



50+ Years of Diversification Announcements

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Abstract

This paper studies announcement returns from 4,764 mergers over 57 years to shed light on several controversies concerning corporate diversification. One prominent view is that diversification destroys value because of agency problems or internal investment distortions, but we find that combined (acquirer plus target) announcement returns are significantly positive for diversifying mergers throughout the period, and no lower than the returns for related mergers. The returns from diversifying acquisitions fell after 1980, and investors rewarded mergers involving financially constrained firms before but not after 1980, consistent with the idea that the value of internal capital markets declined over time.

Keywords: corporate diversification, mergers and acquisitions, event study

JEL Classification: G34

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1. Introduction

Much of what we know about corporate diversification comes from the “diversification discount” literature pioneered by Lang and Stulz (1994). Numerous studies have found that diversified firms tend to trade at a discount compared to stand-alone firms in their industries. The meaning of this finding is the subject of considerable debate. One interpretation is that diversification causes the discount because diversified firms suffer from agency problems that lead to distorted investment due to internal politics (Rajan, Servaes, and Zingales, 2000; Scharfstein and Stein, 2000; McNeil and Smythe, 2009) and information loss due to degraded communication (Ozbas, 2005). An alternative interpretation is that causality runs the other way—firms with discounted assets might be more inclined to diversify.¹ Diversification could be a value-maximizing response to deteriorating industry conditions. Further complicating matters are studies suggesting that the diversification discount may arise mechanically from certain mergers, may be the result of faulty data, or may arise only under certain conditions (Graham, Lemmon, and Wolf, 2002; Villalonga, 2004a; Aggarwal and Zhao, 2009).

In light of difficulties associated with the diversification discount approach, scholars have recently turned to alternative strategies for understanding the value consequences of diversification. One promising approach is to look at operating performance: Maksimovic and Phillips (2002) and Schoar (2002) study plant productivity and find evidence generally consistent with value maximization (an older literature using accounting data reaches a similar conclusion, for example, Weston, 1970, and Weston and Mansinghka, 1971). A complementary approach that has not received as much attention is to study the market’s response to diversification announcements using event study techniques. In principle, the announcement return from a diversifying merger provides a fairly clean estimate of the change in expected value of the merging firms: the estimate is forward looking, it seems to predict subsequent operational performance (Healy, Palepu, and Ruback, 1992), and the effect of diversification is isolated from many confounding influences. Some evidence exists on bidder returns from diversifying acquisitions (e.g., Morck, Shleifer, and Vishny, 1990; Matsusaka, 1993; Hubbard and Palia, 1999), but evidence on combined (acquirer plus target) returns is scarce and in most cases has been estimated only in passing.²

¹ See Matsusaka (2001) and Maksimovic and Phillips (2002) for theory, Campa and Kedia (2002), Maksimovic and Phillips (2002), and Villalonga (2004b) for evidence, and Maksimovic and Phillips (2007) for a survey.

² The studies that estimate combined returns from diversifying acquisitions are Kaplan and Weisbach (1992) that focuses on the success of acquisitions; Maqueira, Megginson, and Nail (1998) that focuses on how merger returns are divided between different classes of securities; Chevalier (2004) that focuses on investment patterns; and Fan and Goyal (2006) that focuses on vertical mergers.

The purpose of our paper is to provide a map of this relatively unexplored terrain by examining the announcement returns from diversifying mergers from 1950 to 2006, a period that spans essentially the entire history of the diversification movement. Our main sample includes 4,764 acquisitions, of which about one-third were diversifying. One of our central findings is that combined returns from diversifying acquisitions were significantly positive overall—in the vicinity of 1.6% over a three-day window—and robust to a variety of considerations, such as means of exchange, alternative measures of diversification, and variations in event study methods. Moreover, the returns from diversifying acquisitions were at least as large as the returns from related acquisitions during most subperiods of the last six decades. This evidence suggests that investors did not view the diversifying mergers that occurred as value destroying, and unless investor reactions are systematically biased over the last 50 or so years, supports the idea the diversification is value maximizing.

A second goal of our paper is to shed some light on the evolution of diversification returns over time. As present, there is little statistical evidence of a time series nature about diversification—most of what we know, or think we know, about the evolution of diversification is inferred from cross-sectional evidence. We find that the market's response to diversification announcements tends to vary over time, both in absolute terms and relative to related acquisitions, but it appears that returns were highest in the 1960s and 1970s, and then fell in the late 1970s and 1980s. This pattern mirrors aggregate behavior in the number and frequency of diversifying acquisitions and is roughly consistent with the oft-noted undoing of diversification in the 1980s, what Shleifer and Vishny (1991, p. 51) call the “round-trip for corporate America.”

One explanation for the decline in corporate diversification is that external capital markets have become more efficient over time, obviating the need for firms to operate internal capital markets. To examine this idea, we compare the return from diversifying acquisitions that match a financially constrained firm (measured by the Kaplan-Zingales index) and a financially unconstrained firm—a pairing that Hubbard and Palia (1999) argue is most likely to create a valuable internal capital market—and find a positive connection up to 1980, but not after 1980. This finding is consistent with the claim that internal capital allocation was valuable in the 1950s, 1960s, and 1970s because external capital markets were undeveloped, but the advantages of internal capital allocation dissipated in the 1980s as capital markets improved due to deregulation, increased professionalization, and heightened disclosure (Bhide, 1990; Matsusaka and Nanda, 2002). Also consistent with this view, we find some evidence that diversifying mergers earned higher announcement returns in periods when external capital was relatively scarce.

Another (not exclusive) explanation for the decline in diversification is that capital markets have become more effective at controlling agency problems that are at the root of inefficient diversification. At least since Jensen (1986), scholars have argued that even though diversification is inefficient, managers may choose to diversify when they have free cash flow in order to build empires. Our finding that diversification announcements on average increased the combined value of the firms undercuts the

idea that diversification is usually inefficient. We do find that acquiring firms earned a mean negative return of -0.6% from diversifying acquisitions, which could imply that these acquisitions were driven by managerial objectives (Morck, Shleifer, and Vishny, 1990). However, the mean bidder return was a significantly positive 0.7% for acquisitions where cash was used as the method of payment, suggesting that the overall negative return is primarily due to signaling effects associated with issuance of stock. To shed additional light on agency motives for diversification, we investigate whether firms that theory identifies as particularly vulnerable to agency problems—those with ample cash but poor investment opportunities (“free cash flow”)—were penalized by the market when they diversified. The estimated returns for “free cash flow” firms are if anything larger than the returns for other acquirers, and in any case are never statistically significant. Taken together, our evidence provides little support for the idea that agency problems are central to understanding corporate diversification.

2. Data and methods

2.1. Sample construction

The sample consists of 4,764 mergers that took place between 1950 and 2006 and involved U.S. publicly traded firms. For the 1950–1980 period, we begin with CRSP firms that were delisted from the NYSE, Amex, or Nasdaq due to an acquisition, and add hand-collected announcement dates, acquiring company names, and various deal characteristics from articles in the *Wall Street Journal* (WSJ). The announcement date is the first day in which an article was published that mentioned the intention to merge. For the 1981–2006 period, we use the Thomson SDC Platinum Mergers & Acquisitions Database (SDC) to identify acquisitions and announcement dates. We trace acquirers that were owned by another company back to the parent, and delete foreign firms, holding companies (SIC 67), and mergers where the acquirer already owned more than 25% of the target on the announcement date.

We supplement the initial sample with data from several additional sources. Standard Industry Classification (SIC) codes for acquirers and targets, used to determine if an acquisition was related or diversifying, are taken from SDC for 1981–2006 and hand-collected from Dun and Bradstreet’s *Million Dollar Directory* (MDD) for 1957–1980. Because MDD lists at most six SIC codes for each firm, we only consider the first six listed SIC codes from SDC for the later part of the sample. We also add the historical (primary) SIC code reported by CRSP. The MDD is not available for 1950–1956 so we use only the historical primary SIC code from CRSP for this period. The method of payment, cash or stock, is identified from SDC for 1981–2006, and hand-collected from the WSJ for 1950–1980. Many of the firms in the sample have sparse accounting data coverage in Compustat prior to 1980; as a result we hand-collect accounting data for nearly 1,000 acquirer and target firms from Moody’s Manuals.

The sample is constructed along fairly standard lines. The main difference from previous research is that we extend the sample back to 1950, whereas most studies

only go back to 1980 or so when CRSP and SDC become more complete. The cost is that a significant fraction of the data had to be hand-collected, and there could be some comparability issues across time. The upside is that the final sample comprises 4,764 observations and is a more-or-less complete list of mergers involving publicly traded companies over the period 1950–2006, making it (we believe) the largest and longest such sample to have been studied.

2.2. Definition of diversifying acquisition

One empirical issue is how to define “diversifying” and “related” acquisitions. We follow the preponderance of the literature and look for relatedness of the buyer and seller in terms of SIC codes. Specifically, we identify the top six four-digit SIC codes for each company, add the historical SIC code from CRSP, and then see if the companies share any SIC codes. If the merger partners do not have any SIC code in common, we call it a “diversifying” merger, otherwise it is a “related” merger. This approach has some well-known limits, for example, it does not capture vertical relations and it does not adjust for the importance of the businesses; its virtues are concreteness and replicability.³ The approach is conservative: we can be fairly confident that the mergers classified as diversifying involve firms in unrelated businesses. Previous studies have defined industries at the two-digit level (Matsusaka, 1993; Hubbard and Palia, 1999; Chevalier, 2004), three-digit level (Kaplan and Weisbach, 1992), or four-digit level (Morck, Shleifer, and Vishny, 1990). Since theory does not point to any particular definition, we focus on three-digit industries, and double-check the results using two-digit industries. Some studies, such as Maquieira, Megginson, and Nail (1998) and Fan and Goyal (2006) classify acquisitions by comparing only primary industries, that is, they do not take into account relations between merger partners’ secondary businesses. Since two-thirds of large corporations operate in five or more four-digit industries, classifications only based on primary businesses end up putting many acquisitions in the “diversifying” category that are really related. For alternative approaches to measuring diversification in the strategy literature, see Rumelt (1974) and Palepu (1985).

Figure 1 plots the total number of acquisitions in our sample over time and the number of diversifying acquisitions measured at the two-digit and three-digit level. The number of mergers is reported as a fraction of the number of publicly traded firms in the year of the merger. The total number of mergers displays a pattern that is

³ There is not much evidence on the prevalence of vertical mergers. Matsusaka (1993) finds few vertical mergers during the conglomerate merger wave, but the more comprehensive study by Fan and Goyal (2006) suggests that between a fifth and a third of all mergers during 1962–1996 may have involved firms in vertically related industries. As a rough check, we re-estimated our main results after deleting mergers between firms that were in vertically related industries in the sense of buying or selling 5% of output from each other according to the 1987 U.S. Input-Output Tables published by the Census, and found no important changes in the main results. We thank Oguzhan Ozbas for providing us with the raw data.

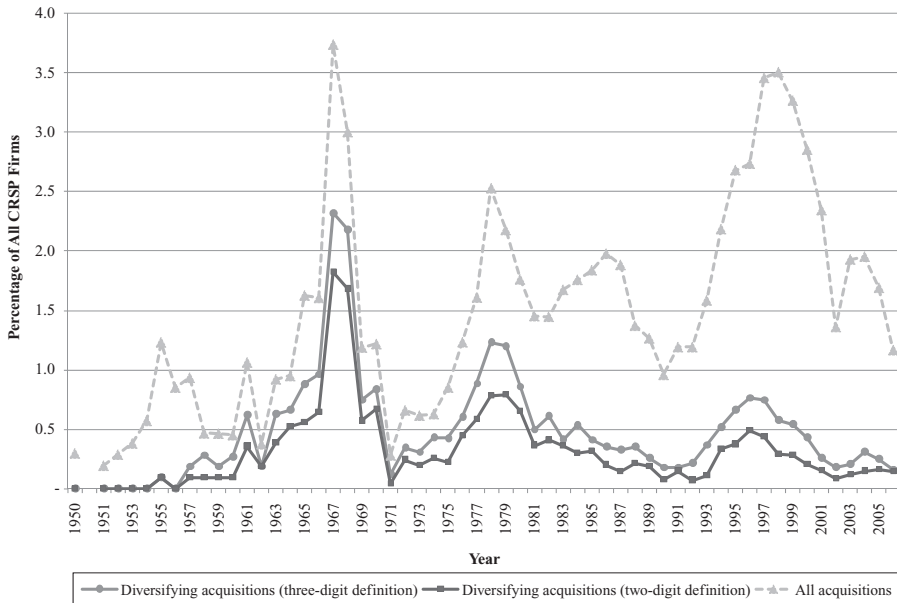


Figure 1

Diversifying acquisitions, 1950–2006

The figure shows the number of diversifying acquisitions each year as a percentage of all CRSP firms. Acquisitions are considered “diversifying” if the firms share a three-digit SIC code or a two-digit SIC code among their top six businesses.

now familiar: the conglomerate merger wave of the 1960s, the “refocusing” wave of the 1980s, and the “dot.com” wave of the 1990s. Despite the common perception that diversification has fallen from favor since the 1970s, we see that firms continued to make diversifying acquisitions after 1980, and there was a minor “boom” in the mid-1990s. Nevertheless, the figure shows that diversifying acquisitions become much less common after 1980. The pattern is similar whether diversification is measured at the two-digit or three-digit level.

Table 1 presents descriptive statistics by three-year subperiods. A majority of the mergers from 1959 to 1979 were diversifying mergers, peaking at 70% in the 1968–1970 subperiod. The popularity of diversifying mergers faded quickly after 1980; only 20% of mergers during the 1981–2006 period were diversifying compared to 54% during the 1950–1980 period. Targets in diversifying mergers had a smaller relative size than targets in related mergers; for the entire sample period targets in diversifying mergers made up 16% of the combined firm compared to 19% in related mergers. Diversifying acquirers paid almost the same deal premium (52% for the full

Table 1

Descriptive statistics

This table reports summary statistics for acquisitions during 1950–2006. In the column headings, “Div” refers to an acquisition in which the acquirer and target did not have a three-digit SIC code in common among their top six SIC codes (diversifying); “Rel” refers to an acquisition in which the acquirer and target did have a three-digit SIC code in common (related). “Deal premium” is the acquisition price divided by pre-announcement price, minus one.

Period	Number		Diversifying (%)	Stock only (%)		Cash only (%)		Tender offer (%)		Deal premium (Mean %)		Relative size (%)		Acquirer diversified? (%)	
	Div	Rel		Div	Rel	Div	Rel	Div	Rel	Div	Rel	Div	Rel	Div	Rel
1950–52	0	8	0	...	...	13	...	...	13	...	25	...	...	30	50
1953–55	1	22	4	100	100	0	0	0	0	0	32	29	11	29	41
1956–58	5	19	21	80	100	0	0	0	0	12	16	27	19	80	63
1959–61	12	10	55	92	90	8	10	0	10	18	29	18	17	83	100
1962–64	30	15	67	90	87	10	13	0	13	26	34	10	16	83	73
1965–67	91	61	60	89	89	10	10	7	10	35	25	17	24	84	87
1968–70	85	37	70	80	86	15	14	6	14	32	32	17	27	81	86
1971–73	30	30	50	83	77	17	23	3	23	40	52	19	14	90	67
1974–76	73	62	54	62	73	27	23	10	23	63	52	10	18	86	82
1977–79	162	146	53	28	39	53	34	5	34	58	55	16	17	86	92
1980–82	101	139	42	29	33	18	14	16	14	60	58	20	21	92	89
1983–85	84	240	26	21	28	36	21	46	21	52	48	23	25	90	93
1986–88	71	286	20	13	25	63	50	45	50	64	61	16	21	96	90
1989–91	42	190	18	38	47	33	25	17	25	58	69	17	18	93	89
1992–94	84	290	22	44	54	33	18	20	18	59	57	15	17	79	83
1995–97	190	586	24	47	58	33	21	26	21	54	53	15	19	75	75
1998–2000	134	694	16	49	56	31	21	22	21	62	61	15	19	83	86
2001–03	47	363	11	43	36	19	29	15	29	54	61	14	17	87	86
2004–06	49	275	15	18	26	45	36	18	36	44	44	17	19	94	87
1950–80	531	454	54	61	66	28	21	6	5	46	44	16	20	85	82
1981–2006	760	3,019	20	36	44	34	26	27	16	57	57	16	19	85	85
1950–2006	1,291	3,473	27	46	47	31	25	18	15	52	55	16	19	85	85

sample) as related acquirers (55%), where deal premium is the ratio of the bidder's offer to the target's pre-bid market value, minus one.

2.3. *Abnormal returns*

A second empirical issue is how to measure the announcement return. Theory does not prescribe a particular window size, but $(-1, + 1)$, $(-2, + 1)$, and $(-5, + 5)$ are popular. We use a $(-1, + 1)$ window throughout but check the robustness of our results with a $(-2, + 1)$ window. Abnormal returns are measured relative to the Fama-French three-factor model estimated using return data for the one-year period ending at day -64 relative to the announcement date.⁴ Most of our analysis focuses on cumulative abnormal returns during the event window as a percentage, but we also report the percentage of positive abnormal returns for robustness.

We study both the combined (bidder plus target) return and the return for acquirers alone. The combined return is the sum of acquirer and target cumulative abnormal returns, weighted by the ratio of acquirer plus target market value to the combined firm's market value. Market values are equity values two days before the merger announcement. For the full sample of 4,764 mergers, the mean (median) abnormal return is 1.59% (0.98%) for the acquirer and target combined, -1.11% (-0.89%) for the acquirer alone, and 17.9% (13.8%) for the target alone. These numbers are comparable to those reported by Andrade, Mitchell, and Stafford (2001) for 1973–1998.

3. Value creation or value destruction?

3.1. *Baseline estimates*

Table 2 reports nonparametric evidence on whether investors expected diversification to create or destroy value. Panel A of the table presents the combined (target plus acquirer) abnormal announcement returns over the entire period 1950–2006. We report returns as a percentage of the pre-announcement combined value of the firms and the percentage of returns that are positive, and we examine two subsamples that differ in how a diversifying acquisition is defined. The announcement return associated with diversifying mergers is positive using both measures. When diversification is defined as a merger between firms that do not have a three-digit SIC code in common, the mean return is 1.6% and the median is 0.9%, both of which are significant at the 1% level. When diversification is defined as a merger between firms that do not have a two-digit SIC code in common, the mean return is 1.7% and the

⁴ In a small number of cases (52) where data to estimate the Fama-French three-factor model was unavailable, we used returns in excess of the value-weighted index in CRSP to measure abnormal returns. We deleted mergers where the target's market value was less than \$1 million or less than 1% of acquirer's market value.

Table 2

Combined (target plus acquirer) returns from acquisition announcements, 1950–2006

This table lists the combined (target plus acquirer) cumulative abnormal return, measured relative to the Fama-French three-factor model, from announcements over a $(-1,+1)$ window. The main entry is the mean, followed by the standard error in parentheses, and the median in square brackets. Returns are measured as a percentage of the combined market value of the firms on day -2 .

	Diversifying acquisitions			Related acquisitions		
	Return	% return positive	<i>N</i>	Return	% return positive	<i>N</i>
<i>Panel A: Full sample</i>						
Diversifying = No three-digit SIC code in common	1.6*** (0.2) [0.9]***	59***	1,291	1.6*** (0.1) [1.0]***	59***	3,473
Diversifying = No two-digit SIC code in common	1.7*** (0.2) [0.9]***	60***	810	1.6*** (0.1) [1.0]***	59***	3,954
<i>Panel B: By method of payment</i>						
Stock	-0.1 (0.2) [-0.2]	48	599	0.0 (0.2) [0.1]	51	1,640
Cash	3.8*** (0.3) [2.6]***	74***	406	3.7*** (0.2) [2.2]***	73***	873
Stock and cash	2.1*** (0.4) [1.6]***	63***	209	2.0*** (0.3) [1.1]***	60***	726
Other	2.7*** (0.9) [0.9]**	58	77	3.3*** (0.5) [2.1]***	67***	234
<i>Panel C: By diversified and undiversified acquirers</i>						
Acquirer not diversified before acquisition	1.3*** (0.5) [0.4]**	53	194	1.1*** (0.3) [0.8]***	56***	538
Acquirer diversified before acquisition	1.7*** (0.2) [1.0]***	60***	1,097	1.7*** (0.1) [1.0]***	60***	2,935

*** and ** indicate statistical significance at the 0.01 and 0.05 level, respectively.

median is 0.9%. Again, both are significant. The proportion of positive observations is significantly greater than 50% using both measures.⁵

⁵ Throughout the paper, we report the significance of medians using the Wilcoxon signed rank test, but do not report the test statistics. We test whether the percentage positive is different from 50 using the normal approximation to a binomial proportion test.

At first glance, these results may not seem entirely surprising. We know from a long line of event studies that the combined return from merger announcements is slightly positive. However, the previous literature is less applicable than it might seem because previous studies do not distinguish between related and diversifying mergers, and the samples are dominated by related mergers (on average 73% related if Table 1 is representative). What has not been clearly shown until now is that the return from diversifying mergers is positive, and this finding stands in contrast to the prevailing view that diversification destroys value.

Panel A of Table 2 also reports the returns from related acquisitions. An acquisition is related if the buyer and target share at least one SIC code. Even if diversifying acquisitions create value (we explore robustness below), it could be that they create less value than related acquisitions. As can be seen, we find that the mean abnormal return from related acquisitions is also positive, but the abnormal returns from diversifying and related acquisitions are similar (the differences are not significant.) Contrary to conventional wisdom, the data indicate that not only do diversifying acquisitions create value, but on average they create as much value as related acquisitions.⁶

One important question is whether the positive return associated with diversifying acquisitions represents the market's assessment of the value consequences of the acquisition or if the market was responding to other information that was released at the same time as the announcement. To make things concrete, think of the estimated announcement return, r^* , being determined by $r^* = r_{CF} + r_{INFO}$, where r_{CF} is the return associated with changing cash flows due to the merger and r_{INFO} is a revaluation of the firm based on information revealed at the time of the announcement (that is, a signaling adjustment). To understand if diversification creates or destroys value, we want to know if r_{CF} is positive or negative, but we only observe r^* . In order to make inferences about r_{CF} from r^* , then, we need to know something about r_{INFO} .

One reason to expect a nonzero value of r_{INFO} is because acquisition announcements typically include information about the method of payment. If a firm pays for an acquisition with its stock, then the announcement return compounds the market's reaction to the acquisition and its reaction to an increase in outstanding equity. An equity issue might affect the stock price if managers have private information about the value of the firm's assets; by choosing to issue stock they reveal that it is overpriced (Myers and Majluf, 1984). An extensive empirical literature finds that seasoned equity issues are associated with negative announcement returns in the neighborhood of -3% on average (Smith, 1986), and that the returns from merger announcements (not specifically diversification announcements) are about 3% lower

⁶ Some studies have assessed the value consequences of diversification by comparing the returns from diversifying and related mergers, but the validity of such an inference is not self-evident. If the abnormal return from diversifying acquisitions was (say) 40% and the return from related acquisitions was (say) 50%, then diversifying acquisitions would be 10% worse than related acquisitions but it would seem too strange to conclude that diversification is a value-destroying activity based on such evidence.

when stock is used instead of cash (Andrade, Mitchell, and Stafford, 2001). Thus, for acquisitions paid for with stock, we would expect $r_{INFO} \approx -3\%$, and the estimated announcement return would underestimate the value creation from diversification by about 3% ($r_{CF} = r^* - 3$).

To gain some perspective on this possibility, Panel B of Table 2 reports the announcement return separately for acquisitions depending on the method of payment. Consistent with evidence from studies that do not focus on diversifying mergers, we find that the return from stock-only acquisitions is about 3.8% lower than the return from cash-only acquisitions for both diversifying and related mergers. What is more important here is that the return associated with cash mergers is positive—3.8% for diversifying mergers and 3.7% for related mergers—and different from zero at better than the 1% level. The medians are also positive and statistically different from zero. Almost three-quarters of the announcement returns are positive for cash acquisitions. The return from stock acquisitions is approximately zero. Since stock issues are met with a reliably negative reaction when not associated with a diversification announcement, our point estimate for the return from diversifying acquisitions using stock suggests that the cash flow component of the return is positive.

Although cash is not “informationally sensitive,” the choice of cash instead of equity may signal that equity is undervalued by the market. This could trigger a positive return from announcements of cash acquisitions for reasons having nothing to do with the acquisition itself. That is, it could be that $r_{INFO} > 0$ for cash acquisitions, biasing upward the estimated return from diversification. This possibility is undercut by the finding of a gap between cash and stock acquisitions that is roughly 3%, the magnitude of the typical return from an equity issue alone—we would expect it to be larger if there is an additional effect from cash itself. Even if cash has a positive signaling value, in an adverse selection model where firms can choose cash or equity financing, the market’s response to the acquisition would be a weighted average of the return from cash and stock acquisitions (where the weights depend on the probability distribution of firm value). Any weighted average would be positive based on the estimates in Panel B of Table 2.

The announcement return may also be a biased estimate of the value of diversification if the announcement signals something about the “quality” of the involved firms. Existing theory suggests that firms might diversify because their organizational capabilities are not well matched to their existing business opportunities (Gort, Grabowski, and McGuckin, 1985; Matsusaka, 2001; Jovanovic and Braguinsky, 2004), in which case, a diversifying merger is bad news about the acquirer and would cause investors to revise down their estimate of the firm’s value. Such a signaling effect would cause our estimate of diversification’s value to be biased down, strengthening confidence in our finding that diversification creates value.⁷

⁷ In the model of Jovanovic and Braguinsky (2004), the announcement also reveals that the target is better than expected, causing an upward revaluation in its price. However, in practice, target abnormal returns

To explore this possibility, Panel C of Table 2 reports abnormal returns separately for acquirers that were making their first move into a new industry (previously specialized firms) and acquirers that were already diversified. We define acquirers to be “diversified before the merger” if they operated in more than one three-digit SIC code in the year before the announcement, and define them to be “not diversified before the merger” otherwise, and we define a merger to be diversifying if the firms did not have a three-digit SIC code in common. The mean (median) combined return when an already diversified firm made a diversifying acquisition was 1.7% (1.0%) whereas the mean (median) return when an undiversified firm made a diversifying acquisition was 1.3% (0.4%). In both cases, means and medians are significantly different from zero, but they are not statistically different from each other. The percentage returns indicate that diversifying acquisitions increased value more often than not whether the acquirer was initially diversified or not. Thus, there is some weak evidence that the market’s reaction is less welcoming to new diversification than ongoing diversification, consistent with the idea that diversification announcements convey bad news about the quality of the acquirer, but the absolute returns remain positive in both cases.⁸

To summarize, the market’s reaction to diversification announcements over the last 50 or so years was significantly positive on average as measured by the abnormal combined return to the merging firms. And the reaction to diversifying announcements on average was no worse than the reaction to related acquisitions. Announcement returns impound information unrelated to the value of diversification per se, but those signaling effects generally bias our estimates of the value of diversification downward, and in any case, do not seem large enough on their own to be driving our main finding of a positive market reaction to diversification announcements.

3.2. Returns over time

While the preceding results suggest that investors consistently viewed diversification as a value-creating activity over the last 50 or so years, the sample averages could conceal time trends that lead to a different interpretation of the evidence. Matsusaka (1993) suggests that the market might have underestimated the inefficiencies of the conglomerate form of organization during the 1960s, only to learn the truth

are typically reversed if an announced merger falls through, suggesting that (Jarrell, Brickley, and Netter, 1988, p. 56) “the market does not, on average, learn much of anything that is new or different about target firms’ intrinsic value through the tender offer process.” Taking theory and evidence together, it seems that diversification announcements convey bad news about the acquirer and little news about the target, meaning that the announcement returns are if anything downward-biased estimates of the value created by diversification.

⁸ We also estimate the return for serial acquirers (defined as firms that appear more than once in our sample) compared to firms that made only a single acquisition, and find no significant differences between diversifying and related acquisitions, but the mean return associated with a one-time acquirer is about twice as high as the mean return associated with a serial acquirer.

in the 1980s. Shleifer and Vishny (2003) suggest that diversification may have been a fad—smart investors understood from the beginning that diversification would not work but lacked the resources to make prices fully reflect their information. If our finding of a positive average return overall conceals negative returns in the later years of the sample, it might be reasonable to conclude that diversification has always been a value-destroying activity but the market did not reflect that in the early years.

To shed light on the possibility of changing sentiment, Table 3 reports returns over time. We report returns for subperiods that are defined to break the sample into periods of merger waves and troughs.⁹ As before, the primary entries are mean returns, with standard errors in parentheses, and medians in square brackets. The table shows that diversifying announcements earned a positive abnormal return on average in every sample period except 1950–1966, and the mean and median were significantly different from zero in the periods covering 1966–1969 and 1976–1999, a little over half of the sample years. The bottom rows of the table show that the return from diversifying acquisitions averaged 2.0% during waves and 1.4% outside of waves. This difference, while nontrivial in magnitude, is not statistically significant. The return from related mergers was similar to the return from diversifying mergers, with a positive and statistically significant return in every period but the first. The last column compares the mean return associated with diversifying and related mergers. The differences are never statistically significant.

We also estimate Table 3 using only cash acquisitions. As expected, the mean and median return for cash acquisitions is higher than for all acquisitions in all periods, and the return is significantly positive for both diversifying and related acquisitions in every period except the first. The time pattern is also similar to the one that appears in Table 3: the mean return from diversifying mergers generally exceeds the mean return from related mergers until 1979, when the pattern reverses, but the differences are not statistically significant except during the conglomerate merger wave (although perhaps not much should be made of this because only 10% of the mergers in this period involved cash).

It is interesting to compare the return patterns with data on the diversification discount over time. There is not a consistent time series, but as an approximation the last column of Table 3 reports the estimated diversification discount over time based on numbers reported in Servaes (1996) for 1961–1976 and Campa and Kedia

⁹ Merger waves are defined following the method of Harford (2005). First, we identify the highest 36-month concentration of merger announcements for each decade as a potential wave (using calendar months, with 1950–1969 and 1990–2006 treated as a single decade). We then test whether this concentration of mergers is significantly different at the 5% level from the empirical distribution of 1,000 randomly generated samples of the same number of mergers for that decade, giving each month an equal probability of merger occurrence. This procedure yields four 36-month merger waves, 3/1966–2/1969, 12/1976–11/1979, 2/1985–1/1988, and 10/1996–9/1999. We also consider but do not report more subjective definitions, with no material change in the main results.

Table 3

Combined (target plus acquirer) returns from acquisition announcements over time

This table reports the combined cumulative abnormal return measured relative to the Fama-French three-factor model over a $(-1,+1)$ window. Returns are measured as a percentage of the combined market value of the merging firms on day -2 . A merger is classified as diversifying if the two firms do not share a three-digit SIC code among their top six codes. Merger waves are labeled in parentheses and defined as the highest 36-month concentration of merger announcements in a decade. The main entry is the mean return, followed by the standard error in parentheses, and median in square brackets. The penultimate column reports p -values for the hypothesis that the means are equal. The last column is the diversification discount based on Servaes (1996) and Campa and Kedia (2002), as discussed in the text.

	Diversifying acquisitions			Related acquisitions			p -value: div = related	Div discount
	Return	% > 0	N	Return	% > 0	N		
1950–66	–0.2 (0.3) [–0.4]	44	70	–0.1 (0.4) [–0.3]	43	91	0.867	–0.39
1966–69 (conglomerate wave)	1.6*** (0.4) [0.8]**	55	123	1.4** (0.6) [1.1]*	55	65	0.713	–0.73
1969–76	0.8 (0.6) [0.5]	56	130	0.9 (0.6) [0.7]**	56	102	0.886	–0.14
1976–79 (post-conglomerate wave)	2.3*** (0.4) [1.6]***	64***	162	2.3*** (0.4) [1.5]***	65***	149	0.967	–0.05
1979–85	1.9*** (0.5) [1.4]***	60***	166	2.4*** (0.4) [1.3]***	65***	294	0.424	–0.06
1985–88 (refocusing wave)	2.5*** (0.8) [1.4]***	61*	72	2.9*** (0.4) [1.7]***	67***	311	0.594	–0.25
1988–96	2.3*** (0.4) [1.4]***	64***	252	2.1*** (0.2) [1.2]***	63***	830	0.725	–0.03
1996–99 (dot.com wave)	1.7*** (0.6) [1.0]***	60***	178	1.2*** (0.3) [0.7]***	55***	740	0.439	NA
1999–2006	0.6 (0.9) [0.6]	55	138	0.8*** (0.3) [0.7]***	57***	891	0.813	NA
All merger wave years	2.0*** (0.3) [1.2]***	60***	535	1.8*** (0.2) [1.1]***	59***	1,265	0.541	
All nonwave years	1.4*** (0.3) [0.9]***	58***	756	1.5*** (0.2) [1.0]***	60***	2,208	0.854	
p -value: wave = nonwave	0.138			0.244				

***, **, * indicate statistical significance at the 0.01, 0.05 and 0.10 level, respectively.

(2002) for 1978–1996.¹⁰ As can be seen, those studies find a persistent diversification discount throughout the period, in contrast to the evidence of positive announcement returns from diversifying acquisitions. Yet the time patterns tend to conform: the diversification discount shrinks in the mid 1970s and late 1980s, around the same time as a peak in the announcement return from diversifying acquisitions.

Table 3 does not control for other factors that are known to be related to merger announcement returns. Although this does not introduce any obvious biases, merger characteristics do vary over time. To get a sense of the behavior of returns over time conditional on deal characteristics, we estimated a regression (not reported) of returns on a dummy for stock as a method of payment dummy, a tender offer dummy, the log of the target firm's market value on day -64 , the log of the target's market value divided by the sum of the combined value of the target and acquirer on day -64 , and a constant. Figure 2 plots the mean residuals from the regressions for diversifying and related acquisitions. The residuals display a similar pattern over time as Table 3. The figure shows what might be a downward trend in the return to both type of mergers, or perhaps a jump downward beginning in the period 1979–1985. There is also some evidence of a decline in the return from diversifying relative to related acquisitions from the beginning of the sample period until the early 1980s. However, the differences across periods are typically not different from zero at conventional levels of significance. Taking the evidence as a whole, it appears there is evidence for the idea that mean announcement returns associated with diversification, both absolute and relative to the return from related acquisitions, changed over time, and perhaps some evidence of a downward trend.

4. Acquirer returns

This section reports evidence on how acquisition announcements affected the price of acquiring firms. Acquirer returns alone (as opposed to combined returns) can not reveal the market's evaluation of the overall merits of a merger, but they do have the potential to shed light on the motives for acquisitions. As Morck, Shleifer, and Vishny (1990) observe, if a bidder's value falls when an acquisition is announced, there is some reason to suspect that managerial objectives rather than shareholder value are driving the acquisition.

The existing evidence on acquirer returns from diversifying mergers is extensive and somewhat contradictory. Table 4 summarizes estimates of which we are aware. As can be seen, both positive and negative returns have been found, and the means

¹⁰ Numbers for the early period are derived from Table II in Servaes (1996), who calculates sale-weighted measures at three-year intervals: for 1950–1966 we use the mean of his estimated means for 1961 and 1964, for 1966–1969 we use his estimated mean for 1967, and for 1969–1976 we use the mean of his estimated means for 1970, 1973, and 1976. Numbers for the later period are derived from Table IVa in Campa and Kedia (2002), who calculate sales-weighted measures for each year between 1978 and 1996. We report the mean of their estimated means for each subperiod.

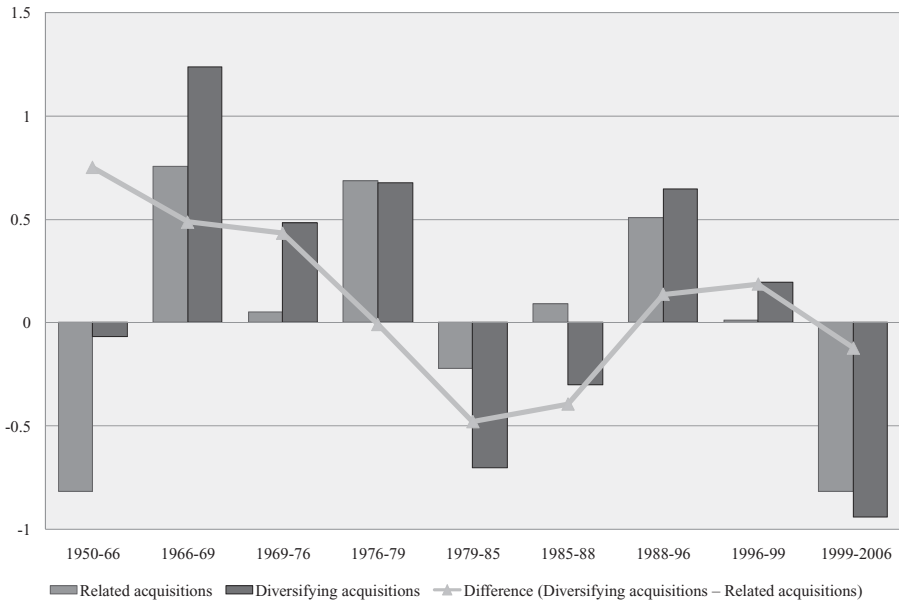


Figure 2

Mean residuals from regressions of combined (acquirer plus target) announcement returns on deal characteristics

This figure plots the residuals from a regression of combined announcement returns on a dummy for stock as a method of payment, a tender offer dummy, the target firm's market value, and the ratio of target's value to the combined market value. The bars show the mean values by period for diversifying versus related acquisitions.

often are not statistically different from zero. The sample sizes are not always large and the methods differ in details (calculation of returns, event window size, definition of diversification, etc.), but there is not an obvious explanation for the dispersion of findings, nor is there an obvious reason to prefer one set of studies over another. By revisiting this issue with our much larger sample, we hope to provide a more definitive conclusion about the effects of diversifying mergers on acquiring firm values, and by using consistent methods across a long time span, we hope to shed some light on the extent to which the conflicts in previous studies are due to different methods.

Table 5 reports the abnormal returns for acquiring firms. The first row in Panel A presents returns for the full sample. The mean return is -0.6% for diversifying acquisitions and -1.3% for related mergers. Both numbers are significantly different from zero at the 1% level. The medians are also both negative and significant. Forty-three percentage of diversifying mergers received positive returns and 39% of related mergers received positive returns. The mean and median returns are significantly more negative (at the 1% level) for related than diversifying mergers. It appears that

Table 4

Summary of the literature on acquirer returns from announcements of diversifying mergers

The table summarizes estimates of the acquirer returns associated with announcements of diversifying acquisitions. The acquirer return is the cumulate abnormal return as a percentage over the indicated window. Unless noted, the results are for daily returns. “NR” means the information was not reported. Definition of diversification: “4D” means four-digit SIC code, “top 3” means the firm’s three most important businesses. Sample: “T” represents target and “A” represents acquirer.

Paper	Years	N	Bidder return		Event window	Definition of diversification	Sample
			Mean	$p < 0.10$			
1. Morck, Shleifer, and Vishny (1990)	1975–87	235	-1.89 ^a (1.70)	No	(-2, +1)	No common 4D in top 3	
1. Morck, Shleifer, and Vishny (1990)	1975–79	120	0.23 ^a (2.13)	No	(-2, +1)	No common 4D in top 3	
1. Morck, Shleifer, and Vishny (1990)	1980–87	115	-4.09 ^a (2.65)	No	(-2, +1)	No common 4D in top 3	
2. Kaplan and Weisbach (1992)	1971–82	177	-1.46 (NR)	NR	(-5, +5)	No common 3D in top 4 4D	T > \$100M, no financial & railroad firms
3. Eckbo (1992)	1963–81	59	-0.41 (NR)	No	(-20, +10)	Target top 4D different from bidder top 4 4D	Mining & manufacturing
3. Eckbo (1992)	1964–82	62	0.62 (NR)	Yes	(0) ^c	Target top 4D different from bidder top 4 4D	Canada, mining & manufacturing
4. Matsusaka (1993)	1968, 71, 74	67	1.23 (0.67)	Yes	(-5, +5)	No common 2D	Mining & manufacturing, stock only
5. Maqueira, Megginson, and Nail (1998)	1977–96	47	-4.79 (2.68)	Yes	(-2, +2) ^{be}	Different primary 2D	Stock only
6. Hubbard and Palia (1999)	1961–70	NR	0.24 (0.86)	No	(-5, +5)	No 2D in common	...
7. Hyland and Diltz (2002)	1978–92	134	0.01 (NR)	Yes	(-1, 0)	New Compustat segment	A > \$100M, A has only 1 segment
7. Hyland and Diltz (2002)	1978–79	17	-0.01 (NR)	No	(-1, 0)	New Compustat segment	A > \$100M, A has only 1 segment

(Continued)

Table 4 (continued)
Summary of the literature on acquirer returns from announcements of diversifying mergers

Paper	Years	N	Bidder return		Event window	Definition of diversification	Sample
			Mean	$p < 0.10$			
7. Hyland and Diltz (2002)	1980–87	82	0.03 (NR)	Yes	(-1, 0)	New Compustat segment	A > \$100M, A has only 1 segment
7. Hyland and Diltz (2002)	1988–92	35	-0.01 (NR)	No	(-1, 0)	New Compustat segment	A > \$100M, A has only 1 segment
8. Bae, Kang, and Kim (2002)	1981–97	41	0.67 (NR)	No	(-5,+5)	No 3D in common	Korean nonfinancial firms
9. Chevallier (2004)	1980–95	289	-1.92 (0.94)	Yes	(-5,+5)	No 2D in common	...
9. Chevallier (2004)	1980–87	NR	-1.58 (NR)	NR	(-5,+5)	No 2D in common	...

^aThe return is not adjusted for market movements, and is divided by the value of the target.

^bEvent window ends two months after completion of merger.

^cMonthly returns.

Table 5

Acquirer returns from acquisition announcements

This table reports the acquiring firm’s cumulative abnormal return measured relative to the Fama-French three-factor model over a (−1,+1) window. Returns are measured as a percentage of the market value of the acquiring firm on day −2. A merger is classified as diversifying if the two firms do not share a three-digit SIC code among their top six codes. Three-year merger waves are labeled in parentheses and defined as the highest 36-month concentration of merger announcements in a given decade based on the method in Harford (2005). The main return entry is the mean, followed by the standard error in parentheses, and median in square brackets. The last column and row report *p*-values for the hypothesis that the means are equal.

	Diversifying acquisitions			Related acquisitions			<i>p</i> -value: div = related
	Return	% return positive	<i>N</i>	Return	% return positive	<i>N</i>	
<i>Panel A: All years combined</i>							
All mergers	−0.6*** (0.2) [−0.6]***	43***	1,291	−1.3*** (0.1) [−1.0]***	39***	3,473	0.003
Stock only	−1.7*** (0.3) [−1.1]***	36***	599	−2.3*** (0.2) [−1.8]***	33***	1,640	0.133
Cash only	0.7** (0.3) [0.1]*	51	406	0.5*** (0.2) [0.2]**	53	873	0.559
Stock and cash	−0.8* (0.5) [−0.8]***	42**	209	−1.7*** (0.2) [−1.5]***	36***	726	0.080
Other method of payment	1.4 (1.1) [0.1]	51	77	−0.1 (0.5) [−0.3]	47	234	0.164
<i>Panel B: By periods</i>							
1950–66	−0.9** (0.4) [−0.7]**	36**	70	−0.7 (0.4) [−0.8]**	34***	91	0.737
1966–69 (conglomerate wave)	1.1** (0.4) [0.5]*	54	123	0.7 (0.7) [0.5]	52	65	0.580
1969–76	−1.0** (0.4) [−0.9]***	42*	130	−1.0* (0.6) [−0.6]	41*	102	0.992
1976–79 (post-conglomerate wave)	−0.7** (0.3) [−0.7]***	40**	162	−0.1 (0.3) [−0.2]	47	149	0.188
1979–85	−0.6 (0.5) [−0.5]**	43	166	−0.5 (0.4) [−0.6]**	43**	294	0.793

(Continued)

Table 5 (continued)

Acquirer returns from acquisition announcements

	Diversifying acquisitions			Related acquisitions			<i>p</i> -value: div = related
	Return	% return positive	<i>N</i>	Return	% return positive	<i>N</i>	
1985–88 (refocusing wave)	−0.2 (0.6) [−0.6]	42	72	−0.4 (0.3) [−0.5]**	43**	311	0.792
1988–96	−0.4 (0.4) [−0.4]**	45	252	−0.9*** (0.2) [−0.8]***	40***	830	0.276
1996–99 (dot.com wave)	−0.5 (0.6) [−0.5]	40***	178	−1.6*** (0.3) [−1.6]***	38***	740	0.079
1999–2006	−2.0** (0.9) [−0.9]**	40**	138	−2.4*** (0.4) [−1.7]***	35***	891	0.666
All merger wave years	−0.2 (0.3) [−0.5]*	43***	535	−1.0*** (0.2) [−0.9]***	41***	1,265	0.009
All nonwave years	−0.9*** (0.3) [−0.6]***	42***	756	−1.5*** (0.2) [−1.1]***	38***	2,208	0.096
<i>p</i> -value: wave = nonwave		0.0444			0.1046		

***, **, * indicate statistical significance at the 0.01, 0.05 and 0.10 level, respectively.

acquisitions were typically bad news for bidding firm shareholders, but diversifying acquisitions were less harmful than related acquisitions.

Bidder returns could have been negative because bidders were overpaying, allowing targets to capture a disproportionate share of the gain, or because the announcement caused investors to downgrade their estimates of the firm's value for signaling reasons. To gain some insight on the importance of signaling, the remaining rows of Panel A in Table 5 report returns separately by the method of payment. As argued above, signaling should be particularly important for stock acquisitions but less of a factor for cash acquisitions. Again we see the gap between cash acquisitions and stock acquisitions, in this case about 2.4% for diversifying mergers and 2.8% for related mergers. The mean return from cash-only acquisitions is positive and statistically distinguishable from zero for both types of merger. The mean return from stock acquisitions is −1.7% for diversifying acquisitions and −2.3% for related acquisitions, both values different from zero at the 1% level of significance. The medians are also negative and significantly different from zero. If the means were adjusted upward by the standard −3% return from an equity issue, the estimates become positive (or perhaps it is better to think of them being approximately zero.)

The evidence suggests that acquirer returns may be negative primarily for signaling reasons, and that without signaling concerns, the returns are positive or at least zero.

Panel B in Table 5 reports the returns by period. The mean acquirer return from diversifying acquisitions is reliably positive during the conglomerate merger wave and negative in the surrounding years and during the most recent period 1999–2006. This suggests that the conflicting findings in the literature (Table 4) may be due in part to examination of different periods and not due to different methods. For example, the significant positive returns in Matsusaka (1993) appear in a sample concentrated on the conglomerate merger wave while the significant negative returns in Chevalier (2004) (and the insignificant negative returns in Morck, Shleifer, and Vishny, 1990) appear in samples concentrated on the 1980s. Timing does not explain all of the contradictory findings—for example, Hyland and Diltz (2002) report significantly positive returns in the 1980s—but timing seems to account for a good part of the variation. A lesson from this is that researchers should be sensitive to the possibility of time variation in the effects they are measuring—especially when it comes to an evolving practice, such as corporate diversification—and should be cautious in generalizing from samples concentrated in particular periods of time.

A second observation about Panel B of Table 5 is that except for the 1999–2006 period, the return is only modestly negative, around -1% , well within the bounds of a negative signaling effect for stock. Thus, there is not strong evidence in the subperiods for the importance of managerial objectives. This conclusion can be seen more directly by focusing only on cash acquisitions. The estimates from cash-only transactions (not reported) reveal a positive mean return from diversifying acquisitions for all periods except the first (which has only 14 observations) and 1985–1988. The return during 1966–1969 is 4.7% , different from zero at the 1% level. Returning to Table 5, the mean return from related acquisitions is negative for the periods in 1950–1976, and positive for 1976–2006, with a significantly negative mean in 1966–1969 and a significantly positive mean in 1996–1999.

Finally, it is worth noting that the return associated with related acquisitions is often lower than the return associated with diversifying mergers, although the difference is nonzero at conventional levels of significance only during the 1996–1999 dot.com merger wave. The reason for this is not clear, but it reinforces the notion that diversifying mergers were not driven by managerial objectives to a greater degree than related mergers. Including only cash acquisitions, the return from diversifying and related acquisitions is significantly different from zero during the conglomerate merger wave.

5. Evolution of market sentiment toward diversification

Figure 2 reveals time variation in the returns from diversification. Returns were highest during 1950–1979, plunged during 1979–1988, then recovered somewhat during 1988–2006. Although these returns suggest volatility in the market's views toward diversification, we should keep in mind that the sample returns are only for

mergers that were actually announced, not all potential mergers. If investor sentiment soured on diversification, we would expect to see fewer diversifying mergers (as managers react to changing investor sentiment), and the measured returns would not appear to be as negative as the true underlying sentiment. Nevertheless, it is reasonable to expect returns to track changes in investor sentiment with a lag, as it takes time for managers to learn about changing views among investors. Seen in this light, Figure 2 suggests that investors soured on diversification in the late 1970s and early 1980s but firms did not fully respond to the changing sentiment immediately. Average returns from diversifying mergers were negative in the 1980s while managers learned, but by the late 1980s managers had gotten the message and stopped making many of the diversifying mergers that the market disliked, causing the mean announcement return to rise. This view fits with informal accounts of the decline of diversification (Sobel, 1984; Shleifer and Vishny, 1991; Matsusaka, 1993) and is also consistent with the drop off in diversifying mergers seen in Figure 1 (50% of sample mergers were diversifying during 1950–1980 compared to 20% during 1981–2006). What it leaves unexplained is why investor sentiment soured on diversification in the late 1970s and early 1980s. The purpose of this section is to provide evidence on why diversification seemed to fall from favor.

5.1. Two hypotheses

We focus on two prominent explanations for the decline in corporate diversification. The *internal capital market hypothesis* posits that diversification was valuable in the 1950s, 1960s, and 1970s because external capital markets were undeveloped. When external capital markets improved in the 1980s, the benefit from internal capital allocation declined, and diversification fell from favor (Bhide, 1990; Matsusaka and Nanda, 2002). This argument rests on a theory of diversification that revolves around advantages of internal capital allocation: if resources can be moved from low to high return projects at a lower cost internally than through markets, diversification can be efficient (Williamson, 1975; Matsusaka and Nanda, 2002). The value of an internal capital market is greatest when external capital allocation is costly.

The *agency cost hypothesis* posits that diversification is inherently a value-destroying strategy but firms nevertheless expand into new lines of business because managers receive private benefits from diversifying (Jensen, 1986). According to this view, diversification flourished in the 1950s, 1960s, and 1970s because of faulty corporate governance that allowed managers to squander corporate wealth for their own gain. In the 1980s, with development of the hostile takeover and low-cost methods of financing, investors were able to gain control of many corporations and block or undo inefficient diversification (Bhagat, Shleifer, and Vishny, 1990). There are many reasons why diversification might be inefficient, including investment and communication distortions from internal politics, and weak incentive systems. We are not so much interested in the reasons why diversification might be inefficient, but in whether the presence of agency problems allows managers to diversify even

when diversification is value destroying. The agency cost hypothesis is not easy to square with the evidence that combined returns were positive and that bidder returns, at least from cash acquisitions, were positive. However, while agency costs might not be the central driver of announcement returns, they may be able to explain some of the variation over time. It should also be kept in mind that the internal capital markets and agency cost hypotheses are not mutually exclusive.

5.2. Tests

In order to evaluate the internal capital market and agency cost hypotheses, we estimate a series of regressions in which the dependent variable is the abnormal combined announcement return. We are interested in whether variables linked to internal capital markets and agency costs can explain announcement returns, and whether those effects change over time. To test for time changes, we estimate the regressions separately for two periods, 1950–1980 and 1981–2006. These periods approximately bracket to the high and low periods for diversification.

Our test of the internal capital market hypothesis is based on the idea that an internal capital market allows headquarters to shift resources from one division to another. Internal resource transfers add value only to the extent that they channel funds to higher return investments or reduce financing costs compared to transfers that take place across external capital markets. Stein (1997) shows how internal resource allocation can add value when headquarters knows more about divisional investment opportunities than outside investors, and Matsusaka and Nanda (2002) show how internal transfers can allow a firm to avoid costly external finance. Following Hubbard and Palia (1999), we posit that a merger is most likely to create a valuable internal capital market when one firm is financially constrained and the other is not. In this case, the unconstrained firm is able to raise resources that it can transfer to the other firm that would otherwise find it difficult to finance its investment.¹¹

To identify firms that are likely to be financially constrained, we employ the KZ index (Kaplan and Zingales, 1997) using coefficient estimates from Lamont, Polk, and Saa-Requejo (2001). The KZ index assigns to each firm a numerical score that is positively related to the firm's debt and market-to-book ratio, and negatively related to the firm's cash flow, stock of cash, and dividends.¹² The assumption is that

¹¹ There are also theories that predict gains from integration even if both firms are financially constrained. Lewellen (1971) argues that a merger can reduce financing costs if the assets can be used to coinsure each other, Duchin (2010) argues that the imperfectly correlated cash flows and investment opportunities of diversified firms allow them to economize on precautionary cash holdings, and Hann, Ogneva, and Ozbas (2008) argue that coinsurance reduces the cost of financing by reducing systematic risk.

¹² Specifically, the value of the KZ index in year t from Lamont, Polk, and Saa-Requejo (2001) is given by $KZ_t = 3.139D_t + 0.283MB_{t-1} - 1.002CF_t - 1.315CS_t - 39.368DIV_t$, where D_t is debt divided by total capital, MB_t is the market-to-book ratio, CF_t is cash flow, CS_t is cash, and DIV_t is dividends, the last three variables all divided by capital in year $t - 1$.

a higher value of the KZ index means a firm is more financially constrained. We compare the KZ value for a given firm in a given year with its industry's (defined using the 12 Fama-French industries) median KZ value for that year and label it a "high KZ" firm if the firm value is above the industry median, and a "low KZ" firm if the firm value is below the industry median.¹³ We then define two dummy variables that indicate when a high KZ firm (financially constrained) buys a low KZ firm (financially unconstrained), and when a low KZ firm buys a high KZ firm. Hubbard and Palia (1999) conduct a similar exercise for the 1960s using the dividend payout ratio as a measure of financial constraints and find that bidders earned higher announcement returns when an unconstrained firm acquired a constrained firm (they do not consider combined returns). We are interested in whether the market reacted more positively to mergers that matched constrained and unconstrained firms than other mergers, and if so, whether that effect diminished over time as would be the case if improved external capital markets made internal capital allocation less valuable.

Our second test of the internal capital market hypothesis relies on the observation that internal capital allocation should be more valuable when external capital is more costly at the aggregate level, an implication recently exploited by Yan (2006). Yan (2006) finds that the value of conglomerates increases relative to focused firms when external capital is more costly at the aggregate level. Following Yan, we include variables in our regressions that capture external capital market conditions: federal discount rate, money supply in 2006 dollars as measured by M2, percentage change in money supply over the previous 12 months, value of corporate bonds issued, value of commercial paper issued, and net new equity issued. The discount rate and M2 are measured in the month before the acquisition; the others are from the year before the acquisition. Here again we are interested in whether the costliness of external finance predicts the returns from diversification, and if so, whether that effect diminishes over time.

To test the agency cost hypothesis, we include variables that capture the potential agency costs of free cash flow. Jensen (1986) argues that firms with cash flow in excess of what is needed to fund all of their positive NPV investment opportunities are most likely to make value-destroying diversifying acquisitions. To identify the firms most at risk, we create a dummy variable equal to one if the acquirer has cash flow from operations in excess of its industry median and a Tobin's Q (representing investment opportunities) lower than its industry median. Cash flow is defined as in Bushman, Smith, and Zhang (2007). If agency costs are an important factor in determining announcement returns, we expect acquisitions by firms with high cash flow and low Q to receive lower returns. If diversification declined because markets became better at controlling agency problems, the agency cost variable will decline in importance

¹³ Because Compustat has sparse accounting data coverage for 1950–1965, there are too few firms to calculate a median KZ at the industry level for every year. To solve this problem we treat 1950–1965 as a single year by pooling observations and calculating the median KZ for a given industry. As a result, industry median KZ figures are the same for every year from 1950 to 1965.

over time. We do not intend this as a definitive test of the agency cost theory—there are other plausible interpretations of the coefficient—but we believe it is a useful starting point since Jensen’s much-cited article on agency costs specifically identified diversifying acquisitions by firms with free cash flow as most likely to destroy value (Jensen, 1986, p. 328): “the theory implies managers of firms with unused borrowing power and large free cash flows are more likely to undertake low benefit or even value-destroying mergers. Diversification programs generally fit this category, and the theory predicts they will generate lower total gains.” We also include bidder and target Q as control variables, following Lang, Stulz, and Walkling (1989), which are sometimes used to test agency theories.

5.3. Regression results

Table 6 presents the results. Each column reports estimates from a single regression; standard errors are in parentheses beneath the coefficient estimates. In addition to variables connected with the internal capital market and agency cost hypotheses, we include a set of control variables that are standard in the literature: deal characteristics (stock dummy, tender offer dummy, target size, and relative size of the two firms) and firm characteristics (buyer Q, target Q, buyer leverage, target leverage, buyer cash, target cash, buyer age, and target age, where age is the number of months since the firm first appears in Compustat).

The regression in column (1) of Table 6 considers only diversifying acquisitions during 1950–1980. Consistent with the internal capital market hypothesis, mergers between a financially constrained acquirer and an unconstrained target earned a return that was 1.59% greater than otherwise identical mergers that did not pair a constrained and unconstrained firm. The coefficient is different from zero at the 5% level of significance. The coefficient for mergers between financially unconstrained acquirers and constrained targets is also sizeable, 0.86%, but is not statistically significant.

The regression in column (2) of Table 6 reports the same regression for diversifying acquisitions during 1981–2006. The coefficients on the two financial constraint variables are much smaller than in column (1), and neither is different from zero at conventional levels of significance. Investors no longer rewarded mergers between a constrained and unconstrained firm during this period, consistent with the view that improved external capital markets were undercutting the value of internal capital allocation.

The regressions in columns (3) and (4) of Table 6 estimate the same regressions for a subsample of small bidders. If improvements in external capital markets can account for part of the decline in investor sentiment toward diversification, then financial constraint variables should be more important among small bidders than large bidders because small bidders are more likely to be financially constrained. The definition of a small bidder is a firm with a market value (measured at day –64) below the median market value of all acquirers in the sample. The coefficients

Table 6

Regressions of combined returns from merger announcements

This table reports regressions of combined (acquirer plus target) announcement returns on financial constraint and agency cost variables, capital market conditions, and deal and firm characteristics. Heteroskedasticity-corrected standard errors are in parentheses beneath the coefficient estimates. The dependent variable is the combined cumulative abnormal announcement return, measured relative to the Fama-French three-factor model, over a $(-1,+1)$ window. “High KZ” firms are financially constrained according to the KZ index, and “low KZ” firms are unconstrained. The KZ index assigns to each firm a numerical score that is positively related to the firm’s debt and market-to-book ratio, and negatively related to the firm’s cash flow, stock of cash, and dividends.

	Diversifying acquisitions					
	Small firms				Related acquisitions	
	1950–80 (1)	1981–2006 (2)	1950–80 (3)	1981–2006 (4)	1950–80 (5)	1981–2006 (6)
Dummy = 1 if high KZ acquirer/low KZ target	1.59** (0.72)	0.41 (1.21)	2.43** (1.22)	1.63 (2.15)	-1.07 (0.91)	-0.64 (0.60)
Dummy = 1 if low KZ acquirer/high KZ target	0.86 (0.65)	-0.69 (0.85)	2.66** (1.24)	-0.50 (1.65)	0.68 (1.08)	-0.11 (0.54)
Dummy = 1 if acquirer has high cash flow and low Q	0.66 (0.92)	0.70 (0.86)	1.17 (1.76)	1.96 (1.59)	-0.96 (0.81)	0.25 (0.49)
<i>Capital market conditions</i>						
Federal discount rate	0.24 (0.23)	-0.21 (0.24)	0.63 (0.40)	-0.30 (0.47)	0.07 (0.23)	-0.20 (0.15)
Money supply, M2 ($\times 100$)	0.06 (0.09)	-0.09 (0.09)	0.25 (0.19)	-0.11 (0.19)	-0.03 (0.08)	-0.05 (0.04)
Growth in money supply	-20.49* (12.03)	-42.75*** (13.59)	-48.63** (22.49)	-36.07 (23.74)	-9.82 (10.40)	-9.66 (8.53)
New equity issued	-0.01 (0.03)	-0.01** (0.01)	-0.00 (0.05)	-0.02 (0.01)	-0.03 (0.04)	-0.01 (0.003)
New bonds issued	0.01 (0.02)	-0.00 (0.01)	-0.02 (0.03)	-0.01 (0.01)	0.05** (0.03)	-0.00 (0.00)
New commercial paper	-0.14*** (0.05)	-0.01 (0.02)	-0.38*** (0.11)	-0.01 (0.04)	0.02 (0.06)	0.00 (0.01)
<i>Deal characteristics</i>						
Dummy = 1 if stock is only method of payment	-2.48*** (0.76)	-2.66** (1.10)	-2.12 (1.45)	-4.53** (2.01)	-1.33 (0.82)	-2.99*** (0.47)
Dummy = 1 if tender offer	2.14* (1.22)	2.03** (0.83)	0.80 (2.40)	3.39** (1.49)	2.42 (3.02)	1.72*** (0.50)
Target size, log	-0.23 (0.34)	-0.33 (0.33)	-0.68 (0.94)	-0.18 (0.83)	0.07 (0.35)	-0.48*** (0.14)
Target size/acquirer size	1.26*** (0.39)	1.41*** (0.45)	2.86** (1.13)	1.64* (0.97)	1.03** (0.43)	1.35*** (0.23)
<i>Firm characteristics</i>						
Q, acquirer	0.11 (0.09)	1.13* (0.59)	0.31 (0.20)	1.68* (0.85)	0.12 (0.15)	0.05 (0.20)
Q, target	-0.25 (0.20)	-1.22*** (0.41)	-0.15 (0.42)	-1.64* (0.84)	-0.79** (0.38)	-0.38* (0.21)

(Continued)

Table 6 (continued)

Regressions of combined returns from merger announcements

	Diversifying acquisitions					
	Small firms				Related acquisitions	
	1950–80	1981–2006	1950–80	1981–2006	1950–80	1981–2006
	(1)	(2)	(3)	(4)	(5)	(6)
Leverage, acquirer	-1.82 (3.38)	0.75 (2.50)	-2.50 (5.57)	3.48 (3.69)	4.23 (3.07)	0.65 (1.51)
Leverage, target	-0.38 (2.22)	-2.08 (3.48)	-0.18 (4.53)	-6.42 (6.60)	-5.64*** (2.03)	-2.97** (1.20)
Cash, acquirer	-1.35 (3.53)	-5.09 (3.56)	-1.89 (6.26)	-3.27 (5.31)	0.87 (5.28)	-3.34** (1.66)
Cash, target	2.69 (3.82)	-2.16 (3.35)	2.34 (6.48)	0.35 (7.02)	0.14 (3.09)	-2.18 (1.46)
Firm age, acquirer (× 100)	0.00 (0.13)	0.05 (0.17)	-0.11 (0.26)	-0.15 (0.28)	-0.04 (0.19)	0.02 (0.10)
Firm age, target (× 100)	0.11 (0.18)	-0.00 (0.23)	0.64* (0.33)	-0.02 (0.54)	-0.14 (0.21)	0.36*** (0.13)
Constant	6.78 (5.71)	15.99*** (5.61)	10.35 (15.71)	14.88 (12.90)	3.15 (5.08)	15.97*** (2.67)
R ²	0.228	0.193	0.314	0.239	0.123	0.150
N	362	396	153	186	300	1,284

***, **, * indicate statistical significance at the 0.01, 0.05 and 0.10 level, respectively.

for 1950–1980 in column (3) imply that the return from a merger with a financially constrained-unconstrained pairing is 2.43% greater than other mergers, and the return on a financially unconstrained-constrained pairing is 2.66% greater than otherwise identical mergers. Both coefficients are statistically significant at the 5% level. The corresponding coefficients for 1980–2006 in column (4) are smaller in magnitude and statistically insignificant. Thus, the evidence for the internal capital market hypothesis is stronger among smaller bidders, as would be expected if small firms are more financially constrained.

For comparison purposes, columns (5) and (6) of Table 6 report similar regressions for mergers between related firms. Both financial constraint variables are statistically insignificant in 1950–1980 and 1980–2006, and three out of four coefficients are actually negative, suggesting that creation of internal capital markets was not important for horizontal mergers. This also supports the idea that internal capital allocation played a role in how investors evaluated diversifying mergers.

A second implication of the internal capital market hypothesis is that announcement returns should be associated with external capital market conditions, and that association should weaken over time. The evidence is mixed. For diversifying acquisitions during 1950–1980 in column (1) of Table 6, two of the five capital market coefficients are statistically distinguishable from zero. The coefficient on the change in money supply and the amount of commercial paper issued are both negative, consistent with the idea that internal capital allocation is less valued when external

financing is available. Also consistent with the internal capital market hypothesis, in 1981–2006 the coefficient on commercial paper falls in magnitude and becomes insignificant. However, the coefficient on money growth becomes more negative and remains statistically significant. The results are better for the internal capital market hypothesis in the small firm sample, but the pattern is roughly the same. For related mergers in columns (5) and (6), only one of the coefficients on the capital market variables is different from zero at conventional levels of significance, and that coefficient (on new bonds issued) is positive instead of negative. This suggests that the value of related mergers was not strongly connected to capital market conditions. Thus, some but not all of the evidence from the capital market variables provides support to the internal capital market hypothesis.

Turning to the agency cost hypothesis, the regressions in Table 6 fail to provide support for the hypothesis. The key variable is a dummy for firms with high cash flow and a low Q. The agency cost hypothesis predicts such “free cash flow” firms will earn lower announcement returns. The coefficient on the free cash variable, however, is positive for diversifying acquisitions, and insignificant in every regression. If anything, the estimates imply that the market rewarded diversifying acquisitions by firms with free cash flow. The bidder’s Q may be another proxy for agency problems, and presumably firms with a low Q would earn a lower return. The estimates support this prediction—the coefficient on the acquirer’s Q is positive in all regressions. However, the coefficient is large and statistically significant only during 1981–2006, which if anything points to increasing agency problems over time. The caveats mentioned above about the limits of this test should be kept in mind, but taken together, these findings provide little support for the idea that diversification declined because of a reduction in agency problems.

We conduct a variety of robustness tests for the estimates in Table 6 that we do not report. The results are virtually unchanged when we allow errors to be clustered by industry. The results are also quite similar if momentum is included in the benchmark model when calculating abnormal returns. If a manufacturing dummy is included in the regression, the coefficient on high KZ/low KZ in regression (3) loses statistical significance, but remains positive and larger than the coefficient in regression (4), and the rest of the results are essentially unchanged. If we include as a control variable the value added of the acquirer’s and target’s primary industry (as a percentage of the total value added), as a way to capture evolution in the importance of specific industries, the internal capital market results become more significant. Finally, the main results are unchanged when we add control variables for serial acquirers, and bankrupt or distressed acquirers.

6. Conclusion

This paper studies the announcement returns from diversifying mergers over a 57-year period using a new data set that spans essentially the entire history of the diversification movement. We find that the combined (acquirer plus target) return

from diversifying acquisitions was positive throughout the sample period, and the return from diversifying acquisitions was no lower than the return from related acquisitions. This evidence suggests that investors perceive diversification to be a value-creating strategy on average, and comports with evidence from profitability and productivity studies showing that diversification improves or at least does not hinder performance. The conclusion that diversification creates value may seem inconsistent with the large literature that shows the existence of a “diversification discount”—multisegment firms tend to trade at a lower price than comparable single segment firms (Lang and Stulz, 1994). However, recent theory (Matsusaka, 2001; Maksimovic and Phillips, 2002) and evidence (Campa and Kedia, 2002; Villalonga, 2004b) suggest that diversification might not cause the discount, rather discounted firms might be more likely to diversify.¹⁴ More research will be needed to sort out the alternative possibilities; our results are intended to advance the discussion by introducing event study evidence into a literature that has largely revolved around estimates of the diversification discount.

We also find that the market’s reaction to diversifying mergers, both in absolute terms and compared to related mergers, became markedly less positive in the 1970s and 1980s. It is well known that around the same time the number of diversifying mergers began to decline, and opinion turned against diversification. We explore two popular explanations for the change in opinion. According to the internal capital market hypothesis, diversification was particularly valuable in the 1950s, 1960s, and 1970s because external capital markets were undeveloped, but internal capital allocation became less valuable in the 1980s when capital markets became more efficient. Consistent with this view, we find that mergers between firms that were likely to be financially constrained received the highest announcement returns during 1950–1980, but not afterward. According to the agency cost hypothesis, diversification took place during 1950–1980 because capital markets could not control agency problems associated with free cash flow, but declined during 1981–2006 when capital markets became better at controlling managers. We explore this hypothesis by examining the returns to firms with abundant cash flow and limited investment opportunities—firms that are most likely to diversify because of agency problems according to Jensen (1986)—and find that the market did not penalize such acquisitions at any point throughout the period. Taken together, our evidence suggests that diversification can provide value when internal capital allocation is more efficient than external capital allocation, but that value has eroded over time. None of our evidence lends support to the view that agency problems are central to understanding corporate diversification. Our findings on the evolution of investor sentiment toward diversification are obviously preliminary, but we believe examination of time series

¹⁴ There is also evidence suggesting that diversified firms might not always trade at a discount historically (Servaes, 1996; Klein, 2001) and that the discount might not be present uniformly in other countries (Lins and Servaes, 1999, 2002).

evidence on diversification can add a useful perspective to a literature that has largely focused on cross-sectional implications.

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