2004) find significantly negative abnormal announcement returns for large-acquirer equity deals overall, driven by significant negative abnormal returns associated with public targets. For the UK firms, Petmezas (2009) finds either zero or significantly negative announcement period abnormal returns for public acquirer equity and mixed deals, irrespective of a high or low valuation period. Large sample evidence in Netter et al. (2011) documents that equity deals for public targets result in negative returns for the acquirer on average, and large equity deals for large public targets result in negative returns for the acquirers, but positive acquirer returns for other types of targets. Public acquirer equity deals for public targets studied in Andrade et al. (2001) experience significant negative announcement period returns. The characteristics of hidden addition acquisitions are associated with negative returns in prior studies; therefore, these acquisitions are expected to have negative short-run wealth effects. Stated in alternative form, the first hypothesis is the following.

H1: Hidden addition acquisitions record negative abnormal returns following the announcement of the acquisition.

The information hypothesis and the price pressure hypothesis are two explanations of positive price responses to index additions. The information hypothesis suggests that an addition to an index conveys-favorable information to the market about a stock's future returns distribution, resulting in a positive price response. Controlling for price pressure, Cai (2007) and Zhou (2011) present evidence in support of the information hypothesis. The price pressure hypothesis (also referred to as the downward-sloping demand or imperfect substitutes hypothesis) claims that index additions result in temporary stock price increases as index funds, mutual funds, pension funds, and other index trackers rebalance portfolios. Harris and Gurel (1986) find that additions to the S&P 500 generate price pressure around the announcement of the addition that reverses

shortly thereafter and suggest that index users drive up the price to minimize tracking error. Pruitt and Wei (1989) document a positive correlation between changes in institutional holdings and S&P 500 additions and deletions. Elliott and Warr (2003) also provide evidence in support of the price pressure hypothesis, particularly for NYSE listed firms. Using fund level data, Green and Jame (2011) find that index funds purchase S&P 500 additions beginning with the announcement but do not fully establish positions until weeks after the effective date, suggesting that index funds are willing to accept higher tracking error for relief from price pressure.

The information hypothesis views an index addition as an information event, where the price pressure hypothesis suggests that no new information is conveyed. Hidden addition acquisitions are arguably cases where no new information is conveyed about stocks' future returns distributions. The acquiring firm is an existing index member, so no new information about the firm beyond the acquisition is conveyed by increasing its weight in the index. Therefore, we are guided toward the price pressure explanation for market reaction to index additions. Mitchell et al. (2004) examine price reactions around merger closings, and find that hidden addition acquisitions collectively experience significant cumulative abnormal returns in the days preceding the merger closing with a partial reversal following the closing date. This price pattern is not present for acquisitions unlikely to trigger substantial portfolio rebalancing by indexers. Mitchell et al. (2004) interpret their results as evidence of downward sloping short-run demand curves for stocks, supporting the price pressure hypothesis. Consistent with Mitchell et al., we expect that hidden addition acquisitions will exhibit temporary upward price pressure prior to the deal completion date as indexers rebalance their portfolios in response to a change in the firms' weights in the index. The second hypothesis is the following:

H2: Hidden addition acquisitions exhibit upward price pressure following the announcement.

For hidden addition acquisitions, the acquisition effect and the price pressure effect present conflicting influences from the same transaction. Announcements of large firm equity purchases of large targets are expected to result in downward price pressure on the acquiring firm stock (Andrade et al., 2001; Moeller et al., 2004; Netter et al., 2011). Upward price pressure is expected to occur because of portfolio rebalancing (Harris & Gurel, 1986; Mitchell et al., 2004). Consistent with prior studies, price pressure is expected to moderate the expected negative announcement effect for hidden addition

acquisitions. We do not make a prediction about the relative influence of price pressure (index addition) compared to the pure acquisition effect. However, the influence of price pressure on the acquisition announcement is expected to be unique to hidden addition acquisitions. The third hypothesis is the following:

H3: Price pressure from a change in a stock's weight in the S&P 500 following an acquisition moderates the negative market reaction to the news of a large equity deal.

3. Research method

Following the methodology in Brown and Warner (1985), we estimate abnormal percentage returns for the acquirers beginning the day before the acquisition announcement through the day after the merger completion date. We use the CRSP equally weighted index to proxy for the market. Market model parameters are estimated over a 150-day window beginning 21 days after the merger date to be consistent with Mitchell et al. (2004). We test the first hypothesis by calculating cumulative average abnormal returns over the three day event window from the day before to the day after the acquisition announcement and label this as the announcement CAAR. An observed announcement CAAR for hidden addition acquisitions that is significantly less than zero is consistent with the acquisition announcement effect for large acquisitions using equity for payment (H1). For the second hypothesis, we calculate the post-announcement CAAR, the abnormal return for the period beginning one day after the announcement through one day after deal completion. A significantly positive CAAR for this period is additional evidence in support of the price pressure hypothesis (H2). To assess the third hypothesis, we calculate the total CAAR, the abnormal return from the period one day before the deal is announced to one day after the deal is completed. A significant positive or zero total CAAR provides affirmative evidence that the price pressure effect completely moderates the announcement effect for large equity acquisitions (H3). Even a significantly negative total CAAR would not negate the presence of conflicting influences from price pressure and pure acquisition effect. Such a result merely reflects the dominance of the negative large equity acquisition effect over the price pressure effect of the index addition.

4. Results

Table 2 (Panel A) shows the abnormal return results for all hidden addition acquisitions and non-addition acquisitions for three periods: announcement, post-announcement, and the total announcement and post-

announcement combined. Consistent with the first hypothesis, announcement CAARs for hidden additions average a significant-1.67%, a finding comparable to the -0.96% reported for large acquirers in equity deals by Moeller et al. (2004). However, hidden addition abnormal returns disappear after the announcement period with a non-significant positive abnormal return over the post-announcement period, and a total abnormal return that is also non-significant. No similar pattern, both in sign and magnitude, is observed for non-addition acquisitions.

Table 2. Announcement, post-announcement, and total cumulative abnormal returns

Abnormal returns associated with acquisitions that were recorded by publicly traded firms during the period 1980 through 2008. In Panel A the abnormal returns are designated as hidden addition acquisitions in cases where the acquirer is an S&P 500 firm and the target is not, and non-addition for all other acquisitions. The hidden addition acquisitions are further divided into immediate and delayed additions in Panel B, with those acquisitions that result in an increase of at least 5 percent in number of shares outstanding for the S&P 500 firm classified as immediate addition. The p-values are reported in parentheses.

Panel A		
	Hidden addition acquisitions	Non-addition acquisitions
Announcement CAAR	-1.668[a] (.000)	1.478[a] (.000)
Post-announcement CAAR	.983 (.353)	2.172[a] (.000)
Total CAAR	-0.158 (.884)	3.154[a] (.000)
N	259	15,062
Panel B		
	Immediate addition	Delayed addition
Announcement CAAR	-2.413[a] (.000)	-1.160[a] (.004)
Post-announcement CAAR	4.667[a] (.007)	-0.663 (.608)
Total CAAR	2.225 (.225)	-1.802 (.174)
N	105	154

Note: [a] Significant at the 1 percent level.

In Panel B we report the results for hidden additions split by type, immediate and delayed. The results suggest that the market views immediate and delayed hidden additions differently. We see a strongly significant -2.41% market reaction to the announcement of immediate hidden additions, and a strongly significantly +4.67% reversal after the announcement period to yield a non-significant 2.23% combined abnormal return. Delayed additions have a significant -1.16% abnormal announcement CAAR that moderate to insignificant post-announcement and total CAARs. The significant positive post-announcement abnormal returns for immediate hidden additions and zero post-announcement abnormal returns for delayed

additions support hypothesis 2. The overall insignificant total CAAR results support the notion that price pressure moderates the acquisition effect for hidden addition acquisitions (H3).

A plausible interpretation of the immediate hidden addition CAARs is that upon announcement, the market views the acquisition as an equity deal by a large acquirer and bids the price down. Subsequently, it becomes apparent that it is an immediate hidden addition and market participants bid the price up in anticipation of the price pressure effect of the coming S&P 500 rebalancing. The nature of the observed price swings in these deals has practical implications for traders.

A trading strategy arises from the deferred nature of the market reaction to the realization that a substantial rebalancing will occur following a hidden addition acquisition announcement. A trader who can determine that a takeover will result in an immediate hidden addition on the day it is announced can enjoy a positive abnormal return by buying it the next day. Two questions arise for such a strategy: how large does a deal need to be to generate a positive return, and when are the optimal times to buy and sell the stock in the period between the announcement and completion.

Table 3 reports results of a regression of the abnormal return on the percentage increase in the number of shares for hidden addition acquisitions. Panel A shows results when the total abnormal return from the day before the announcement until the day after the completion date is used as the dependent variable. Panel B shows regressions using the abnormal returns from the day after the announcement to the day after the completion date. The strongly significant positive relationship with percentage increase in shares in both regressions reinforces the evidence on the reversal of negative CAARs associated with these acquisitions (H3). Model 1 in both panels is a regression of the total abnormal return on the percentage increase in shares of the acquirer. Both the coefficient estimate of .082 and the model ($F = 9.00$) are significant at the 1% level in Panel A. The regression in Panel B shows similar results in the magnitude and significance of the coefficient estimate. Model 2 includes indicator variables for private targets, subsidiary targets, and conglomerate targets. These target characteristics have been found to influence the market response to acquisitions in previous studies (Chang, 1998; Moeller et al., 2004). Controlling for target characteristics, the coefficient estimates for the percentage increase in shares and the model remain significant at the 1% level in both Panels A and B.

Table 3. Regression of abnormal return on percent increase of shares

This table reports regression results of abnormal returns on percentage increase in shares and other variables that have been found to affect returns for hidden addition acquisitions from 1980 through 2008. The dependent variable in Panel A is the total abnormal return from the day before the announcement to the day after the completion date. The dependent variable in Panel B is the post-announcement abnormal return from the day after the announcement to the day after the completion date. The variable Private target is a binary variable that takes the value of 1 if the target is private and 0 if the target is public. The subsidiary target variable is 1 if the target is a subsidiary and 0 if it is not. Conglomerate is a binary variable that is one if the target is in a different two digit SIC code than the acquirer and 0 otherwise.

Panel A		
Coefficient	Model 1	Model 2
Intercept	-0.015	-0.0286
Percentage increase in shares	0.082[a]	0.090[a]
Private target		-0.032
Subsidiary target		0.081[b]
Conglomerate		0.019
F	9.00[a]	5.11[a]
R^2	0.0339	0.075
Adjusted R^2	0.0301	0.060
N	259	259
Panel B		
Coefficient	Model 1	Model 2
Intercept	-0.422	-0.010
Percentage increase in shares	0.091[a]	0.096[a]
Private target		-0.048[b]
Subsidiary target		0.0623[b]
Conglomerate		0.017
F	11.81[a]	6.13[a]
R^2	0.0439	0.088
Adjusted R^2	0.0402	0.074
N	259	259

Notes: [a]Significant at the 1 percent level. [b]Significant at the 5 percent level.

Panel B (Model 1) provides important information to prospective traders about whether or not a particular hidden addition acquisition is large enough to present a profitable post-announcement trading opportunity. The intercept is -0.422 and the coefficient estimate for the percentage increase in shares is 0.091. For a hidden addition deal that will result in an increase in the acquirer's shares of 1%, the estimation results suggest that a trader may anticipate an after-announcement abnormal return of -.33% (-.422+.091*1). For a deal that results in a 50% increase in the acquirer's shares, a trader may anticipate a return of 4.13% (-.422 +.091*50). Generally, any share increase above 4.637% yields a positive post-announcement abnormal return for a hidden addition acquisition.

To provide an illustration of when price pressure occurs, Table 4 displays daily average abnormal returns for the 10 days following the announcement and the 10 days preceding the completion of the deals. This information can be useful to prospective traders to determine the best time to buy shares in the post-announcement period. Panel A reveals that the negative reaction to the announcement continues the day after the announcement, which suggests that a trader should wait until the second day after an acquisition is announced to make a purchase. This gives traders more than one day to determine if an announced takeover is a hidden addition large enough for it to be beneficial to buy shares. Panel B shows that the returns during the final 10 days before completion are mostly positive, with a cumulative return for the ten days of 2.12%. There is a .81% jump in the average abnormal return (significant at 1% level) two days before deal completion. At this time the market likely becomes confident that the deal will go through and that a rebalancing will occur.

These results offer the possibility of several promising options regarding profitable trading strategies for immediate hidden addition acquisitions. Buying the day after the announcementand holding to completion gives an average abnormal return of 4.67% in 108 days on average (significant at the 1% level and 16.4% annualized abnormal return). Buying at the beginning of trading two days after the announcement and selling four days after the announcement yields an abnormal return of .54% (92.33% annualized). Buying ten days before completion and holding until completion yields 2.12% (significant at the 5% level and 113% annualized).

Table 4. Immediate hidden addition acquisition daily abnormal returns

This table reports the abnormal returns associated with immediate hidden addition acquisitions on a daily basis relative to the acquisition announcement date in Panel A and relative to the completion date in Panel B. Day "0" represents the announcement and completions date; "+/-" signifies after and before the relevant date, respectively. The number of observations for each day reported in both panels is 105.

Panel A		
Day relative to announcement date	Average abnormal return (number of observations)	Cumulative average abnormal return
0	-1.770%	
+1	-0.796%	
+2	0.132%	0.132%
+3	0.161%	0.293%
+4	0.249%	0.542%
+5	-0.340%	0.202%
+6	-0.169%	0.033%
+7	-0.290%	-0.257%
+8	0.007%	-0.250%
+9	-0.414%	-0.664%
+10	0.122%	-0.542%

Table 4 (cont.). Immediate hidden addition acquisition daily abnormal returns

Panel B		
Day relative to completion date	Average abnormal return (number of observations)	Cumulative average abnormal return
-10	0.136%	0.136%
-9	-0.017%	0.119%
-8	0.401%	0.520%
-7	0.237%	0.757%
-6	0.309%	1.066%
-5	0.251%	1.317%
-4	-0.363%	0.954%
-3	0.215%	1.169%
-2	0.809%	1.978%
-1	-0.015%	1.963%
0	0.156%	2.119%

Conclusion

For acquirer wealth effects in hidden addition acquisitions, two opposing factors are at play − the negative effect of large equity deals and the positive effect of increasing the weight of the acquirer in the S&P 500 index. We find that the positive effect of price pressure outweighs the negative announcement effect only for very large deals that will cause immediate index rebalancing upon the deal completion. In addition, we find that in the large deals, the negative effect occurs at the announcement and the positive effect occurs with a lag, providing potential profitable trading opportunities.

We note that although the deals described in this study do not occur with great frequency, there are many other value-weighted indexes (such as the Wilshire 5000), where acquisitions that cause rebalancing may be more common. It is uncertain whether the magnitude of the effects found in this study would be greater or less for firms in other indexes. Although other indexes do have funds tracking them, such funds are not as ubiquitous as those that track the S&P 500. This could reduce the positive rebalancing effect. On the other hand, the firms in those indexes are smaller than the firms in the S&P 500, so the negative acquisition effect may be less, too. In addition, there are a greater number of potential acquisition targets that are large enough to cause a large percentage increase in these firms. Also, a higher percentage of firms in those indexes are listed on exchanges other than the NYSE where previous research has found price pressure to more pronounced (Elliot & Warr, 2003). Whether or not the results found in this study translate to other indexes and if the effects there are greater or less is a matter for further investigation by academics and practitioners.

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