

Does Corporate Diversification Destroy Value?

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Abstract:

We analyze several hundred firms that expand via acquisition and/or increase their reported number of business segments. The mean market reaction to acquisition announcements is positive but, according to the Berger and Ofek (1995) method for valuing conglomerates, the excess values of the acquiring firms decline after the diversifying event. For our sample, half or more of the reduction in excess value occurs because the firms acquire already-discounted business units, and not because combining firms destroys value. We also show that firms that increase their number of business segments due to pure reporting changes do not exhibit reductions in excess value. Our results suggest that the standard assumption that conglomerate divisions can be benchmarked to typical stand-alone firms needs to be carefully reconsidered.

JEL classification: G12, G34

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Does corporate diversification destroy value? Several recent papers attempt to answer this question by comparing the market value of firms that report operations in multiple business segments to the value of a portfolio of stand-alone firms that operate in the same industries as the divisions of the conglomerate. Lang and Stulz (1994) use this approach and find that multi-segment firms have low values of Tobin's q compared to a portfolio of single-segment firms. Using a similar approach, Berger and Ofek (1995) find that U.S. conglomerates are priced at a mean discount of approximately 15%. Lins and Servaes (1999) find similar discounts in Japan and the U.K. Indeed, based on the Berger and Ofek methodology, diversified firms with valuation discounts had aggregate value losses of \$800 billion in 1995. The magnitude of the value loss suggests that operating the divisions of conglomerates as stand-alone firms would create significant value. In this paper we provide new evidence on whether the act of corporate diversification destroys value, or whether the divisions that make up conglomerates would trade at a discount, even if they operated as stand-alone firms.

In concluding that diversification destroys value, the prior literature implicitly assumes that stand-alone firms are a valid benchmark for valuing the divisions of conglomerates. The main point of our paper is that the diversification discount calculation can be misleading if there are systematic differences between the divisions of conglomerates and the stand-alone firms to which they are benchmarked. Failure to account for these differences can lead to incorrect inferences regarding the effect of corporate diversification on firm value. To assess the extent to which these selection bias issues are important, we examine two samples of firms that expand via acquisition and/or increase their reported number of business segments.

The first sample consists of firms involved in mergers and acquisitions (M&A) for which we can identify the market value of the acquirer and target prior to the acquisition. At the time of the announcement, we find that the combined abnormal returns of the acquirer and target are 3%,

indicating that overall the market views these mergers positively. Using the methodology of Berger and Ofek (1995), however, we find that the mean excess value of the acquiring firms declines by approximately 7% over the two-year period surrounding the acquisition. To determine the cause of the decline in excess value, we examine the valuations of the targets prior to the acquisition and find that they have excess values of approximately -10% in their last year of operation as stand-alone firms. The addition of an already discounted unit reduces the excess value of the acquiring firm as measured by the excess value methodology, even if combining the firms does not destroy any value.

For the M&A sample we find that almost all of the 7% reduction in excess value for the acquirers can be traced directly to the addition of already “discounted” targets. Moreover, the reduction in excess value from the acquisition of a discounted target appears in many different types of firms: those involved in both related and unrelated acquisitions, those that increase their number of segments and those that do not, and those that end up single segment or multisegment after the M&A event. These findings indicate that in our sample the units that are combined into other firms are systematically different than stand-alone firms, and suggest that methodologies that benchmark divisions of conglomerates to stand-alone firms might overstate the magnitude of the diversification discount.

Much of the prior literature on the diversification discount (Lang and Stulz (1994), Berger and Ofek (1995), and Servaes (1996)) defines conglomerates as firms that report operations in multiple business segments. Somewhat surprisingly, only 16% of the firms in our M&A sample increase their number of reported business segments following the merger, even though most of the merger events are large enough to qualify for segment reporting. Chevalier (2000) also finds relatively few segment increases in her M&A sample. To better understand how our findings for the M&A sample are related to the multisegment discount, we gather data

for a second sample: firms that begin as single-segment and then increase their number of business segments. Nearly two-thirds of these firms increase their number of segments via acquisitions, while the remaining one-third increase their number of business segments because of internal expansion or reporting changes. We obtain many more segment-increases in this sample, because unlike in the M&A sample, we include some firms for which we can not exactly identify the acquired unit prior to acquisition.

For the segment-increasing firms that expand via acquisition, the mean excess value changes from about zero to -14% over the two-year period surrounding the segment increase. Because we cannot directly identify the acquired units in this sample, we assign excess values using a method similar in spirit to the standard benchmarking assumption of the segment-based literature: to proxy for the excess values of the new segments, we use a multiple of the median value among all same-industry stand-alone Compustat firms that were targets of completed acquisitions. Our results suggest that about half of the 14% “value loss” in these diversifying firms is explained by the parent adding an already discounted unit. We also examine the one-third of firms that increase their reported number of segments because of internal growth or due to pure reporting changes.¹ These firms do not experience a decline in excess value at the time of the segment increase, which provides additional support for the view that the diversification discount is linked to the characteristics of acquired firms.

There are at least two important caveats related to generalizing our result that adding an already discounted firm causes a decline in excess value for diversifying firms, even if no value is destroyed. First, our valuations are based on public bidders and targets even though many acquired units in the segment-increasing sample result from partial or private acquisitions. Of

¹ Piotroski (1999) finds that firms that increase their number of segments as a pure reporting change (with no real alteration of company structure) exhibit significant positive stock price performance in the periods following the segment increase. Hyland (1999) also distinguishes between reporting changes and other segment-increasing events.

course, this problem is not ours alone. Most diversification studies assume that one can use information on publicly traded stand-alone firms to value the divisions of conglomerates. Schoar (2000) provides some evidence that publicly traded targets are representative of the broader sample of acquired units. She finds that acquired plants (many of which are privately held) exhibit low productivity (and would presumably also have low market values) prior to acquisition, and that in general productivity and excess value are positively correlated. So, perhaps this first problem is not too serious. Second, our focus is limited to studying several hundred firms that expand via acquisitions and/or segment increases. Thus, we can not be sure that our results hold for the broader sample of multisegment firms commonly examined. Schoar, however, finds that for a broad cross-section of firms, already diversified companies continue to expand via acquisition, suggesting that many divisions of conglomerates arise via acquisition. In addition, two-thirds of the firms in our sample that increase segments do so via acquisition. These findings suggest that results based on M&As have implications related to the valuation of multisegment firms. At the very least, our findings suggest that the benchmarks for valuing conglomerate firms should be carefully chosen, and that one should interpret cautiously conglomerate valuations that rely on stand-alone firms.

Several other papers investigate issues related to interpreting the diversification discount. Lang and Stulz (1994), Hyland (1999), and Campa and Kedia (1999) provide evidence that diversifying firms are poor performers prior to conglomeration, indicating that the act of diversifying does not necessarily cause the entire discount observed in conglomerates. Schoar (2000) finds that the industry- q of new units is lower than the average industry- q of a firm's initial segments. Lamont and Polk (1999) show that conglomerate firms have higher required rates of return and that this can account for approximately one-third of the diversification discount. Using plant level data, Maksimovic and Phillips (1998) find that the growth of most

conglomerates is consistent with optimal behavior; they do not find evidence that peripheral divisions are protected inefficiently by headquarters. Whited (2000) argues that much of the evidence that links the diversification discount to inefficient cross-subsidization suffers from problems related to measurement error.

Our paper is also related to other research that examines the endogeneity of the diversification decision. Villalonga (2000) compares conglomerates to portfolios of single-segment firms with a high “propensity to diversify” (rather than matching to the actual business units that become part of the larger firm like we do in our M&A analysis). Similar to our results, she finds that the diversification discount is reduced when conglomerates are compared to stand-alone firms with similar propensities to diversify. In contrast to our paper, however, her focus is on the valuations of diversifying firms and not on the divisions that they add. Our paper also complements the analysis in Chevalier (2000). In a sample similar to our subset of unrelated M&A firms, she finds that investment patterns commonly attributed to cross-subsidization between divisions are apparent in pairs of merging firms prior to their mergers.

The remainder of the paper is organized as follows. Section II describes the standard excess value calculation and presents a numerical example that summarizes our main point. Section III describes the data. Section IV reports ex ante excess values for acquiring and acquired firms, and Section V shows the extent to which the pre-acquisition discount of acquired units explains the change in excess value for the acquiring firm. Section VI reports ex ante excess values for segment-increasing firms and those removed from Compustat because they are acquired, and Section VII relates these figures to the change in excess value. Section VIII summarizes our results and discusses implications for other studies of corporate diversification.

II. Measuring the effect of diversification on firm value

To value multisegment firms, Berger and Ofek (1995) impute values for each segment of a diversified company using valuation multiples from the median stand-alone firm in the same industry as the segment being valued. On average, they find that the actual market value of conglomerates is less than the weighted sum of the imputed divisional values, a negative “excess value”. Based on this finding, Berger and Ofek conclude that diversification destroys value in the aggregate. The key assumption in this valuation approach is that “typical” single-segment firms are a valid benchmark against which to compare the divisions of conglomerates.

The main point of our paper is that a firm’s “excess value” can decline if it acquires an already discounted unit, even if the act of combining the firms itself destroys no value. Therefore, conglomeration might not be as bad as is commonly thought. We use a numerical example to illustrate this intuition. Assume that an acquiring firm A with sales of 100 acquires a new division T with sales of 65. The market values of the acquiring and target firms are 115 and 70, respectively, as shown in Table I. To determine the excess value of these firms, we compare each division's market-to-sales ratio to the benchmark ratio for the median firm in its own industry. The benchmark market-to-sales ratio for firm T is 1.08 in comparison to 1.25 for the median firm in its industry, implying an excess value of -15% ($=\ln(1.08/1.25)$). In contrast, the excess value of firm A is 0%. The rightmost column in Table I shows that the mathematical combination of the two businesses results in an excess value of -6% for the conglomerate.

In this example the acquisition does not destroy value, and the acquiring firm does not make an inefficient decision when it purchases firm T at market value. And yet, the excess value calculation makes it appear that the acquirer’s value has been reduced by 6%. If, on average, firms that choose to diversify or the divisions that they add are discounted prior to acquisition, then this valuation methodology may erroneously attribute (too much) value loss to the act of

combining the two firms. This example highlights that it is important to consider the characteristics of individual divisions of conglomerate firms before concluding 1) that the population of undiversified firms is an appropriate benchmark against which to value conglomerate divisions, and 2) that corporate diversification destroys value.

III. Sample selection and description

To shed light on the importance of potential selection bias issues described above, we examine a sample of firms making acquisitions. We use the Securities Data Corporation (SDC) Mergers and Acquisitions database to identify an initial sample of 2,457 publicly traded acquirers that completed an acquisition of 100% of the shares of a publicly traded target firm over the period 1980-1995. We require that both the acquirer and the target are listed in the 1996 active, research, or historical Compustat Industry Segment files. These files contain segment-level data from 1978 through 1995 and include companies reclassified or removed from the annual industrial files. A total of 755 acquisitions meet these criteria. We refine this sample by applying the same criteria used by Berger and Ofek (1995). We eliminate firm-years with any segment in a financial services industry (SIC code between 6000 and 6999), with total sales less than \$20 million, or if the allocation of sales among divisions is incomplete (i.e., the sum of segment sales is not within 1% of the firm's total sales). This leaves a sample of 356 acquisitions. When assets are not completely allocated across business segments, we prorate the unallocated assets across divisions based on the relative asset size of the divisions.

A. Excess value measures

We define excess value using the two-step methodology in Berger and Ofek (1995). In the first step, an imputed value is calculated for each division by multiplying each segment's sales (assets) by the median market-to-sales (market-to-assets) ratio of single-segment firms in

the same industry in the same year. These benchmark multipliers are based on all single-segment firms, including those that are removed from Compustat due to merger, acquisition, bankruptcy, or other reasons. To ensure that the multipliers are representative, at least 5 companies in the industry must have data that year. If less than 5 firms match at the 4-digit SIC level, the 3-digit SIC level is examined and so on until the median of the tightest SIC level with at least 5 observations is found. In the second step, the excess value is calculated as the log of the ratio of the firm's actual market value to the sum of its divisions' imputed values. There are potential valuation problems related to purchase vs. pooling accounting when using asset multipliers.² Therefore, in describing our results we focus on sales-based calculations, though we show asset results in the tables.

B. Diversification measures

We group firms based on two different measures of the type of diversification. First, if the acquirer and the target share any four-digit SIC codes, according to the Compustat segment tapes, we classify acquisitions as related. If the acquirer and target have no common SIC codes, the acquisition is classified as unrelated. Similar classification schemes are used by Morck, Shleifer, and Vishny (1990) and Chevalier (2000). For our sample, 226 of the acquisitions are unrelated and 130 are related.

Second, we classify the firms according to whether or not the acquisition corresponds to an increase in the number of reported business segments. Fifty-seven of our acquisitions

² With purchase accounting, book asset values are marked-to-market, effectively resulting in a market-to-book asset value of 1.0. This accounting change induces a negative bias into excess value calculations when these altered market-to-book asset ratios for conglomerates are benchmarked to unaltered ratios for stand-alone firms (see Plumlee and Wolf (2000)). The effect of accounting methodology is important in our analysis because half of our sample firms use purchase accounting and we study diversification at the time of acquisition. The issue would exist but be less important if the acquisition had occurred in the more distant past. Importantly, sales are not marked to market, so the market-to-sales ratio does not suffer from this same problem.

correspond to segment increases as of year $t = +1$.³ Chevalier (2000) also reports few segment increases for a similar sample of mergers. The fact that so few acquisitions correspond to segment increases is somewhat surprising, given that more than half of the acquisitions appear to be large enough to warrant reporting as a separate segment (according to the accounting rules described in Section VI.B).

Although there are relatively few segment increases directly associated with acquisitions in our sample, 186 of our acquiring firms report operations in multiple business segments in the year following the acquisition ($t=+1$). Even without segment increases, the fact that over half of the acquirers in our sample are multisegment firms links our results to studies of the conglomerate discount. (Another link is that we show below that nearly two-thirds of firms that increase from one segment to more than one do so via acquisition.) Finally, because our sample contains a number of firms that remain as single-segment firms following the acquisition, the M&A sample also allows us to investigate whether the valuation issues we identify apply more broadly.

C. Event study returns

To provide preliminary evidence on the expected valuation effects of the acquisitions in our sample, we compute event study returns over the three-day $\{-1, +1\}$ period surrounding the announcement date of the acquisitions as reported in SDC. The abnormal returns are computed using the residuals from a market model estimated over the period beginning 200 days and ending 51 days prior to the announcement. The mean three-day announcement period cumulative abnormal return of the targets in our sample is 22.51%, while for the bidders it is -0.78% . The mean combined abnormal returns of the acquirer and target (weighted according to the pre-announcement market values of equity) is 3.4%. All of these abnormal returns are statistically

³ Another 12 firms record segment increases in year $t=+2$. Using this broader definition of segment increases does

significant at the 0.01 level. The patterns of the cumulative abnormal returns are similar to those reported by Chevalier (2000) and Kaplan and Weisbach (1992) and indicate that overall the market views these acquisitions positively at the time of the announcement. We also find positive combined returns in both related and unrelated acquisitions, as well as those that result in single- or multisegment firms ex post.⁴

IV. Excess values of acquiring and acquired firms in the merger and acquisition sample

Based on the event study evidence, the acquisitions in our sample do not appear to destroy value at the time of the announcement. In this section we explore whether the selection bias issues discussed in Section II can potentially account for the conglomerate discount by examining the excess values of our merging firms surrounding the acquisition. Because the thrust of our paper is to examine the valuation effects of diversification, we focus on the change in the excess value of the acquirer over the period surrounding the acquisition. We require that our sample firms have three years of data available, centered on the year in which the acquisition is completed. The timing conventions are illustrated in Figure 1.

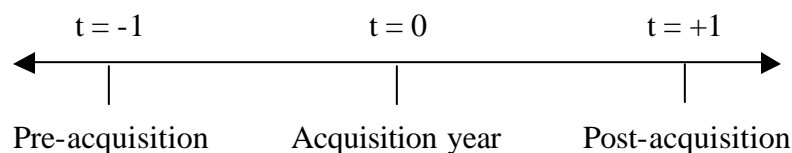


Figure 1. Timing conventions for measuring changes in excess values.

We focus on the first full year after the acquisition ($t = +1$). We exclude year zero because the excess value measures rely on accounting data, and the effective year of the acquisition ($t = 0$)

not qualitatively alter the reported results.

⁴ Like in Morck, Shleifer, and Vishny (1990), the acquiring firms in our M&A sample experience negative announcement returns in unrelated deals in the 1980s; however, combined returns are positive even for this subset.

does not represent a full year of accounting performance as a combined company for the majority of our sample firms.

A. Excess values of acquiring firms

Table II presents excess values for the acquiring firms in the M&A sample. For the full sample of 356 firms (Panel A) in the last year in operation as a stand-alone company ($t = -1$), the mean (median) excess value based on sales multipliers is 14.02% (11.03%). These excess values are significantly different from zero, indicating that, in the year prior to the acquisition, the acquiring firms are valued at a premium relative to the median single-segment firms in their industries. Chevalier (2000) also finds that acquirers trade at a premium.

By $t = +1$, the first full year after the acquisition, the excess values of the acquiring firms have dropped substantially. The sales multiplier mean (median) excess value is 7.09% (6.14%). More importantly, the acquisitions are associated with large declines in excess values. Examining firm-by-firm the change in excess value from $t = -1$ to $t = +1$, the mean (median) change is -6.93% (-4.35%). These changes are statistically significant at the 0.01 level. In unreported analysis, we find that the changes in excess value are uncorrelated with the event study returns documented in Section III.C.

A.1 Excess values of acquiring firms by type of diversification

Panels B through E of Table II explore whether the reductions in excess value are related to the type of diversification strategy. Among firms making related acquisitions (Panel B), the mean (median) sales multiplier change in excess value from $t = -1$ to $t = +1$ is -10.44% (-7.75%), significantly different from zero at the 0.01 level. In contrast, firms that make unrelated acquisitions (Panel C) exhibit much smaller changes in excess value. For the unrelated acquisition group, the mean (median) change in excess value is -4.92% (-1.62%), and only the mean is reliably different from zero at the 0.10 level. Comparing the changes in excess value

across the related and unrelated acquisition groups, only the median change based on asset multipliers is statistically different across the two groups at the 0.10 level.

For acquisitions in which the number of reported business segments remains unchanged (Panel D), the mean (median) sales multiplier based change in excess value from $t = -1$ to $t = +1$ is -5.53% (-3.13%), both of which are significantly different from zero at the 0.05 level. When the acquisition is accompanied by an increase in the number of reported business segments (Panel E), the decline in excess value is considerably larger. For the segment-increasing group, the mean (median) change in sales-multiplier-based excess value is -14.28% (-12.10%), both significantly different from zero. We cannot, however, reject the hypothesis that the changes in excess value are equal at the 0.10 level for the segment-increasing and no-segment-increase groups.

In summary, the acquisitions in our sample are associated with a reduction in excess value. Though not significant, there is some evidence that the reduction is larger when the reported number of segments increases. One possible interpretation is that acquisitions destroy value. An alternative explanation is that the addition of an already discounted unit can cause a decline in the excess value measure, even if no value was destroyed in the acquisition. To investigate this possibility, we examine the characteristics of the acquired firms to see what role they play in explaining the decline in excess value.

B. Excess values of target firms

Table III presents two measures of excess value prior to acquisition for the target firms in the M&A sample. The pre-announcement excess value is computed using the market value of equity reported on CRSP one month prior to the announcement of the acquisition. This measure of excess value excludes the valuation effects due to the acquisition announcement. The pre-effective excess value is calculated using the market value of equity based on the last stock price

available prior to delisting.⁵ This measure includes the valuation effects of the acquisition announcement.

For the full sample, based on sales multipliers, the mean (median) pre-announcement excess value of the targets is -35.89% (-35.11%). The corresponding mean (median) pre-effective excess value of the targets is -10.16% (-7.68%). All of these numbers are significantly less than zero at the 0.01 level. The differences in the pre-announcement and pre-effective excess values for the target firms reflect the large wealth gains of target shareholders in acquisitions. Nonetheless, after accounting for the acquisition announcement, the target firms continue to exhibit negative excess values. Overall, these findings indicate that target firms in acquisitions are poor performers (in terms of excess value) relative to “typical” stand-alone firms.

The table also reports the relative size of the acquisition, calculated as the ratio of target sales to the combined sales of the acquirer and target at $t = -1$. The acquisitions are fairly large. The mean (median) ratio of target to combined sales is 24.87% (21.21%). Given the negative excess values of the targets, it is natural to expect that the excess value of the acquiring firms will decline as these fairly large, poorly performing companies are merged into existing operations, even if the acquisitions do not destroy value.

Panels B through E report the pre-effective excess values and relative acquisition sizes for the various subgroups. The most striking result is that the patterns in target firm excess values and relative sizes in Table III closely parallel the declines in acquiring firm excess values documented in Table II. Namely, target firms in related acquisitions are larger and more deeply discounted relative to targets in unrelated acquisitions. In the related acquisition group (Panel B), the mean pre-effective sales multiplier excess value of the target firms is -20.58%. In comparison, the corresponding mean excess value in the unrelated acquisition group is -4.17%

⁵ The pre-effective excess values use Compustat data, which records the last price available when the firm is

(Panel C). Additionally, the ratio of target-to-combined sales of the mean related acquisition (29.41%) is larger than that for the mean unrelated acquisition (22.26%). Panels D and E report the results for the subsamples based on whether the acquisition leads to a segment increase. The mean pre-effective excess value of target firms in the group with no segment increases is – 10.55%, compared to a mean pre-effective excess value of –8.12% for targets in acquisitions that correspond to segment increases. The ratio of target-to-combined sales of the mean acquisition in the no segment increase group is 23.08%, compared to a mean of 34.25% for the group with segment increases.⁶

The finding that the targets have low excess values is consistent with other research. For example, Lang, Stulz and Walkling (1989) find that the q ratios of target firms in tender offers decline significantly over the five years preceding the offer. Hubbard and Palia (1999) note that acquired units are often financially constrained. Maksimovic and Phillips (1999) show that acquired plants have lower productivity than the productivity of the selling firm's other plants. Schoar (2000) finds that acquired plants have lower productivity than the median plant in their same industry, and that productivity and excess value are positively correlated.

V. Explaining the apparent value loss in acquisitions

In this section, we determine the portion of the reduction in acquiring firm excess value that is attributable to acquiring a unit with low excess value. Our strategy is straightforward. We compute the excess value the combined firm would have if its parts were merged instantaneously

delisted. We check this value using the last available trading price from CRSP and obtain virtually identical results.

⁶ Though not reported in the tables, we also examine firms that end up as single- or multisegment ex post. In each case, these firms experience decreases in excess value following the acquisition, and the decreases are tied to the size and discount of the acquired unit. The same patterns hold in firms that end up with positive excess value ex post, negative excess value ex post, multisegment and negative excess value ex post, etc.

at $t = -1$, prior to the actual acquisition. This calculation estimates the excess value of the sum of the combined firm's parts, before the acquisition could have possibly destroyed any value.

More specifically, define P_{+1} , the projected excess value at $t = +1$, as

$$P_{+1} = \ln \left(\frac{MVA_{-1} + MVT_{-1}}{IVA_{-1} + IVT_{-1}} \right), \quad (1)$$

where MVA_{-1} and IVA_{-1} are the market value and imputed value of the acquirer at $t = -1$, and MVT_{-1} and IVT_{-1} are the corresponding quantities for the target. The projected excess value is based on the pre-effective market value of the target because this quantity represents investors' assessment of the target's value as part of the combined firm. The imputed values are calculated using the methodology of Berger and Ofek (1995). We compare the change in the projected excess value to the actual change in excess value of the combined firm to determine whether the acquisition has an effect on the value of the firm, beyond what can be accounted for by the ex ante excess values of the acquirer and the target.⁷

Table IV reports the actual and projected changes in the excess values of the acquiring firms from $t = -1$ to $t = +1$. For the full sample, the mean (median) actual change in excess value based on sales multipliers is -6.93% (-4.35%). The mean (median) projected change is -7.38% (-1.76%). The difference between the actual and projected excess values can be interpreted as the value created or destroyed by acquisition that is not accounted for by the mechanical effect of adding a low valued target. The differences between the actual and projected excess value

⁷ One data issue occurs in some unrelated acquisitions. When an unrelated acquisition does not result in the reporting of a new business segment, the ex post excess value of the combined firm is benchmarked to the industries of the original business segments of the acquirer. The projected excess value, however, is benchmarked in part to the industries of the target's business segments, via IVT_{-1} in equation (1). For these observations, this issue might introduce some noise into the ability of the projected excess value to predict ex post excess values.

changes are very close to zero, indicating that the addition of a discounted target explains most of the decline in excess value for the acquirer.⁸

Panels B through E present the subsample results. For the related acquisition group (Panel B), the mean (median) differences between the actual and projected changes in excess value are -0.84% (-4.01%). The negative differences suggest that some additional value loss occurs beyond simply adding a low-valued unit; however, neither difference is statistically different from zero. Comparing the unexplained change in excess value to the actual change indicates that the mechanical valuation effect explains approximately 92% ($1 - [-0.0084 / -0.1044]$) of the mean change in excess value of the acquirers. In the unrelated acquisition group (Panel C), the mean (median) differences between the actual and projected excess values are 1.19% (0.71%), but neither is significantly different from zero.

For acquisitions with no segment increase (Panel D), the results are similar to those in the full sample: the mechanical effect of adding a discounted target firm explains nearly all of the actual change in excess value following the acquisition. For the segment-increasing subsample, the results are somewhat different. The mean (median) difference in the actual and projected change in excess value is -4.15% (-2.79%). Although these differences are not statistically significant, they provide weak evidence that segment-increasing acquisitions exhibit additional value loss beyond that which can be explained by the characteristics of the target. In the case of segment-increasing acquisitions, the mechanical valuation effect explains about 71% ($1 - [-0.0415 / -0.1428]$) of the average decline in the excess value of the acquirers.

To further explore how much of the decline in the excess value of acquiring firms is attributable to a purely mechanical effect of adding low valued targets, Table V presents results

⁸ The finding that there is no significant difference between the value of the pieces and the value of the conglomerate is consistent with a result in Burch and Nanda (2000). In a study of spin-offs, they find that the

from regressing the actual change in excess value on the projected change in excess value. Statistical significance is based on Robust-Cluster standard errors. Using sales multipliers, the R^2 indicates that the projected change in the value loss explains 26% of the variation in the actual change. Moreover, the estimated regression coefficient on the projected value loss term is not statistically different from 1.0 (p-value=0.979), indicating that the projected change in excess value is an unbiased predictor of the actual change. The intercept in the regression is 0.0039, which is not statistically different from zero (p-value=0.839). The intercept measures the unexplained portion of the change in excess value and indicates that, on average, essentially no additional value loss remains after accounting for the characteristics of the acquired firm.

Table VI presents analysis regressing the actual change in excess value on the projected change and two indicator variables. In Panel A, the indicator is set equal to one if the acquisition is related. Based on sales multipliers, the estimated coefficient on the projected value loss is not significantly different from one (p-value = 0.958). The estimated intercept is 0.0110 (p-value = 0.678), indicating that for unrelated acquisitions the characteristics of the acquisition account for almost all of the observed change in excess values. For related acquisitions, the coefficient estimate on the indicator variable is -0.0200 , which is insignificant.

In Panel B, the indicator variable is set equal to one if the acquisition leads to a segment increase. Consistent with the univariate results in Table IV, the coefficient on the segment-increase indicator is -0.0579 , but is not significantly different from zero (p-value = 0.302). The negative coefficient on the indicator variable provides weak evidence that segment-increasing acquisitions result in value loss beyond that explained by the characteristics of the target.

combined excess value of the parent and spun-off unit is statistically indistinguishable from the excess value of the firm prior to spin-off.

VI. Segment-increasing firms

Our M&A evidence shows that the excess values of acquiring firms decline following acquisition, which we attribute to acquired units having significantly negative excess values. This result suggests that the types of firms that are absorbed into other firms differ systematically from the stand-alone firms to which conglomerates are typically benchmarked. By simply accounting for the pre-acquisition value of the target firms, we explain most of the negative valuation effects associated with mergers.

Much of the diversification discount literature, however, defines conglomeration as operating in multiple business segments, and we have relatively few segment increases in the M&A sample. To comment more directly on the valuation effects associated with operating in multiple business segments, and also to assess the robustness of the M&A results, we examine a sample of firms that increase their number of business segments from one to more than one. Relative to the M&A sample, the criteria to be included in segment-increasing sample are not as restrictive in that we do not require being able to exactly identify the acquired unit(s).

B. Segment-increasing sample

From the set of firms listed in the 1996 Compustat Industry Segment file, including the research and historical files, we identify those that change from reporting one segment (in $t = -1$) to reporting multiple segments. We require that these firms have three years of data and that they report more than one segment in periods $t = 0$ and $t = +1$. We concentrate on these firms, in part, because Lang and Stulz (1994) and Servaes (1996) show that the largest drop-off in q occurs between single-segment and two-segment firms. Our initial sample consists of 225 firms from the period 1984 to 1995. We start in 1984 because Lexis/Nexis does not have annual reports for periods earlier than 1984.

Firms increase their number of reported segments for a variety of reasons. *Financial Accounting and Standards Board* (FASB) Statement 14 requires firms to report data for individual lines of business that represent more than 10% of the firm's total revenues, assets, or profits. New segments may result from the acquisition of a new line of business, the internal growth of an operation that passes one of these thresholds, or simple restructuring of existing operations. Based on annual reports, 10-Ks and Investor Dealers' Digest Merger & Acquisition reports from Lexis/Nexis, we group our sample firms into three categories related to the reason for the increase in the number of reported business segments.

Under *Generally Accepted Accounting Principles* (APB 16, August 1970) firms are required to discuss acquisitions in the footnotes of their filings. When the footnotes mention an acquisition, we place a firm into one of two categories. If the acquired unit operates in an industry related to the existing operations of the diversifying firm based on the 4-digit SIC code listed in Compustat, we categorize the segment increase as a related acquisition. Otherwise, the acquisition is classified as unrelated. We delete 32 observations because either the size or industry of the new business segment does not match the description of the acquired firm(s). If we find no evidence of an acquisition, we include the segment increase in the "no acquisition" group. Firms in this group may have added segments due to internal growth, a decision to begin reporting a previously existing division, etc.

The majority of segment-increases in our sample result from acquisitions. Of the final sample of 225 segment increases, 124 result from unrelated acquisitions and 17 result from related acquisitions. These proportions are similar to those in Hyland (1999), who reports that 150 out of 227 firms in his sample of firms that increase from one segment to more than one segment do so via acquisition. The remaining 84 segment increases in our sample result from internal growth and reporting changes.

The primary difference between the M&A and segment-increasing samples is that in the former we only keep firms for which we can identify the acquired unit.⁹ In contrast, in the segment-increasing sample we do not require exact identification of the acquired unit that leads to the segment increase. (In many cases, the segment increases result from partial acquisitions, acquisitions of private firms, or multiple acquisitions that occur over several years.) Instead, we proxy for the valuations of the new segments with the median single-segment firm among same-industry firms that are removed from Compustat because they are acquired or involved in a merger, which is similar in spirit to the benchmarking assumption made in other conglomeration analyses. Compustat footnote code 35 indicates whether firms on the annual industrial files are removed due to acquisition or merger (code 01 or 04).

A. Excess values of segment-increasing firms

Table VII presents excess values centered on the year of the segment increase. For the full sample of 225 firms (Panel A) in the last year in operation as a focused company ($t = -1$), the mean (median) excess value based on sales multipliers is 4.36% (0.00%). These excess values are not significantly different from zero, indicating that, in the year prior to diversifying, the sample firms are not valued at a discount relative to the median single-segment firms in their industries. These results are similar to those reported in Lang and Stulz (1994), who find that diversifying firms have industry-adjusted Tobin's q values that are not significantly different from zero. Our results differ from those reported in Campa and Kedia (1999), who find that diversifying firms have negative excess values prior to diversification.¹⁰

⁹ Two other differences are that the segment-increasing sample only includes firms that start with a single unit, and the segment-increasing sample contains some firms that increase their number of reported segments, even though they did not make an acquisition (the "no acquisition" group).

¹⁰ Campa and Kedia (1999) find that firms that diversify once from one to more than one segment trade at a discount of 7% (2%) using sales (asset) multipliers in the year prior to the segment increase. One difference between their approach and ours is the choice of benchmark to calculate excess values. Campa and Kedia restrict the benchmark group to firms that always operate as a single segment. In contrast, we assume no foreknowledge of the firms' future choices about whether to operate as a focused or diversified firm and thus avoid any potential look-ahead bias.

By $t = +1$, the first full year after conglomeration, the diversifying firms exhibit a statistically and economically significant diversification discount. The sales multiplier mean (median) excess value is -8.99% (-7.08%), which are reliably negative at the 0.10 level or better. More importantly, diversification is associated with large declines in excess value. Firm-by-firm, the mean (median) change in excess value from $t = -1$ to $t = +1$ is -13.71% (-7.07%), which are significant at the 0.01 level.

We now examine whether the change in excess value varies by the type of segment increase (Panels B through D of Table VIII). Note that much of the existing literature defines diversification based on the number of reported segments. One therefore might expect to observe a decline in excess value whenever a firm begins to report additional segments. In some instances, however, firms begin to report new business segments because of internal growth or a change in filing practice. (For example, Cybex International reports a single segment, “Medical and fitness eq.”, in 1992. In 1993, Cybex operates two segments, “exercise equipment” and “medical equipment”. Total assets of the company increased only \$5 million, from \$104 million in 1992 to \$109 million in 1993.) In these “no acquisition” cases, the firm has not changed substantially, even though the number of segments has increased, so we do not expect to find a significant decrease in excess value.

Firms that add segments because of internal growth or reporting changes start with excess values that are indistinguishable from zero and, consistent with our expectation, do not exhibit a significant reduction in excess value (Panel B). The mean (median) sales multiplier change in excess value for the no acquisition group is -6.48% (-1.58%), and neither is reliably different from zero. Therefore, there does not appear to be loss in value when the increase in the number of business segments is attributable to internal growth or reporting changes.

Firms that increase their number of business segments through unrelated acquisitions also have excess values that are indistinguishable from zero prior to diversification, but exhibit large changes in excess value after increasing their number of segments. For the unrelated acquisition group, the mean (median) change in excess value from $t = -1$ to $t = +1$ is -16.56% (-8.52%), both significantly less than zero at the 0.01 level. Companies making related acquisitions have the largest decline in excess value. The related acquisition group has positive excess values in year $t = -1$, and large negative excess values in year $t = +1$. The mean (median) change in sales-based excess value is -28.63% (-22.16%), and both are significantly less than zero at the 0.01 level. This finding is consistent with our results for the M&A sample, where related acquisitions are associated with large declines in excess values. However, the related acquisition group has only 17 observations, so these numbers should be treated cautiously.¹¹

B. Excess values of acquired firms

The acquired units in the M&A sample are valued at a significant discount relative to same-industry stand-alone firms. To examine whether this finding can be generalized, Table VIII presents excess values for the population of firms that are removed from Compustat because they are acquired. Two key points stand out. First, the excess values are significantly below zero in year $t = -1$, just prior to when the firm is acquired. Second, there is a notable downward trend in the years leading up to the firm's acquisition. For example, the mean excess values based on sales multipliers are -5.74% in year $t = -3$, -12.51% in year $t = -2$, and -15.96% in year $t = -1$. These excess values are all significantly different from zero at the 0.01 level. With discounts of

¹¹ We statistically reject the hypothesis that the mean and median changes in excess value in Panels B through D are equal across the three groups at the 0.05 level. In pairwise comparisons based on sales multipliers, the mean changes in excess value are not equal for the no acquisition and unrelated acquisition groups at the 0.10 level. The differences in the medians are not significant. The differences in the mean (median) changes in excess values across the no acquisition and related acquisition subsamples are significant at the 0.05 (0.01) level. The differences in the mean changes in excess values across the related and unrelated groups are not significant, but the differences in the medians are significant at the 0.05 level.

this magnitude, it is natural to expect that the excess value of segment-increasing firms will decline as poorly performing companies are merged into existing operations, even if diversification itself does not destroy value.

VII. Explaining (part of) the apparent value loss in segment-increasing firms

To determine the portion of the ex post discount for segment-increasing firms that is attributable to the acquisition of a unit with negative excess value, we follow the strategy that we used on the M&A sample. We project the excess value that the conglomerate would have if its parts were merged instantaneously at $t=-1$, prior to the actual segment increase. The only difference is that for the sample of segment-increasing firms we calculate the imputed value of the new segment(s) using the median excess value from the population of acquired firms in the same industry measured at $t=-1$.¹² In other words, we assume that the excess values of the new segments are similar to those of other acquired firms in the same industry. We use the respective actual sizes of the conglomerate segments as of $t=+1$ to weight the $t=-1$ excess values of the initial segment and proxied new segment(s). This calculation determines the projected excess value of the conglomerate after the segment increase, under the null hypothesis that the act of diversification itself does not affect value.

We only perform this calculation for the unrelated acquisition group. The comparison is not feasible for the firms making related acquisitions because the original parent division of these firms is often dissolved in conjunction with the increase in the number of reported business

¹² There are only 653 single-segment firms with sufficient data to calculate excess value firms that are removed from the Compustat active file because of merger or acquisition during 1984-1995, and in many industries only a few firms are removed. Therefore, for this part of the paper only, we define industry based on one-digit SIC code, to ensure that we have enough acquired firms in any given industry. The results are similar when we repeat the analysis based on the tightest SIC grouping with at least five firms.

segments. Specifically, of the 17 firms making related acquisitions, the segment ID of the original parent at $t = -1$ continues to exist at $t = +1$ for only six firms.

To examine how much of the actual value loss is mechanically attributable to the acquisition of a discounted unit, Panel A in Table IX presents the actual and projected changes in excess value for the segment-increasing firms. Based on sales multipliers, the mean actual change in excess value from $t=-1$ to $t=+1$ is -16.56% , while the mean projected change is -8.91% , implying that approximately 50% of the observed value loss can be accounted for by the addition of an already discounted unit. Based on asset multipliers, we explain approximately 40% of the mean decline in excess value.

Panel B of the table presents results from regressing the actual change in excess value on the projected change. Based on R^2 , the projected change explains 33% of the variation in the actual value loss. Moreover, the estimated regression coefficient on the projected value loss term is close to one (though statistically different from one), indicating that the projected value loss estimates do a reasonable job capturing the cross-sectional variation in the actual changes in excess values. The intercept in the regression is -0.0926 , which is significantly different from zero (p -value=0.029). The intercept indicates that the unexplained portion of the 16.6% change in excess value is approximately 9.26%. Our results indicate that only about one-half of the discount in our sample of segment increasing-firms can be attributed to negative valuation consequences associated with diversification. This result is generally consistent with our findings from the subsample of M&A firms with segment increases.

Finally, we perform an unreported robustness check to investigate the effect of our proxying for the excess value of the acquired units in the segment-increasing sample. We repeat the analysis on the M&A sample pretending like we do not know the identity of the actual acquired unit but instead proxying with the median same-industry single-segment firm among

acquired units.¹³ That is, we repeat on the M&A sample the experiment that we use on the segment-increasing sample. Like in Table V, the adjusted R^2 for the regression of the actual change in excess value on the projected change is around 20% and the beta coefficient is indistinguishable from 1.0; however, the intercept equals -0.049 . Interestingly, when we proxy for the acquired units in the M&A sample, we do not explain the entire value loss, which corresponds to the pattern we observe when we use the same methodology on the segment-increasing sample. Overall, this suggests that proxying for the acquired unit (as in the segment-increasing analysis) does not induce substantial bias into projecting the change in excess value, although it does reduce the portion of the value loss that we can explain.

VIII. Conclusions

During the 1990s academic research and popular press reports generally argued that corporate diversification is bad. Based on methodologies that compare the values of conglomerates to proxies for the valuations of their individual divisions, the literature indicates that conglomerate firms are discounted by as much as 15% from the value that could be attained by simply breaking them up and operating the divisions as stand-alone companies.

An implicit assumption in the common valuation methodologies is that divisions of conglomerate firms are similar to “typical” stand-alone firms. We contend that if the divisions of conglomerates systematically differ from the stand-alone firms to which they are benchmarked, failure to account for these differences can lead to incorrect inferences regarding the valuation effects of corporate diversification. Our evidence suggests that these selection biases are relevant.

¹³ We thank Owen Lamont for suggesting this experiment.

We show that units that are combined into firms through merger or acquisition are priced at significant discounts (relative to the median stand-alone firm in the same industry) prior to becoming part of the larger firm. When this discounted unit is added to an existing firm, not surprisingly, it has a negative effect on the excess value of the combined business as measured using the standard methodology. In a sample of acquisitions, we demonstrate that accounting for the characteristics of the acquired units explains nearly all of the reduction in the acquirer's excess values for all types of acquisitions (related or unrelated; and segment-increasing or not) and firms (whether they are single- or multisegment ex post). In a sample of segment-increasing firms, we proxy for the pre-acquisition discount of acquired units and can account for about half of the reduction in excess value following the segment increase. Consistent with the view that the characteristics of acquired units are an important factor in determining the valuation discount, we find that excess value is not reduced when a firm increases its number of business segments without making an acquisition.

A strength of our M&A analysis is that we are able to directly value the acquired business units. However, our M&A firms are priced at a premium prior to the acquisition and relatively few acquisitions directly result in segment-increases. These facts imply that our results can not be applied one-for-one to the overall corporate diversification literature; however, we feel that our analysis still has important implications for that literature. First, half of our M&A firms are multisegment ex post, and the valuation of these firms (which are included in typical diversification discount studies) is artificially low according to the standard methodologies because they contain a unit that would be valued at a discount even if it stood alone. The same implications hold for M&A firms that are multisegment with negative excess value ex post. Second, nearly two-thirds of the firms that increase their number of segments do so via acquisition in our sample, and only firms that become multisegment via acquisition experience a

reduction in excess value. In her broad sample of firms, Schoar (2000) finds that already diversified firms are relatively likely to continue making acquisitions and that they expand more frequently via acquisition than they do via internal growth. These points link our M&A findings to the corporate diversification literature.

A weakness of our segment-increasing analysis is that we can not explicitly value the acquired units because many segment increases result from partial acquisitions, acquisitions of private firms, or multiple acquisitions. We proxy for the value of the acquired units using information about public firms that become inactive due to merger or acquisition. Schoar's (2000) analysis implies that, were it available, using valuations of private and partial acquisitions might produce results similar to what we report. Schoar finds that acquired plants (which are often acquired in partial or private acquisitions) have lower productivity than the median plant in their industry and that plant-level productivity is positively related to excess value.

To the extent that our results carry over to the full sample of conglomerates, they have important implications about whether conglomeration destroys value in the typical multisegment firm. At a minimum, our results suggest that the standard assumption that conglomerate divisions can be benchmarked to firms that remain as stand-alone needs to be carefully reconsidered. Moreover, they also suggest that the distribution of excess values for multisegment firms should be centered closer to zero, instead of near -15% as implied by some previous research.

In terms of measuring the diversification discount, we offer a new approach to benchmarking the divisions of conglomerate firms: compare conglomerate divisions that arise via acquisition to stand-alone firms that disappear from the public record because they are merged or acquired. Other researchers can potentially use this same methodology, especially if they are able to identify the conglomerate divisions that are created via acquisition.

Another issue that we believe deserves attention in future research involves better understanding the relation between the economic event of diversifying through adding a business unit in a new industry and the accounting event of choosing when to report a new business segment. Hayes and Lundholm (1996) suggest that segment reporting is an accounting event that is often subject to strategic managerial motives, which calls into question the approach of defining corporate diversification strictly on the basis of the number of business segments. We have attempted to cover all the bases in our paper by examining firms that experience the accounting event of increasing the number of reported business segments and also examining firms that experience the economic event of making a diversifying acquisition.

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Table I
Example of Negative Excess Value with No Value Destruction

This table shows how acquiring target Firm T could affect Firm A's excess value. By construction, total market value is conserved so no market value is destroyed. The benchmark represents the median market/sales ratio of single-segment same-industry firms.

	Firm A	Firm T	Combination
Sales ^a	100.00	65.00	165.00
Market Value	115.00	70.00	185.00
Benchmark Market/Sales Ratio	1.15	1.25	
Imputed Value	115.00	81.25	196.25
Excess Value	0.000	-0.15 ^b	-0.06 ^c

^a This could be book value of assets if an asset multiplier is used.

^b Excess value is calculated as $\ln[70/(65*1.25)] = \ln[70/81.25] = \ln[0.862] = -0.15$.

^c Excess value is calculated as $\ln[(115+70)/(100*1.15 + 65*1.25)] = \ln[185/196.25] = \ln[0.943] = -0.06$.

Table II
Excess Values for Acquirers

This table reports excess values for the year prior to and the year following the acquisition. The sample consists of 356 firms that completed acquisitions between 1980 and 1995 with sufficient data to calculate excess values as defined in Berger and Ofek (1995). Acquisitions are classified as related when the acquirer and target firms share a 4-digit SIC code prior to the acquisition. Acquisitions are classified as segment-increasing if the number of reported segments is greater at $t=+1$ than at $t=-1$. Differences ($EV_{+1} - EV_{-1}$) are the firm-specific differences from period $t = -1$ to period $t = +1$. Panel A reports results for the full sample. Panels B through E examine subsamples.

	Sales Multiplier		Asset Multiplier	
	Mean	Median	Mean	Median
Panel A: Full Sample (356 firms)				
EV_{-1}	0.1402***	0.1103***	0.0753***	0.0214***
EV_{+1}	0.0709***	0.0614***	0.0183	-0.0334
$EV_{+1} - EV_{-1}$	-0.0693***	-0.0435***	-0.0570***	-0.0379***
Panel B: Related Acquisition (130 firms)				
EV_{-1}	0.1749***	0.1026***	0.0712**	0.0255**
EV_{+1}	0.0705**	0.0000***	-0.0198	-0.0378
$EV_{+1} - EV_{-1}$	-0.1044***	-0.0775***	-0.0909***	-0.0847***
Panel C: Unrelated Acquisition (226 firms)				
EV_{-1}	0.1203***	0.1185***	0.0776***	0.0173**
EV_{+1}	0.0711**	0.0730**	0.0402*	-0.0327
$EV_{+1} - EV_{-1}$	-0.0492*	-0.0162	-0.0374*	-0.0169
Panel D: No Segment Increase (299 firms)				
EV_{-1}	0.1525***	0.1230***	0.0920***	0.0410***
EV_{+1}	0.0971***	0.0833***	0.0345*	-0.0207
$EV_{+1} - EV_{-1}$	-0.0553**	-0.0313**	-0.0576***	-0.0378***
Panel E: Segment Increase (57 firms)				
EV_{-1}	0.0760	0.0912	-0.0126	-0.0193
EV_{+1}	-0.0668	-0.0855*	-0.0665***	-0.0918***
$EV_{+1} - EV_{-1}$	-0.1428*	-0.1210***	-0.0539	-0.0381

*, **, and ***, significantly different from zero at the 10, 5 and 1 percent levels, respectively.

Table III
Excess Values for Targets and Relative Sizes of Acquisitions

This table reports excess values of target firms in the year prior to being acquired. The sample consists of 356 firms that were acquired between 1980 and 1995 with sufficient data to calculate excess values as defined in Berger and Ofek (1995). The pre-announcement excess value is based on the market value of equity one month prior to the announcement of the acquisition. The pre-effective excess value is based on the last stock price available prior to the date the target is delisted. The relative size of the acquisition is the ratio of the target's sales (assets) to the combined sales (assets) of the target and acquiror at the end of the year preceding the acquisition. Acquisitions are classified as related when the acquiror and target firms share a 4digit SIC code prior to the acquisition. Acquisitions are classified as segment-increasing if the number of reported segments is greater at $t=+1$ than at $t=-1$. Panel A reports results for the full sample while Panels B through E examine subsamples.

	Sales Multiplier		Asset Multiplier	
	Mean	Median	Mean	Median
Panel A: Full Sample (356 firms)				
Pre-announcement EV _{.1}	-0.3589***	-0.3511***	-0.2692***	-0.2837***
Pre-effective EV _{.1}	-0.1016***	-0.0768***	-0.0120	-0.0268
Relative size	0.2487	0.2121	0.2273	0.1774
Panel B: Related Acquisition (130 firms)				
Pre-effective EV _{.1}	-0.2058***	-0.1489***	-0.0765***	-0.0681***
Relative size	0.2941	0.2697	0.2654	0.2362
Panel C: Unrelated Acquisition (226 firms)				
Pre-effective EV _{.1}	-0.0417	-0.0325	0.0251	0.0000
Relative size	0.2226	0.1577	0.2053	0.1446
Panel D: No Segment Increase (299 firms)				
Pre-effective EV _{.1}	-0.1055***	-0.0840***	-0.0138	-0.0260
Relative size	0.2308	0.1902	0.2125	0.1578
Panel E: Segment Increase (57 firms)				
Pre-effective EV _{.1}	-0.0812	-0.0768	-0.0024	-0.0401
Relative size	0.3425	0.2966	0.3048	0.2654

*, **, and ***, significantly different from zero at the 10, 5 and 1 percent levels, respectively.

Table IV
Actual and Projected Changes in Excess Values for Acquirers

This table reports changes in excess values from the year prior to the acquisition to the year following the acquisition. The sample consists of 356 firms that completed acquisitions between 1980 and 1995 with sufficient data to calculate excess values as defined in Berger and Ofek (1995). Acquisitions are classified as related when the acquirer and target firms share a 4-digit SIC code prior to the acquisition. Acquisitions are classified as segment-increasing if the number of reported segments is greater at $t=+1$ than at $t=-1$. Panel A reports results for the full sample while Panels B through E examine subsamples.

	Sales Multiplier		Asset Multiplier	
	Mean	Median	Mean	Median
Panel A: Full Sample (356 firms)				
Actual Change ($EV_{+1} - EV_{-1}$)	-0.0693***	-0.0435***	-0.0570***	-0.0380***
Projected Change ($P_{+1} - EV_{-1}$)	-0.0738***	-0.0176***	-0.0326***	-0.0087***
Difference ($EV_{+1} - P_{+1}$)	0.0045	-0.0133	-0.0244	-0.0168
Panel B: Related Acquisition (130 firms)				
Actual Change ($EV_{+1} - EV_{-1}$)	-0.1044***	-0.0775***	-0.0909***	-0.0847***
Projected Change ($P_{+1} - EV_{-1}$)	-0.0960***	-0.0449***	-0.0463***	-0.0164***
Difference ($EV_{+1} - P_{+1}$)	-0.0084	-0.0401	-0.0446	-0.0470
Panel C: Unrelated Acquisition (226 firms)				
Actual Change ($EV_{+1} - EV_{-1}$)	-0.0492*	-0.0162	-0.0374*	-0.0169
Projected Change ($P_{+1} - EV_{-1}$)	-0.0610***	-0.0092***	-0.0247***	-0.0045***
Difference ($EV_{+1} - P_{+1}$)	0.0119	0.0071	0.0127	0.0073
Panel D: No Segment Increase (299 firms)				
Actual Change ($EV_{+1} - EV_{-1}$)	-0.0553**	-0.0313*	-0.0576***	-0.0378***
Projected Change ($P_{+1} - EV_{-1}$)	-0.0686***	-0.0173***	-0.0368***	-0.0120***
Difference ($EV_{+1} - P_{+1}$)	0.0132	0.0106	0.0207	0.0219
Panel E: Segment Increase (57 firms)				
Actual Change ($EV_{+1} - EV_{-1}$)	-0.1428*	-0.1210*	-0.0539	-0.0381
Projected Change ($P_{+1} - EV_{-1}$)	-0.1012*	-0.0339**	-0.0104	0.0065
Difference ($EV_{+1} - P_{+1}$)	-0.0415	-0.0279	-0.0436	0.0029

*, **, and ***, significantly different from zero at the 10, 5 and 1 percent levels, respectively.

Table V
Relationship Between Projected and Actual Excess Values

This table reports regression results examining how well the projected excess values actually predict the ex post excess value. The sample consists of 356 firms that completed acquisitions between 1980 and 1995 with sufficient data to calculate excess values as defined in Berger and Ofek (1995). The regression model is:

$$(EV_{+1} - EV_{-1}) = a + b(P_{+1} - EV_{-1})$$

where EV_{+1} is the actual ex post excess value, P_{+1} is the projected ex post excess value, and EV_{-1} is the ex ante excess value. Robust-Cluster standard errors are presented in parentheses. p-values for the null hypotheses that $\alpha=0$ and $\beta=1$ are reported in brackets.

	Adj. R ²	Intercept	Coefficient on Projected Change (P ₊₁ - EV ₋₁)
Compustat Projected Excess Values			
Actual Change in Sales Multiplier (EV ₊₁ -EV ₋₁)	0.2636	0.0039 (0.0190) [0.839]	0.9968 (0.1192) [0.979]
Actual Change in Asset Multiplier (EV ₊₁ -EV ₋₁)	0.1516	-0.0238 (0.0165) [0.170]	1.0231 (0.1044) [0.827]

Table VI
Relationship Between Projected and Actual Excess Values

This table reports regression results examining how well the projected excess values predict actual ex post excess value. The sample consists of 356 firms that completed acquisitions between 1980 and 1995 with sufficient data to calculate excess values as defined in Berger and Ofek (1995). The regression models are:

$$(EV_{+1} - EV_{-1}) = a + b(P_{+1} - EV_{-1}) + I I(\bullet)$$

where EV_{+1} is the actual ex post excess value, P_{+1} is the projected ex post excess value, EV_{-1} is the ex ante excess value, and $I(\bullet)$ is an indicator variable for relatedness or segment increase. The relatedness indicator equals one if the acquisition is classified as related. The segment increase indicator equals one when the acquisition results in an increase in the number of reported business segments. Robust-Cluster standard errors are presented in parentheses. p-values for the null hypotheses that $\alpha=0$ and $\beta=1$ and $\lambda=0$ are reported in brackets.

	Adj. R ²	Intercept	Coefficient on Projected Change ($P_{+1} - EV_{-1}$)	Coefficient on Indicator Variable I(\bullet)
Panel A: Relatedness Indicator				
Actual Change in Sales Multiplier ($EV_{+1}-EV_{-1}$)	0.2620	0.0110 (0.0261) [0.678]	0.9937 (0.1173) [0.958]	-0.0200 (0.0353) [0.579]
Actual Change in Asset Multiplier ($EV_{+1}-EV_{-1}$)	0.1517	-0.0127 (0.0206) [0.545]	1.0118 (0.1039) [0.911]	-0.0313 (0.0267) [0.260]
Panel B: Segment Increase Indicator				
Actual Change in Sales Multiplier ($EV_{+1}-EV_{-1}$)	0.2637	0.0126 (0.0237) [0.603]	0.9907 (0.1237) [0.941]	-0.0579 (0.0541) [0.302]
Actual Change in Asset Multiplier ($EV_{+1}-EV_{-1}$)	0.1500	-0.0196 (0.0179) [0.290]	1.0296 (0.1040) [0.780]	-0.0254 (0.0303) [0.415]

Table VII
Excess Values for Firms that Increase the Number of Reported Segments

This table reports excess values for the year prior to and the year following the first year in which more than one segment is reported. The sample consists of 225 firms that changed from reporting one segment in year $t = -1$ to reporting more than one segment in years $t = 0$ and $t = +1$. Excess values are calculated as defined in Berger and Ofek (1995). Differences ($EV_{+1} - EV_{-1}$) are the firm-specific differences from period $t = -1$ to period $t = +1$. Panel A reports results for the full sample while Panels B through D examine subsamples.

	Sales Multiplier		Asset Multiplier	
	Mean	Median	Mean	Median
Panel A: Full Sample (225 firms)				
EV ₋₁	0.0436	0.0000	0.0323	0.0000
EV ₊₁	-0.0899 **	-0.0708 ***	-0.0481 *	-0.0811 ***
EV ₊₁ - EV ₋₁	-0.1371 ***	-0.0707 ***	-0.0870 ***	-0.0397 ***
Panel B: No Acquisition (84 firms)				
EV ₋₁	0.0418	0.0000	-0.0022	0.0029
EV ₊₁	-0.0230	-0.0093	-0.0389	-0.0688
EV ₊₁ - EV ₋₁	-0.0648	-0.0158	-0.0387	-0.0195
Panel C: Unrelated Acquisitions (124 firms)				
EV ₋₁	0.0330	0.0000	0.0464	-0.0080
EV ₊₁	-0.1326 ***	-0.1075 ***	-0.0598 *	-0.0874 **
EV ₊₁ - EV ₋₁	-0.1656 ***	-0.0852 ***	-0.1063 ***	-0.0416 **
Panel D: Related Acquisitions (17 firms)				
EV ₋₁	0.1778	0.0860	0.1781 *	0.0080
EV ₊₁	-0.1085	-0.0324	-0.0074	-0.0511
EV ₊₁ - EV ₋₁	-0.2863 ***	-0.2216 ***	-0.1855 ***	-0.1793 ***

*, **, and ***, significantly different from zero at the 10, 5 and 1 percent levels, respectively.

Table VIII
Excess Values for Single-Segment Firms that are Removed from
Compustat Because of Merger or Acquisition

This table reports excess values for the three years before the firm was removed from Compustat due to merger or acquisition. The sample consists of 653 firms that are removed from the Compustat active tapes because of merger or acquisition over the period 1984-1995. Excess values are calculated as defined in Berger and Ofek (1995).

	Sales Multiplier		Asset Multiplier	
	Mean	Median	Mean	Median
EV ₋₃	-0.0574 ***	-0.0511 ***	-0.0020	-0.0056
EV ₋₂	-0.1251 ***	-0.1131 ***	-0.0408 ***	-0.0386 ***
EV ₋₁	-0.1596 ***	-0.1601 ***	-0.0593 ***	-0.0526 ***

*** means significantly different from zero at the 1 percent level.

Table IX**Relationship Between Actual and Projected Excess Values for Segment Increasing Firms**

This table reports regression results examining how well the projected excess values actually predict the ex post excess value. The sample consists of 124 firms that changed from reporting one segment at year $t = -1$ to reporting more than one segment during years $t = 0$ and $t = +1$ as the result of an unrelated acquisition. Excess values are calculated as defined in Berger and Ofek (1995). The regression model is:

$$(EV_{+1} - EV_{-1}) = a + b(P_{+1} - EV_{-1})$$

where EV_{+1} is the actual ex post excess value, P_{+1} is the projected ex post excess value and EV_{-1} is the ex ante excess value. Robust-Cluster standard errors are presented in parentheses. P-values for the null hypotheses that $\alpha=0$ and $\beta=1$ are reported in brackets.

Panel A: Univariate statistics of actual and projected changes in excess values.				
	Sales Multiplier		Asset Multiplier	
	Mean	Median	Mean	Median
Actual Change ($EV_{+1} - EV_{-1}$)	-0.1656	-0.0852	-0.1063	-0.0416
Projected Change ($P_{+1} - EV_{-1}$)	-0.0891	-0.0586	-0.0412	-0.0094

Panel B: Regressions of actual changes in excess value on projected changes in excess value.			
	Adj. R ²	Intercept	Coefficient on Projected Change ($P_{+1} - EV_{-1}$)
Actual Change in Sales Multiplier ($EV_{+1}-EV_{-1}$)	0.3304	-0.0926 (0.0363) [0.029]	0.8192 (0.0647) [0.0191]
Actual Change in Asset Multiplier ($EV_{+1}-EV_{-1}$)	0.3265	-0.0783 (0.0257) [0.012]	0.6797 (0.2179) [0.172]