Operating Performance and the Method of Payment in Takeovers

Randall Heron and Erik Lie*

Abstract

This study investigates the relation between the method of payment in acquisitions, earnings management, and operating performance for a large sample of firms that conducted acquisitions between 1985 and 1997. Prior to their acquisitions, acquirers exhibit levels of operating performance that exceed that of their respective industry peers. We find no evidence that acquirers manage their earnings prior to acquisitions, despite the possible incentives of managers who plan stock-based acquisitions to temporarily inflate their stock's purchasing power. Subsequent to acquisitions, acquirers continue to exhibit superior performance relative to their industry and experience significantly higher levels of operating performance than control firms with similar pre-event operating performance. Although the extant literature documents significant relations between the form of acquisition payment, announcement returns, and the post-acquisition excess return of acquirers, we find no evidence that the method of payment conveys information about the acquirer's future operating performance.

I.   Introduction

   Myers and Majluf (1984) show that in the presence of information asymmetry between managers and shareholders, managers have the incentive to issue stock when they perceive it to be overvalued. Consistent with this argument, numerous studies document that the average market reaction to the announcement of equity offerings is significantly negative (see, for example, Asquith and Mullins (1986), Masulis and Korwar (1986), and Mikkelson and Partch (1986)). In the context of acquisitions, this theory implies that acquiring firms prefer to pay for their acquisitions with stock when it is overvalued and cash when the stock is undervalued. Travlos (1987) reports empirical evidence consistent with this notion for a sample of 167 acquisitions conducted between 1972 and 1981. Travlos finds that, on average, acquirers experience negative excess returns at

the announcements of stock-financed acquisitions and "normal" returns at the announcements of cash-financed acquisitions. He concludes that "the findings are consistent with the signaling hypothesis, which implies that financing a takeover through exchange of common stock conveys the negative information that the bidding firm is overvalued" (p. 961).

Erickson and Wang (1999) recognize the possible incentives for firms that conduct stock-financed acquisitions to manage earnings by aggressively utilizing discretionary accruals to temporarily inflate the purchasing power of their stock, and thereby reduce the effective cost of the acquisition. They study a sample of 55 stock-financed acquisitions conducted between 1985 and 1990 and conclude that firms conducting stock-financed acquisitions manage their earnings upward prior to their acquisitions.

If managers choose to artificially inflate reported earnings in one period by aggressively using discretionary accruals, their decision will have an offsetting effect on future earnings because accounting procedures constrain accruals to reverse over time. As a result, if there exists a significant amount of earnings management before stock-financed acquisitions, we expect to see a decline in the operating performance reported by these firms after their acquisitions. This, in turn, might explain some of the poor stock price performance subsequent to stock-financed acquisitions documented by Loughran and Vijh (1997) and Rau and Vermaelen (1998).[1]

Healy, Palepu, and Ruback (1992) examine the operating performance of the 50 largest mergers between 1979 and 1984 and report that operating performance improves following acquisitions. Although it is not the primary focus of their study and it is not presented in a table, they do report the results of a regression in which they regress post-acquisition operating performance against pre-merger performance and a dummy variable capturing the form of financing. They conclude that there is no evidence to relate post-acquisition operating performance to the form of financing. Further, unlike Travlos (1987), they find no relation between the form of financing and the merger-related abnormal stock returns for the combined firm.

The apparent inconsistency between the results reported by Healy, Palepu, and Ruback (1992) vs. those reported by Travlos (1987), Loughran and Vijh (1997), Rau and Vermaelen (1998), and Erickson and Wang (1999) could be attributable to differences in the underlying samples. For example, Healy, Palepu, and Ruback's sample of 50 observations may be insufficient to accurately test for cross-sectional differences in operating performance across the methods of financing. Also, their emphasis on only the largest acquisitions may prevent their results from being generalized to the entire population of public acquisitions. Finally, although we are unable to determine from their analysis how many of the 50 acquisitions in their sample were financed with stock, cash, or both, it is apparent from our analysis that stock has become an increasingly popular means of financ-

[1]There is a significant amount of evidence that is consistent with this line of reasoning in the literature on seasoned equity offerings (SEOs). For instance, Loughran and Ritter (1997) show that operating performance increases in the periods leading up to SEOs and decreases in the subsequent periods, and Teoh, Welch, and Wong (1998) and Rangan (1998) show that discretionary accruals explain a significant portion of the decline in earnings and poor stock price performance subsequent to SEOs.

ing acquisitions relative to cash. Thus, the motivations for and the information conveyed by stock and cash acquisitions may have changed over time.

We reexamine the link between the method of payment in acquisitions, stock price reactions, and operating performance using a sample of 859 acquisitions conducted between 1985 and 1997. Like Travlos (1987), we document that acquiring firms experience negative abnormal stock returns around announcements of stock-financed acquisitions and normal returns around cash acquisitions. We further examine the total gains to the acquirers and targets for both cash and stock-financed acquisitions. Although combined firm returns are positive for both types of transactions, they are significantly higher for cash acquisitions. Consequently, our analysis of both bidder returns and combined firm returns suggests that announcements of cash acquisitions convey more favorable information than do announcements of stock acquisitions.

We also conduct tests to determine whether managers manipulate earnings upward prior to acquisitions by aggressively using discretionary accruals. There is no evidence of earnings management prior to acquisitions for our overall sample. Moreover, in contrast to Erickson and Wang (1999), when we partition our sample according to the method of payment (cash, mixed, and stock), we find no difference in the use of discretionary accruals across the payment categories. We reach similar conclusions when we conduct multivariate regressions where we use the fraction of cash-financing as the dependent variable and include discretionary accruals measures as explanatory variables.

Next, we find that acquiring firms experience above-industry levels of operating performance, both before and after acquisitions. Similar to Healy, Palepu, and Ruback (1992), there is no evidence that the trends in industry-adjusted operating performance differ across the three payment methods. For all categories of payment types, acquiring firms outperform their industries both before and after their acquisitions, and experience significant improvements in operating performance relative to control firms matched on industry classification and prior performance. Further tests suggest that the performance improvement following acquisitions is positively related to the acquirer's market-to-book ratio and negatively related to the target's market-to-book ratio, corroborating the findings of studies that relate share price gains surrounding takeover announcements to Tobin's Q ratios (Lang, Stulz, and Walkling (1989) and Servaes (1991)).

Finally, we offer some possible explanations for why both the announcement returns and post-acquisition stock returns differ across payment types even though the trends in operating performance subsequent to acquisitions are similar. An examination of the stock returns surrounding post-acquisition earnings announcements reveals that the puzzling stock return performance following acquisitions is not attributable to erroneous expectations regarding short-term earnings that correlate with the method of payment. Instead, we suggest that the stock return patterns might be partially due to changes in investors' perceptions of future growth opportunities or to changes in capital structure. With regard to the latter possibility, we document that debt ratios increase by significantly greater margins around cash acquisitions than around stock acquisitions.

The paper proceeds as follows. Section II discusses the sample selection and provides selected sample statistics. Section III presents our empirical tests. Section IV concludes.

II.   Sample and Descriptive Statistics

We examine acquisitions announced and completed between January 1985 and December 1997. The source of our sample is the Securities Data Company's (SDC) Mergers and Acquisitions database. Because our tests rely on financial data, we analyze only those transactions for which both the target and the acquiring firm are publicly traded and are covered on both CRSP and Compustat. We also exclude financial firms (SIC code beginning with 6) because they are subjected to regulatory requirements and use accounting practices that make them more difficult to analyze than other firms. This leads to an initial sample of 948 transactions. We then exclude 89 transactions for which either the sales or the assets (book value) of the target are less than 1% of the corresponding figures for the acquirer because the target's small relative size makes it unlikely to have a material influence on the acquiring firm's operations. The final sample consists of 859 acquisitions by 657 different acquirers. Sixty-five percent of the transactions occur between acquirers and targets that have the same two-digit SIC code.[2] Across the methods of payment, the percentage of transactions where the acquirer and target have the same two-digit SIC code is 58% for cash acquisitions, 76% for mixed payment acquisitions, and 67% for stock acquisitions.

Table 1 presents the sample distribution based on the year of announcement, as well as a breakdown according to the method of payment. Prior to 1990, the majority of deals involved cash payments, peaking at 74% in 1988. From 1991 onward, the majority of deals use stock payments, reaching a peak of 66% in 1996. Out of the total of 859 acquisitions, 342 (40%) were paid for with cash, 90 (10%) with a combination of cash and stock, and 427 (50%) with stock only.

Table 2 presents the distribution of the acquirers and targets according to exchange. Sixty-five percent of the acquirers traded on the NYSE, 5% on the AMEX, and 30% on the NASDAQ. In contrast, a majority of the targets (59%) traded on the NASDAQ, while 30% traded on the NYSE and 11% traded on the AMEX. The table also provides a further breakdown of the exchange listings of both acquirers and targets according to the method of payment. Among the firms that paid for their acquisitions with cash, 73% traded on the NYSE, which is slightly higher than the proportion of NYSE acquirers for the overall sample of 65%. For stock acquisitions, the proportion of the acquirers that traded on the NASDAQ (38%) is a little higher than the proportion of NASDAQ acquirers for the overall sample (30%). Roughly two-thirds (66%) of the stock acquisitions

---

[2]We use SIC codes from Compustat throughout. Because Compustat reports only the most recent SIC codes, we examined the SIC code histories on CRSP and found that the most recent codes (two-digit) for our acquirers match the codes at the time of the acquisition for over 92% of the cases. Moreover, in their study of SIC code sources, Kahle and Walkling (1996) conclude that "Compustat based comparisons are significantly more powerful in detecting abnormal performance than CRSP based comparisons" and that "Compustat's classification procedures overcome any disadvantage from not providing historical SIC codes" (p. 334).

TABLE 1

Sample Distribution by Year and Method of Payment

Year	Total	Cash Payment		Mixed Payment		Stock Payment	
		N	% of Total	N	% of Total	N	% of Total
1985	52	26	50%	8	15%	18	35%
1986	65	43	66%	7	11%	15	23%
1987	49	27	55%	3	6%	19	39%
1988	61	45	74%	7	11%	9	15%
1989	49	25	51%	5	10%	19	39%
1990	37	15	41%	4	11%	18	49%
1991	25	6	24%	5	20%	14	56%
1992	31	12	39%	3	10%	16	51%
1993	41	12	29%	8	20%	21	51%
1994	76	20	26%	8	11%	48	63%
1995	112	37	33%	9	8%	66	59%
1996	143	35	24%	14	10%	94	66%
1997	118	39	33%	9	8%	70	59%
Total	859	342	40%	90	10%	427	50%

Distribution of final sample of 859 mergers and acquisitions by year of announcement and method of payment.

TABLE 2

Sample Distribution by Exchange Listing and Method of Payment

Exchange	Full Sample		Cash Payment		Mixed Payment		Stock Payment	
	Acquirer	Target	Acquirer	Target	Acquirer	Target	Acquirer	Target
NYSE	65%	30%	73%	34%	62%	37%	59%	26%
AMEX	5%	11%	6%	15%	12%	12%	3%	8%
NASDAQ	30%	59%	21%	51%	26%	51%	38%	66%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Distribution of final sample of 859 mergers and acquisitions by exchange listing and method of payment.

involved targets that traded on the NASDAQ. This figure slightly exceeds the proportion of NASDAQ targets (59%) for the entire sample.

Table 3 provides descriptive statistics for the sample based on the last fiscal year prior to the acquisition and announcement period returns. Consistent with prior research, the size differential between acquirers and targets is greater for cash acquisitions than it is for acquisitions containing a stock component. In terms of median asset values, the typical target is 13% as large as the acquirer in cash acquisitions. This compares to 18% in stock acquisitions and 38% when the payment is a mix of cash and stock. Market-to-book ratios increase monotonically as the proportion of payment in the form of stock increases. Surprisingly, both parties involved in stock-based transactions have higher cash balances than do the participants in all cash or mixed payment transactions. This may be attributable to the positive relation between market-to-book ratios and cash levels documented by Opler, Pinkowitz, Stulz, and Williamson (1999).

We calculate announcement period returns for the acquirer, target, and the weighted combination of the two using the equity market values five days prior to the announcement date to determine the weights. The estimation period for the market model is −250 to −10 trading days relative to the announcement date and

TABLE 3

Descriptive Statistics

	Acquirer		Target		Combined	
	Mean	Median	Mean	Median	Mean	Median
Panel A. Cash Payment						
Assets	2,645	967	412	124		
Sales	3,116	1,056	515	168		
Market-to-book value of assets	1.655	1.433	1.462	1.219		
Cash scaled by assets	0.111	0.055	0.100	0.044		
Announcement period return	0.006	0.000	0.254*	0.214*	0.053*	0.030*
Panel B. Mixed Payment						
Assets	2,258	485	691	186		
Sales	2,510	476	819	152		
Market-to-book value of assets	2.020	1.374	1.528	1.298		
Cash scaled by assets	0.101	0.055	0.131	0.077		
Announcement period return	0.003	−0.003	0.193*	0.151*	0.050*	0.030*
Panel C. Stock Payment						
Assets	1,993	490	546	88		
Sales	2,052	496	467	90		
Market-to-book value of assets	2.673	1.959	2.160	1.541		
Cash scaled by assets	0.178	0.097	0.182	0.093		
Announcement period return	−0.019*	−0.019*	0.171*	0.145*	0.009*	0.006**

Descriptive statistics for 342 mergers and acquisitions financed with cash, 427 financed with stock, and 90 with a combination of cash and stock. All figures are based on the fiscal year immediately preceding the announcement. Market-to-book value of assets is defined as (book value of assets, less the book value of equity, plus the market value of equity) / book value of assets. Cash scaled by assets is the sum of cash and cash equivalents divided by the book value of assets. The announcement period return for the acquirer and the target is the abnormal stock return from one day before through one day after the announcement date. The combined announcement period return is estimated as the weighted average of the announcement period returns to the acquirer and the target, where the weights are the market values of equity five days before the announcement date.

* and ** denote that the announcement period returns are significantly different from zero at the 0.01 and 0.05 levels, respectively.

the CRSP equal-weighted index is used to proxy market returns. Announcement period returns are defined to be the abnormal return over the interval from one day before to one day after the announcement date. The mean and median announcement returns of the targets are significantly positive across all three methods of payment. However, the average target firm announcement return of 25.4% when target shareholders receive cash payments is significantly higher than the corresponding average return of 17.1% when shareholders receive stock payments. The announcement returns for acquiring firms do not significantly differ from zero when the form of payment is either cash or a mix of cash and stock. In contrast, the average abnormal announcement period decline in the value of the acquiring firms in stock-financed acquisitions of −1.9% is significantly different from zero at the 1% level. Although combined announcement period returns are significantly positive across all three payment methods, the 5.3% combined announcement period return for cash acquisitions is significantly higher than the corresponding 0.9% combined announcement period return for stock acquisitions (p-value < 0.01).[3]

---

[3]The announcement return results are consistent with the findings of Travlos (1987). They are also consistent with Wansley, Lane, and Yang (1983) and Huang and Walkling (1987) who suggest that the difference in target shareholder returns across payment methods is due to a tax effect. Because gains

III.   Empirical Tests

A.   Earnings Management

Loughran and Vijh (1997) note that a stock merger can be viewed in two parts: an equity issue and a merger. Because of the equity issuance component in a stock-based merger, managers of bidding firms may have incentives to manage their earnings prior to the acquisition in an attempt to temporarily inflate the firm's stock price and reduce the total cost of the acquisition.

To examine earnings management, we estimate accruals based on the procedure described in Teoh, Welch, and Wong ((1998), Appendix A), which is a modification of the Jones (1991) model. This procedure recognizes that some accruals are nondiscretionary, in that they are dictated by overall business conditions and are not subject to manipulation by managers, while other accruals (discretionary accruals) are likely to be managed. Because Guenther (1994) and Sloan (1996) suggest that managers have more discretion over current accruals, we analyze current and long-term accruals separately.

Table 4 presents median levels of discretionary accruals for the three fiscal years preceding the merger and for the year of the merger. Across all three payment classifications and all four years, we find no instances in which the median level of discretionary accruals differs significantly from zero at the 0.05 level. Hence, any earnings management prior to acquisitions is not pervasive, and represents an imperceptible component of annual earnings.

As a robustness check of our results in a multivariate framework, we regress the fraction of the transaction value that is paid with cash against the discretionary accruals in the fiscal year preceding the acquisition and various control variables. Because the dependent variable is censored at zero and one, we estimate a double-censored Tobit model. If the managers of acquirers aggressively use discretionary accruals to inflate the value of their stock as a form of currency in the transaction, the sign on our discretionary accruals variables should be negative.

Table 5 reports the results of this multivariate analysis. Consistent with Martin (1996), we find a highly significant positive relationship between the use of cash and the mode of acquisition being a tender offer. Not surprisingly, the proportion of cash used increases with the acquirer's cash balance relative to the total transaction value. Consistent with the arguments of Myers (1977) and Jung, Kim, and Stulz (1996) and the empirical results of Martin (1996), the proportion of cash used is significantly negatively related to the market-to-book ratio of the acquirer. Additionally, the cash proportion is significantly negatively related to the market-to-book ratio of the target. This can be interpreted as consistent with the Hansen (1987) model. Hansen argues that the acquirer would prefer to finance the acquisition with equity when the target's managers are more informed than the acquirer's managers about the true target value, because this will force the

---

in stock acquisitions are tax deferred for the target's shareholders, whereas gains in cash acquisitions create immediate tax obligations, acquirers that pay with cash must compensate the target's shareholders with higher returns. Wansley, Lane, and Yang (1987) suggest that the resulting higher premiums in cash acquisitions enhance the signal of the payment method. However, Erickson (1998) finds that tax characteristics associated with the target and its shareholders do not materially affect acquisition structure and that the benefits of tax deferral for the target's shareholders are modest.

TABLE 4

Median Discretionary Accruals Categorized by Form of Payment

	Fiscal Year Relative to Announcement			
	−3	−2	−1	0
Panel A. Cash Payment				
Discretionary current accruals	0.004	−0.004	0.001	0.009
Discretionary long-term accruals	−0.009	−0.005	−0.005	−0.011
Number of observations	283	294	312	304
Panel B. Mixed Payment				
Discretionary current accruals	−0.009	0.000	0.014	0.003
Discretionary long-term accruals	−0.014	−0.003	−0.021	−0.035
Number of observations	65	69	76	75
Panel C. Stock Payment				
Discretionary current accruals	−0.001	0.006	0.000	0.009
Discretionary long-term accruals	−0.009	−0.015	−0.009	−0.026
Number of observations	342	375	395	383

Median discretionary accruals during the three fiscal years preceding acquisitions. The calculation of discretionary accruals is described in detail in Teoh, Welch, and Wong (1998). The discretionary accruals are scaled by the book value of assets. None of the median accruals are significantly different from zero at the 0.05 level.

target's shareholders to share in any subsequent revaluations. Hence, if the probability of overvaluation increases with the market-to-book ratio, acquirers are more inclined to use equity financing in takeovers of targets with high market-to-book ratios.

The statistical insignificance of the coefficients on the discretionary accrual variables (model b) corroborates our earlier conclusions based on the univariate comparisons of Table 4. Specifically, there is no evidence to link the use of discretionary accruals to the method of payment in acquisitions, as the *p*-values of both coefficients exceed 0.05. While the coefficient on discretionary long-term accruals has a *p*-value of 0.07, the sign of the coefficient is contrary to the prediction. Thus, managers in stock-based acquisitions do not appear to systematically engage in deceptive accounting practices to inflate the purchasing power of their stock.

Our results with regard to discretionary accruals differ from those of Erickson and Wang (1999), who report that in their sample of 55 stock-financed acquisitions, unexpected (i.e., discretionary) accruals are positive during the fiscal quarters before the announcement date. The different results may be attributable to different samples or different procedures for estimating unexpected accruals. Guay, Kothari, and Watts (1996) argue that discretionary accrual models are best applied for large non-random samples in which managers have clear incentives to use discretionary accruals. Because our sample is several times larger than that of Erickson and Wang, our results should be more reliable. Regarding methodology, both this study and that of Erickson and Wang estimate unexpected accruals as the deviation from the accruals predicted using a regression model. However, while we estimate the regression model for each firm-year using data for firms in the same industry during the same year, Erickson and Wang estimate the regression model only once for their whole sample using within sample financial data

TABLE 5

Tobit Regression of Payment Type

	(a)	(b)
Intercept	0.338	0.390
	(0.257)	(0.204)
Tender offer	5.379	5.300
	(0.000)	(0.000)
Assets of target / (Assets of target + Assets of acquirer)	−1.711	−1.722
	(0.006)	(0.007)
Cash of acquirer / Transaction value	0.220	0.201
	(0.008)	(0.016)
Market-to-book value of assets for acquirer	−0.251	−0.233
	(0.005)	(0.010)
Market-to-book value of assets for target	−0.359	−0.375
	(0.002)	(0.002)
Discretionary current accruals		−0.750
		(0.288)
Discretionary long-term accruals		1.386
		(0.066)
Log likelihood	−533.00	−483.88
Adjusted R^2 (from OLS regression)	0.497	0.499
Number of observations	839	764

Regressions of the fraction of the transaction that is paid with cash against various independent variables using a double-censored Tobit model (censored at zero and one). Tender offer is a dummy variable that equals one if the acquisition takes the form of a tender offer and zero if it takes the form of a merger. Assets of target and Assets of acquirer are the book value of assets for the target and acquirer, respectively, at the end of the fiscal year preceding the acquisition. Cash of acquirer is the cash and cash equivalents of the acquirer at the end of the fiscal year preceding the acquisition. Transaction value is the total value of the acquisition as given by the SDC. Market-to-book value of assets for acquirer and Market-to-book value for target are the ratios of market value of assets to book value of assets for the target and acquirer, respectively, at the end of the fiscal year preceding the acquisition. The calculation of discretionary accruals is described in detail in Teoh, Welch, and Wong (1998). The discretionary accruals are scaled by the book value of assets. All figures are based on the fiscal year immediately preceding the announcement. p-values are given in parentheses.

during the quarters before the acquisitions. We believe that our approach is superior because we capture industry effects during the same period and because our models to estimate expected accruals employ out-of-sample firms with "normal" accruals. On the other hand, we acknowledge that the use of quarterly data may in certain circumstances improve the power of tests for earnings management.

B.   Analysis of Operating Performance

We measure operating performance as operating income scaled by sales. This measure should be immune to the mechanical effects that the method of accounting for the merger (purchase or pooling accounting) and the method of financing (cash or equity) have on financial statement items such as net income and book value of assets.[4] We also considered scaling operating income by the market value of assets in a manner similar to that of Healy, Palepu, and Ruback

---

[4]Kaplan (1989) uses this measure in his analysis of management buyouts and Hotchkiss and Mooradian (1998) employ a similar procedure in their analysis of acquisitions of firms in Chapter 11. Further, Barber and Lyon (1996) suggest that scaling operating income by sales is the appropriate measure of operating performance when firms have recently purchased operating assets or conducted acquisitions.

(1992). However, because market values are likely to increase (decrease) given an increase (decrease) in operating income, we were concerned that this measure could conceal any changes in performance.

We compare the operating performance of our sample firms to two benchmarks to control for factors beyond the merger transactions that may affect performance. First, to control for changing industry and economy-wide conditions, we compute an industry-adjusted performance metric by comparing the operating performance of the sample firms to the median operating performance of firms in the same three-digit SIC code. Second, to also control for possible mean reversion resulting from abnormal pre-event performance, we compare the operating performance of the sample firms to that of a sample of firms in a similar industry with similar pre-event performance. The simulation results in Barber and Lyon (1996) indicate that this benchmark is superior to a benchmark based solely on industry, especially for samples that exhibit abnormal pre-event performance, as is the case for our sample. Because Healy, Palepu, and Ruback (1992) only employ an industry benchmark, we believe that our study represents an improvement in methodology.

To construct the sample of control firms with similar operating performance, we first identify all firms with the same two-digit SIC code. Among these firms, we earmark those with operating performance within $\pm 10\%$ or within ± 0.01 of the performance of the sample firm in the year preceding the completion of the merger. Finally, among firms that satisfy these criteria, we choose the single firm whose performance is closest to that of the original sample firm. These criteria yield control firms for approximately 94% of our sample firms. If no firms meet these criteria, we repeat the process first for firms with the same one-digit SIC (which yields control firms for about 4% of our sample firms), and then for all firms without regard to SIC code (which yields control firms for about 2% of our sample firms). If still no firms meet the criteria, we choose as the control firm the firm whose performance is closest to that of the original sample firm.

During the years before the completion of the merger, we compare the operating performance of the acquirer to that of the acquirer's control firm. During the subsequent years, we compare the performance of the merged firm to the weighted performance of the acquirer's control firm and the target's control firm, where the weights are determined by the sales of the target and the acquirer in the fiscal year preceding the merger completion. We require both our sample firms and their control firms to have operating performance data available from one year before through two years after the merger.[5] Furthermore, we only report medians, because Barber and Lyon (1996) find that non-parametric tests are uniformly more powerful than parametric tests in studies of operating performance.

Table 6 shows that the trends in the levels of operating performance are similar across the payment types. For all payment categories, acquirers exhibit significantly higher levels of operating performance than their counterparts in the

---

[5]Although our requirement that firms have operating performance data available both before and after the acquisition is necessary to make valid comparisons across time with control firms matched on the basis of industry and similar pre-acquisition operating performance, we obtain virtually identical median levels of unadjusted operating performance and median levels of industry-adjusted performance if we include all firms that have information available at any particular time.

same industry in the years leading up to the acquisition. The superior operating performance continues following the acquisitions, at which point acquiring firms outperform their industry medians by margins that are, with one exception, significant at the 1% level across all payment types. Subsequent to their acquisitions, acquirers that pay with stock outperform their industries by slightly greater margins than acquirers that pay with cash.

TABLE 6

Median Operating Income Scaled by Sales

	Fiscal Year Relative to Completion							Median Changes		
	− 3	− 2	− 1	0	+1	+2	+3	− 1 to +1	− 1 to +2	− 1 to +3
Panel A. Cash Payment										
Unadjusted income	0.129	0.131	0.138	0.135	0.134	0.135	0.131	−0.002	0.002	0.000
Industry-adjusted income	0.027*	0.030*	0.032*	0.031*	0.028*	0.029*	0.024*	−0.003	−0.003	−0.003
Performance-adjusted income	0.000	0.000	0.000	0.014*	0.016*	0.016*	0.017*	0.016*	0.016*	0.018*
Number of observations	247	260	260	260	260	260	218	260	260	218
Panel B. Mixed Payment										
Unadjusted income	0.130	0.149	0.132	0.127	0.124	0.132	0.125	−0.002	0.000	−0.008
Industry-adjusted income	0.039*	0.047*	0.041*	0.032*	0.029*	0.033*	0.023**	−0.001	0.001	0.000
Performance-adjusted income	−0.007	0.000	0.000	0.008	0.028*	0.032*	0.018	0.028*	0.034*	0.018
Number of observations	65	70	71	71	71	71	57	71	71	57
Panel C. Stock Payment										
Unadjusted income	0.146	0.153	0.159	0.150	0.153	0.146	0.150	0.005	0.006	0.004
Industry-adjusted income	0.039*	0.043*	0.059*	0.048*	0.045*	0.052*	0.045*	0.005	0.005	0.003
Performance-adjusted income	0.010	0.000	0.000	0.010	0.018*	0.021*	0.027*	0.018*	0.020*	0.027*
Number of observations	267	279	279	279	279	279	195	279	279	195

Median levels and median changes of operating income scaled by sales. The numbers before year zero represent those of the acquirer, while the subsequent years represent the combined firms. Industry-adjusted operating income is the paired difference between the operating income of the sample firms and the median figure for firms with the same three-digit SIC code. Performance-adjusted operating income is the paired differences between the operating income of the sample firms and the operating income of their respective performance-matched control firms.

* and ** denote significantly different from zero at the 0.01 and 0.05 levels, respectively.

All unadjusted median levels are significantly different from zero at the 0.01 level.

Our results further suggest that all categories of acquiring firms significantly outperform their control firms matched on industry and pre-event performance following the acquisitions. The difference in operating performance between acquiring firms and their control firms in cash-based acquisitions ranges from +0.016 in year one to +0.017 in year three for cash-based acquisitions, from +0.018 to +0.027 for stock-based acquisitions, and from +0.028 to +0.018 for acquisitions with mixed payments. With the exception of the figure for year three for the mixed payment category, all of these figures differ from zero at the 0.01 significance level. The final three columns show similar results when examining changes in operating performance relative to the control groups. Most importantly for the purposes of this study, there is little evidence that the changes in performance-adjusted operating income differ across the three payment categories. Regardless of the interval over which the change in performance-adjusted

operating income is measured, the differences are not statistically significant at the 0.10 level.

C.   Multivariate Analysis of Changes in Operating Income

We next utilize a multivariate framework to determine whether the improvements in operating performance that we document in Table 6 are related to characteristics of the acquisition agreement, the target firm, and the acquiring firm. The dependent variable for the regressions is the change in the performance-adjusted operating income scaled by sales. The independent variables include a dummy variable indicating a tender offer, the ratio of the size of the target firm relative to that of the combined firm, market-to-book ratios for both the acquirer and the target, a dummy variable indicating that the acquirer and the target are in the same industry (same two-digit SIC code), the fraction of the transaction proceeds that were paid in cash, and our estimates of discretionary accruals in the fiscal year preceding the acquisition. The changes in operating income are winsorized at the fifth and 95th percentiles to reduce the influence of extreme values.

Table 7 contains four regression models. In the first two models, the dependent variable is the change in the ratio of performance-adjusted operating income to sales from the year before to the year after the acquisition. In the third and fourth models, the dependent variable is the change in performance-adjusted operating income from a year before through two years after the acquisition.

The results offer no evidence that the changes in operating performance are related to the form of acquisition (merger vs. tender offer) or the size of the target relative to that of the acquirer.[6] Consistent with our prior univariate results, there is also no evidence that the changes in operating performance are related to the fraction of the transaction paid with cash. We also included our estimates of discretionary accruals in the year preceding the acquisitions in the regression model as a robustness check. As expected, we find a significantly negative relationship between the use of discretionary accruals and the change in performance-adjusted operating income from the year preceding the acquisition to the year subsequent to the acquisition. Thus, even though there is no systematic evidence of earnings management for any of the payment categories, the negative coefficients on the discretionary accruals measures show that when individual firms manage earnings upward prior to their acquisitions (i.e., they have positive discretionary accruals), they experience subsequent earnings deterioration. The stronger relation between discretionary current accruals and subsequent earnings than between discretionary long-term accruals and subsequent earnings is consistent with the conjecture that discretionary current accruals are better indicators of earning management than discretionary long-term accruals (Teoh, Welch, and Wong (1998)).

The significantly positive coefficient on the same industry variable suggests that operating performance improvements are significantly greater when target

---

[6]Any relation between operating performance and the form of acquisition could reflect a relation between managerial resistance to the merger and operating performance, because tender offers are more likely to be resisted than mergers. For example, a takeover that is resisted might result in managerial turnover, which in turn could affect operating performance through different management styles or purposeful accounting manipulation.

TABLE 7

Regression of Change in Operating Income

	Dependent Variable is the Change in Performance-Adjusted Operating Income from Year −1 to:			
	Year +1		Year +2	
Intercept	0.009 (0.497)	0.008 (0.512)	0.001 (0.926)	0.008 (0.626)
Tender offer	0.006 (0.632)	0.009 (0.490)	0.001 (0.955)	0.012 (0.441)
Assets of target / (Assets of target + Assets of acquirer)	−0.001 (0.957)	−0.005 (0.811)	0.006 (0.818)	0.000 (0.989)
Market-to-book value of assets for acquirer	0.008 (0.009)	0.010 (0.001)	0.016 (0.000)	0.018 (0.000)
Market-to-book value of assets for target	−0.008 (0.018)	−0.010 (0.005)	−0.008 (0.085)	−0.008 (0.080)
Same industry	0.018 (0.043)	0.019 (0.038)	0.026 (0.019)	0.023 (0.054)
Fraction of transaction paid with cash	0.002 (0.887)	−0.002 (0.846)	−0.001 (0.934)	−0.015 (0.349)
Discretionary current accruals		−0.078 (0.008)		−0.061 (0.107)
Discretionary long-term accruals		−0.054 (0.063)		−0.036 (0.348)
p-value for F-test	0.045	0.001	0.000	0.000
Adjusted R^2	0.013	0.037	0.034	0.041
Number of observations	590	537	590	537

Regressions of the change in performance-adjusted operating income scaled by sales against various independent variables. The changes in operating income have been winsorized at the fifth and 95th percentiles to mitigate the effect of outliers. Tender offer is a dummy variable that equals one if the acquisition takes the form of a tender offer and zero if it takes the form of a merger. Assets of target and Assets of acquirer are the book value of assets for the target and acquirer, respectively, at the end of the fiscal year preceding the acquisition. Market-to-book value of assets for acquirer and Market-to-book value for target are the ratios of market value of assets to book value of assets for the target and acquirer, respectively, at the end of the fiscal year preceding the acquisition. Same industry is a dummy variable equal to one if the acquirer and target have the same primary two-digit SIC code and zero otherwise. The calculation of discretionary accruals is described in detail in Teoh, Welch, and Wong (1998). The discretionary accruals are scaled by the book value of assets. All figures are based on the fiscal year immediately preceding the announcement. p-values are given in parentheses.

firms are from the same industry as the acquirer. This result is broadly consistent with numerous studies in the financial literature related to focus vs. diversification in takeovers, including Bhagat, Shleifer, and Vishny (1990), Berger and Ofek (1995), (1996), Comment and Jarrell (1995), John and Ofek (1995), Servaes (1996), Maquieira, Megginson, and Nail (1998), and Rajan, Servaes, and Zingales (2000).

The coefficient on the market-to-book asset ratio for the acquirer suggests that operating performance improvements are positively and significantly related to the market-to-book ratio of the acquiring firm. Conversely, there is a negative relation between the change in operating income and the market-to-book asset ratio of the target firm. To the extent that higher market-to-book asset ratios proxy for "well-managed" firms, our results suggest that, ceteris paribus, improvements in operating performance are greater when well-managed firms conduct acquisitions of poorly performing firms. An alternative interpretation is that improve-

ments in operating performance are greater when firms with good growth opportunities acquire firms with poor growth opportunities. Although not reported in the table, we also estimated a regression model that includes an interaction term between the market-to-book ratios of the acquirer and the target and found the coefficient on this interaction term to be significantly positive. This further corroborates the result that the improvements in operating performance are significantly greater when firms with high market-to-book ratios acquire targets with low market-to-book ratios. Collectively, our results are consistent with Lang, Stulz, and Walkling (1989) and Servaes (1991), who find that takeover gains, measured as stock price performance around acquisition announcements, are greater when high Q firms acquire low Q targets.[7]

D. Reconciling Operating Performance with Stock Returns

The similar results on operating performance across payment methods contrast with both our announcement returns results and the long-term stock return patterns of acquirers reported by Loughran and Vijh (1997) and Rau and Vermaelen (1998). This is puzzling because a firm's operating performance is presumably an important determinant of its market value. In the remainder of this analysis, we explore some possible explanations to reconcile these findings.

1. Erroneous Earnings Expectations and the Market Reaction to Post-Acquisition Earnings Announcements

One potential explanation for the weak relation between stock returns and operating performance subsequent to acquisitions is that investors systematically develop erroneous expectations of near-term earnings performance subsequent to acquisitions that correlate with the method of payment. For example, although operating performance following all types of acquisitions tends to improve relative to benchmarks, investors may have expected even greater improvements following stock acquisitions or smaller improvements following cash acquisitions.

We examine this possibility by estimating the abnormal stock price reactions to quarterly earnings announcements over the three years subsequent to the completion of the acquisitions. Brous, Datar, and Kini (2001) and Denis and Sarin (2001) use this approach to investigate whether investor overoptimism at the time of seasoned equity offerings is responsible for the well-documented decline in stock price performance subsequent to seasoned equity offerings.

We acknowledge that quarterly earnings announcements are not the only time when investors update their expectations with regard to a firm's value. Investors receive information through various sources throughout each quarter that affect their estimates of quarterly earnings, and thus value. However, our tests only rely on the assumption that stock price reactions to quarterly earnings announcements provide additional information to capital markets about current and future earnings. A review of the literature on quarterly earnings announcements dating back to Ball and Brown (1968) suggests that this assumption is reasonable.

---

[7]If we do not winsorize the changes in operating income, the same industry coefficient is not statistically significant and the two market-to-book coefficients remain significant only when the change in operating income is measured from year -1 to year $+1$. Most importantly, the results for the fraction of cash are the same.

We obtain the vast majority of our quarterly earnings announcement dates from Compustat. In those cases where earnings announcement dates were not available from Compustat, we collected them from the Wall Street Journal Index.[8] We have dates of earnings announcements made by the acquiring firms for a period of up to three years subsequent to the effective date of the acquisition for over 98% (844 of 859) of our sample firms.[9] In total, the collection of individual earnings announcement dates consists of 8,657 observations (3,455 announcements subsequent to 337 cash acquisitions, 940 announcements subsequent to 89 mixed payment acquisitions, and 4,262 announcements subsequent to 418 stock acquisitions).

As is apparent from Table 8, there is no evidence that investors are more pleasantly surprised at the announcements of quarterly earnings following cash acquisitions than following stock acquisitions. In fact, the mean (median) cumulative raw return during the three-day window around the earnings announcements of 0.23% (0.05%) for cash acquirers is lower than the corresponding mean (median) raw return of 0.80% (0.55%) for mixed payment acquirers and the mean (median) raw return of 0.49% (0.36%) for stock acquirers. The corresponding abnormal returns based on a one-factor market model (same estimation parameters as used earlier) paint a similar picture. Neither the mean cumulative abnormal return of 0.09% nor the median of -0.09% for cash acquirers is significantly different from zero at conventional levels. In contrast, the mean (median) of 0.56% (0.37%) for mixed payment acquirers and 0.30% (0.27%) for stock acquirers are statistically greater than zero (p-values < 0.05).[10]

2. Investors' Expectations of Future Growth Opportunities

A second potential explanation is that the stock return patterns reflect changing investor perceptions of future growth opportunities rather than changes in near-term earnings or operating performance. For example, the stock prices could reflect an overly optimistic (pessimistic) view of future growth opportunities at the announcements of stock (cash) acquisitions. If the market-to-book ratio captures the market's perceptions of future growth opportunities, this line of reasoning is consistent with our earlier results, which indicate that for both acquirers and targets, market-to-book ratios are significantly higher before stock acquisitions than before cash acquisitions (the p-values for tests of mean and median differences are less than 0.01 for both acquirers and targets).[11] This explanation is also

---

[8]Because Compustat quarterly data is available for only the most recent 48 quarters, nearly all of the earnings announcements for the acquisitions completed prior to 1989 come from the Wall Street Journal Index.

[9]Of the handful of firms for which we could not uncover any earnings announcement dates, there were a few cases where the firm itself was acquired almost immediately subsequent to the effective date of their acquisition of another company or entered bankruptcy proceedings. If an acquiring firm in our sample is taken over or otherwise ceases to exist prior to three years subsequent to the acquisition it conducted, we still include in our analysis all of its earnings announcements before it disappeared as a public company.

[10]We obtain similar results if we use alternative abnormal return methods such as a market-adjusted approach.

[11]Loughran and Ritter (1997) and Hertzel, Lemmon, Linck, and Rees (1999) advance similar arguments in the context of equity offerings.

TABLE 8

Returns Surrounding Quarterly Earnings Announcements

	Cash Payment		Mixed Payment		Stock Payment	
	(3,455 announcements made by 337 different firms)		(940 announcements made by 89 different firms)		(4,262 announcements made by 418 different firms)	
	Mean	Median	Mean	Median	Mean	Median
Raw return	0.0023	0.0005	0.0080	0.0055	0.0049	0.0036
Abnormal return	0.0009	−0.0009	0.0056	0.0037	0.0030	0.0027
	(0.407)	(0.324)	(0.007)	(0.029)	(0.023)	(0.001)
Percent positive	49.2%		53.6%		52.5%	

Raw returns and abnormal returns surrounding the quarterly earnings announcements made by acquiring firms over the three years subsequent to the effective date of their acquisitions. A three-day window (−1 to +1) is used to measure the returns surrounding each earnings announcement. Abnormal returns are based on the one-factor market model where the equal-weighted index is used to proxy overall market returns and the estimation period spans from −250 to −10 days prior to the announcement. p-values are in parentheses.

consistent with Rau and Vermaelen's (1998) finding that "glamour" firms exhibit significantly lower post-acquisition returns than "value" firms.

3.   Changes in Capital Structure

A third possibility is that the relation between stock returns and payment method is attributable to differential changes in capital structure and, thus, the cost of capital. Numerous studies report a positive stock price reaction to debt-increasing events and a negative stock price reaction to debt-decreasing events (see Smith (1986) for a review). Lewellen (1971) suggests that cost of capital considerations alone could provide a substantial source of value enhancement in acquisitions due to greater debt capacity.

We investigate this issue by examining whether the debt ratio changes around acquisitions are related to the method of payment. Because the different methods of accounting for acquisitions correlate highly with the method of payment, we standardize debt ratios by sales rather than assets.[12]

As is evident from Table 9, from the year prior to the acquisition to the year after, debt ratios for the combined firm increase significantly across all methods of payment. However, the median change in debt ratios around cash acquisitions of 9.1% is economically and statistically larger than the corresponding median change in debt ratios around stock acquisitions of 2.2% (the p-value for statistical difference is less than 0.01).

In light of Fama's (1998) "bad model" arguments and the recent work of Eckbo, Masulis, and Norli (2000), the puzzling patterns in the long-term stock returns of acquiring firms may also be attributable to factors such as leverage that are not captured in most models of the return-generating process. For example, the research of Eckbo, Masulis, and Norli (2000) suggests that leverage is an important, yet omitted factor when returns following security offerings are benchmarked on the basis of size and market-to-book ratios. Similarly, our findings of

---

[12]As an alternative, we could have standardized by the market value of assets. However, this could conceal any debt changes if the market value increases with the amount of debt.

TABLE 9

Median Debt Ratios

	Cash Payment		Mixed Payment		Stock Payment	
	Median	N	Median	N	Median	N
Year prior to the acquisition (−1)	0.441	340	0.569	90	0.457	424
Year subsequent to the acquisition (+1)	0.564	307	0.698	86	0.520	383
Median change from year −1 to year +1	0.091*	306	0.099*	86	0.022*	382

Median levels and median changes in debt ratios. The debt ratio is estimated as total liabilities scaled by sales. All numbers represent those of the combined firm. * denotes that the median change is significantly different from zero at the 0.01 level. The median change from year −1 to year +1 is significantly larger for cash acquisitions than for stock acquisitions (p-value < 0.01).

a significantly larger increase in leverage around cash acquisitions could explain the difference in long-term stock returns following stock and cash acquisitions if leverage is omitted from the model used to benchmark long-term stock returns.

IV. Conclusion

Using a large sample of acquisitions announced and completed between 1985 and 1997, we investigate potential pre-event earnings management and post-event changes in operating performance. Even though acquiring firms exhibit superior operating performance relative to their industry counterparts prior to acquisitions, we find no evidence of earnings management. Subsequent to acquisitions, acquiring firms continue to exhibit operating performance levels in excess of their respective industries and significantly outperform control firms with similar pre-event operating performance.

When we categorize our sample according to payment type, we find no difference in the pre-acquisition discretionary accruals or post-acquisition changes in operating performance across payment categories. These results persist in a multivariate framework. Consequently, the method of payment does not appear to provide information regarding the firms' future operating performance. Instead, we find that improvements in operating performance subsequent to acquisitions are significantly greater when firms with higher market-to-book ratios acquire firms with low market-to-book ratios and when the acquirer and target belong to the same industry.

If the changes in operating performance do not differ materially following stock and cash acquisitions, why are both the announcement returns and the post-acquisition long-term returns lower for stock acquisitions? Our empirical tests provide little support for the notion that firms that conduct stock acquisitions disappoint their investors when they announce quarterly earnings after their acquisitions. Alternatively, investors may be overly optimistic about long-term future growth opportunities before announcements of stock acquisitions. Although the subsequent operating performance might not materially change, stock prices will change as investors revise their expectations of longer-term growth opportunities.

A final possibility is that the trends in stock returns are due to differential changes in capital structure rather than operating performance. In this regard, we document a more dramatic increase in debt ratios around cash acquisitions than around stock acquisitions, which, in turn, may contribute to the higher announcement and post-acquisition returns for cash acquisitions.

References

Asquith, P., and D. Mullins. "Equity Issues and Offering Dilution." *Journal of Financial Economics,* 15 (1986), 61–89.

Ball, R., and P. Brown. "An Empirical Evaluation of Accounting Income Numbers." *Journal of Accounting Research,* 6 (1968), 159–178.

Barber, B. M., and J. D. Lyon. "Detecting Abnormal Operating Performance: The Empirical Power and Specification of Test Statistics." *Journal of Financial Economics,* 41 (1996), 359–399.

Bhagat, S.; A. Shleifer; and R. Vishny. "Hostile Takeovers in the 1980s: The Return to Corporate Specialization." Brookings Papers on Economic Activity, *Microeconomics,* (1990), 1–72.

Berger, P., and E. Ofek. "Diversification's Effect on Firm Value." *Journal of Financial Economics,* 37 (1995), 39–65.

——————————. "Bustup Takeovers of Value-Destroying Diversified Firms." *Journal of Finance,* 51 (1996), 1175–1200.

Brous, P. A.; V. T. Datar; and O. Kini. "Is the Market Optimistic about the Future Earnings of Seasoned Equity Offering Firms?" *Journal of Financial and Quantitative Analysis,* 36 (2001), 141–168.

Comment, R., and G. Jarrell. "Corporate Focus and Stock Returns." *Journal of Financial Economics,* 37 (1995), 67–87.

Denis, D., and A. Sarin. "Is the Market Surprised by Poor Earnings Realizations following Seasoned Equity Offerings?" *Journal of Financial and Quantitative Analysis,* 36 (2001), 169–193.

Eckbo, E. B.; R. W. Masulis; and O. Norli. "Seasoned Public Offerings: Resolution of the 'New Issues Puzzle'." *Journal of Financial Economics,* 56 (2000), 251–291.

Erickson, M. "The Effect of Taxes on the Structure of Corporate Acquisitions." *Journal of Accounting Research,* 36 (1998), 279–298.

Erickson, M., and S. Wang. "Earnings Management by Acquiring Firms in Stock for Stock Mergers." Journal of Accounting and Economics, 27 (1999), 149–176.

Fama, E. F. "Market Efficiency, Long-Term Returns, and Behavioral Finance." *Journal of Financial Economics,* 49 (1998), 283–306.

Guay, W.; S. Kothari; and R. Watts. "A Market-Based Evaluation of Discretionary Accrual Models." *Journal of Accounting Research* (Supplement), 34 (1996), 83–105.

Guenther, D. "Measuring Earnings Management in Response to Corporate Tax Rate Changes: Evidence from the 1986 Tax Reform Act." *Accounting Review,* 69 (1994), 230–243.

Hansen, R. G. "A Theory for the Choice of Exchange Medium in Mergers and Acquisitions." *Journal of Business,* 60 (1987), 75–95.

Healy, P.; K. Palepu; and R. Ruback. "Does Corporate Performance Improve after Takeovers?" *Journal of Financial Economics,* 31 (1992), 135–175.

Hertzel, M.; M. Lemmon; J. S. Linck; and L. Rees. "Long-Run Performance following Private Placements of Equity." Working Paper, Arizona State Univ. (1999).

Hotchkiss, E. S., and R. M. Mooradian. "Acquisitions as a Means of Restructuring Firms in Chapter 11." *Journal of Financial Intermediation,* 7 (1998), 240–262.

Huang, Y. S., and R. A. Walkling. "Target Abnormal Returns Associated with Acquisition Announcements: Payment, Acquisition Form, and Managerial Resistance." *Journal of Financial Economics,* 19 (1987), 329–349.

John, K., and E. Ofek. "Asset Sales and Increase in Focus." *Journal of Financial Economics,* 37 (1995), 105–126.

Jones, J. "Earnings Management during Import Relief Investigation." *Journal of Accounting Research,* 29 (1991), 193–228.

Jung, K.; Y. C. Kim; and R. M. Stulz. "Timing, Investment Opportunities, Managerial Discretion, and the Security Issue Decision." *Journal of Financial Economics,* 42 (1996), 159–185.

Kahle, K. M., and R. A. Walkling. "The Impact of Industry Classifications on Financial Research." *Journal of Financial and Quantitative Analysis,* 31 (1996), 309–335.

Kaplan, S. "The Effects of Management Buyouts on Operating Performance and Value." *Journal of Financial Economics,* 24 (1989), 217–254.

Lang, L. H. P.; R. Stulz; and R. Walkling. "Managerial Performance, Tobin's Q, and the Gains from Successful Tender Offers." *Journal of Financial Economics,* 24 (1989), 137–154.

Lewellen, W. G. "A Pure Financial Rationale for the Conglomerate Merger." *Journal of Finance,* 26 (1971), 521–545.

Loughran, T., and J. Ritter. "The Operating Performance of Firms Conducting Seasoned Equity Offerings." *Journal of Finance,* 52 (1997), 1823–1850.

Loughran, T., and A. Vijh. "Do Long-Term Shareholders Benefit from Corporate Acquisitions?" *Journal of Finance,* 52 (1997), 1765–1790.

Maquieira, C. P.; W. L. Megginson; and L. Nail. "Wealth Creation versus Wealth Redistributions in Pure Stock-for-Stock Mergers." *Journal of Financial Economics,* 48 (1998), 3–33.

Martin, K. J. "The Method of Payment in Corporate Acquisitions, Investment Opportunities, and Management Ownership." *Journal of Finance,* 51 (1996), 1227–1246.

Masulis, R. W., and A. N. Korwar. "Seasoned Equity Offerings: An Empirical Investigation." *Journal of Financial Economics,* 15 (1986), 91–118.

Mikkelson, W., and M. Partch. "Valuation Effects of Security Offerings and the Issuance Process." *Journal of Financial Economics,* 15 (1986), 31–60.

Myers, S. C. "Determinants of Corporate Borrowing." *Journal of Financial Economics,* 5 (1977), 147–175.

Myers, S. C., and N. Majluf. "Corporate Financing and Investment Decisions when Firms Have Information That Investors Do Not Have." *Journal of Financial Economics,* 13 (1984), 187–221.

Opler, T.; L. Pinkowitz; R. Stulz; and R. Williamson. "The Determinants and Implications of Corporate Cash Holdings." *Journal of Financial Economics,* 52 (1999), 3–46.

Rajan, R.; H. Servaes; and L. Zingales. "The Cost of Diversity: The Diversification Discount and Inefficient Investment." *Journal of Finance,* 55 (2000), 35–80.

Rangan, S. "Earnings Management and the Performance of Seasoned Equity Offerings." *Journal of Financial Economics,* 50 (1998), 101–122.

Rau, R., and T. Vermaelen. "Glamour, Value and the Post-Acquisition Performance of Acquiring Firms." *Journal of Financial Economics,* 49 (1998), 223–253.

Servaes, H. "Tobin's Q and the Gains from Takeovers." *Journal of Finance,* 46 (1991), 409–420.

————. "The Value of Diversification during the Conglomerate Merger Wave." *Journal of Finance,* 51 (1996), 1201–1225.

Sloan, R. "Do Stock Prices Fully Impound Information in Accruals about Future Earnings?" *Accounting Review,* 71 (1996), 289–315.

Smith, C. W. "Investment Banking and the Capital Acquisition Process." *Journal of Financial Economics,* 15 (1986), 3–29.

Teoh, S. H.; I. Welch; and T. J. Wong. "Earnings Management and the Underperformance of Seasoned Equity Offerings." *Journal of Financial Economics,* 50 (1998), 63–99.

Travlos, N. G. "Corporate Takeover Bids, Methods of Payment, and Bidding Firms' Stock Returns." *Journal of Finance,* 42 (1987), 943–963.

Wansley, J.; W. Lane; and H. Yang. "Abnormal Returns to Acquired Firms by Type of Acquisition and Method of Payment." *Financial Management,* 12 (1983), 16–22.

————. "Gains to Bidder Firms in Cash and Securities Transactions." *Financial Review,* 22 (1987), 403–414.