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DO APPEARANCES MATTER?

THE IMPACT OF EPS ACCRETION AND DILUTION ON STOCK PRICES

A DISSERTATION SUBMITTED TO

THE FACULTY OF THE GRADUATE SCHOOL OF BUSINESS

IN CANDIDACY FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

BY

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AUGUST 1999

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CHAPTER I

DO APPEARANCES MATTER? THE IMPACT OF EPS ACCRETION AND DILUTION ON STOCK PRICES

I.1 Introduction

The purpose of this paper is to test whether increases in earnings-per-share ("EPS accretion") *per se*, when separated from real cash flow effects, have any impact on stock prices and returns. This question is motivated by the wide-spread perception, among corporate executives and financial advisors, that transactions which result in future EPS reductions (or "dilution") depress the stock prices of firms, whether immediately or in the long-term, even if such dilution is merely due to accounting conventions and regulations, and not related to cash flows. The best example of a corporate event which might lead to EPS accretion or dilution is an acquisition of another company. In that case, it rarely happens that the acquirer's future reported EPS will merely consist of the sum of the original company's earnings plus those of the newly-acquired entity. In particular, the method of accounting for the combination (pooling-of-interests vs. purchase), the method of payment (cash, stock, etc.) and the relative P/E ratios of the companies involved, can result in widely different EPS figures being reported. Within the traditional corporate finance valuation framework, this would not be an issue. After all, if the firm is valued based on the expected future cash flows to the providers of capital, then such "cosmetic" differences in reported earnings are irrelevant. However, the view among practitioners is that reported earnings do matter, above and beyond cash flows. The reason often cited for

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why managers are so concerned with EPS is that many believe that analysts and investors

will often focus excessively on EPS and EPS growth in valuing securities, almost

"blindly" applying a multiple, such as a P/E or market-to-book ratio, to the reported

figures. Therefore, the story goes, firms that engage in transactions which depress their

EPS growth will be penalized with lower valuations in the market.

In his book *Big Deal* Bruce Wasserstein, who as an investment banker and private

equity investor was involved in many of the major M&A deals of the 80's and early 90's,

states the following concerning merger accounting methods, and more generally, the

issue of post-merger earnings:

> "The choice of purchase versus pooling has absolutely no impact on a
> company's underlying health or performance. However, from a financial
> accounting perspective, the survivor's earnings can differ dramatically
> depending on which approach is taken. (...) With many investors focused
> on earnings, companies often hesitate to take on dilutive transactions."
> (Wasserstein (1998))

The last line hints at the importance of addressing this question, because

irrespective of whether the stock market "sees through" the accounting differences and

prices remain unaffected, the ex-ante behavior of managers, supported by their financial

advisors, is affected. In particular there is plenty of anecdotal and documented evidence

that concerns about EPS accretion and dilution affect and even determine many

investment and financing decisions taken by corporations. For example:

- Following a recent SEC guideline stating that companies involved in stock repurchase programs would not qualify for pooling accounting treatment if they acquired another company, several corporations, including Cisco Systems, 3Com Systems and Gillette, cancelled their repurchase programs

- One of the reasons cited by managers in the 60's and early 70's for engaging in diversifying acquisitions was to maintain or accelerate their EPS growth. This

was accomplished when high P/E companies acquired low P/E companies. Conversely, acquisitions where the acquirer had a low relative P/E were avoided (see Brealey and Myers (1996) for a discussion of this "earnings game").

- Nathan (1988) looks at a sample of acquisitions from the 60's and 70's and finds that, in about half the cases where the pooling accounting method was eventually used, the proxy materials explicitly mentioned that completion of the transaction was conditional on pooling treatment being approved.

- Part of the standard analysis delivered by investment bankers to their clients that are considering buying another company is a "dilution analysis", also known as a "merger consequences analysis." The purpose of the analysis is solely to measure the impact of the transaction on expected future EPS, and it is used as an integral part of the decision process as to whether and how to proceed with the acquisition, along with pricing, financing and structuring. It is the case that sometimes, expected dilution is the main reason for not pursuing a deal.

- Lys and Vincent (1995) document that AT&T paid up to $500 million extra for NCR in 1991 in order to get them to cooperate in meeting the requirements for pooling. AT&T mentioned their concerns that if purchase accounting were used, their investors, primarily individuals, would not see through the merely cosmetic effect of the extra depreciation and goodwill charges in reducing their reported EPS, and would penalize the stock.

The examples above illustrate that concerns about EPS accretion have real effects, by altering the decisions of corporate managers. This paper does not address the issue of why managers, financial advisors and analysts might believe that EPS matters. I am mainly concerned with establishing whether "accounting accretion," that is, the part of future EPS changes that is due to accounting conventions and acquisition financing

decisions, does indeed impact acquirer stock prices in the short- and long-term. In particular, the paper tests the hypotheses that EPS accretion is positively related to announcement and/or long-term abnormal stock performance by the acquiring firm.[1]

Using a sample of 224 large transactions completed between 1975 and 1994, I estimate the expected EPS accretion (or dilution) resulting from each acquisition for the two fiscal years following completion. The sample includes a diverse cross section of transactions, in terms of merger accounting and acquisition financing methods. The measures of EPS accretion are based on the projected earnings of the acquirer and the target as stand-alone entities at the time of closing, and therefore do not include any potential synergies from combining the two companies' operations. This results in a measure of EPS accretion that has no "real" content, in the sense of being correlated with changes in future expected cash flows, but merely reflects the accounting conventions and payment methods used by the acquiring firm. These measures of accretion are then used as explanatory variables in regressions where the dependent variables are various estimates of announcement and long-term abnormal returns by the acquirer.

Consistent with the claim that managers are concerned about EPS accretion, I find that acquirers use the merger accounting method most likely to improve future reported EPS. In particular, although transactions that use the pooling method in my sample turn out to have higher EPS dilution than those that use the purchase method, they would have been far more dilutive had they used purchase accounting. This is important because the choice of merger accounting method is not innocuous. In particular, in order to qualify for pooling, the acquisition has to be a stock-for-stock deal. However, as other authors

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[1] Note that the hypotheses, formulated to be consistent with practitioners' beliefs, imply a one-sided test. Still, for the sake of being conservative in interpreting the statistical evidence, all tests in the paper are performed as two-sided tests, which biases the results against finding any effects of accretion on returns.

have found and is further confirmed here, stock deals exhibit negative abnormal performance, both at announcement and in the long-run.[2]

The evidence in this paper suggests that, consistent with the hypotheses outlined above, EPS accretion has a marginally positive but statistically significant impact on announcement and long-term stock returns. At announcement, I find that for each one percent increase in expected earnings yield (ratio of projected EPS to current stock price) due to the acquisition, the acquirer experiences a 0.3% increase in abnormal returns. To get a sense for what this means for the firms in the sample, going from minus to plus one standard deviation around the mean of year 1 EPS accretion, a 6% change in projected earnings yield, increases announcement returns by 2%. This effect survives, both in magnitude and significance, even when accounting for other factors known to affect acquirer announcement returns, such as the method of payment (cash vs. stock), the premium paid over market value and the book-to-market ratio of the acquirer and target.[3]

To study the post-completion effects of EPS accretion, I use the two most commonly employed procedures for measuring long-term abnormal performance in the literature: 1) monthly average abnormal returns using the Fama-French three-factor model; and 2) long-term buy-and-hold abnormal returns. Irrespective of the metric used, the evidence is that EPS accretion continues to positively impact the abnormal performance of the acquirer for up to 18 months after the closing of the transaction. The magnitude of the effect is also consistent across measures of abnormal performance. Each one percent gain in projected year 1 earnings yield increases abnormal performance by 1.3% (annualized), during the first year and a half following completion. The

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[2] See Travlos (1987), Loughran and Vijh (1997) and Mitchell and Stafford (1998).

[3] See Travlos (1987), Lang et al. (1989) and Servaes (1991).

relationship is also robust to various adjustments made to account for potential cross-correlations in the estimated abnormal performance measures, due to overlapping estimation periods.

I separately address the issue of purchase vs. pooling accounting, by testing whether acquirers' stock prices benefit from the extra EPS accretion due to qualifying for pooling treatment. I find that both at announcement and in the long run, the impact of pooling accretion is the same as that of the overall EPS accretion measures reported above, i.e., it is marginally positive in magnitude and statistically different from zero. In some sense this is the most surprising and puzzling of the findings in this paper. since the pooling accretion is caused by an arbitrary set of accounting rules, and can be almost perfectly measured at the time of the acquisition's announcement.

One potential explanation for my results is that the estimated EPS accretion and dilution might be a signal about the acquirer's propensity to overpay, or conversely, an indication they are getting a "good deal." In particular, I show in section I.2 that EPS accretion can be mechanically related to the difference between acquirer and target valuation levels, as well as the premium paid over book value. Therefore, paying a high valuation for a target is both dilutive and suggestive of over-paying, while a low valuation will be more accretive and perhaps indicative of a "bargain." This induces a correlation between acquirer returns and EPS accretion, as found here, but without a causal relation. I attempt to control for this spurious relation between accretion and target valuation in various ways, and do not believe that this explains my results, however as discussed in the conclusion of the paper, it is not clear that all of the effect can be accounted for with the available information.

In order to help evaluate the evidence, it is important to outline what kind of results we might have expected to find. Two very different views, the "efficient markets

view" and the "naive practitioners' view," are particularly helpful, not only because they represent two extremes, but also because they give us exact predictions for the magnitudes of the measured effects. The "efficient markets view," as outlined above, would predict a coefficient of zero on the EPS accretion measure (assuming all "real cash flow" effects had been purged from the estimate). The "naive practitioners' view" assumes the market takes the reported EPS figures at face value, and thus is perfectly "fooled" by the accounting accretion, which implies a coefficient on the EPS accretion variable equal to the average P/E for the sample[4] (about 10, based on forecasted one-year ahead earnings).

If we restrict ourselves to considering only these two extremes, then the evidence is certainly in favor of the "efficient markets view." The estimated coefficients, 0.3 at announcement and 1.3 in the long run, are at least one order of magnitude smaller than those predicted by the "naive view." Clearly the market can see through most, if not all, of the purely cosmetic effects of EPS accretion. Still, the measured effect is not zero, a result which is particularly robust at announcement, given the short estimation window, which makes the estimated coefficients and the large t-statistics highly reliable. Furthermore, we do not have to restrict ourselves to the "naive view," as a counterpoint to the "efficient markets view." There are other theories, based on investor irrationality, which predict smaller, but still positive, coefficients on accretion.[5] They all imply that, to

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[4] If $P = P/E * E \Rightarrow \dfrac{\Delta P}{P} = P/E * \dfrac{\Delta E}{P} \Rightarrow \text{Return} = P/E * \text{Accretion}$

[5] An example is the literature on "functional fixation," which dates back to the 1960's. In this view, stock prices are set by the interaction between informed and unsophisticated investors, the latter characterized by their inability to unscramble the information about cash flows contained in reported earnings, i.e., they take the numbers at face value. The "traditional functional fixation" hypothesis assumes prices are always set by unsophisticated investors, so that accounting differences are completely ignored and the market is always fooled (same as the "naive practitioner view" above). The "extended" hypothesis assumes that prices are set by both sophisticated and unsophisticated investors, so that the extent to which prices reflect or ignore pure accounting effects depends on the relative proportion of each type of investor

some extent, stock prices will partly reflect any earnings accretion or dilution, including the portion that is not cash-flow relevant, depending on the type of investors in the company.[6] Consistent with that, I find some evidence that the magnitude of the effect of EPS accretion on acquirer returns, particularly in the long-run, is negatively related to the level of institutional ownership of the acquirer. That is, for acquirers with low institutional ownership, the effect is much more pronounced. This suggests that when the acquirer has a higher percentage of unsophisticated investors, its stock price is more sensitive to the cosmetic effects of changes in EPS due to mergers, perhaps because these investors are less able to untangle the non-cash flow relevant part of EPS accretion.

Altogether, the evidence in this paper suggests that, to some extent, EPS accretion and dilution does affect stock returns. More importantly, the effect is much smaller than that predicted by practitioners. In fact, except for situations where an acquisition is expected to be extremely dilutive, perhaps due to large pre-announcement differences in valuation levels, or particularly severe future accounting charges, the results suggest that management should not concern itself a great deal with the outcome of its "dilution analysis," as any effects are likely to be overwhelmed by the real effects of getting the right price and subsequently integrating the two companies.

The paper is organized as follows. Section I.2 defines EPS accretion and dilution, with examples. Section I.3 describes the sample used and the variables included in the subsequent empirical work. Section I.4 briefly discusses the existing related literature. Sections I.5 and I.6 present the main results concerning the relationship between EPS

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at announcement time (see Hand (1990) for a review of this literature).

[6] These alternative theories lack the one feature which makes the "naive view" so attractive, namely a sharp prediction for the magnitude of the effect. In fact, any positive estimate could conceivably be consistent with some version of functional fixation, which in some sense makes it an unfair test for the "efficient markets view."

accretion and acquirer returns, both at announcement and in the long-run. Section I.7 focuses specifically on whether the EPS accretion due to the method of merger accounting impacts returns. Section I.8 examines whether EPS accretion is related to abnormal operating performance or cash flows to the acquirer, which might explain the results in the previous sections. Section I.9 concludes and discusses implications of the results.

I.2 What Is Earnings Accretion and Dilution?

For the purposes of this paper, EPS accretion and dilution are defined in accordance with practitioners' notion of a change in current and future expected EPS due to the acquisition. In general terms, this change in expected EPS for year t is measured as:

$$\Delta E_0(EPS_t) = E_0\left(\frac{(Comb.\,Earn.)_t - (\Delta\,Depn. + Int.\,Exp.)_t * (1 - \tau) - (Goodwill\,Am. + Pref.\,Divs)_t}{(Acq.\,Common\,Shs. + Shs.\,Issued\,in\,Acquisition)_0}\right) - E_{-1}(Acq.\,EPS_t). \quad (1)$$

That is, annual EPS accretion for the surviving entity is the difference between the expected post-merger EPS of the combined acquirer and target and the expected EPS of the acquirer as a stand-alone entity. Post-merger combined EPS is measured as: 1) the sum of the earnings corresponding to the original acquirers' operations and incremental earnings from the target, including any potential synergies, 2) less the after-tax effect of added interest expense, incremental depreciation and goodwill amortization due to purchase accounting, as well as dividends on any preferred stock issued in connection with the deal, 3) all divided by total common shares outstanding at the time of the acquisition, including incremental shares issued in the merger.

The change in EPS estimated using equation (1) includes both real performance changes due to target earnings and synergies, the "real accretion," and the negative or

dilutive effects of accounting rules and payment methods on reported EPS, which I define as "accounting accretion." As the formula indicates, there are three main potential sources of accounting accretion (or dilution in this case): 1) method of accounting, i.e., pooling-of-interests vs. purchase; 2) the relative P/E ratios of the acquirer and the target; and 3) acquisition financing method, e.g., cash vs. stock deals. One of the issues that complicates measuring the magnitude of accounting accretion is that deal pricing, and hence the possibility of over-payment, is directly related to overall accretion and dilution. In fact, it is straightforward to see that if an acquirer grossly overpays for a company, there is a high likelihood that future reported EPS will be diluted, whether because too many acquirer shares are issued as part of the deal, or because the interest on the excessive debt raised to finance an over-priced cash deal wipes out the acquired earnings. This effect has a real impact on acquirer valuation, and it should not be surprising that, particularly on announcement of the deal, the acquirer's stock return would be negatively related to the amount of over-payment, and hence negatively related to expected accounting accretion.

Each of the three causes of accounting accretion is separately explained below, with examples to illustrate. Note that in each example, the acquirer is assumed to obtain the target at market value, that is, without paying a premium, thus abstracting from any impact of over-payment on measured accretion. Also, in each case the combined value of the target and the acquirer is the same, even though the reported EPS is different, illustrating the absence of "real" effects related to accounting accretion.

I.2.1 Merger accounting method

US GAAP prescribes two different methods of accounting for mergers, namely pooling-of-interests ("pooling") and purchase. The parties involved in the deal do not

have a choice, that is, either the transaction qualifies as a pooling based on a strict set of criteria[7], in which case it must be accounted for as such, or it must be accounted for as a purchase. In a pooling transaction, the two companies merely combine their existing financial statements together. There are no write-ups of assets to account for the re-valuation of the target implicit in the price paid for the acquisition. Except for the one-time write-off of merger-related expenses, financial statements going forward do not incorporate any residual effect of the merger. In a purchase deal, on the other hand, target assets are re-valued and recorded on the combined company's balance sheets at their new, fair market value. In addition, any difference between the price paid for the target and the fair market value of its assets is incorporated into a balance sheet account called goodwill. The newly stepped-up assets will have higher levels of depreciation and the goodwill must also be amortized, over a period not to exceed 40 years. Therefore, in purchase transactions, the entire amount paid by the acquirer is reflected in the balance sheet of the combined company, and in addition future reported earnings will be depressed by the extra asset depreciation and goodwill amortization expenses.

For example, let us suppose a company A acquires company T in an exchange of shares, at a fair market value of $1000, which we'll assume equal to the stand-alone value of T, so no acquisition premium is paid. Also, both parties are assumed to have the same P/E going in. The following compares the reported EPS of the combined company under pooling and purchase, estimated using equation (1) above.

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[7] The criteria are many, and they are quite stringent and intricate. For the purposes of this paper, the only ones that matter are that in order to qualify for pooling: a) the acquirer must pay for the deal in voting common stock and must acquire more than 90% of target, b) the companies must have been independent entities before the deal, with less than 10% ownership of one another, c) for two years before the transaction, neither party engaged in any voting-equity related transactions in contemplation of the merger, including spin-offs, additional issuances or repurchases, and d) there are no significant disposals of combined assets following the completion of the merger for up to 2 years, other than in the ordinary course of business.

	A	T	Combined (Pooling)	Combined (Purchase)
Earnings Absent Merger	100	100	200	200
Depreciation Step-up (10 yrs)	-	-	-	25
Goodwill Amortization (40 yrs)	-	-	-	6.3
Tax Rate	30%	30%	30%	30%
Reported Earnings	100	100	200	176.3
# of Shares	10	10	20	20
EPS ($/sh)	10	10	10	8.8
Price ($/sh)	100	100	100	100
P/E	10	10	10	11.2
Market Capitalization	1000	1000	2000	2000
Original BookValue Assets	1000	500	1500	1500
Target Assets Step-up	-	-	-	250
Goodwill	-	-	-	250
Total Book Assets	1000	500	1500	2000

Note that in this example, the target assets are written-up by $250, from their original book value of $500, resulting in extra depreciation expenses of $25 per year. The remaining $250 difference between the purchase price of $1000 and the stepped-up asset value of $750, is allocated to goodwill and amortized over 40 years. As a result, in the case of purchase accounting, EPS is diluted by $1.20 per share[8] simply due to the method of accounting for the acquisition, without any corresponding cash flow effect.

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[8] $\Delta EPS_{purchase} = \dfrac{(100+100)-6.3-25*(1-0.3)}{(10+10)} - 10 = -\$1.20$

1.2.2 Differential P/E Ratios Between Acquirer and P/E Target

When an acquisition is financed with stock, and the acquirer has a higher P/E than the target (as stand-alone entities, irrespective of the pricing of the deal), then post-merger EPS will be automatically increased. This effect is known as the "bootstrap game" or the "earnings game" and was a common motivation for mergers in the sixties[9] (see Wasserstein (1998) and Brealey and Myers (1996)). The opposite effect, i.e. automatic EPS dilution, occurs when the *target* has a high relative P/E. To see how, let us examine the following example, where again A acquires T at fair market value of $1000 in a stock deal, but now the acquirer has a lower stand-alone P/E ratio than the target. I will also assume the transaction qualifies for pooling, so as to avoid extra amortization and concentrate on the effect of the P/E differential.

	A	T	Combined
Reported Earnings	100	50	150
# of Shares	10	5	20
EPS ($/sh)	10	10	7.5
Price ($/sh)	100	200	100
P/E	10	20	13.3
Market Capitalization	1000	1000	2000
Total Book Assets	1000	1000	2000

In this example, just the difference in P/E's accounts for a 25% reduction in reported EPS, again without any real value implications. This effect accounts for the common "wisdom" among M&A practitioners and corporate executives that companies

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[9] For the stock-financed transactions in my sample, I do find that on average the acquirer has a higher P/E ratio than the target.

should not acquire targets with higher P/E's than their own (see Brealey and Myers (1996)).

I.2.3 Acquisition Financing

Finally, acquisitions involving the issuance of debt and/or preferred stock, either as direct payment to the target, or to help finance the cash portion of the deal, can result in EPS dilution due to the incremental interest expense and/or preferred dividends. To see this, consider the following example where A acquires T at fair market value, paying with a combination of cash and stock (50% each). A raises debt at 8.5% to finance the cash part. I will assume both parties have the same P/E and that, although accounted as a purchase (since the deal involves compensation other than voting common stock), no goodwill or step-up depreciation results because the target's pre-merger book value of assets equals their fair market value and the acquirer pays no acquisition premium.

	A	T	Combined
Earnings Absent Merger	50	50	100
Acquisition-Related Interest	-	-	42.5
Tax Rate	30%	30%	30%
Reported Earnings	50	50	70.3
# of Shares	5	5	7.5
EPS ($/sh)	10	10	9.4
Price ($/sh)	200	200	220
P/E	20	20	23.5
Market Equity Value	1000	1000	1650 [10]
Acquisition-Related Debt	-	-	500
Total Market Capitalization	1000	1000	2150
Total Book Assets	1000	1000	2000

The effect of the after-tax interest on the acquisition-related debt and the newly-issued shares is to reduce reported EPS by $0.60/sh[11].

I.3 Data Description and Measures of Dilution

I.3.1 Sample Selection

The merger sample used in this paper is based on the CRSP Merger Database, which includes all mergers between CRSP-listed firms announced between 1958 and

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[10] I assume that the combined value increases by 150 due to the interest tax shields (debt * tax rate).

[11] $\Delta EPS_{purchase} = \dfrac{(50+50)-(42.5)*(1-0.3)}{(5+2.5)} - 10 = -\$0.60$

1996. Because of significant changes in the rules concerning pooling and purchase accounting in the early 70's, the sample is restricted to deals announced starting January 1975. Furthermore, there have to be at least two full fiscal years' worth of acquirer stock returns following the closing of the transaction, so the sample includes only deals completed by December 1994. In order to obtain industry classifications for benchmarking the surviving company's valuation levels and stock returns, I require that both the acquirer and the target be included in the Value Line survey at the time of the merger announcement. Value Line provides a ready-made, well-established and accepted industry classification scheme, which is superior to just employing SIC code matches (see Andrade and Stafford (1999) for a discussion of the problems with using SIC codes to match industries, particularly where CRSP data are concerned). The acquirer and target must be on Compustat at the time of the merger, and for the following two years, in the case of the surviving company. This leads to an initial sample of about 550 transactions.

For the analysis in this paper, it is important to focus on transactions where accretion or dilution is likely to be an issue, that is, acquisitions that are "large" relative to the acquirer's size. Deals that are "small" for the acquirer will not generate significant dilution or accretion, irrespective of the accounting and financing and even pricing. As a result, I restrict the sample to transactions where the market equity of the target is at least 10% of the market equity of the acquirer, at the time of the original merger announcement. This results in approximately 420 transactions remaining.

Finally, I eliminate deals where estimation of dilution would be ex-ante extremely difficult, if not impossible. These include multi-party transactions, mergers involving simultaneous spin-offs or reorganizations by any party, and extraordinary dividends and/or distributions to common shareholders. Also, deals where the consideration paid to target shareholders was at least partly in convertible securities, whether debt, preferred

stock or warrants, were removed because future conversion of the securities would have an uncertain dilutive effect on EPS. The final sample contains 224 transactions.

Relevant dates, such as initial announcement and closing, as well as subsequent quarterly earnings announcements, are from various news sources, including the Wall Street Journal and Lexis-Nexis. For the purposes of this paper, the announcement date is the first date in which there is any news that the acquirer is interested in purchasing the target, while closing date is the earliest of: a) the date in which the deal closes, or b) the date the acquirer reports consolidated results for the combined companies.

Stand-alone earnings and EPS projections for the target and the acquirer, for the years following the announcement of the merger, are obtained from company reports on Value Line. The last report issued before the deal is used.

I obtain data on the final terms of the transaction by consulting post-closing SEC filings of the surviving entity, including: a) pricing; b) number of shares issued or new debt raised by acquirer; and c) method of accounting, including incremental depreciation and goodwill amortization. Finally, stock returns for up to thirty-six months following the closing of the transaction are from CRSP.

Table A.1 contains summary statistics on the sample.[12] Note that it contains a good deal of heterogeneity. In particular, about 70% of the deals are accounted for as purchases, while the remaining 30% are poolings. Also, there is a good balance between "all cash" and "all stock" transactions, and a significant number of deals, almost 20%, are financed with combinations of cash, stock and/or other securities. As a result of the selection procedure outlined above, the acquisitions are all "big", both in absolute and relative terms. The median transaction value is nearly $400 million, and represents 31%

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[12] The Appendix lists all 224 transactions individually, with data on relevant dates, method of accounting and acquisition currency.

of the acquirers' entire pre-announcement market equity. The acquisitions are also richly priced, with the average acquirer paying a premium of about 50% above the pre-announcement target value.

The third panel in Table A.1 contains a distribution of the transaction completion dates across time and acquirer industry. Not surprisingly, about three-quarters of the sample deals are completed between 1978 and 1988, which corresponds to the well-known merger wave of the 1980's, a period of unprecedented takeover activity. Still, in any given calendar year, most acquirers come from different industries.[13] This will become an important consideration later in the paper, in assessing the statistical properties of the post-merger long-term returns regressions.

I.3.2 Measuring Accretion

The main variables of interest in this paper are the estimated annual accretion for the two full fiscal years (years +1 and +2) following the completion of the deal (year 0). Referring to equation (1) above, the general formula for estimating EPS accretion or dilution each year is: [14]

$$\Delta E_0(EPS_t) = E_0\left(\frac{(Comb.\,Earn.)_t - (\Delta\,Depn. + Int.\,Exp.)_t * (1 - \tau) - (Goodwill\,Am. + Pref.\,Divs)_t}{(Acq.\,Common\,Shs. + Shs.\,Issued\,in\,Acquisition)_0}\right) - E_{-1}(Acq.\,EPS_t)$$

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[13] All firms, whether acquirer or target, are assigned to one of 55 industries, based on their Value Line industry classifications, using the procedure outlined in Andrade and Stafford (1999).

[14] After August 1993, goodwill arising from purchase transactions became deductible for tax purposes in certain cases. There is not enough information to determine which transactions in the sample qualified for this tax deduction, so I assume none did. However, results are not materially different if we assume all post-August 1993 purchases deducted their goodwill amortization for tax purposes (the net impact of which is to increase EPS accretion, as only the after-tax portion of goodwill amortization is deducted from the bottom line).

Many of the items in the above formula are known at the time of the closing of the deal or can be obtained from the first post-merger SEC filing, such as the total shares issued, the incremental depreciation and amortization, and the marginal tax rate[15]. These items also remain constant over time, at least for the first few post-closing years which are studied in this paper, and so are accurately estimated. Only interest expense on debt that is directly related to acquisition financing is included. Therefore, no interest will be accrued for that portion of the acquisition costs that the company explicitly mentions as being financed with cash or working capital on hand.[16] For cash deals where there is no mention of a debt issue explicitly tied to merger financing, I will assume the interest rate for purposes of calculating dilution is that corresponding to the acquirer debt instrument "most likely" to have been employed, usually bank debt.[17] The tax rate is the statutory marginal tax rate in effect at the time the deal closed. All estimates are adjusted for stock splits and stock dividends.

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[15] In some cases, the surviving entity did not explicitly disclose the extra depreciation on the re-valued assets. For those situations, whenever the company did disclose the value at which the new property, plant and equipment (PP&E) was recorded, I estimated the asset step-up as the difference between this new value, and the last reported net book value of PP&E for the target before closing. Companies that did not explicitly break out the amount of goodwill and related amortization were eliminated from the sample.

[16] I also try a measure of accretion which includes the estimated foregone interest income on the cash on hand used to finance the deal, assuming those funds would have earned the 3-month t-bill rate. These accretion estimates are essentially the same as before (correlation of 0.988), with identical results.

[17] For many companies, there is evidence that in years 1 and 2 they altered their acquisition financing, usually by paying down some of the debt or preferred stock, and sometimes even issuing new shares for that purpose. This results in two different possible measures of accretion for years 1 and 2. The first, which I call "projected accretion", assumes the company maintains debt, preferred and common share amounts related to acquisition financing as they were at completion of the deal. The advantage of this measure is that it only incorporates information known to investors at closing. The second measure, "actual dilution", uses the actual debt, preferred and common outstanding at the end of each fiscal year. All empirical specifications in this paper were estimated using both measures, and the results were nearly identical. Only results for "projected dilution" are reported.

The only items in equation (1) that are not available directly from post-closing financial statements are the annual earnings and EPS corresponding to the former operations of the acquirer and the target. For this, I use the projected acquirer and target earnings and EPS from Value Line, at the time of the acquisition. Two things should be noted about these measures. First, these projections are for the target and acquirer as stand-alone entities. As reported in Pound (1988), financial analysts, including Value Line, continue to project operations of companies involved in acquisitions as if they were stand-alone, right up to the closing of the deal.[18] I believe this to be an advantage, as it ignores any real economic effects from potential acquisition synergies. Therefore, the measure of accretion that arises is much closer to the above-mentioned "accounting accretion," due to accounting conventions and method of payment choices. Secondly, as these are year 0 projections of future earnings, they will necessarily deviate from actual earnings realizations for years 1 and 2. This cannot be avoided, as the surviving entity does not separately report the earnings corresponding to the former targets' operations. I believe this is also advantageous, as these projections do not incorporate the real effects of future over/under-performance by the surviving entity, which would certainly impact stock prices,[19] but would not correspond to the concept of accounting accretion. Also, this is the correct measure of expected accretion to use when measuring the initial stock price reaction between announcement and closing, as it is based on data available at the time.

I estimate two types of accretion measures. The first, which I will call "market accretion" (MKT_ACC), is estimated assuming that the acquirer does not pay a premium

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[18] Apparently this is meant to help investors decide whether to vote for or tender into the proposed acquisition, by providing a good measure of the value of the company as an independent entity.

[19] See Table A.12 in section I.8 for evidence of this.

above the market value of the target before the announcement. All other deal terms remain the same, i.e., the interest rate on the acquisition debt, the exchange ratio of the shares, the method of accounting and the stepped-up value of the target assets. Obviously the actual amount of debt and/or shares issued, and resulting goodwill, will be different from those realized. The purpose of this "market" measure of accretion is to avoid the confounding effect of any future EPS dilution as a result of potential over-payment by the acquirer. This is particularly important when relating the initial announcement returns to the expected accretion. If the actual deal terms are used to calculate the latter, then this will induce a spurious correlation between measured expected accretion and stock returns, as acquisitions that are judged to be over-priced will lead to both large expected future dilution (negative accretion) and negative announcement returns[20]. The second measure, "acquisition accretion" (ACQ_ACC), is estimated using the actual terms of the deal, and is the measure employed in all specifications involving long-term post-closing returns. The reason is that, on one hand, it better reflects actual reported accretion or dilution, while on the other hand, it seems reasonable to expect that even if the acquirer over-pays, the negative stock reaction due to the over-payment will occur by closing. That way, long-term returns and valuation levels are not expected to be further impacted, and the previously mentioned spurious correlation between deal pricing and accretion is less of a concern.

Finally, these various measures of accretion have to be scaled by a deflator, in order to make them comparable across firms. Also, the deflator must take into account that eventually the estimated accretion will be used to explain returns. Given that, the

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[20] The recently completed AT&T/TCI deal is a good example of this. The Wall Street Journal reported on June 25, 1998 that investors drove down AT&T's stock price at announcement due to concerns that they were overpaying for the target. At the same time, the paper reported that AT&T expected significant EPS dilution in the short-term as a result of the transaction.

best variable to use to scale $\Delta E(EPS_t)$ is the stock price at the beginning of the period, as pointed out in Christie (1987)[21]. To see why, consider a very basic valuation framework, where the price of the stock equals the discounted sum of all its expected future dividends. Also assume for simplicity that the firm pays out all its earnings as dividends. In that case:

$$P_t = \sum_{k=0}^{\infty} \frac{E_t(D_{t+k})}{(1+E(r))^k} = \sum_{k=0}^{\infty} \frac{E_t(EPS_{t+k})}{(1+E(r))^k} = \frac{E_t(EPS_{t+1}) + E_t(P_{t+1})}{1+E(r)} \quad \text{and} \quad r_t = \frac{EPS_t + P_t - P_{t-1}}{P_{t-1}}$$

where P_t is the stock price at the end of year t, r_t is the total stock return over the year, D_t are the total dividends received per share during year t, and $E(r)$ is the annual expected return on equity (assumed constant). Now, for a given year, define the abnormal equity return as:

$$ar_t = r_t - E(r) = \frac{EPS_t + P_t - P_{t-1}}{P_{t-1}} - \frac{E_{t-1}(EPS_t + P_t) - P_{t-1}}{P_{t-1}} = \frac{EPS_t + P_t - E_{t-1}(EPS_t + P_t)}{P_{t-1}}$$

Then, replacing P_t with its full expression and re-arranging, we get the following expression for the abnormal return on equity:

$$ar_t = \sum_{k01}^{T} \frac{\Delta E_t(EPS_{t+k})}{P_{t-1} * (1+E(r))^{k-1}} = \left(\frac{Accretion(Yr\,t)}{P_{t-1}} + \frac{Accretion(Yr\,t+1)}{P_{t-1} * (1+E(r))} + \frac{Accretion(Yr\,t+2)}{P_{t-1} * (1+E(r))^2} + ... \right) \quad (2)$$

This analysis indicates that beginning-of-period stock price is the natural deflator to use when scaling accretion measures. Therefore throughout the paper, all accretion

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[21] Scaling by acquirer stand-alone EPS, so that accretion would be expressed as a % change, has various problems. Firstly, it would require discarding deals where the acquirer has negative EPS. Secondly, when the acquirer EPS is "small", the resulting estimated accretion is distorted. In fact the accretion estimates using % change contain numerous outliers, which leads to poor econometric properties when used in a regression. Finally, these % changes are not additive across years, i.e., you cannot add estimated accretion for years 1 and 2 to get total accretion over that period.

measures, whether "market" (MKT_ACC) or "acquisition" (ACQ_ACC), are scaled by the stock price before announcement.[22]

The final panel in Table A.1 reports sample statistics for year 1 and year 2 EPS accretion, both "acquisition" and "market" measures. Focusing on ACQ_ACC, the average transaction in the sample appears to be approximately EPS neutral in year 1 (i.e., zero accretion) and slightly accretive in year 2. In fact for the entire sample, 114 transactions are accretive in year 1 while 110 are dilutive. Also not surprisingly, MKT_ACC is higher than ACQ_ACC in both years, since the former assumes no premium paid, and hence lower incremental depreciation and amortization charges in the future, as well as fewer shares and/or debt issued to finance the acquisition.

I.4 Previous Research

In the accounting field there is an extensive literature dealing with the issue of pooling vs. purchase. In broad terms , that literature is concerned with the value relevance, if any, of one or the other method of merger accounting. The research examines whether market prices reflect the value of the goodwill asset recorded in the company's books, and its resulting annual amortization expense. That is, are share prices affected by the accounting treatment of the merger, independent of whether the deal is fairly valued? In particular, there is concern that firms that are allowed to use pooling get an unfair advantage, as they will report higher earnings *ceteris paribus*, and thus be

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[22] Equation (2) actually implies that the correct deflator might be the stock price at the beginning of the period over which abnormal returns are estimated (e.g., end-of-year 1 price for year 2 abnormal returns estimates). A second set of accretion measures using that deflation convention resulted in similar results, which are not reported. Also, as per equation (2), accretion measures deflated by an estimate of $(1+E(r))^k$ were attempted, with nearly identical results to those reported in the text. $E(r)$ was estimated using the CAPM, where beta is a value-weighted average of the estimated betas for the acquirer's and the target's industries.

rewarded with higher stock prices. This research can be divided into roughly two types: event studies around announcement dates, and valuation level regressions.

The pioneering event study in this area is that of Hong, Kaplan and Mandelker (1978), which is later revisited and expanded by Davis (1990). These papers look at the abnormal returns on the acquirer's stock around the announcement of the acquisition, and around subsequent earnings announcements. The idea is to test whether acquirers that use pooling accounting exhibit positive abnormal returns, because the market is "fooled" by the higher earnings they report due to the absence of the incremental depreciation and amortization of purchase accounting. The authors find no evidence of any positive abnormal performance.

Valuation levels studies try to relate either the share price or the total market equity of the company to various accounting measures, including goodwill and its amortization. Vincent (1997) looks at a sample of 92 transactions between 1979 and 1986, including both poolings and purchases. The author estimates the pro-forma impact of treating pooling firms as if they were purchase, by estimating what the incremental depreciation and amortization would have been, and then tests whether the market incorporates this "as if purchase" value into the stock price of pooling firms, thus treating them like purchase firms. The author finds that is not the case, and in addition, provides evidence that stock price levels are depressed for purchase firms due to the extra depreciation and amortization. The author concludes that purchase firms are disadvantaged, and their stock price is somewhat penalized for the lower earnings reported due to their higher amortization.

There are also some studies showing that acquirers appear willing to pay extra in order to receive pooling treatment, in the hopes of avoiding a potential "hit" to their stock prices from the additional purchase accounting amortization expenses. Nathan (1988)

and Robinson and Shane (1990) show that acquirers pay higher premia over pre-announcement market prices in pooling acquisitions, even after controlling for acquisition currency and other factors that might impact the premium paid. Lys and Vincent (1996) document the extreme lengths to which AT&T went in order to have its takeover of NCR accounted for as a pooling, including increasing their offer price to entice NCR management to help get pooling approved. The authors estimate that AT&T paid an extra $500 million overall in the process of getting pooling.

Because they focus purely on the merger accounting method and its effects, these accounting studies cannot and do not address the broader issue of the pricing impact of overall EPS accretion and dilution, since the choice of pooling vs. purchase is just one of the driving factors behind accretion. However, the questions asked are similar in spirit to the ones addressed in this paper, and the results are somewhat consistent. In particular, the findings described above that stock prices are negatively affected by purchase-related depreciation and amortization are consistent with the results reported later in this study on the relation between long-term returns and earnings accretion.

On the overall question of whether accounting rules matter, there is evidence in the accounting literature pointing to some impact of changes in accounting rules on stock returns. For example, changes in accounting rules for inventory (Ricks (1982)), oil and gas exploration costs (Lev (1979)) and rules to qualify for pooling-of-interests treatment (Leftwich (1981)) have been found to negatively impact the stock prices of affected companies, despite absence of cash flow implications.

More along the lines of the analysis presented in this paper, as part of their study on long-term post-merger performance by acquiring firms, Rau and Vermaelen (1998) test whether the abnormal returns experienced by acquirers are related to the acquisitions' "EPS impact." The authors segment their sample into deals with low, medium and high

EPS impact, and then test for statistical differences in the long-term (36 months) abnormal returns of these three sub-samples. They find no statistically significant abnormal performance for any of the sub-samples, although the signs and magnitudes are all in the "right" direction, i.e., the high impact sub-sample reports slightly positive long-term abnormal performance, while the low impact sub-sample reports negative abnormal returns. Interestingly, the average 3-year abnormal return of the low EPS impact sub-sample is −6% and the average abnormal return over the same period for their entire sample is −3%, but the latter number is judged to be statistically different from zero, while the former is not. Also, the authors never test whether the average abnormal returns of the high and low EPS impact sub-samples are different from each other, which would seem to better address their hypothesis, rather than from zero.

I.5 Announcement Period Returns and EPS Accretion

This section addresses the first hypothesis concerning EPS accretion, namely that upon announcement of the transaction, acquirer returns are increasing in the amount of expected future accretion. The dependent variable in all the regressions is ANNEXRET, the cumulative excess returns earned by the acquirer's stock in the 5 trading days surrounding the announcement date.[23] Table A.1 reports that the average firm in the sample experiences a negative and statistically significant reaction to the announcement of about −1.8% (t-statistic of −4.0).[24]

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[23] Daily excess returns are estimated as the residuals from a market model. The model parameters are estimated over a period of 250 days before announcement to 10 days before announcement.

[24] Consistent with the evidence in Jensen and Ruback (1983) that acquiring firms do not seem to experience any gains on announcement.

It is important to control for factors that are known to impact acquirer returns, such as the acquisition currency (cash. vs. stock) and the book-to-market equity ratio of the acquirer.[25] Acquisition currency is captured by two variables: %STOCK. an estimate of the % of total acquisition cost made up of common shares of the acquirer, and ALLSTOCK, a dummy variable equal to 1 if the acquisition is 100% equity-financed. In addition, following the procedure outlined in Rau and Vermaelen (1998), I classify acquirers as "value" (ACQ_VAL) or "glamour" (ACQ_GLAM) based on whether their pre-announcement book-to-market ratio (B/M) was in the top or bottom 40% of all companies on the NYSE that year, respectively.[26] A similar procedure is used to classify target companies as value or glamour (TGT_VAL or TGT_GLAM), based on their pre-announcement B/M. I also include the premium paid by the acquirer over the target's pre-announcement market value (PREMIUM), as one would expect that measure to be correlated with the extent of over-payment, and hence returns. Finally, I create a dummy variable called POOLING, equal to 1 if the transaction is accounted for as a pooling-of-interests.

Table A.2 displays the correlation matrix between these control variables and measures of EPS accretion. Note that all accretion estimates, whether for fiscal years 1 or 2, MKT_ACC or ACQ_ACC, are highly correlated with each other. This is not surprising, as their signs and relative rankings should be similar. Also, %STOCK,

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[25] Travlos (1987) finds significantly negative abnormal returns for acquirers in all stock deals at announcement, and Loughran and Vijh (1997) document that this negative effect persists for up to five years following closing. Lang et al. (1989) and Servaes (1991) find that announcement returns are negatively related to the acquirers' Tobin's Q (and hence positively related to book-to-market equity), while Rau and Vermaelen (1998) report that acquirers with low book-to-market equity ("glamour") continue to earn negative abnormal returns for up to 36 months.

[26] I also tried defining "value" and "glamour" as either: a) the top and bottom 20% of all NYSE firms; or b) the top and bottom third of all acquirers in the sample (as done in Rau in Vermaelen (1998)). The results were qualitatively unchanged.

ALLSTOCK and POOLING are almost perfectly correlated. This occurs because every pooling transaction is a stock-for-stock merger, and the sample has only a handful of purchase deals that are entirely stock-financed.[27]

An interesting finding from Table A.2 is that stock financing and/or pooling is negatively correlated with accretion, i.e., all-stock and pooling deals are more dilutive to EPS. At first this appears contradictory, however I find that transactions that use pooling would have reported much higher levels of depreciation and goodwill amortization if they had been accounted for as purchases, than the average purchase firm in the sample. The median purchase transaction is valued at 80% above the target's book value pre-announcement, while the same figure for pooling deals is 129%. Therefore, while pooling deals appear as more dilutive than purchases, they would have been much more so if accounted for as purchases. This is consistent with the practitioners' notion that one key advantage of paying for an acquisition with stock is the possibility of qualifying for pooling treatment, which is particularly valued when the acquisition would result in large asset write-ups or goodwill.[28]

Table A.3 reports the results of univariate specifications where ANNEXRET is separately regressed on measures of EPS accretion and the control variables. Whether you look at ACQ_ACC or MKT_ACC, announcement abnormal returns are positively related to expected year 1 and year 2 EPS accretion. Note that the magnitude and statistical significance of the coefficients is similar whether one looks at ACQ_ACC or

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[27] As a result, the POOLING variable is dropped from the analysis. In Section I.7, I address the specific issue of the benefits of pooling vs. purchase accounting using a modified POOLING variable, meant to capture the incremental accretion from receiving pooling-of-interests treatment.

[28] On the other hand, POOLING and PREMIUM are negatively correlated, which suggests that the higher dilution for pooling deals is not due to higher premia. The likely explanation is that the targets have higher market-to-book ratios to begin with.

MKT_ACC, suggesting the result is not due to a spurious negative correlation between acquisition premia and EPS accretion. In order to get a handle on the magnitude of the effect, notice that the measure of accretion we defined in section I.3, the ratio of $\Delta E(EPS)$ to stock price, is equivalent to estimating the change in expected "earnings yield" or "return on market equity" (EPS-to-price ratio).[29] Given that, the coefficient estimates of about 0.3 on the accretion variables imply an approximately three-to-one relationship between changes in earnings yield and stock returns, i.e., for every one percent gain in projected year 1 earnings yield due to EPS accretion, acquirers' shares earn an extra thirty basis points.[30] Specifically for the firms in this sample, sample statistics from Table A.1 indicate that going from one standard deviation below the mean to one standard deviation above the mean in year 1 accretion (ACQ_ACC_1), results in a change in year 1 earnings yield of about 6%, which given the price impact of accretion estimated above, corresponds to an extra 2% return on the acquirers' stock at announcement. This is of the same order of magnitude as the −3.6% extra return earned by the acquirers in the sample that pay with stock, as reported in Table A.3 (in line with the results of Travlos (1987)). On the other hand, as mentioned in the introduction, it is not nearly as large an effect as implied by the "naive practitioner view," which for this sample would have predicted a

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[29] $\dfrac{\Delta E_0(EPS_t)}{P_{-1}} = \dfrac{E_0(EPS_t)}{P_{-1}} - \dfrac{E_{-1}(EPS_t)}{P_{-1}}$ = Change in Earnings Yield

[30] There is an issue concerning when the information used to estimate accretion is known. In particular, if there are multiple stages of bidding, or if the pricing, method of payment and/or accounting method change between the first announcement and the closing, then the initial reaction we measure does not reflect the impact of those changes on accretion. The announcement regressions were re-estimated using a different version of ANNEXRET, measured as the cumulative daily excess returns from before announcement through completion (an average of 88 trading days), at which point all information required to estimate accretion was available. Results were qualitatively similar, although the coefficient estimates on the accretion variables increased from 0.3 to 1.0. Given the results in later sections, this higher figure is likely due to the long-term effect of accretion on stock prices, which has similar magnitude.

coefficient of about 10.[31] Therefore, while it is somewhat troubling that the market's reaction is affected by the accretion at all, this does not constitute a serious mispricing, and should not in any way take precedence over careful valuation or deal structuring, when putting together an acquisition.

Table A.4 reports the same analysis, however in a multivariate framework. Only MKT_ACC is used to measure accretion, in order to avoid the potential impact of over-payment on returns and EPS accretion. Results on EPS accretion and stock financing are similar to those of Table A.3, including the magnitude of the estimated coefficients. Note, however, that the ACQ_VAL and ACQ_GLAM dummies do not exhibit the opposite signs predicted by the results of Rau and Vermaelen (1998), nor are they statistically significant. This also indicates that the effect of EPS accretion on announcement returns is likely not due to acquirer Tobin's q, as reported in Lang et al (1989) and Servaes (1991). Those studies find that high-q acquirers experience positive announcement returns. Because their measures of Tobin's q are highly correlated with market-to-book and P/E, then one might suspect that acquisitions involving high-q (or high P/E) acquirers would also involve larger EPS accretion (for the reasons outlined in section I.2), leading to a spurious relation between accretion and returns. However, the ACQ_GLAM dummy variable included in my regressions proxies precisely for these high market-to-book firms, and despite being included as a control variable, the magnitude and significance of the coefficients on accretion remain unaltered. TGT_VAL and TGT_GLAM also are not statistically significant in the multivariate specifications, although the signs are in opposite directions.[32]

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[31] The median acquirer P/E ratio at announcement, based on projected year 1 EPS, was 9.2.

[32] I also run specifications with explanatory variables measuring the relative B/M of the acquirer and target. These are not significant, and do not add to the interpretation of the results, and hence are not reported.

Econometrically, the short estimation window (5 trading days) and the resulting absence of any overlap in across observations remove any concern of cross-correlation among abnormal returns and/or the estimated residuals. However, heteroscedasticity might still remain a problem. In particular, Maloney et al (1993) find that the variability of acquirer announcement returns is related to the relative value of the target and the acquirer, i.e., deals that are "larger" from the acquirers' perspective have greater impact on returns, whether positive or negative. Also, return volatility might be related to the size of the company. I explicitly test for both these hypothesis, and find no evidence of heteroscedasticity related to either relative deal size or company size. Still, the standard errors in Tables A.3 and A.4 are heteroscedasticity-adjusted, using the procedure of White (1980).

In short, even after controlling for acquisition premium and the negative impact of stock financing, there is evidence consistent with the view that accretive acquisitions lead to higher announcement excess returns. It is important to emphasize again that my measure of expected accretion is based purely on data known at the time of the transaction, and is designed to exclude any real effects from potential acquisition synergies. Therefore, although the effect is not as large as the "naive view" suggests, the fact that the market seems to take this artificial change in future EPS into account at all is fairly surprising and puzzling.[33]

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[33] It is also consistent with press and analysts' discussions of merger announcements, which often attribute negative acquirer stock price reactions to "concerns that the acquisition would dilute future earnings."

I.6 Long-Term Abnormal Returns and EPS Accretion

This section addresses the second hypothesis concerning EPS accretion, namely that in the long-run, accretive transactions lead to improved stock performance by the acquirers. As in any study of long-term returns, the key issue in measuring abnormal performance is picking the benchmark for equity returns. The literature seems to have settled on two different long-term risk-adjustment procedures (see Fama (1998) and Mitchell and Stafford (1998) for a discussion of the methodologies commonly employed in long-term performance studies): 1) average monthly abnormal returns from multi-factor regressions, based on the Fama-French 3-factor model; and 2) buy-and-hold abnormal returns.

I.6.1 Average Monthly Abnormal Returns

In this analysis, a measure of long-term abnormal returns for each acquirer is obtained by regressing the monthly excess returns on the firm's stock on the three Fama-French factors[34] (see Fama and French (1993) for details on constructing the factors and evidence on the model's ability to price assets):

$$R_{i,t} - R_{f,t} = a_i + b_i\left(R_{m,t} - R_{f,t}\right) + s_i\,SMB_t + h_i\,HML_t$$

The intercept a_i from the regression is an estimate of the average monthly abnormal return earned by the acquirer over the estimation period (EXRET). With EXRET calculated for each firm, I can now test whether EPS accretion affects long-term performance of acquirers. Table A.5 reports the results for univariate specifications,

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[34] R_m is the return on the CRSP value-weighted portfolio of stocks on the NYSE, AMEX and NASDAQ. SMB is the return on a zero-investment portfolio constructed by going long on small capitalization stocks and short on large capitalization stocks. HML is the return on a zero-investment portfolio that is long stocks with high book-to-market equity and short stocks with low book-to-market.

while Table A.6 includes estimates within a multivariate framework. Accretion measures and control variables are the same as in the announcement period regressions of Section I.5.

For the entire three-year period following completion of the deal, the evidence is that there is a significant positive relation between long-term abnormal performance and expected EPS accretion. By breaking out the estimation period into two equal sub-periods, it appears that the first 18 months account for the entire effect, and there is no evidence of any lasting effect of EPS accretion beyond the initial year or so after closing the deal. This effect is robust across specifications, even after controlling for acquisition currency, accounting method, premium paid and "value" vs. "glamour" status. The point estimates for the coefficient on year 1 accretion are remarkably constant as well, about 0.1 in Table A.6. This implies that a one percent gain in expected year 1 earnings yield will generate an average monthly abnormal return of 0.1%, or approximately 1.3% annualized.

One potentially serious objection to the estimation methodology is that because the estimates are from panel regressions, there might be cross-correlations among the errors that violate the assumptions of OLS. In particular, the abnormal returns are estimated over 18-month or 36-month periods that overlap each other in many cases. Therefore, it is possible that the left-hand side variables in my regressions are correlated, which would invalidate the estimated coefficients, and the t-statistics in particular.

As a first attempt to address this problem, I re-run the specifications in Tables A.5 and A.6 using calendar-year abnormal returns. For each transaction, define CY 1 as the first full calendar year following the closing of the transaction (e.g., if the deal closes in August 1987, then CY 1 is the 12-month period from January to December of 1988). CY 2 is defined as the next calendar year, following CY 1. Now, I re-estimate the average

monthly abnormal returns for the acquirer, but this time over the 24-month period spanned by CY 1 and CY2, and for each calendar year sub-period as well. For acquirers with fiscal years that do not end in December, accretion measures (which are based on fiscal years) are also converted to a calendar year basis by using weighted averages of the estimated accretion for fiscal years 0, 1 and 2. The advantage of using calendar-year abnormal returns in the regression is that it allows for the inclusion of year dummy variables in the model specification, which alleviates some of the potential impact of overlapping estimation periods on the point estimates of the coefficients. The coefficient estimates from these calendar-year regressions are almost identical to those in Tables A.5 and A.6, and thus are not reported. Statistical significance is somewhat reduced, although the t-statistics are still quite large. In short, the point estimates for the magnitude of the impact of EPS accretion on long-term returns remain the same, and the effect does not seem to be a statistical artifact.

Including year dummy variables does not address the problem that the potential correlation between measures of abnormal returns across firms, might invalidate the estimated standard errors and t-statistics. Addressing that problem requires specifying a form the correlation might take. One form that appears likely in this case is due to industry effects. In particular, Andrade and Stafford (1999) document that there is significant time clustering of acquirers by industry, likely in response to some unobserved industry shock. If that is the case, then the same shock could also impact the acquirers' stock returns. Therefore, acquirers in the same industry during the same time period might experience similar abnormal performance. This would make the OLS residuals cross-correlated for these observations, and bias the t-statistics. The third panel in Table A.1 helps get a feel for the potential magnitude of the problem. For most calendar years, there is at least one industry that is represented by two or three acquirers.

To test for this possibility, I re-estimated the univariate calendar-year regressions described above, however whenever there were multiple acquirers in the same industry in the same year, I replaced all those observations with one, representing their average value. This reduced the sample size to 179 observations, however all of them likely independent of each other[35], which then makes the estimated standard errors consistent. The results were the same as above, with point estimates on year 1 accretion of about 0.1, and t-statistics around 3. Therefore, I conclude that the positive effect of EPS accretion on long-term acquirer abnormal returns, over the first 12 to 18 months following completion, is not merely the result of a mis-specified regression.

I.6.2 Buy-and-Hold Abnormal Returns

In this section long-term abnormal performance is measured as the difference between the cumulative buy-and-hold return earned by the acquirer's stock and the cumulative return on a benchmark portfolio of firms with similar size and book-to-market at the time of the acquisition.[36] Buy-and-hold returns are the preferred measure of abnormal performance in many long-term performance studies,[37] and therefore are employed here to test the sensitivity of results to the abnormal performance metric used. The procedure used to estimate buy-and-hold abnormal return ("BHAR") is identical to that employed by Mitchell and Stafford (1998).[38] Otherwise, measures of EPS accretion

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[35] After all, most cross-correlations are already captured by the three Fama-French factors, and industry effects are the only obvious alternative left uncovered.

[36] Based on the findings by Fama and French (1992) that size and book-to-market equity explain most of the cross-sectional variation in stock returns.

[37] For example, Ikenberry et al (1995), Mitchell and Stafford (1998) and Loughran and Vijh (1997) all use buy-and-hold returns to measure abnormal performance following mergers and acquisitions. Loughran (1991) and Loughran and Ritter (1995) use them to study performance following IPO's and seasoned equity offerings.

[38] I thank Mark Mitchell and Erik Stafford for providing me with their size and book-to-market

and control variables are the same as in section I.6.1. Tables A.7 and A.8 report results for univariate and multivariate specifications. Note that only calendar year regressions are reported, in order to allow for the inclusion of year dummy variables (the results are quantitatively and qualitatively similar for fiscal year BHAR's and accretion measures).

As in section I.6.1, there is a statistically significant and positive relation between abnormal returns and EPS accretion, and the effect is entirely concentrated in the first calendar year following closing. Furthermore, the point estimates also match those for the average monthly abnormal returns reported above. The coefficients on CY 1 accretion reported in Table A.8 are approximately 1.0, which implies an increase in abnormal return of 1.0% per year for each percentage increase in year 1 earnings yield, very close to the 1.3% (annualized) figure estimated in section I.6.1 for that time period.

Note also that all control variables related to stock financing have their "expected" signs based on results reported by other authors, i.e., all coefficients on %STOCK and ALLSTOCK are negative. However, none are statistically significant in any specification. More interestingly, the coefficients on TGT_GLAM are consistently negative and statistically significant in all long-term returns specifications. To the extent that glamour targets are potentially over-valued at the time of the deal, hence increasing the chance the acquirer over-pays for them, this could lead to a negative reaction in the long run, as valuations revert.[39] However, irrespective of whether one believes in this view of glamour stocks or not, the important thing is that this result does not affect the magnitude or statistical significance of the positive relationship between long-term returns and EPS accretion.

portfolio allocations for all firms on CRSP every year, so I could calculate the benchmark portfolio returns.

[39] As previously mentioned in section I.5, I also run specifications which include explanatory variables meant to measure relative acquirer and target B/M ratios and/or "glamour" and "value" status. These variables do not appear significantly, nor do they alter the existing results.

A variety of short- and long-term pricing regularities have been documented in the finance literature (see Fama (1998) for a general survey and discussion of these results). In particular, two previously identified anomalies at first appear related to the EPS accretion results reported here: 1) short-term under-reaction to news, that is, event-date stock returns of the same sign as the subsequent long-run abnormal performance; and 2) post-earnings announcement drift, which is the tendency for post-earnings announcement returns to be related to the size and direction of the earnings surprise at announcement. However, the basis for these pricing anomalies seems to be the market's mis-perception of the signals contained in the news about future firm prospects. In fact, subsequent empirical and theoretical work that has attempted to explain the observed pricing regularities[40] is based on the premise that the event or the announcement is informative about cash flows in the future, but that investors mis-read the signal. In this paper, the variable of interest, EPS accretion, does not contain any new information about future cash flows, as it is based on earnings projections available at the time of the merger, and arbitrary merger accounting conventions which are cash flow neutral. In fact, the accretion measures are explicitly designed to avoid incorporating the effects of any synergies.

The results reported here contrast with the recent findings of Teoh, Welch and Wong (1998a and 1998b) and Rangan (1998) on the relation between pre-equity offering earnings management and long-term stock returns. Those authors find that firms that engage in aggressive earnings management in anticipation of an IPO or seasoned equity offering incur significant negative returns in the years following the issue. They attribute this to the fact that market participants eventually realize that the pre-offering earnings

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[40] For example, Daniel at al (1998) and Barberis et al (1998) on short-term under-reaction, and Bernard and Thomas (1990) and Ball and Bartov (1996) on post-earnings announcement drift.

had been managed and that their implied growth was over-stated, which results in the stock price drifting down. The evidence in this paper suggests that the market does not see through all of the EPS accretion due to a merger, for up to 18 months after closing, and more importantly, there is never a reversal or negative drift to compensate for any initial gains.

My results also contrast with the evidence in Rau and Vermaelen (1998) that the relation between long-term returns and EPS impact is not significant. As previously discussed, their analysis involved splitting their merger sample into thirds, based on the level of EPS impact due to the acquisition, rather than using the actual level of EPS impact as an explanatory variable for abnormal performance. In reality, although they term their analysis "cross-sectional", the authors just use EPS impact as a sorting variable, and then test for differences of means. In particular, it is surprising that after showing that there are significant differences between the long-term performance of acquirers with high and low book-to-market equity ("value" and "glamour" respectively), the authors did not control for that in assessing the importance of their EPS impact variable. Because they did not use a regression framework, controlling for "value" and "glamour" status, as well as the acquisition currency (cash vs. stock), it is hard to say that the authors truly tested the effect of EPS changes on long-term returns. Finally, the measure of EPS impact they used, which is similar to the formula for EPS accretion in equation (1) above, is not forward-looking, but rather based on trailing earnings. The authors estimated what the impact of the acquisition would have been on the previous year's EPS, rather than future EPS. There is no reason to believe that the effect of an acquisition on trailing EPS would be of the same magnitude (or even sign) as the impact on future EPS. Since stock prices are forward-looking, using expected accretion rather than past pro-forma accretion, seems warranted. In any case, I re-estimated the

empirical specifications in Tables A.6 and A.8 (multivariate regressions), replacing the actual level of expected accretion with dummy variables for "high," "medium" or "low," in the spirit of the Rau and Vermaelen analysis, and find that none of them turn up statistically significant (although the signs are as predicted – positive for "high" and negative for "low"). This suggests their methodology is biased against finding a large effect.

1.6.3 Robustness of Results

Table A.9 splits the sample into sub-samples based on transaction and acquirer characteristics, and reports the coefficients (and t-statistics) on the year 1 EPS accretion variable for each sub-sample regression. The goal is to test the sensitivity of the results to these characteristics, as well as attempt to gain some better understanding of what might explain the measured relation between returns and EPS accretion.

Panel A splits the sample by relative size of the acquirer and target, where a deal is defined as "large" if it is above the sample median (recall from Table A.1 that the median relative size is 31%). The evidence indicates that all the statisical significance of the results comes from the relatively large transactions. On one hand this makes sense, as my estimate of EPS accretion for the smaller deals is likely to be a more noisy measure of true accretion. On the other hand it is puzzling, as it also implies that the effect arises in precisely those transactions that are most significant from the point of view of the acquirer, which in some sense are those that one expects receive the most careful scrutiny by analysts and the market.

Panel B divides the sample based on whether the deal is accretive in year 1 or dilutive (i.e., positive or negative EPS accretion). 114 transactions are classified as accretive, with the remaining 110 called dilutive. The results indicate that both sub-

samples exhibit the statistically significant positive relationship between acquirer returns and EPS accretion which is found in the overall sample. However, the magnitude of the effect, particularly in the long-term, appears much higher for the dilutive deals.

Finally, Panel C segments the sample based on acquirer institutional ownership (as reported in Value Line). An acquirer is classified as having "high" institutional ownership if the % of shares held by institutions at the time of the announcement is above the sample median (which is 41%), and "low" otherwise. While the results for both sub-samples are similar at announcement, there is evidence that in the long-term, only the "low" institutional ownership sub-sample exhibits the positive relationship between returns and EPS accretion. This suggests that, at least to some extent, the overall effect might be explained by unsophisticated investors being fooled by the non-cash flow effects of merger accounting and EPS changes of the post-merger company.

I conclude that irrespective of the reader's preferred method of measuring long-term abnormal performance, there is consistent evidence that the acquiring firms' stock returns are positively impacted by the EPS accretion generated by the transaction for up to 18 months after closing, even though this accretion is the mechanical result of accounting and other non-cash flow or value-relevant factors. The estimated coefficients imply an extra 1.0% to 1.3% return on average for each extra 1.0% in year 1 earnings yield due to the acquisition. For the firms in my sample, going from minus to plus one standard deviation around the mean year 1 accretion, would imply an additional 6% to 8% return per year. Again as in Section I.5, the effect, while real, is far weaker than the "naive practitioners' view" would imply. The coefficient estimates of 1.0 on year 1 accretion are an order of magnitude less than those predicted by that view.

I.7 Pooling vs. Purchase

In this section I explicitly test for the pricing impact of EPS accretion resulting purely from the method of merger accounting. This is done for two main reasons. Firstly, there is already a literature in accounting addressing this question, as discussed in section I.4, with inconclusive results. Secondly and more importantly, there is a sense in which this type of accretion should be the most irrelevant for stock prices, as it is purely the outcome of arbitrary accounting rules. Let us recall the discussion in section I.2 on the sources of accretion. The method of accounting impacts reported EPS mainly by determining the value at which the acquired assets are written in the acquirer's books (at market value for purchase, at book value for pooling), and the resulting incremental depreciation and goodwill amortization. This extra depreciation and amortization, however, is applied to the target's existing assets, and hence provides no new information about the value of the target, that was not already incorporated in its stock price before the merger. Therefore, there should be no abnormal return to the acquirer, whether at announcement or subsequent to closing, related to this accounting component of overall EPS accretion.

I modify the existing EPS accretion measures to reflect an assumption that all transactions are accounted for as purchases. First, a variable called POOLING_ACC is created. For pooling deals, this is an estimate of the depreciation and goodwill amortization that would have resulted from the transaction had it been accounted for as a purchase. It is measured as the difference between the total purchase price and the target's pre-closing book value of equity, amortized at the target's average asset life.[41]

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[41] This implicitly assumes the entire premium is accounted for as an asset write-up, rather than goodwill. A similar accretion calculation, assuming a 40 year life (equal to the typical goodwill amortization period), leads to almost identical results.

POOLING_ACC is zero for purchase transactions. Next, a new measure of EPS accretion is created (PURCH_ACC_1), equal to the original accretion measure (ACQ_ACC_1) less POOLING_ACC. By including both variables in a regression, PURCH_ACC_1 measures the effect of EPS accretion and dilution on stock prices, abstracting from the merger accounting method, while POOLING_ACC captures the abnormal return earned by the acquirer as a result of qualifying for pooling treatment, and hence avoiding the purchase-related depreciation and amortization. Table A.10 reports the results, both for announcement and post-closing long-term abnormal returns.

Two things are remarkable about the figures in Table A.10. The first is that the coefficient estimates on the accretion measure, PURCH_ACC_1, are nearly identical to the comparable figures on ACQ_ACC_1 previously reported in Tables A.3, A.4, A.7 and A.8. Secondly, the effect of the pooling accretion variable (POOLING_ACC) is both statistically significant and very similar in magnitude to that of the purchase accretion measures in the same regressions, i.e., 0.20 vs. 0.23 at announcement and 0.83 vs. 0.82 for the first year after closing. This further strengthens our previous results, by showing that they were not caused by some undetected "real" effect, related to the method of acquisition financing or the relative valuation of the acquirer and the target. Even the component of EPS accretion related solely to arbitrary merger accounting conventions impacts acquirer returns, with the same magnitude and direction.

It is interesting to contrast the results found in this section with the conflicting evidence in the accounting literature on the impact of purchase accounting depreciation and amortization on stock prices. For example, Hong et al (1978) do not find evidence that firms benefit from pooling accounting. However, they do not contrast pooling with purchase, as their sample only contains pooling transactions, and do not consider the actual amount of extra accretion these companies obtain from qualifying for pooling, as is

done here. On the other hand, Vincent (1997) and Robinson et al (1995) find evidence that is weaker, but still consistent, with what I report. One reason that might explain why my results are stronger is that these accounting studies regress levels rather than returns, i.e., they try to explain the level of the stock price or market equity. Although equivalent in theory, and generated from the same discounted dividends framework (see the derivation of equation (2) in section I.3), levels and returns regressions are quite different in practice. In particular, levels regressions have heteroscedasticity problems, because the dependent variable, whether price or market equity, can differ across firms by orders of magnitude. In addition, while we have models that can account for most of the cross-section of stock returns, the same is not true for the cross section of prices. This means the omitted variables problem and the possibility of cross-correlations in estimated residuals is far more serious in levels regressions. Finally, levels regressions are very sensitive to risk adjustment. While small inaccuracies in risk measurement do not seriously impact estimation of abnormal returns, particularly over a few days' period, they will have a large effect on estimated price levels, because the inaccurate risk measure is used to discount dividends and cash flows into perpetuity.[42] For all these reasons, in some sense perhaps the specifications employed in the accounting studies were not statistically "well-behaved" enough to accurately measure the significance of the measured relationships.

I.8 Abnormal Operating Performance and EPS Accretion

It is crucial to the interpretation of my results that the measure of EPS accretion used is free of any "real" effects, i.e., not related to or informative about future cash

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[42] This point is a version of the "bad model problem" discussed in Fama (1998).

flows. As pointed out earlier, some factors that might induce a spurious correlation between accretion and returns are: 1) the use of cash vs. stock to finance the deal, and 2) the potential relationship between an acquirer over-paying for a target and the resulting EPS dilution. In order to control for these effects, I include %STOCK and ALLSTOCK in my regression specifications, and also use the "market" accretion variables (which ignore the premium paid by the acquirer) when studying announcement period returns. Still, it is possible that, either by accident or some unforseen reason, the accretion measure ends up being correlated with acquirer cash flows and operating performance, which would explain the relationship between returns and accretion that I find. In this section, I explicitly test for this, by examining whether EPS accretion is related to the long-term abnormal operating performance of the acquirer.

The key measure of operating performance used is the ratio of EBITDA (earnings before interest, taxes, depreciation and amortization) to sales (the "cash flow margin" or "EBITDA margin"). This measure has the property of capturing the profitability of the acquirer, while avoiding any of the spurious merger accounting effects, such as the extra depreciation and amortization due to purchase, as well as the financing choices made by the acquirer (cash, debt or stock). Two measures of abnormal performance are estimated, using different assumptions about the acquirer's "expected performance." The first is ΔCF, which is the difference between the cash flow margin in year t (=+1 or +2) and year -1,[43] and thus implicitly assumes that past performance is a good measure of future expected performance. The second is ΔCF_ADJ, which is ΔCF less the change in the median cash flow margin of the industry of the acquirer over the same period.[44] This

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[43] Year -1 cash flow margins are estimated pro-forma, as the ratio of the sums of the acquirer's and target's EBITDA and sales.

[44] In cases where the industry of the acquirer and target differ, I use as industry benchmark a weighted-average of the median cash flow margins of both industries.

model assumes that an acquirer's future expected performance is a function of its past performance and the change in the industry's performance. According to Barber and Lyon (1996), both these measures lead to tests of abnormal operating performance that are well specified and powerful.[45]

The first panel in Table A.11 simply estimates the correlation between year 1 EPS accretion (ACQ_ACC_1) and the above measures of abnormal operating performance. Whether one looks at the period "year -1 to year +1," or "year -1 to year +2," the correlations are never statistically significant. In fact, somewhat surprisingly, the point estimates are negative in sign. Preliminary evidence suggests, therefore, that my results are not explained by accretion capturing some component of future cash flows.

The second and third panels of Table A.11 confirm these results. The sample is split into two sub-samples, "accretive" and "dilutive," based on whether year 1 EPS accretion is positive or negative, respectively. Panel B tests whether the median abnormal operating performance of each sub-sample is different from zero, using the Wilcoxon signed rank test. Panel C tests whether the median abnormal performance is different across the two sub-samples, using the Mann-Whitney U test. I employ nonparametric tests due to the results in Barber and Lyon (1996), suggesting they are uniformly more powerful than parametric t-tests.[46] The results in Panels B and C indicate that neither the accretive or dilutive sub-samples experiences abnormal operating performance in absolute terms. More importantly, there is no evidence that the accretive sample has superior cash flows to the dilutive sample.

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[45] The one exception pointed out by Barber and Lyon (1996) is the case where the pre-event performance of the acquirer is "unusual" relative to the benchmark. I do not believe this to be a problem for my sample, as the acquirer's pre-event (year -1) cash flow margins are statistically indistinguishable from the industry's mean and median for that year.

[46] The results are the same, both in magnitude and significance, if I look at means instead of medians, and employ parametric t-tests.

I further explore these issues in Table A.12, by regressing long-term abnormal returns (BHAR's) on ΔCF_ADJ[47] and measures of EPS accretion. These regressions are similar to the specifications reported in Table A.8. Two interesting results arise. Firstly, adding abnormal operating performance to the regressions does not change the relationship between long-term returns and EPS accretion. There is still evidence of a statistically significant impact of EPS accretion on acquirer returns during the first full calendar year after closing, and no effect in the second year. Secondly, the coefficients on ΔCF_ADJ themselves are highly significant, which makes sense, as one would expect that abnormal operating performance would lead to abnormal returns in the same direction. This result gives us some confidence that both the abnormal returns and operating performance estimates are correctly measuring what we intend them to.

Overall, the evidence in this section indicates that, consistent with earlier claims, my measure of accretion does not appear to proxy for future cash flow shocks or abnormal operating performance.

I.9 Summary and Implications

The results in this paper can be summarized as follows:

- EPS accretion has a marginally positive and significant impact on acquirer returns at announcement

- The post-merger long-term abnormal performance by the acquirers is positively related to the amount of EPS accretion reported for up to a year and a half following closing

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[47] Results are the same when ΔCF is used instead.

- The pooling-of-interests method of merger accounting, by reducing the amount of EPS dilution *ceteris paribus*, can improve acquirer returns both at announcement and in the long-run

- Managers seem to structure transactions in a way that minimizes the resulting EPS dilution, at least as far as method of accounting is concerned

One potential objection to the methodology used in this paper is that, if EPS dilution is truly detrimental to stock prices, then the most dilutive transactions would not actually get done. As a result, the data we observe are for the least ex-ante dilutive acquisitions. Alternatively, the dilutive transactions we do observe should be particularly good or value-increasing, since they are completed despite the negative EPS impact. Therefore, this objection implies that my estimates of the effect of accretion on returns are actually downward biased, i.e., the pure effect is even stronger than measured here. Unfortunately, there is little that can be done to address this problem, since we cannot observe the deals that are not done. However, the evidence in Table A.9, showing that the statistical significance of the results is the same for both accretive and dilutive deals, and that the magnitude of the effect is actually larger for dilutive deals, should serve to alleviate some of the concerns raised by this objection.

Another potential confounding effect is that of leverage. As careful inspection of equation 1 (i.e., the definition of EPS accretion) indicates, holding constant the deal pricing and the accounting method, cash deals will tend to be both more accretive and leverage-increasing, while the opposite is true for stock deals. The intuition is that, given equity costs are higher than after-tax debt costs, the negative impact on EPS from acquisition financing is lower for debt-financed deals than equity-financed deals, holding the amount of financing constant. This might spuriously induce a relationship between

accretion and leverage. In order to control for this, I run both announcement returns and long-term returns specifications including as explanatory variables, in addition to EPS accretion, both levels of and changes in acquirer leverage, between pre-announcement and post-closing periods. The results were unchanged, and the leverage variables were never significant.

I have attempted to show throughout the paper that my estimate of EPS accretion does not have "real" content, which would explain its relation to acquirer returns. For example, I find that measured accretion is uninformative about future abnormal performance and cash flows. Alternatively, as mentioned at various points throughout the paper, the effect of EPS accretion on returns, both at announcement and in the long-run, might be a result of the acquirer over- or under-paying for the target, because of the spurious correlation between over-payment and earnings dilution. I try to account for this problem in various ways. For the announcement period regressions I use only the market accretion measure, which does not include any premium paid by the acquirer.[48] Also, based on the analysis of Rau and Vermaelen (1998), I include the ACQ_VAL and ACQ_GLAM dummy variables. They are meant to control for the possibility that the market misperceives the value of the acquirer and its managerial talent at the time of the merger, which might lead to long-term abnormal returns. Furthermore, it is possible that the target company is already over- or under-valued by the market at the time of the announcement, so that even the market accretion measure (MKT_ACC) would partly reflect that. Because of this possibility, I include TGT_VAL and TGT_GLAM. In addition, I run separate specifications, not reported, which include various measures of

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[48] I also run long-term abnormal returns specifications where the acquirer's announcement excess returns ("ANNEXRET") is included as an explanatory variable. The idea is that the stock price announcement reaction will, to a large extent, reflect the market's estimate of any over- or under-payment by the acquirer. The coefficients on ANNEXRET are never significant, nor do the other results change.

target valuation levels: target pre-announcement EBITDA multiples, P/E and book-to-market ratios, both absolute and relative to industry medians. The bottom line on all these adjustments is that the estimated effect of accretion on returns survives intact, both in magnitude and significance. Still, these are all imperfect proxies for the value of the target. Therefore, one possible explanation for my results is that accretion and dilution are signals of the acquirer's propensity to over-pay, or conversely, to identify bargains.

The results presented in this paper have several implications. Firstly, they present a challenge to theories of corporate valuation, by uncovering a long-term relation between stock prices and a non-cash flow relevant variable, EPS accretion. By using only the acquisition terms and the pre-announcement projections for the acquirer and target as stand-alone entities, the EPS accretion measured here is explicitly designed to be uninformative about future synergies. Therefore, theories recently advanced to account for long-term pricing anomalies do not apply, as they are specifically predicated on investors mis-perceiving some signal in current earnings about future cash flows. Also, the fact that the magnitude and direction of the effect is similar at announcement and in the long-run, without any evidence of reversal, is not easily accommodated by either the traditional valuation theory, or theories of over- and underreaction. The overall impact of accretion is not nearly as big as practitioners and corporate managers seem to believe, but it is present and consistent across different measures of abnormal performance, types of accretion, and time periods, suggesting that while the market sees through most, it does not see through all of the earnings management. Furthermore, the magnitude of the mis-pricing appears negatively related to the amount of institutional ownership in the acquiring company, consistent with less sophisticated investors being the ones mislead by cosmetic EPS effects.

Secondly, the evidence is relevant to the current discussion within the accounting world as to whether to disallow the pooling-of-interests method. The results suggest that the method of accounting, by altering the future reported EPS of the surviving entity, has some valuation impact, even though it is cash-flow neutral. Therefore, whatever solution the accounting profession finally settles on, it will not be innocuous for investors and market participants.

Finally, the results suggest that the concerns expressed by managers and M&A practitioners about the impact of acquisitions on future EPS and stock prices, while not unfounded, are probably exaggerated. The magnitude of the effect is much smaller than expressed in the press or in practitioners' own accounts. In particular, the evidence suggests that, except for the most dilutive transactions, it makes little sense for managers to expend time, effort and resources in structuring the deal so as to improve it's impact on reported EPS. That time is better spent making sure the price paid is fair, and managing the post-completion integration of the two companies.

APPENDIX A

TABLES

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Table A.1
Summary Statistics

Summary statistics for a sample of 224 mergers announced and completed between 1/75 and 12/94, where both the acquirer and the target were listed on the CRSP database and on the Value Line Investment Survey as of the announcement date. Includes only transactions where total target market equity was at least 10% of acquirer total market equity at announcement. Merger accounting method refers to which of the methods allowed under GAAP the acquirer uses to consolidate the target company assets. Acquisition currency describes the types of securities any or all the target shareholders receive in return for their shares. Other acquisition currency includes debt instruments and preferred stock, perhaps in combination with cash and/or common stock. Deal size is the total market value (in millions of $) of all securities received by target shareholders. Relative size is the ratio (in %) of the target company's market value of equity to the acquirer's market value of equity as of the last month before the first announcement of any potential bids for the target. Acquisition premium is the ratio (in %) of the final price paid by the acquirer for the target's equity to the total market value of equity of the target as of the last month before the first announcement of any bids. ANNEXRET is an estimate of the total cumulative excess returns earned by the acquirer's common shares over the five trading days surrounding the announcement of the first bid by the acquirer. Daily excess returns are the residuals from a market model, where model parameters are estimated daily over a 240-trading day period preceding the first announcement of a bid by the acquirer. Annual frequencies are based on the closing date of the transaction. Acquirers are allocated among the 55 industry classifications defined in Andrade and Stafford (1998), based on their Value Line industry classifications. ACQ_ACC_X and MKT_ACC_X are estimates, as of the closing date, of expected future EPS accretion/dilution for the acquirer in fiscal year X (= 1 or 2). EPS accretion/dilution is measured as the expected change (ΔEPS) in projected acquirer EPS for fiscal year X due to the acquisition, scaled by the acquirer stock price one week before announcement. ΔEPS includes the effects of adding the projected target stand-alone earnings and the impact of the merger accounting method and the method of financing. Year 0 is the fiscal year in which the merger closes. ACQ_ACC estimates accretion/dilution using the actual price paid by the acquirer in the merger. MKT_ACC estimates accretion/dilution assuming the target was bought for a price equal to its total market equity one month before the first announcement of any bids. Annual frequencies are based on the closing date of the transaction. Acquirers are allocated among the 55 industry classifications defined in Andrade and Stafford (1998), based on their Value Line industry classifications.

	Number	% of Total
Merger Accounting Method		
Purchase	156	69.6%
Pooling	68	30.4%
Acquisition Currency		
All Cash	104	46.4%
All Stock	77	34.4%
Cash & Stock	21	9.4%
Other	22	9.8%

Table A.1 (continued)
Summary Statistics

	Average	First Quartile	Median	Third Quartile
Deal Size ($ MM)	$1212	$170	$399	$1034
Relative Size	54%	18%	31%	62%
Acquisition Premium	54%	26%	50%	76%
ANNEXRET	-1.84%	-6.62%	-1.86%	2.05%

	'75	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94
No. of Deals Closed	2	6	10	12	15	8	16	16	18	16	17	25	8	14	9	6	6	7	8	5
No. of Different Acquirer Industries	2	4	9	12	11	7	12	14	12	12	15	18	7	11	8	6	4	4	7	4
Max. No. of Acquirers in Same Industry	1	2	2	1	3	2	3	2	3	3	2	2	2	3	2	1	2	4	2	2

	Average	Median	Standard Dev.
ACQ_ACC_1	0.5%	0.0%	3.1%
ACQ_ACC_2	1.0%	0.2%	3.6%
MKT_ACC_1	1.8%	1.0%	3.2%
MKT_ACC_2	2.4%	1.3%	3.8%

Table A.2
Correlation Matrix

Correlation matrix for various transaction characteristics and measures of expected EPS accretion/dilution as of closing date, for all mergers in the sample. Sample is comprised of 224 mergers announced and completed between 1/75 and 12/94, where both the acquirer and the target were listed on the CRSP database and on the Value Line Investment Survey as of the announcement date. Closing date is the earliest of either the transaction completion date, or the day the target is consolidated into the acquirer for financial reporting purposes. ACQACC_X and MKTACC_X are estimates, as of the closing date, of expected future EPS accretion/dilution for the acquirer in fiscal year X (= 1 or 2). EPS accretion/dilution is measured as the expected change (ΔEPS) in projected acquirer EPS for fiscal year X due to the acquisition, scaled by the acquirer stock price one week before announcement. ΔEPS includes the effects of adding the projected target stand-alone earnings and the impact of the merger accounting method and the method of financing. Year 0 is the fiscal year in which the merger closes. ACQACC estimates accretion/dilution using the actual price paid by the acquirer in the merger. MKTACC estimates accretion/dilution assuming the target was bought for a price equal to its total market equity one month before the first announcement of any bids. PREMIUM is the ratio (in %) of the final price paid by the acquirer for the target's equity to the total market value of equity of the target as of the last month before the first announcement of any bids. %STOCK is the percentage of total acquisition cost made up of stock, based on the number of acquirer shares issued to target shareholders and the acquirer's stock price on the closing date. ALLSTOCK is a dummy variable equal to 1 if the deal is financed 100% with stock. POOLING is a dummy variable equal to 1 if the merger is accounted for as a pooling-of-interests. X_VAL is a dummy variable equal to 1 if X's (= ACQ or TGT) book-to-market (B/M) equity ratio right before the first announcement of a bid is in the top 40% of all NYSE companies ("value'). X_GLAM is a dummy variable equal to 1 if X's (=ACQ or TGT) B/M equity ratio right before announcement is in the bottom 40% of NYSE companies ("glamour").

	ACQACC_1	ACQACC_2	MKTACC_1	MKTACC_2	PREMIUM	%STOCK	ALLSTOCK	POOLING	ACQ_VAL	ACQ_GLAM	TGT_VAL	TGT_GLAM
ACQACC_1	1.00	0.98	0.95	0.93	-0.04	-0.23	-0.18	-0.16	0.03	-0.11	0.12	-0.15
ACQACC_2		1.00	0.97	0.97	-0.01	-0.26	-0.22	-0.19	0.03	-0.12	0.15	-0.16
MKTACC_1			1.00	0.99	0.06	-0.27	-0.23	-0.20	0.07	-0.14	0.17	-0.20
MKTACC_2				1.00	0.05	-0.27	-0.24	-0.21	0.06	-0.14	0.19	-0.20
PREMIUM					1.00	-0.25	-0.20	-0.16	0.02	-0.02	0.12	-0.15
%STOCK						1.00	0.94	0.85	-0.15	0.14	-0.26	0.27
ALLSTOCK							1.00	0.90	-0.14	0.13	-0.24	0.25
POOLING								1.00	-0.13	0.17	-0.26	0.27
ACQ_VAL									1.00	-0.53	0.24	-0.22
ACQ_GLAM										1.00	-0.15	0.25
TGT_VAL											1.00	-0.56
TGT_GLAM												1.00

Table A.3

Announcement Excess Returns - Univariate Regressions

Univariate OLS regressions of announcement excess returns on various transaction characteristics and measures of future expected EPS accretion/dilution as of closing date, for a sample of 224 mergers announced and completed between 1/75 and 12/94, where both the acquirer and the target were listed on the CRSP database and on the Value Line Investment Survey as of the announcement date. Dependent variable in all regressions is ANNEXRET, an estimate of the total cumulative excess returns earned by the acquirer's common shares over the five trading days surrounding the announcement of the first bid by the acquirer. ACQ_ACC_X and MKT_ACQ_X are estimates, as of the closing date, of expected future EPS accretion/dilution for the acquirer in fiscal year X (= 1 or 2). EPS accretion/dilution is measured as the expected change (ΔEPS) in projected acquirer EPS for fiscal year X due to the acquisition, scaled by the acquirer stock price one week before announcement. Year 0 is the fiscal year in which the merger closes. ACQ_ACC estimates accretion/dilution using the actual price paid by the acquirer in the merger. MKT_ACC estimates accretion/dilution assuming the target was bought for a price equal to its total market equity one month before the first announcement of any bids. PREMIUM is the ratio (in %) of the final price paid by the acquirer for the target's equity to the total market value of equity of the target as of the last month before the first announcement of any bids. %STOCK is the percentage of total acquisition cost made up of stock, based on number of acquirer shares issued to target shareholders and the acquirer's stock price on the closing date. ALLSTOCK is a dummy variable equal to 1 if the deal is financed 100% with stock. . X_VAL is a dummy variable equal to 1 if X's (= ACQ or TGT) book-to-market (B/M) equity ratio right before the first announcement of a bid is in the top 40% of all NYSE companies ("value"). X_GLAM is a dummy variable equal to 1 if X's (=ACQ or TGT) B/M equity ratio right before announcement is in the bottom 40% of NYSE companies ("glamour"). All specifications include calendar year dummy variables (results not shown). T-statistics based on heteroscedasticity-adjusted standard errors are in parenthesis, under each estimated coefficient.

Variable	Intercept	Slope	Adj. R^2
ACQ_ACC_1	-0.0201	0.3585	0.184
	(-0.978)	(2.773)	
ACQ_ACC_2	-0.0193	0.2763	0.179
	(-0.917)	(2.442)	
MKT_ACC_1	-0.0215	0.2977	0.166
	(-0.972)	(2.774)	
MKT_ACC_2	-0.0204	0.2289	0.163
	(-0.913)	(2.612)	
PREMIUM	-0.0106	-0.0067	0.106
	(-0.439)	(-0.548)	
% STOCK	0.0115	-0.0459	0.197
	(0.618)	(-5.530)	
ALLSTOCK	0.0002	-0.0365	0.167
	(0.009)	(-4.459)	
ACQ_VAL	-0.0154	0.0051	0.105
	(-0.674)	(0.527)	
ACQ_GLAM	-0.0067	-0.0191	0.124
	(-0.285)	(-2.423)	
TGT_VAL	-0.0144	0.0233	0.134
	(-0.623)	(2.540)	
TGT_GLAM	-0.0047	-0.0243	0.140
	(-0.196)	(-3.159)	

Table A.4
Announcement Excess Returns - Multivariate Regressions

Multivariate OLS regressions of announcement excess returns on various transaction characteristics and measures of future expected EPS accretion/dilution as of closing date, for a sample of 224 mergers announced and completed between 1/75 and 12/94, where both the acquirer and the target were listed on the CRSP database and on the Value Line Investment Survey as of the announcement date. Dependent variable in all regressions is ANNEXRET, an estimate of the total cumulative excess returns earned by the acquirer's common shares over the five trading days surrounding the announcement of the first bid by the acquirer. MKT_ACC_1 is an estimate, as of the closing date, of expected future EPS accretion/dilution for the acquirer in fiscal year 1. Year 0 is the fiscal year in which the merger closes. EPS accretion/dilution is measured as the expected change (ΔEPS) in projected acquirer EPS for a given fiscal year due to the acquisition, scaled by the acquirer stock price one week before announcement. MKT_ACC estimates dilution assuming the target was bought for a price equal to its total market equity one month before the first announcement of any bids, and thus excludes any dilution due to the premium paid by the acquirer. MKT_ACC_012 is the sum, over years 0 through 2, of MKT_ACC. PREMIUM is the ratio (in %) of the final price paid by the acquirer for the target's equity to the total market value of equity of the target as of the last month before the first announcement of any bids. %STOCK is the percentage of total acquisition cost made up of stock, based on number of acquirer shares issued to target shareholders and the acquirer's stock price on the closing date. ALLSTOCK is a dummy variable equal to 1 if the deal is financed 100% with stock. X_VAL is a dummy variable equal to 1 if X's (= ACQ or TGT) book-to-market (B/M) equity ratio right before the first announcement of a bid is in the top 40% of all NYSE companies ("value"). X_GLAM is a dummy variable equal to 1 if X's (=ACQ or TGT) B/M equity ratio right before announcement is in the bottom 40% of NYSE companies ("glamour"). All specifications include calendar year dummy variables (results not shown). T-statistics based on heteroscedasticity-adjusted standard errors are in parenthesis, under each estimated coefficient.

	[1]	[2]	[3]	[4]	[5]
Intercept	-0.0157	0.0026	-0.0079	-0.0066	0.0032
	(-0.677)	(0.136)	(-0.332)	(-0.260)	(0.118)
MKT_ACC_1	0.3033	0.2335	0.2563	0.2422	0.2215
	(2.699)	(2.901)	(2.872)	(2.442)	(2.520)
PREMIUM	-0.0105				
	(-0.906)				
%STOCK		-0.0400			
		(-4.700)			
ALLSTOCK			-0.0314		-0.0272
			(-3.807)		(-3.189)
ACQ_VAL				-0.0112	-0.0129
				(-1.029)	(-1.194)
ACQ_GLAM				-0.0169	-0.0164
				(-1.871)	(-1.822)
TGT_VAL				0.0115	0.0082
				(1.083)	(0.792)
TGT_GLAM				-0.0112	-0.0071
				(-1.186)	(-0.789)
R^2	0.240	0.299	0.279	0.269	0.297
Adj. R^2	0.166	0.230	0.208	0.185	0.213

Table A.5
Long-Term Excess Returns - Univariate Regressions

Univariate OLS regressions of post-closing average monthly excess returns (up to 36 months) on various transaction characteristics and measures of future expected EPS accretion/dilution, for a sample of 224 mergers announced and completed between 1/75 and 12/94, where both the acquirer and the target were listed on the CRSP database and on the Value Line Investment Survey on the announcement date. Dependent variable in all regressions is EXRET, an estimate of the average monthly excess return on the acquirer's stock over periods of up to 36 months following the closing of the transaction. Average monthly excess returns are estimated, using the Fama-French three-factor model, as the intercept from a regression of monthly acquirer stock returns (net of the risk-free rate) on the returns on the market portfolio (net of the risk-free rate) and the returns on SMB (a zero-investment portfolio "long" small stocks and "short" big stocks) and HML (a zero-investment portfolio "long" high book-to-market equity (B/M) stocks and "short" low B/M stocks) . ACQ_ACC_X are estimates, as of the closing date, of expected future EPS accretion/dilution for the acquirer in fiscal year X (= 1 or 2). EPS accretion/dilution is measured as the expected change (ΔEPS) in projected acquirer EPS for fiscal year X due to the acquisition, scaled by the acquirer stock price one week before announcement. Year 0 is the fiscal year in which the merger closes. ACQ_ACC_012 is the sum, over years 0 through 2, of ACQ_ACC. PREMIUM is the ratio (in %) of the final price paid by the acquirer for the target's equity to the total market value of equity of the target as of the last month before the first announcement of any bids. %STOCK is the percentage of total acquisition cost made up of stock, based on number of acquirer shares issued to target shareholders and the acquirer's stock price on the closing date. ALLSTOCK is a dummy variable equal to 1 if the deal is financed 100% with stock. X_VAL is a dummy variable equal to 1 if X's (= ACQ or TGT) book-to-market (B/M) equity ratio right before the first announcement of a bid is in the top 40% of all NYSE companies ("value"). X_GLAM is a dummy variable equal to 1 if X's (=ACQ or TGT) B/M equity ratio right before announcement is in the bottom 40% of NYSE companies ("glamour"). T-statistics are in parenthesis, under each estimated coefficient.

Variable	36-Month EXRET			18-Month EXRET (1 to 18)			18-Month EXRET (19 to 36)		
	Intercept	Slope	R^2	Intercept	Slope	R^2	Intercept	Slope	R^2
ACQ_ACC_1	-0.0011	0.0642	0.046	-0.0020	0.1044	0.075			
	(-1.030)	(3.292)		(-1.526)	(4.238)				
ACQ_ACC_2	-0.0012	0.0483	0.041				-0.9361	4.0458	0.001
	(-1.174)	(3.096)					(-1.473)	(0.423)	
PREMIUM	-0.0026	0.0036	0.008	-0.0016	0.0007	0.001	1.1314	-3.7255	0.023
	(-1.414)	(1.321)		(-0.686)	(0.192)		(1.050)	(-2.279)	
% STOCK	0.0009	-0.0038	0.013	0.0007	-0.0049	0.013	-0.7253	-0.3928	0.001
	(0.684)	(-1.705)		(0.426)	(-1.715)		(-0.877)	(-0.292)	
ALLSTOCK	0.0004	-0.0028	0.008	0.0000	-0.0036	0.007	-0.6782	-0.5915	0.001
	(0.308)	(-1.311)		(0.011)	(-1.286)		(-0.878)	(-0.452)	
ACQ_VAL	-0.0007	0.0004	0.001	-0.0005	-0.0023	0.003	-1.2538	1.2544	0.004
	(-0.572)	(0.164)		(-0.347)	(-0.791)		(-1.692)	(0.919)	
ACQ_GLAM	-0.0014	0.0020	0.004	-0.0023	0.0028	0.005	-0.7399	-0.3590	0.001
	(-1.059)	(0.969)		(-1.364)	(1.023)		(-0.918)	(-0.282)	
TGT_VAL	-0.0004	-0.0006	0.001	-0.0023	0.0032	0.006	-1.3109	1.2745	0.004
	(-0.300)	(-0.301)		(-1.426)	(1.166)		(-1.729)	(0.986)	
TGT_GLAM	-0.0002	-0.0011	0.001	0.0014	-0.0063	0.025	-0.7624	-0.2933	0.001
	(-0.112)	(-0.520)		(0.801)	(-2.386)		(-0.942)	(-0.236)	

Table A.6
Long-Term Excess Returns - Multivariate Regressions

Multivariate OLS regressions of post-closing average monthly excess returns on various transaction characteristics and measures of future expected EPS accretion/dilution, for a sample of 224 mergers announced and completed between 1/75 and 12/94, where both the acquirer and the target were listed on the CRSP database and on the Value Line Investment Survey on the announcement date. Dependent variable in all regressions is EXRET, an estimate of the average monthly excess return on the acquirer's stock over 18-month sub-periods following the closing of the transaction. Average monthly excess returns are estimated, using the Fama-French three-factor model, as the intercept from a regression of monthly acquirer stock returns (net of the risk-free rate) on the returns on the market portfolio (net of the risk-free rate) and the returns on SMB (a zero-investment portfolio "long" small stocks and "short" big stocks) and HML (a zero-investment portfolio "long" high book-to-market equity (B/M) stocks and "short" low B/M stocks) . ACQ_ACC_X are estimates, as of the closing date, of expected future EPS accretion/dilution for the acquirer in fiscal year X (= 1 or 2). EPS accretion/dilution is measured as the expected change (ΔEPS) in projected acquirer EPS for fiscal year X due to the acquisition, scaled by the acquirer stock price one week before announcement. Year 0 is the fiscal year in which the merger closes. PREMIUM is the ratio (in %) of the final price paid by the acquirer for the target's equity to the total market value of equity of the target as of the last month before the first announcement of any bids. %STOCK is the percentage of total acquisition cost made up of stock, based on number of acquirer shares issued to target shareholders and the acquirer's stock price on the closing date. ALLSTOCK is a dummy variable equal to 1 if the deal is financed 100% with stock. X_VAL is a dummy variable equal to 1 if X's (= ACQ or TGT) book-to-market (B/M) equity ratio right before the first announcement of a bid is in the top 40% of all NYSE companies ("value"). X_GLAM is a dummy variable equal to 1 if X's (=ACQ or TGT) B/M equity ratio right before announcement is in the bottom 40% of NYSE companies ("glamour"). T-statistics are in parenthesis, under coefficients.

| | Dep. Variable = 18-Month EXRET (1 to 18) | | | | |
	[1]	[2]	[3]	[4]	[5]
Intercept	-0.0027	-0.0010	-0.0014	-0.0006	-0.0002
	(-1.177)	(-0.576)	(-0.869)	(-0.189)	(-0.076)
ACQ_ACC_1	0.1048	0.0997	0.1018	0.1011	0.0999
	(4.242)	(3.931)	(4.058)	(4.069)	(3.970)
PREMIUM	0.0013				
	(0.370)				
%STOCK		-0.0023			
		(-0.806)			
ALLSTOCK			-0.0016		-0.0009
			(-0.567)		(-0.328)
ACQ_VAL				-0.0014	-0.0014
				(-0.403)	(-0.421)
ACQ_GLAM				0.0048	0.0049
				(1.553)	(1.556)
TGT_VAL				-0.0007	-0.0008
				(-0.227)	(-0.259)
TGT_GLAM				-0.0065	-0.0063
				(-2.071)	(-2.010)
R^2	0.075	0.077	0.076	0.106	0.107
Adj. R^2	0.071	0.073	0.072	0.090	0.086

Table A.6, continued
Long-Term Excess Returns - Multivariate Regressions

	Dep. Variable = 18-Month EXRET (9 to 36)				
	[6]	[7]	[8]	[9]	[10]
Intercept	1.0785	-0.8229	-0.7535	-2.1790	-2.0903
	(0.991)	(-0.944)	(-0.935)	(-1.480)	(-1.341)
ACQ_ACC_2	3.7305	3.5625	3.2661	3.4530	3.1437
	(0.393)	(0.359)	(0.333)	(0.351)	(0.314)
PREMIUM	-3.7161				
	(-2.269)				
%STOCK		-0.2646			
		(-0.190)			
ALLSTOCK			-0.4954		-0.2473
			(-0.369)		(-0.177)
ACQ_VAL				1.2553	1.2370
				(0.758)	(0.744)
ACQ_GLAM				0.3502	0.3541
				(0.228)	(0.230)
TGT_VAL				1.3672	1.3403
				(0.858)	(0.836)
TGT_GLAM				0.6798	0.7139
				(0.442)	(0.459)
R^2	0.023	0.001	0.001	0.008	0.008
Adj. R^2	0.019	0.001	0.001	0.001	0.001

Table A.7

Long-Term BHAR's - Univariate Regressions

Univariate OLS regressions of buy-and-hold abnormal returns (BHAR's) over the first two full calendar years following closing, on various transaction characteristics, measures of future expected EPS accretion/dilution and calendar year dummy variables, for a sample of 224 mergers announced and completed between 1/75 and 12/94, where both the acquirer and the target were listed on the CRSP database and on the Value Line Investment Survey on the announcement date. Dependent variable in all regressions is CYBHAR, an estimate of the abnormal buy-and-hold return earned by the acquirer's stock over the entire 24 month period, and 12-month sub-periods, beginning with the first full calendar year following the closing of the deal. BHAR's are estimated as the difference between the return on the acquirer's stock over the estimation period, and return on a "benchmark" portfolio of stocks with size and book-to-market equity (B/M) similar to the acquirers' at the beginning of the period. ACQ_ACC_CYX are estimates, as of the closing date, of expected future EPS accretion/dilution for the acquirer in calendar year X (= 1 or 2). EPS accretion/dilution is measured as the expected change (ΔEPS) in projected acquirer EPS for calendar year X due to the acquisition, scaled by the acquirer stock price one week before announcement. Calendar year 1 (CY 1) is the first full calendar year following the closing date. ACQ_ACC_CY12 is the sum of ACQ_ACC_CYX for years 1 and 2. PREMIUM is the ratio (in %) of the final price paid by the acquirer for the target's equity to the total market value of equity of the target as of the last month before the first announcement of any bids. %STOCK is the percentage of total acquisition cost made up of stock, based on number of acquirer shares issued to target shareholders and the acquirer's stock price on the closing date. ALLSTOCK is a dummy variable equal to 1 if the deal is financed 100% with stock. X_VAL is a dummy variable equal to 1 if X's (= ACQ or TGT) book-to-market (B/M) equity ratio right before the first announcement of a bid is in the top 40% of all NYSE companies ("value"). X_GLAM is a dummy variable equal to 1 if X's (=ACQ or TGT) B/M equity ratio right before announcement is in the bottom 40% of NYSE companies ("glamour"). T-statistics are in parenthesis, under each estimated coefficient.

Variable	24-Month CYBHAR (Yrs 1-2)			12-Month CYBHAR (Year 1)			12-Month CYBHAR (Year 2)		
	Intercept	Slope	Adj. R^2	Intercept	Slope	Adj. R^2	Intercept	Slope	Adj. R^2
ACQ_ACC_CY1	0.2707	1.1610	0.013	0.0694	0.9899	0.004			
	(1.165)	(1.844)		(0.502)	(2.646)				
ACQ_ACC_CY2	0.2754	0.8791	0.011				0.1055	0.1617	0.001
	(1.185)	(1.748)					(0.812)	(0.573)	
PREMIUM	0.2624	0.0578	0.001	0.0784	0.0247	0.001	0.0916	0.0321	0.001
	(1.088)	(0.621)		(0.542)	(0.442)		(0.696)	(0.607)	
% STOCK	0.3358	-0.1429	0.015	0.1099	-0.0619	0.001	0.1483	-0.0878	0.012
	(1.446)	(-1.975)		(0.786)	(-1.421)		(1.140)	(-2.179)	
ALLSTOCK	0.3287	-0.1142	0.009	0.1038	-0.0375	0.001	0.1443	-0.0796	0.009
	(1.411)	(-1.608)1		(0.741)	(-0.878)		(1.107)	(-2.019)	
ACQ_VAL	0.2876	0.0500	0.001	0.0960	-0.0062	0.001	0.0895	0.0598	0.001
	(1.229)	(0.693)		(0.683)	(-0.142)		(0.690)	(1.498)	
ACQ_GLAM	0.3349	-0.0697	0.002	0.1114	-0.0339	0.001	0.1167	-0.0491	0.001
	(1.423)	(-1.058)		(0.789)	(-0.859)		(0.899)	(-1.337)	
TGT_VAL	0.3001	0.0115	0.001	0.0944	0.0394	0.001	0.0972	0.0288	0.001
	(1.284)	(0.170)		(0.676)	(0.976)		(0.747)	(0.762)	
TGT_GLAM	0.3330	-0.1316	0.017	0.1302	-0.1432	0.041	0.1037	0.0015	0.001
	(1.437)	(-2.085)		(0.961)	(-3.881)		(0.790)	(0.042)	

Table A.8
Long-Term BHAR's - Multivariate Regressions

Multivariate OLS regressions of acquirer long-term buy-and-hold abnormal returns (BHAR's) over the first two full calendar years following closing, on various transaction characteristics, measures of future expected EPS accretion/dilution and calendar year dummy variables, for a sample of 224 mergers announced and completed between 1/75 and 12/94, where both the acquirer and the target were listed on the CRSP database and on the Value Line Investment Survey on the announcement date. Dependent variable in all regressions is CYBHAR, an estimate of the abnormal buy-and-hold return (BHAR) earned by the acquirer's stock in each of two consecutive 12-month sub-periods beginning with the first full calendar year following the closing of the deal. BHAR's are estimated as the difference between the return on the acquirer's stock over the estimation period, and return on a "benchmark" portfolio of stocks with size and book-to-market equity (B/M) similar to the acquirers' at the beginning of the period. ACQ_ACC_CYX are estimates, as of the closing date, of expected future EPS accretion/dilution for the acquirer in calendar year X (= 1 or 2). EPS accretion/dilution is measured as the expected change (ΔEPS) in projected acquirer EPS for calendar year X due to the acquisition, scaled by the acquirer stock price one week before announcement. Calendar year 1 (CY 1) is the first full calendar year following the closing date. PREMIUM is the ratio (in %) of the final price paid by the acquirer for the target's equity to the total market value of equity of the target as of the last month before the first announcement of any bids. %STOCK is the percentage of total acquisition cost made up of stock, based on number of acquirer shares issued to target shareholders and the acquirer's stock price on the closing date. ALLSTOCK is a dummy variable equal to 1 if the deal is financed 100% with stock. X_VAL is a dummy variable equal to 1 if X's (= ACQ or TGT) book-to-market (B/M) equity ratio right before the first announcement of a bid is in the top 40% of all NYSE companies ("value'). X_GLAM is a dummy variable equal to 1 if X's (=ACQ or TGT) B/M equity ratio right before announcement is in the bottom 40% of NYSE companies ("glamour"). All specifications include calendar year dummy variables (results not shown). T-statistics are in parenthesis, under each estimated coefficient.

	Dep. Variable = 12-Month CYBHAR (Year 1)				
	[1]	[2]	[3]	[4]	[5]
Intercept	0.0542	0.0821	0.0765	0.1337	0.1347
	(0.379)	(0.593)	(0.552)	(0.968)	(0.970)
ACQ_ACC_CY1	0.9884	0.9272	0.9657	0.8252	0.8232
	(2.637)	(2.447)	(2.564)	(2.233)	(2.219)
PREMIUM	0.0233				
	(0.423)				
%STOCK		-0.0447			
		(-1.025)			
ALLSTOCK			-0.0263		-0.0041
			(-0.620)		(-0.095)
ACQ_VAL				-0.0415	-0.0418
				(-0.834)	(-0.836)
ACQ_GLAM				-0.0124	-0.0124
				(-0.272)	(-0.270)
TGT_VAL				-0.0723	-0.0729
				(-1.514)	(-1.508)
TGT_GLAM				-0.1743	-0.1738
				(-3.823)	(-3.782)
R^2	0.090	0.094	0.091	0.156	0.156
Adj. R^2	0.001	0.004	0.001	0.059	0.055

Table A.8, continued
Long-Term BHAR's - Multivariate Regressions

	Dep. Variable = 12-Month CYBHAR (Year 2)				
	[6]	[7]	[8]	[9]	[10]
Intercept	0.0931	0.1480	0.1440	0.0745	0.1119
	(0.705)	(1.134)	(1.103)	(0.553)	(0.826)
ACQ_ACC_CY2	0.1554	0.0547	0.0883	0.1289	0.0841
	(0.550)	(0.193)	(0.312)	(0.447)	(0.293)
PREMIUM	0.0310				
	(0.585)				
%STOCK		-0.0864			
		(-2.104)			
ALLSTOCK			-0.0780		-0.0760
			(-1.955)		(-1.822)
ACQ_VAL				0.0414	0.0363
				(0.852)	(0.750)
ACQ_GLAM				-0.0310	-0.0304
				(-0.692)	(-0.684)
TGT_VAL				0.0361	0.0242
				(0.772)	(0.516)
TGT_GLAM				0.0383	0.0471
				(0.863)	(1.061)
R^2	0.079	0.097	0.094	0.092	0.107
Adj. R^2	0.001	0.007	0.004	0.001	0.001

Table A.9
Sensitivity to Transaction and Acquirer Characteristics – Sub-sample Results

Coefficients on EPS accretion variable, from univariate OLS regressions of acquirer announcement excess returns (ANNEXRET) and buy-and-hold abnormal returns (BHAR's) over the first two full calendar years following closing, on measures of future expected EPS accretion/dilution, for a sample of 224 mergers announced and completed between 1/75 and 12/94, where both the acquirer and the target were listed on the CRSP database and on the Value Line Investment Survey on the announcement date. ANNEXRET is an estimate of the total cumulative excess returns earned by the acquirer's common shares over the five trading days surrounding the announcement of the first bid by the acquirer. CYBHAR is an estimate of the abnormal buy-and-hold return (BHAR) earned by the acquirer's stock in each of two consecutive 12-month sub-periods beginning with the first full calendar year following the closing of the deal. BHAR's are estimated as the difference between the return on the acquirer's stock over the estimation period. and return on a "benchmark" portfolio of stocks with size and book-to-market equity (B/M) similar to the acquirers' at the beginning of the period. Year 1 EPS Accretion is measured as the expected change (ΔEPS) in projected acquirer EPS for calendar year 1 due to the acquisition, scaled by the acquirer stock price one week before announcement. Calendar year 1 is the first full calendar year following the closing date. Relative size is estimated based on the pre-announcement market equity capitalization of the acquirer and the target companies. "Large" transactions are those where relative size is above the median, while the remainder are "small". "Accretive" deals are those where where Year 1 EPS accretion is positive, and the remainder are "Dilutive." Institutional ownership is calculated as the % of total shares outstanding held by institutions. and is defined as "High" when above the sample median, and "Low" otherwise. All specifications include calendar year dummy variables (results not shown). T-statistics are in parenthesis. under each estimated coefficient.

	Coefficients on Year 1 EPS Accretion	
	ANNEXRET	12-Month CYBHAR (Yr 1)
PANEL A – Relative Size		
Large	0.3069	0.8985
(N=112)	(2.872)	(3.029)
Small	0.4988	2.7273
(N=112)	(1.068)	(1.631)
PANEL B – Accretive vs. Dilutive		
Accretive	0.2616	0.8071
(N=114)	(2.419)	(3.182)
Dilutive	0.4297	2.9706
(N=110)	(2.031)	(3.890)
PANEL C – Institutional Ownership		
High	0.6269	1.7055
(N=112)	(2.708)	(1.508)
Low	0.3019	1.3288
(N=112)	(2.433)	(4.886)

Table A.10
Pooling vs. Purchase Accounting and Acquirer Returns

Multivariate OLS regressions of acquirer announcement excess returns (ANNEXRET) and buy-and-hold abnormal returns (BHAR's) over the first two full calendar years following closing, on measures of future expected EPS accretion/dilution and the merger accounting method, for a sample of 224 mergers announced and completed between 1/75 and 12/94, where both the acquirer and the target were listed on the CRSP database and on the Value Line Investment Survey on the announcement date. ANNEXRET is an estimate of the total cumulative excess returns earned by the acquirer's common shares over the five trading days surrounding the announcement of the first bid by the acquirer. CYBHAR is an estimate of the abnormal buy-and-hold return (BHAR) earned by the acquirer's stock in each of two consecutive 12-month sub-periods beginning with the first full calendar year following the closing of the deal. BHAR's are estimated as the difference between the return on the acquirer's stock over the estimation period, and return on a "benchmark" portfolio of stocks with size and book-to-market equity (B/M) similar to the acquirers' at the beginning of the period. PURCH_ACC_X are estimates, as of the closing date, of expected future EPS accretion/dilution for the acquirer in calendar year X (= 1 or 2), assuming all transactions used the purchase method of accounting. EPS accretion/dilution is measured as the expected change (ΔEPS) in projected acquirer EPS for calendar year X due to the acquisition, scaled by the acquirer stock price one week before announcement. For pooling transactions, pro-forma depreciation and amortization was estimated using the premium paid by the acquirer over the target pre-announcement book value of equity, amortized over the average life of the target assets. Calendar year 1 (CY 1) is the first full calendar year following the closing date. ALLSTOCK is a dummy variable equal to 1 if the deal is financed 100% with stock. POOLING_ACC is an estimate of the extra EPS accretion to the acquirer from using the pooling-of-interests accounting treatment (equals 0 for purchase deals). X_VAL is a dummy variable equal to 1 if X's (= ACQ or TGT) book-to-market (B/M) equity ratio right before the first announcement of a bid is in the top 40% of all NYSE companies ("value'). X_GLAM is a dummy variable equal to 1 if X's (=ACQ or TGT) B/M equity ratio right before announcement is in the bottom 40% of NYSE companies ("glamour"). All specifications include calendar year dummy variables (results not shown). T-statistics are in parenthesis, under each estimated coefficient.

Variable	ANNEXRET			12-Month CYBHAR (Year 1)		
	[1]	[2]	[3]	[4]	[5]	[6]
Intercept	-0.0118	-0.0071	0.0017	0.0765	0.0772	0.1351
	(-0.518)	(-0.296)	(0.063)	(0.553)	(0.556)	(0.969)
PURCH_ACC_1	0.2692	0.2544	0.2277	0.9715	0.9687	0.8220
	(2.895)	(2.906)	(2.569)	(2.593)	(2.569)	(2.204)
POOLING_ACC	0.2137	0.2168	0.2008	0.9034	0.9051	0.8265
	(2.243)	(2.445)	(2.268)	(2.344)	(2.339)	(2.184)
ALLSTOCK		-0.0183	-0.0189		-0.0043	-0.0055
		(-1.739)	(-1.839)		(-0.082)	(-0.105)
ACQ_VAL			-0.0123			-0.0419
			(-1.153)			(-0.835)
ACQ_GLAM			-0.0126			-0.0130
			(-1.333)			(-0.273)
TGT_VAL			0.0073			-0.0728
			(0.709)			(-1.500)
TGT_GLAM			-0.0053			-0.1742
			(-0.584)			(-3.742)
R^2	0.283	0.293	0.304	0.093	0.093	0.156
Adj. R^2	0.213	0.219	0.216	0.003	0.001	0.050

Table A.11
Long-Term Operating Performance and EPS Accretion

Non-parametric tests of correlations between long-term abnormal operating performance and a measure of expected year 1 EPS accretion/dilution, for a sample of 224 mergers announced and completed between 1/75 and 12/94, where both the acquirer and the target were listed on the CRSP database and on the Value Line Investment Survey on the announcement date. ACQ_ACC_1 are estimates, as of the closing date, of expected EPS accretion/dilution for the acquirer in fiscal year 1. EPS accretion/dilution is measured as the expected change (ΔEPS) in projected acquirer EPS for fiscal year 1 due to the acquisition, scaled by the acquirer stock price one week before announcement. Year 0 is the fiscal year in which the merger closes. CF is the ratio of EBITDA (earnings before interest, taxes, depreciation and amortization) to sales for the acquirer, except in year -1, where it is a weighted average of target and acquirer CF's. ΔCF is the change in CF between year -1 and year X (=+1 or +2). ΔCF_ADJ is the difference between ΔCF for the acquirer and for the median firm in the acquirer's industry. Industry classifications are from Value Line. "Accretive sub-sample" is the subset of transactions where ACQ_ACC_1 is positive, while "dilutive sub-sample" is defined for negative ACQ_ACC_1. "Correlations Coefficients" tests the hypothesis that the Pearson correlation coefficient is zero. "Medians" uses the Wilcoxon signed rank test to examine the hypothesis that each median is zero. "Difference of Medians" uses the Mann-Whitney U test to examine the hypothesis that the medians of the accretive and dilutive sub-samples are different from each other. P-values are in parenthesis.

	Year -1 to +1	Year -1 ot +2
PANEL A — Correlation Coefficients		
ΔCF and ACQ_ACC_1	-0.047	-0.056
	(0.254)	(0.217)
ΔCF_ADJ and ACQ_ACC_1	-0.018	-0.021
	(0.402)	(0.385)
PANEL B — Medians		
Accretive Sub-sample		
ΔCF	-0.002	-0.006
	(0.297)	(0.246)
ΔCF_ADJ	-0.001	-0.003
	(0.399)	(0.286)
Dilutive Sub-sample		
ΔCF	0.003	0.005
	(0.106)	(0.119)
ΔCF_ADJ	-0.004	0.002
	(0.478)	(0.433)
PANEL C — Difference of Medians		
Accretive vs. Dilutive Sub-samples		
ΔCF	-0.005	-0.011
	(0.099)	(0.105)
ΔCF_ADJ	0.004	-0.005
	(0.489)	(0.420)

Table A.12
Long-Term Abnormal Returns, Operating Performance and EPS Accretion

Univariate and multivariate OLS regressions of acquirer long-term buy-and-hold abnormal returns (BHAR's) over the first two full calendar years following closing, on measures of future expected EPS accretion/dilution, long-term abnormal operating performance and calendar year dummy variables, for a sample of 224 mergers announced and completed between 1/75 and 12/94, where both the acquirer and the target were listed on the CRSP database and on the Value Line Investment Survey on the announcement date. Dependent variable in all regressions is CYBHAR, an estimate of the abnormal buy-and-hold return (BHAR) earned by the acquirer's stock in each of two consecutive 12-month sub-periods beginning with the first full calendar year following the closing of the deal. BHAR's are estimated as the difference between the return on the acquirer's stock over the estimation period, and return on a "benchmark" portfolio of stocks with size and book-to-market equity (B/M) similar to the acquirers' at the beginning of the period. ACQ_ACC_CYX are estimates, as of the closing date, of expected future EPS accretion/dilution for the acquirer in calendar year X (= 1 or 2). EPS accretion/dilution is measured as the expected change (ΔEPS) in projected acquirer EPS for calendar year X due to the acquisition, scaled by the acquirer stock price one week before announcement. Calendar year 1 (CY 1) is the first full calendar year following the closing date. ALLSTOCK is a dummy variable equal to 1 if the deal is financed 100% with stock. ΔCF_ADJ is the difference between ΔCF for the acquirer and for the median firm in the acquirer's industry. ΔCF is the change in CF between year -1 and year +1. CF is the ratio of EBITDA (earnings before interest, taxes, depreciation and amortization) to sales for the acquirer, except in year -1, where it is a weighted average of target and acquirer CF's. Industry classifications are from Value Line. All specifications include calendar year dummy variables (results not shown). T-statistics are in parenthesis, under each estimated coefficient.

Variable	24-Month CYBHAR (Yrs 1-2)		12-Month CYBHAR (Year 1)		12-Month CYBHAR (Year 2)	
	[1]	[2]	[3]	[4]	[5]	[6]
Intercept	0.4780	0.4501	0.0707	0.0486	0.0889	0.1099
	(1.466)	(1.396)	(0.368)	(0.255)	(0.618)	(0.761)
ACQ_ACC_CY1		1.1171		0.8887		
		(1.713)		(2.311)		
ACQ_ACC_CY2						0.0299
						(0.107)
ALLSTOCK		-0.1295		-0.0436		-0.0625
		(-1.712)		(-0.978)		(-1.497)
ΔCF_ADJ	1.8813	1.9103	1.1840	1.2076	1.0805	1.0298
	(2.205)	(2.266)	(2.352)	(2.430)	(2.733)	(2.597)
R^2	0.111	0.142	0.096	0.129	0.110	0.121
Adj. R^2	0.017	0.041	0.001	0.027	0.015	0.017

Table A.13
Sample Companies

Sample of 224 mergers announced and completed between 1/75 and 12/94, where both the acquirer and the target were listed on the CRSP database and on the Value Line Investment Survey as of the announcement date. Includes only transactions where total target market equity was at least 10% of acquirer total market equity at announcement. First announcement date is the date of the first indication that any party is interested in acquiring the target. Acquirer announcement date is the date of the first indication that the eventual acquirer is interested in the target. Close date is the earliest of either the transaction completion date, or the day the target is consolidated into the acquirer for financial reporting purposes. Acquisition currency describes the types of acquirer-issued securities any or all the target shareholders received in return for their shares.

First Ann. Date	Acquirer Ann. Date	Close Date	Acquirer	Target	Merger Acounting Method	Acquisition Currency
4/75	4/75	5/75	Signal Companies	Universal Oil	Purchase	Cash
7/75	7/75	11/75	Baker Oil Tools	Reed Tool	Pooling	Stock
11/75	11/75	1/76	Colt Industries	Garlock	Purchase	Cash
12/75	1/76	2/76	Northwest Industries	Microdot	Purchase	Cash
12/75	12/75	12/76	General Electric	Utah International	Pooling	Stock
12/75	12/75	4/76	Gould	ITE Imperial	Purchase	Cash, Stock
5/76	8/76	9/76	Lamson & Sessions	Youngstown Steel Door	Purchase	Cash
9/76	9/76	1/77	NL Industries	Rucker	Pooling	Stock
10/76	10/76	2/77	Champion International	Hoerner Waldorf	Pooling	Stock
10/76	12/76	1/77	Lear Siegler	Royal Industries	Purchase	Cash
11/76	11/76	12/76	General Cable	Sprague Electric	Purchase	Cash
2/77	2/77	5/77	Colt Industries	Menasco Manufacturing	Pooling	Stock
2/77	2/77	4/77	Wallace Murray	Hydrometals	Purchase	Cash
4/77	4/77	9/77	General Signal	Sola Basic Industries	Pooling	Stock
5/77	5/77	11/77	PepsiCo	Pizza Hut	Pooling	Stock
5/77	5/77	7/77	Norton Simon	Avis	Purchase	Cash
8/77	9/77	11/77	Allegheny Ludlum	Chemetron	Purchase	Debt, Pref.
9/77	9/77	1/78	Ex-Cell-O	McCord	Purchase	Cash, Stock
10/77	10/77	1/78	Dean-Witter Organization	Reynolds Securities International	Purchase	Stock
11/77	11/77	12/77	Borg-Warner	Baker Industries	Purchase	Cash
11/77	11/77	5/78	National Distillers & Chemical	Emery Industries	Purchase	Cash, Debt
1/78	1/78	5/78	Dayton-Hudson	Mervyn's	Pooling	Stock
1/78	1/78	6/78	Louisiana Pacific	Fibreboard	Purchase	Cash
3/78	3/78	5/78	Esmark	STP	Purchase	Cash
3/78	3/78	5/78	General Cable	Automation Industries	Purchase	Cash
3/78	3/78	5/78	Cabot	Kawecki Berylco	Purchase	Cash
5/78	5/78	6/79	Gannett	Combined Communications	Pooling	Stock
6/78	6/78	8/78	IC Industries	Pet	Purchase	Cash
6/78	6/78	1/79	Eaton Corp	Cutler-Hammer	Purchase	Cash, Pref.
6/78	6/78	9/78	General Signal	Leeds & Northrup	Purchase	Cash, Stock
7/78	7/78	10/78	Allis-Chalmers	American Air Filter	Purchase	Cash

Table A.13, continued
Sample Companies

First Ann. Date	Acquirer Ann. Date	Close Date	Acquirer	Target	Merger Acounting Method	Acquisition Currency
7/78	9/78	1/79	Johns-Manville	OlinKraft	Purchase	Cash, Debt
8/78	8/78	2/79	RJ Reynolds	Del Monte	Purchase	Cash, Debt
8/78	8/78	1/79	Wheelabrator-Frye	Neptune International	Pooling	Stock
9/78	9/78	11/78	Gulf & Western	Simmons	Purchase	Cash
9/78	9/78	2/79	Pillsbury	Green Giant	Purchase	Cash, Stock
9/78	9/78	11/80	Chessie System	Seaboard Coast Line	Pooling	Stock
11/78	11/78	2/79	Diamond Shamrock	Falcon Seaboard	Pooling	Stock
12/78	12/78	4/79	Hershey Foods	Friendly Ice Cream	Purchase	Cash
4/79	5/79	7/79	Transamerica	Interway	Purchase	Cash
5/79	5/79	8/79	Continental Group	Florida Gas	Purchase	Cash, Debt
6/79	6/79	7/79	Allied Chemical	Eltra	Purchase	Cash
7/79	7/79	10/80	Tiger International	Seaboard World Airlines	Purchase	Stock, Pref.
7/79	7/79	10/79	Ampco-Pittsburgh	Pittsburgh Forgings	Purchase	Cash
7/79	7/79	12/79	Genstar	Flintkote	Purchase	Cash
7/79	7/79	9/79	McGraw Edison	Studebaker-Worthington	Purchase	Cash
8/79	8/79	1/80	Pan Am	National Airlines	Purchase	Cash
10/79	10/79	2/80	Raytheon	Beech Aircraft	Pooling	Stock
10/79	10/79	12/79	Gifford-Hill	Amcord	Purchase	Cash
11/79	12/79	3/80	Pay Less Drug Stores NW	Pay Less Drug Stores CA	Purchase	Cash
2/80	2/80	1/81	Signal	Ampex	Pooling	Stock
3/80	3/80	6/80	Universal Leaf Tobacco	Royster	Purchase	Cash, Pref.
4/80	4/80	7/80	Square D	Yates Industries	Purchase	Cash
6/80	6/80	9/80	Dart Industries	Kraft	Pooling	Stock
7/80	7/80	5/81	Penn Central	GK Technologies	Purchase	Cash
9/80	11/80	4/81	Cooper Industries	Crouse-Hinds	Pooling	Stock
10/80	10/80	8/81	Westinghouse Electric	Teleprompter	Purchase	Cash
11/80	11/80	1/81	Ashland Oil	United States Filter	Purchase	Cash, Pref.
12/80	2/81	3/81	Dart & Kraft	Hobart	Purchase	Cash
1/81	1/81	3/81	Ampco-Pittsburgh	Buffalo Forge	Purchase	Cash
1/81	1/81	10/81	Baldwin United	Sperry & Hutchinson	Purchase	Cash
3/81	3/81	6/81	Standard Oil (Ohio)	Kennecott	Purchase	Cash
4/81	4/81	6/81	American Express	Shearson Loeb Rhoades	Pooling	Stock
5/81	7/81	8/81	Du Pont	Conoco	Purchase	Cash, Stock
6/81	6/81	8/81	Occidental Petroleum	Iowa Beef Processors	Purchase	Stock, Debt
7/81	7/81	9/81	Allied Stores	Garfinckel, Brooks Bros.	Purchase	Cash
7/81	7/81	9/81	Tyco	Ludlow	Purchase	Cash
8/81	8/81	12/81	American Hospital Supply	Bentley Labs	Pooling	Stock
8/81	9/81	10/81	Sherwin-Williams	Gray Drug Stores	Purchase	Cash
9/81	9/81	8/82	Northwest Bancorporation	Dial	Purchase	Cash
9/81	9/81	3/82	Genuine Parts	General Automotive Parts	Pooling	Stock
11/81	11/81	1/82	United States Steel	Marathon Oil	Purchase	Cash, Pref.
11/81	11/81	2/82	Corning Glass Works	MetPath	Pooling	Stock

Table A.13, continued
Sample Companies

First Ann. Date	Acquirer Ann. Date	Close Date	Acquirer	Target	Merger Acounting Method	Acquisition Currency
11/81	11/81	1/82	Witco Chemical	Richardson	Purchase	Cash
11/81	11/81	3/82	Smith Kline	Beckman Instruments	Pooling	Stock
11/81	11/81	3/82	Marriott	Host International	Purchase	Cash
12/81	12/81	8/82	Avon Products	Mallinckrodt	Purchase	Cash, Stock
4/82	4/82	5/82	Limited Stores	Lane Bryant	Purchase	Cash
4/82	4/82	7/82	Aetna Life & Casualty	Geosource	Purchase	Stock
6/82	6/82	9/82	Best Products	Modern Merchandising	Purchase	Stock
6/82	6/82	9/82	Ogden	Allied Maintenance	Pooling	Stock
7/82	7/82	9/82	Morton-Norwich Products	Thiokol	Purchase	Cash, Stock
7/82	7/82	10/82	RJ Reynolds	Heublein	Purchase	Cash, Stock, Debt
8/82	8/82	4/83	Mellon National	Girard	Purchase	Stock, Debt
9/82	9/82	1/83	Xerox	Crum & Forster	Purchase	Cash, Stock, Debt
10/82	10/82	1/83	Fuqua Industries	American Seating	Purchase	Cash, Stock
10/82	10/82	11/82	Western Union	E. F. Johnson	Pooling	Stock
11/82	11/82	12/82	Transamerica	Fred James	Purchase	Cash
11/82	11/82	2/83	Signal Companies	Wheelbrator-Frye	Purchase	Stock
11/82	11/82	1/83	Kroger	Dillon Companies	Pooling	Stock
12/82	1/83	1/83	National Distillers and Chemical	Suburban Propane & Gas	Purchase	Cash
12/82	7/83	10/83	Quaker Oats	Stokley-Van Camp	Purchase	Cash
1/83	1/83	8/83	Financial Corp of America	First Charter Financial	Purchase	Cash, Stock, Debt
3/83	3/83	8/83	Nortek	Monogram Industries	Purchase	Cash, Stock
3/83	3/83	7/83	Great Western	Financial Federation	Pooling	Stock
4/83	4/83	8/83	Southeastern Public Service	Graniteville	Purchase	Cash
6/83	6/83	8/83	CSX	Texas Gas Resources	Purchase	Cash, Stock
6/83	6/83	7/83	Brown Forman	Lenox	Purchase	Cash
6/83	6/83	10/84	Mercantile Texas	Southwest Bancshares	Purchase	Stock
6/83	6/83	8/83	Fort Howard Paper	Maryland Cup	Purchase	Cash, Stock
6/83	6/83	9/83	Hercules	Simmonds Precision Products	Pooling	Stock
7/83	7/83	10/83	Harris	Lanier Business Products	Pooling	Stock
7/83	7/83	4/84	First National State Bancorp	Fidelity Union Bancorporation	Pooling	Stock
8/83	8/83	12/83	Burlington Northern	El Paso	Purchase	Cash, Debt
9/83	9/83	10/83	Williams Companies	Northwest Energy	Purchase	Cash
9/83	9/83	3/84	Kaneb Services	Moran Energy	Pooling	Stock
12/83	12/83	2/84	American Standard	Trane	Purchase	Cash, Stock
12/83	12/83	2/84	Lear Siegler	Bangor Punta	Purchase	Cash
1/84	1/84	2/84	Texaco Oil	Getty Oil	Purchase	Cash
2/84	3/84	5/84	Standard Oil	Gulf	Purchase	Cash

Table A.13, continued
Sample Companies

First Ann. Date	Acquirer Ann. Date	Close Date	Acquirer	Target	Merger Acounting Method	Acquisition Currency
3/84	3/84	5/84	US Gypsum	Masonite	Purchase	Cash
3/84	7/84	9/84	United Merchants & Manufacturers	Johnathan Logan	Purchase	Cash. Pref.
4/84	4/84	5/84	Savannah Foods	Michigan Sugar	Purchase	Cash
4/84	4/84	6/84	Homestake Mining	Felmont Oil	Pooling	Stock
5/84	5/84	9/84	Mobil	Superior Oil	Purchase	Cash. Pref.
5/84	5/84	6/84	Petrie Stores	Miller Wohl	Purchase	Cash
7/84	7/84	9/84	Champion International	St Regis	Purchase	Cash. Stock
8/84	9/84	10/84	IC Ind	Pneumo	Purchase	Cash. Stock
11/84	11/84	12/84	Gulf & Western	Prentice-Hall	Purchase	Cash
11/84	11/84	1/85	Textron	Avco	Purchase	Cash
1/85	1/85	2/85	Crane	Unidynamics	Purchase	Cash
1/85	4/85	6/85	Ames Department Stores	G. C. Murphy	Purchase	Cash
2/85	2/85	7/85	Sunshine Mining	Woods Petroleum	Purchase	Cash, Stock, Debt
3/85	3/85	3/85	Coastal Corp	American Natural Resources	Purchase	Cash
3/85	3/85	4/85	Triangle Ind	National Can	Purchase	Cash
3/85	3/85	4/85	Cooper Ind	McGraw-Edison	Purchase	Cash
4/85	4/85	5/85	Service Merchandise	H. J. Wilson	Purchase	Cash. Pref.
4/85	4/85	5/85	Emhart	Mite	Purchase	Cash
5/85	5/85	9/85	RJ Reynolds	Nabisco Brands	Purchase	Cash. Debt. Pref.
5/85	5/85	8/85	Chrysler	Gulfstream Aerospace	Purchase	Cash. Pref.
5/85	5/85	7/85	Pillsbury	Diversifoods	Purchase	Cash
6/85	11/85	4/86	Bally Manufacturing	MGM Grand Hotels	Purchase	Cash
7/85	7/85	8/85	Monsanto	G. D. Searle & Co.	Purchase	Cash
7/85	11/85	1/86	West Point Pepperell	Cluett, Peabody & Co	Purchase	Cash. Stock
8/85	8/85	3/86	Boatmen's Bancshares	General Bancshares	Pooling	Stock
9/85	9/85	11/85	Philip Morris	General Foods	Purchase	Cash
9/85	10/85	11/85	Proctor & Gamble	Richardson-Vicks	Purchase	Cash
10/85	10/85	11/85	Spring Industries	M. Lowenstein Corp	Purchase	Cash
10/85	10/85	12/85	FPL Group	Colonial Penn Group	Purchase	Cash
10/85	10/85	2/86	U.S. Steel	Texas Oil & Gas	Pooling	Stock
11/85	4/86	5/86	CSX	Sea-Land	Purchase	Cash
12/85	12/85	6/86	General Electric	RCA	Purchase	Cash
12/85	1/86	4/86	Occidental Petroleum	Midcon	Purchase	Cash. Stock
1/86	1/86	2/86	Heilig-Myers	Sterchi Brothers	Purchase	Cash
1/86	1/86	4/86	Dean Foods	Larsen	Pooling	Stock
3/86	3/86	6/86	Schering-Plough	Key Pharmaceuticals	Pooling	Stock
3/86	3/86	7/86	Keystone International	Anderson, Greenwood & Co	Pooling	Stock
3/86	3/86	5/86	Maytag	Magic Chef	Pooling	Stock
5/86	5/86	7/86	Louisiana Land & Exploration	Inexco Oil	Purchase	Cash, Stock

Table A.13, continued
Sample Companies

First Ann. Date	Acquirer Ann. Date	Close Date	Acquirer	Target	Merger Acounting Method	Acquisition Currency
5/86	5/86	8/86	Pacific Lighting	Thrifty	Pooling	Stock
5/86	5/86	6/86	Marriott	Saga	Purchase	Cash
5/86	9/86	10/86	Quaker Oats	Anderson Clayton	Purchase	Cash
6/86	6/86	10/86	May Department Stores	Associated Dry Goods	Pooling	Stock
6/86	6/86	2/87	PNC Financial	Citizens Fidelity	Pooling	Stock
6/86	7/86	8/86	Lockheed	Sanders Associates	Purchase	Cash
7/86	7/86	8/86	Pentair	McNeil	Purchase	Cash
7/86	8/86	9/86	International Paper	Hammermill Paper	Purchase	Cash
8/86	8/86	9/86	Textron	Ex-Cell-o	Purchase	Cash
9/86	9/86	12/86	Delta Airlines	Western Airlines	Purchase	Cash, Stock
9/86	9/86	11/86	Union Pacific	Overnite Transportation	Purchase	Cash
9/86	9/86	11/86	Danaher	Western Pacific Industries	Purchase	Cash
10/86	10/86	12/86	Emhart	Planning Research	Purchase	Cash
2/87	2/87	11/87	USAir	Piedmont Aviation	Purchase	Cash
2/87	2/87	8/87	Security Pacific	Ranier Bancorporation	Pooling	Stock
2/87	3/87	4/87	Ecolab	ChemLawn	Purchase	Cash
3/87	3/87	1/88	Fleet Financial	Norstar Bancorporation	Pooling	Stock
4/87	4/87	8/87	Advanced Micro Devices	Monolithic Memories	Pooling	Stock
7/87	7/87	9/87	M.A. Hanna	Day Internationa	Purchase	Cash
7/87	9/87	10/87	Tonka	Kenner Parker Toys	Purchase	Cash
8/87	8/87	1/89	PacifiCorp	Utah Power & Light	Pooling	Stock
9/87	10/87	2/88	Arkla	Entex	Pooling	Stock
10/87	10/87	1/88	Sequa	Atlantic Research	Purchase	Cash
10/87	10/87	12/87	National Education.	Advanced Systems	Pooling	Stock
1/88	1/88	2/88	Eastman Kodak	Sterling Drug	Purchase	Cash
1/88	1/88	6/88	National City	First Kentucky National	Pooling	Stock
2/88	2/88	5/88	Dun & Bradstreet	IMS International	Pooling	Stock
2/88	5/88	6/88	Crompton & Knowles	Ingredient Technology	Purchase	Cash
2/88	2/88	4/88	Southdown	Moore McCormack Resources	Purchase	Cash
3/88	3/88	6/88	American Stores	Lucky Stores	Purchase	Cash
3/88	8/88	9/88	Imo Delaval	Varo	Purchase	Cash
4/88	5/88	12/88	Boatmen's Bancshares	Centerre Bancorporation	Pooling	Stock
7/88	7/88	12/88	Alltel	CP National	Pooling	Stock
8/88	8/88	10/88	Mark IV Industries	Armtek	Purchase	Cash
10/88	10/88	12/88	Philip Morris	Kraft	Purchase	Cash
10/88	10/88	7/89	Tyson Foods	Holly Farms	Purchase	Cash
10/88	10/88	1/89	Maytag	Chicago Pacific	Purchase	Cash, Stock
12/88	12/88	2/89	Federal Express	Tiger International	Purchase	Cash
1/89	2/89	6/89	Panhandle Eastern	Texas Eastern	Purchase	Cash, Stock

Table A.13, continued
Sample Companies

First Ann. Date	Acquirer Ann. Date	Close Date	Acquirer	Target	Merger Acounting Method	Acquisition Currency
2/89	3/89	4/89	Black & Decker	Emhart	Purchase	Cash
5/89	5/89	9/89	Applied Power	Barry Wright	Purchase	Cash
6/89	6/89	7/89	MA Com	Adams-Russell Electronics	Purchase	Cash
7/89	7/89	10/89	Bristol-Myers	Squibb	Pooling	Stock
8/89	9/89	3/90	CoreStates	First Pennsylvania	Pooling	Stock
10/89	10/89	6/90	Georgia Pacific	Great Northern Nekoosa	Purchase	Cash
4/90	4/90	9/90	Thermo Instrument Sytems	Finnigan	Purchase	Cash
5/90	5/90	10/90	Avery International	Dennison Manufacturing	Pooling	Stock
6/90	6/90	12/90	Equifax	Telecredit	Pooling	Stock
6/90	6/90	1/91	Sunstrand	Milton Roy	Purchase	Cash
7/90	7/90	3/91	GTE	Contel	Pooling	Stock
7/90	7/90	12/90	Arkla	Diversified Energies	Purchase	Stock
11/90	11/90	9/91	AT&T	NCR	Pooling	Stock
2/91	2/91	7/91	IE Ind	Iowa Southern	Pooling	Stock
5/91	9/91	3/92	Society Corp	Ameritrust	Pooling	Stock
6/91	6/91	12/91	NCNB	C&S Sovran	Pooling	Stock
7/91	7/91	12/91	Chemical Bank	Manufacturers Hanover	Pooling	Stock
8/91	8/91	4/92	BankAmerica	Security Pacific	Purchase	Stock
10/91	10/91	6/92	Comerica	Manufacturers National	Pooling	Stock
11/91	11/91	2/92	Newell	Sanford	Pooling	Stock
3/92	3/92	10/92	NBD Bancorp	INB Financial	Pooling	Stock
5/92	5/92	3/93	Sprint	Centel	Pooling	Stock
6/92	6/92	10/92	Super Valu Stores	Wetterau	Purchase	Cash
6/92	7/92	10/92	Bergen Brunswig	Durr-Fillauer Medical	Purchase	Cash
9/92	9/92	6/93	KC Southern Industries	Midsouth	Purchase	Cash
10/92	10/92	2/93	Perkin-Elmer	Applied Biosystems	Pooling	Stock
12/92	12/92	3/93	Ball	Heekin Can	Purchase	Stock
7/93	7/93	11/93	Merck	Medco Containment Services	Purchase	Cash. Stock
8/93	8/93	11/93	Mattel	Fisher Price	Pooling	Stock
9/93	9/93	10/93	Sonoco Products	Engraph	Purchase	Cash
9/93	9/93	12/93	Primerica	Travelers	Purchase	Stock
10/93	10/93	2/94	Columbia Healthcare	HCA-Hospital	Pooling	Stock
10/93	10/93	3/94	Society Corp	Keycorp	Pooling	Stock
12/93	12/93	8/94	Mellon Bank	Dreyfus	Pooling	Stock
3/94	3/94	4/94	Northrop Corp	Grumman	Purchase	Cash
8/94	8/94	12/94	American Home Products	American Cyanamid	Purchase	Cash

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