

## Were the Acquisitive Conglomerates Inefficient?

Peter G. Klein

Department of Economics  
Terry College of Business  
University of Georgia  
Athens, GA 30602-6254  
(706) 542-3697 (voice)  
(706) 542-3376 (fax)  
[pklein@terry.uga.edu](mailto:pklein@terry.uga.edu)

September 21, 2001

Forthcoming, *Rand Journal of Economics*

**Abstract:** This paper challenges the conventional wisdom that the 1960s conglomerates were inefficient. I offer valuation results consistent with recent event-study evidence that markets typically rewarded diversifying acquisitions. Using new data, I compute industry-adjusted valuation, profitability, leverage, and investment ratios for thirty-six large, acquisitive conglomerates from 1966 to 1974. During the early 1970s, the conglomerates were less valuable and less profitable than standalone firms, favoring an agency explanation for unrelated diversification. In the 1960s, however, conglomerates were not valued at a discount. Evidence from acquisition histories suggests that conglomerate diversification may have added value by creating internal capital markets.

*JEL:* L22, G34

I am grateful to Bronwyn Hall, Dave Hyland, Sandy Klein, John Matsusaka, Harold Mulherin, Annette Poulsen, Eric Powers, F. M. Scherer, Henri Servaes, David Teece, Oliver Williamson, two anonymous referees, the Editor (Kyle Bagwell), and workshop participants at Berkeley, Columbia, Copenhagen Business School, Santa Clara, Southern California, and Wake Forest for helpful comments. I also thank Bronwyn Hall, Steve Kaplan, and Mike Sullivan for sharing data. John Chapman and Trey Wainwright provided valuable research assistance. Financial support from the Bradley and Olin Foundations and the Mises Institute is cheerfully acknowledged.

## 1. Introduction

Corporate restructuring in the 1980s has generally been seen as an “undoing” of the earlier, conglomerate merger wave of the 1960s and early 1970s. In the consensus view, the last thirty years have been a “round trip of the American corporation” (Shleifer and Vishny, 1991), a trip from specialization to conglomeration and back to specialization or “focus.” This view is based partly on evidence from studies of the conglomerate period by Rumelt (1974, 1982), Ravenscraft and Scherer (1987), Kaplan and Weisbach (1992), and others who find no evidence that conglomerate diversification improved long-term firm performance. Combined with findings of negative market valuations for diversified firms and diversifying acquisitions during the 1980s (Bhagat, Shleifer, and Vishny, 1990; Lang and Stulz, 1994; Berger and Ofek, 1995; Comment and Jarrell, 1995), the evidence has led to the conclusion that unrelated diversification is per se inefficient, and that the conglomerate era is best understood as an agency phenomenon.

Recent findings question this conventional wisdom, however. Matsusaka (1993a) and Hubbard and Palia (1999) provide event-study evidence that diversifying acquisitions were value-increasing during the conglomerate period. In light of the newer evidence, “[t]he simple view that the 1980s ‘bust-ups’ were a corrective to past managerial excesses is untenable” (Matsusaka, 1993a). Moreover, major U.S. corporations continue to be diversified. Montgomery (1994) reports that for each of the years 1985, 1989, and 1992, over two-thirds of the Fortune 500 companies were active in at least five distinct lines of business (defined by 4-digit Standard Industrial Classification codes). As she reminds us, “While the popular press and some researchers have highlighted recent divestiture activity among [the largest U.S.] firms, claiming a ‘return

to the core,' some changes at the margin must not obscure the fact that these firms remain remarkably diversified.'<sup>1</sup>

Another problem with the agency view of the 1960s is that it is based largely on ex post evidence. Studies such as Ravenscraft and Scherer's (1987) look at the long-term, post-merger performance of merging firms, or the value added from the breakups of the 1980s (and by implication, of the value lost from the conglomerations of the 1960s). This evidence does not control, however, for the competitive, regulatory, and institutional changes of the last 30 or 40 years, changes that likely affect the relative efficiency of diversification. Capital markets have become more competitive, specialized management and personnel consultants have replaced some internal management and control systems, and antitrust authorities have taken a more relaxed attitude toward horizontal and vertical (as opposed to conglomerate) expansion.<sup>2</sup> If these changes are exogenous, then the relative value of conglomerate firms will have changed over time—whatever the efficiency properties of diversification in general.

Can the placing of various diverse business units within a single ownership structure create value? One theory is that the subunits can benefit from the creation of an internal capital market within the conglomerate. Alchian (1969), Williamson (1975), Gertner, Scharfstein, and Stein (1994), and Stein (1997) argue that internal capital markets have advantages where access to external funds is limited. The central office of the diversified firm can use informational advantages, residual control rights, and its ability to intervene selectively in divisional affairs to

<sup>1</sup> Several recent studies also question the claim that diversification destroyed value in the 1980s and 1990s. Maksimovic and Phillips (forthcoming) argue that comparative advantage, rather than agency costs or financial-market imperfections, explains why diversified firms appear to trade at a discount. Chevalier (1999), Graham, Lemmon, and Wolf (forthcoming), and Campa and Kedia (2000) show that selection effects, rather than value destruction, explain much of the observed discount.

<sup>2</sup> But see Matsusaka (1996) for the case that antitrust enforcement did not play a major role in the diversification of the 1960s. In a sample of 549 acquisitions from 1968, he found that diversification was equally likely when small firms merged as when large firms merged, even though only large firms would have been subject to antitrust scrutiny.

allocate resources within the firm better than the external capital markets would do if the divisions were standalone firms. However, rent seeking by divisional managers (Scharfstein and Stein, 2000), bargaining problems within the firm (Rajan, Servaes, and Zingales, 2000) or bureaucratic rigidity (Shin and Stulz, 1998) can make divisional cross-subsidization inefficient.

The present paper contributes to a growing empirical literature that examines the costs and benefits of diversification by reevaluating the evidence from the conglomerate period itself.<sup>3</sup> However, unlike most other studies, which look at broad samples of diversified and nondiversified firms, I focus on a narrowly defined sample of large, highly diversified conglomerates, the firms in which internal-capital-market advantages are most likely to be realized. My sample—a panel of thirty-six “acquisitive” conglomerates from 1966 to 1974, the height of the conglomerate merger wave—contains more detailed business-segment information than that available to previous researchers. Using these line-of-business data, for each firm in each year of the sample I construct a benchmark portfolio of assets, distributed across lines of business in the same proportions as the conglomerate. This matched portfolio is composed of shares of nondiversified firms whose main industries match those of each conglomerate division (and are similar in size). The shares are weighted to correspond to the conglomerate’s distribution of activity in each line of business. By subtracting from each conglomerate’s value or profit a weighted average of the values or profits of its matching standalone firms, I measure the value added by firm-level diversification, controlling for industry and scale effects.

My results challenge the idea that conglomeration is per se inefficient. Specifically, I find an average “diversification discount” of 0.07 and a median discount of 0.08 for the 1966–74 period, much smaller than the discounts reported by Lang and Stulz (1994) and Berger and Ofek (1995) for the 1980s. Moreover, the discount changes substantially over time. For the middle years of

<sup>3</sup> This literature includes Matsusaka (1993a, 1993b, forthcoming); Barber, Palmer, and Wallace (1995); Servaes (1996); and Hubbard and Palia (1999).

the sample, 1969 to 1971, I find an average discount of 0.18 and a median discount of 0.11. For the latest years, 1972 to 1974, the average discount is slightly higher, 0.20, while the median discount falls to 0.04. During the earliest years of the sample, 1966 to 1968, I find an average diversification “premium” of 0.27, and a median discount of 0.08, though neither the premium nor the discount is statistically significantly different from zero. In other words, while large, acquisitive conglomerates tended to perform more poorly than their matched portfolio benchmarks during the end of the 1960s and the early 1970s, many conglomerates performed very well during the middle and late 1960s, and conglomerates as a group were not valued at a discount. When I control for unobserved firm-specific characteristics and other known determinants of firm value such as operating efficiency and leverage, the average 1966–68 premium rises to 0.36 (and becomes statistically significant), the average 1969–71 discount falls to 0.01 (no longer statistically significant), and the average 1972–74 discount falls to 0.17 (still statistically significant). This suggests that conglomeration may have added value during the late 1960s, but reduced value during the early 1970s.

What could explain such a valuation premium? Further analysis suggests that the valuation and profitability results reflect the changing efficiency of internal capital markets. Following Hubbard and Palia (1999), I construct measures of external financing constraints for my sample conglomerates and their acquisition targets. Hubbard and Palia find that the highest abnormal bidder returns in diversifying acquisitions during the 1960s came when financially unconstrained firms acquired firms that faced costly external financing (or vice versa). This implies that market participants expected diversifying acquisitions to create value by providing opportunities by creating internal capital markets. Using a similar approach, I show that those of my sample conglomerates that made internal-capital-market generating acquisitions were rewarded with higher industry-adjusted  $q$  and profitability ratios than those conglomerates that made other kinds

of acquisitions. Moreover, the valuation premium for firms with internal capital markets is highest during the 1966–68 period, when the average conglomerate was not valued at a discount.

The remainder of the paper is organized as follows. Section 2 describes the sample, data, and methods. Basic results are presented in section 3. Section 4 explains the analysis of internal-capital-market advantages based on acquisitions and external financing constraints. Section 5 concludes.

## 2. Data and methods

To construct the dataset I begin with the 63 firms used in Weston and Mansinghka's (1971) pioneering study of conglomerates.<sup>4</sup> This list consists of all firms making at least three mergers during the 1960–68 period and meeting the following conditions: (1) at least 20% of the increase in the firm's total assets during the period must be from external acquisitions, and (2) in 1968 the firm must be active in at least ten 3-digit SIC categories or at least five 2-digit SIC categories. For each firm on the Weston–Mansinghka list, I hand-collected business-segment information from annual reports, SEC form 10-Ks, and standard reference sources such as *Moody's Industrial Manual*.<sup>5</sup> These sources provide descriptions of the firms' product lines and some measure of activity by industry segment, most often segment sales. Assets, income, or capital expenditures by industry segment were almost never reported. (Indeed, firms were generally reluctant to

<sup>4</sup> Matsusaka (forthcoming) also uses the Weston–Mansinghka list.

<sup>5</sup> Compustat began collecting business-segment information only in 1974, while Trinet's Large Establishment Data Base, compiled from plant-level census data, starts in 1979. The Federal Trade Commission's line-of-business project collected business-segment data from 1974 to 1977. Dun and Bradstreet's *Million Dollar Directory* provides SIC codes, but no other information, for business segments as early as the 1950s. Most papers on diversification use the Compustat data; Wernerfelt and Montgomery (1988), Lichtenberg (1992), and Liebeskind and Opler (1995) use the census data. Ravenscraft and Scherer (1987) use the FTC data, while Servaes (1996) and Matsusaka (forthcoming) get segment information from the *Million Dollar Directory*.

release any line-of-business information until it became required on the form 10-K.) Based on product descriptions I assigned a 4-digit SIC code to each segment in each year.<sup>6</sup> Using these sources, I could find reliable segment information for 36 of the Weston–Mansinghka firms. This left a sample of 36 conglomerates with sales-weighted segment information, a richer dataset than that those used for previous studies of this period. A list of these firms is provided in Table 1.

[Table 1 about here]

Table 2 provides some descriptive statistics for the sample. Panel A gives average and median sales, assets, and earnings (EBIT) for the sample conglomerates and for all manufacturing firms (defined as all firms in the NBER Master File; see Hall, 1990, for a description). Clearly, these conglomerates were large firms—much larger, on average, than the typical firm. The sample firms average, for the 1966–74 period, \$1,393.4 million in assets and \$1,546.9 million in annual sales, compared with \$306.2 million and \$340.7 million, respectively, for all manufacturing firms. Yet these conglomerates were not the largest firms in the economy. The largest firms, even during the conglomerate boom years, were AT&T, the oil companies, General Motors, Ford, and other industrial giants that diversified only narrowly. (Tenneco, for example, the largest conglomerate in my sample, was about one-seventh the size of Exxon.)

Panel B of Table 2 gives information on the conglomerates' levels of diversification, first by the number of industry segments per observation, and second by segment sales-weighted Herfindahl indexes (as in Comment and Jarrell, 1995, and Lang and Stulz, 1994). The average number of segments per firm-year is 5.1, with a minimum of two and a maximum of ten. The Herfindahls are calculated, for each firm-year, as the sum of squared segment sales divided by total sales. A four-segment firm with one large segment and three small segments has a larger

<sup>6</sup> Some segments changed their reported activities from year to year, in which case I adjusted the segment SIC codes accordingly.

Herfindahl than a firm with four equally sized segments; hence the segment Herfindahl provides a more precise measure of diversification than simply reporting the number of segments. The Herfindahls vary from a minimum of 0.11 to a maximum of 0.70, indicating considerable variety in these firms' diversification strategies. Admittedly, these industry segments are coarser than true lines of business; nonetheless they provide reasonable approximations of actual business activities.

[Table 2 about here]

These figures highlight a key difference between my sample firms and those that make up Servaes's (1996) sample of diversification in the 1960s and 1970s. Servaes uses a broad sample of multiple-segment and single-segment firms. His firms are less diversified than mine, with an average of 1.5–2.3 segments per firm from 1967 to 1973, compared with my 5.0 segments per firm. His firms are also smaller than mine, with average assets of \$274–389 million, close to the average for all manufacturing firms. Servaes's paper is about diversification per se, while mine focuses on a particular set of diversified firms, namely large, acquisitive conglomerates. Also, Servaes's segment data are from Dun and Bradstreet's *Million Dollar Directory*. The *Million Dollar Directory* segment codes are similar to my segment codes, so this apparent difference in the average degree of diversification between the two samples is probably not an artifact of the different coding schemes.

From the NBER Master File I then retrieved data for Tobin's  $q$ , operating profit, cash flow, leverage, and investment for each conglomerate. Tobin's  $q$  is computed as the market value of common and preferred stock plus the book value of short- and long-term debt, adjusted for age structure, less the net short-term assets, all divided by the book value of capital stock.<sup>7</sup> Because firms with low  $q$  ratios have low expected cash flows relative to the amount of invested capital,  $q$

<sup>7</sup> The adjustment for age structure is as described in Hall, 1990.

can be interpreted as a measure of the firm's investment opportunity set (Smith and Watts, 1992; Gaver and Gaver, 1993), or as a measure of managerial inefficiency or agency conflict within the firm (Lang, Stulz, and Walkling, 1991). Operating profit (operating income divided by total assets) is used to measure the efficiency of the firm's operating units, independent of the firm's capital structure, investment policy, and other variables that are part of the firm's corporate-level strategy. Cash flow is measured as income available for common plus depreciation less income taxes paid, all divided by net sales. Leverage is defined as the value of long-term debt, adjusted for age structure, divided by total assets, and investment is defined as gross investment divided by total assets.

Table 3 reports unadjusted value and performance measures for the full, nine-year panel and three 3-year subperiods. As seen in the table, the average value of large, acquisitive conglomerates was declining throughout the sample period. The sample firms have an average  $q$  of 2.03 during the 1966–68 subperiod (the peak of the conglomerate “boom”), 1.24 during the 1969–71 subperiod, and 0.94 during the 1972–74 subperiod. Median  $q$  declines similarly from 1.50 to 1.12 to 0.90. Operating profit and cash flow remained roughly constant, while leverage increased slightly and investment declined.

[Table 3 about here]

Are these patterns caused by diversification? One way to assess the effect of diversification on value would be to compare conglomerates to specialized firms. However, if the divisions of a conglomerate are systematically located in high- $q$  industries, or systematically operate at a more efficient scale, then this comparison would suggest that diversification adds value although the positive relation between diversification and value has nothing to do with diversification itself. To address this problem, I compare the characteristics of the sample conglomerates with the characteristics they would have if each division were like the median standalone firm in the same

industry and about the same size. This comparison assesses the benefits of diversification within the conglomerate structure independent of the benefits of industry diversification per se.

I construct industry-adjusted values of  $q$ , operating profit, cash flow, leverage, and investment using the following procedure. The sample of 36 firms provides 283 conglomerate observations with a total of 1,442 business-segment observations.<sup>8</sup> For each segment-year I searched for matching firms from the set of all firms in the NBER Master File meeting two criteria: (1) they are classified by Compustat as having in that year the same primary 3-digit SIC code as the conglomerate's segment, and (2) they have sales of at least 50%, and no more than 150%, of the sales of the conglomerate segment. The sales restriction, besides controlling for scale, also controls for the possibility that the matching firms are themselves diversified; to the extent that firm size proxies for diversification, the matching firms are no more diversified than their corresponding conglomerate segments. Using these criteria I identified, on average, 5.02 matching firms per segment-year, and was able to match 1,042 of the 1,442 segment-years in the sample (72%).<sup>9</sup>

I also experimented with variations in the matching criteria, exploring the tradeoff between the “tightness” of the scale criterion and the ability to generate a reasonably large set of matching firms. The results are not particularly sensitive to small changes in the size criterion. Abandoning the size criterion altogether, however, makes industry-adjusted conglomerate performance worse for the early years of the sample and better for the later years. This suggests that scale effects are important in adjusting value or profit measures for industry effects. (See also the discussion of Servaes, 1996, below.)

<sup>8</sup> I excluded financial segments (SIC 6000–6999) and segments for regulated utilities (SIC 4900 and SIC 4999).

<sup>9</sup> The standard deviation was 4.3 matching firms per segment-year, with a minimum of 1 and a maximum of 21. The NBER Master File excludes many non-manufacturing firms, so the segments that failed to match were typically non-manufacturing segments or very small segments.

I then retrieved the median values of  $q$  and the other financial ratios for the firms matching each segment-year, and constructed sales-weighted averages of those variables for each firm in each year. The final dataset contains exactly parallel samples of 283 conglomerate observations and 283 matching sets of standalone firms, matched at the divisional level by year, size, and industry.

The matched standalone observations are then subtracted from the conglomerate observations to provide industry-adjusted figures for each performance variable. That is, suppose that in a given year conglomerate  $i$  has total sales  $X_i$ , segments  $j = 1, \dots, n$ , and segment sales  $x_i^j$ . For a particular financial ratio  $R$ , conglomerate  $i$ 's industry-adjusted  $R$  for that year is given by

$$R_i - \sum_{j=1}^n r_i^j w_i^j,$$

where  $R_i$  is the conglomerate's own  $R$ ,  $r_i^j$  is the median  $R$  of segment  $j$ 's matching firms, and  $w_i^j = x_i^j/X_i$  is the weight assigned to division  $j$ . Industry-adjusted  $q$ , for example, can be interpreted as the difference between the conglomerate's own  $q$  and the  $q$  it would have most likely had if each of its divisions were as valuable as the median standalone firm in the same industry and about the same size.

### 3. Results

#### 3.1. Basic results

Table 4 reports industry-adjusted value and performance measures. Panel A provides average and median industry-adjusted values of  $q$ , operating profit, cash flow, leverage, and investment for the full sample and the three-year subperiods. For the full, 1966–74 period the conglomerates

have negative industry-adjusted  $q$  ratios and operating profit margins, and positive industry-adjusted leverage ratios. The industry-adjusted  $q$  ratios correspond to an average diversification discount of 0.07 and a median discount of 0.08. During this period the conglomerates were less valuable, less profitable, and more highly leveraged than size-weighted groups of nondiversified firms from the same industries.<sup>10</sup> (Industry-adjusted cash flow and investment values are essentially zero). Consistent with Servaes (1996), there is a negative relationship between diversification and value, though the discount is small.

[Table 4 about here]

The results vary widely among the three subperiods. Average industry-adjusted  $q$  is 0.27 for the first subperiod (not significantly different from zero),  $-0.18$  for the second (significant at the 5% level), and  $-0.20$  for the third (significant at the 1% level). In other words, there is a diversification premium from 1966 to 1968 and a moderate discount from 1969 to 1971 and from 1972 to 1974. Median industry-adjusted  $q$  is  $-0.08$  for the first subperiod (not significantly different from zero),  $-0.11$  for the second (significant at the 1% level), and  $-0.04$  for the third (significant at the 1% level). The divergence between average and median industry-adjusted  $q$  for the 1966–68 subperiod implies that the distribution of  $q$  during this subperiod is highly skewed; conglomerate performance was more volatile during this period than during the other periods. Industry-adjusted operating profit, cash flow, leverage, and investment do not change substantially across subperiods. In short, despite low current profitability and high leverage, adjusted for industry, investors did not discount conglomerate stocks as a group prior to 1969.<sup>11</sup>

<sup>10</sup> Weston and Mansinghka (1971) and Melicher and Rush (1973) also found that conglomerates were highly leveraged. Weston (1981) suggests that conglomerate acquirers specifically sought targets whose debt capacity had not been fully utilized.

<sup>11</sup> The statistical significance of the industry-adjusted values reported in Table 4 is potentially overstated because the same firm is included several times in each subperiod. I correct for this in the regression models reported below, and the significance levels are the same.

Do these results reflect the value of diversification per se, or only large, acquisitive conglomerates? Servaes (1996) studies single- and multiple-segment firms from the same period and finds a different result: multiple-segment firms were valued at a substantial discount compared to single-segment firms during the 1960s, but not during the early 1970s. This suggests that my result holds only for large, acquisitive conglomerates and not for diversified firms more generally.

To see how my sample of acquisitive conglomerates compares to Servaes's sample I computed industry-adjusted  $q$  ratios for my sample firms using the same procedure Servaes used to compute his Table III. Servaes's sample includes less detailed segment information, so he could not control for scale in constructing industry-adjusted  $q$  ratios, nor construct activity-weighted averages. Imitating his procedure, I adjusted the  $q$  ratios for my sample firms by two methods, first using the firm's primary industry only, and second using an equally weighted average of all the firm's industries. I also did not control for scale in selecting the matching firms. Table 5 summarizes the results. Servaes reports average industry-adjusted  $q$  ratios for his multiple-segment firms of  $-0.77$  for 1967,  $-0.60$  for 1970, and  $-0.08$  for 1973 using the first method, and  $-0.64$  for 1967,  $-0.53$  for 1970, and  $-0.06$  for 1973 using the second (his data are cross-sectional, collected every three years). Using his procedure, I estimated for my firms average industry-adjusted  $q$  ratios of  $0.08$  for 1966–68,  $-0.14$  for 1969–71, and  $-0.08$  for 1972–74 using the first method, and  $0.02$  for 1966–68,  $-0.17$  for 1969–71, and  $-0.08$  for 1972–74 using the second (I use a three-year average rather than a single year, since my sample is smaller). That is, my large, acquisitive conglomerates were valued much more highly than the average diversified firm during the early period, about the same during the middle period, and less highly during the later period. Looking at the medians rather than the means, the results are similar: my conglomerates were valued much more highly (that is, discounted much less severely) than the average diversified firm during the early period, somewhat more highly during

the middle period, and about the same during the later period. Over this period the performance of large, acquisitive conglomerates was much more volatile than the performance of diversified firms more generally.

[Table 5 about here]

One possible explanation for these results is that the firms in my sample were the first to develop the conglomerate form during the early and middle 1960s and were earning “innovation rents” as late as the 1966–68 period.<sup>12</sup> As the innovation was diffused, those rents were dissipated, disappearing by the late 1960s and early 1970s. Moreover, Table 5 demonstrates that industry-adjusted values can vary substantially depending on the weighting and sampling procedure. By using segment data without weights, Servaes (1996) could expand his sample to a broad set of diversified and nondiversified firms, but at the cost of less precise estimates of industry-adjusted values. Specifically, comparison of Panels B and C of Table 5 suggests that Servaes’s method of assigning equal segment weights can bias downward the estimates of industry-adjusted  $q$ , relative to the procedure of using correct segment weights. This may explain part of the difference in our results.

Panel B of Table 4 reports the change in industry-adjusted  $q$  between the subperiods.<sup>13</sup> Between the first and second subperiods, average industry-adjusted  $q$  falls from 0.27 to  $-0.18$ , a difference of  $-0.45$  (significant at the 5% level). Between the second and third subperiods, average industry-adjusted  $q$  falls from  $-0.18$  to  $-0.20$ . This shows that the measured differences in industry-adjusted  $q$  between the first and second subperiods are not due to random error.

<sup>12</sup> Innovation rents, the returns from being the first to develop a new product, process, or organizational form, are featured prominently in recent models of endogenous innovation (Aghion and Howitt, 1992; Grossman and Helpman, 1991; Romer, 1990).

<sup>13</sup> The subperiod difference tests are analogous to the “differences-in-differences” tests used in the literature on natural experiments (Meyer, 1995, and Heckman and Smith, 1995).

Contrary to the conventional wisdom, the diversification discount was imposed on large, acquisitive conglomerates only at the end of the 1960s.

### *3.2. Sample selection issues*

One concern with the results reported above is that the panel is unbalanced, as data were unavailable for several firms in the sample during the earliest years. The entry of new firms in the sample could bias the results for the earlier, 1966–68 subperiod. For example, average industry-adjusted  $q$  would appear to decline after 1969 if the sample contained only firms with above-average ratios for the earliest years, while firms with below-average industry-adjusted  $q$  ratios were added over time.

To investigate this possibility I redid the comparisons for various subsets of firms in the sample. First, I created a balanced panel including only the firms that were present in 1966. Qualitatively, the results (not reported here) are similar to those presented in Table 4, with one exception: the conglomerates now have negative average industry-adjusted  $q$  ratios for the 1966–68 subperiod (significant at the 5% level). Second, I did the same comparisons, over the same three periods, including only the firms present in 1967. The qualitative results are now virtually identical to those presented in Table 4 (the 1966–68 discount becomes a premium, significant at the 10% level). This means that average conglomerate  $q$  rises, not falls, as firms enter the sample in 1967. The entry of additional firms in 1968 and 1969 does not affect the general result. In short, changes in the composition of the sample over time do not appear to be driving the findings. On the other hand, the fact that the sign of the average discount switches during the early period and is significant shows how difficult it is to estimate accurately the size of the diversification discount using these data.

Another potential problem is that Weston and Mansinghka's list of acquisitive conglomerates, from which my sample is drawn, is composed of firms that were both highly diversified and active acquirers during the 1960–68 period. But my analysis begins in 1966, before the Weston–Mansinghka list is complete. If strongly performing firms tend to make acquisitions and poorly performing firms do not, then my sample could be biased by the inclusion of firms that did well during the 1966–68 subperiod, even if they did poorly from 1969 to 1974. According to this line of reasoning, a firm that performed well from 1960 to 1968 could make acquisitions and thus be eligible for the Weston–Mansinghka list, while a firm that performed poorly before 1968 but well afterward would not make enough acquisitions before 1968 to meet Weston and Mansinghka's growth criterion. This could account for the differences in my findings among the three subperiods.

I do not think the sample is biased in this way, however, for two reasons. First, the underlying hypothesis, that diversifying acquisitions follow strong performance, is inconsistent with the existing empirical literature on conglomerates. Diversification is usually a response to poor performance or low growth opportunities in their core business. Weston and Mansinghka's 63 conglomerate firms, for example, tended to be poor performers before they became conglomerates. Matsusaka (forthcoming) offers a model in which firms diversify because their original businesses are not good matches with their organizational capabilities. He presents evidence on changes in firms' core businesses over time consistent with this model. There is thus no reason to think the Weston–Mansinghka criteria systematically select above-average performers during the 1960–68 period.

Second, even if the Weston–Mansinghka criteria did exclude firms that were below-average performers in 1968, above-average performers from 1969 to 1972, and conglomerates after 1969, there do not seem to be many such firms. To find firms with those characteristics, I computed  $q$  ratios for all firms in the NBER Master file from 1960 to 1974. Of the 1,133 firms with usable

data, 109 firms had below-average 1960–68  $q$  ratios (which, by hypothesis, would exclude them from making acquisitions and therefore being candidates for the Weston–Mansinghka list) and above-average 1969–74  $q$  ratios. Of those 109 firms, only about four were active in five or more 2-digit SIC categories (one of Weston and Mansinghka’s diversification criteria) in 1970, and only about eight were active in five or more 2-digit SIC categories in 1973. Only three are in Scharfstein’s (1998) list of 165 firms that were conglomerates in 1979. Thus it seems highly unlikely that a poorly performing firm could fail to meet Weston and Mansinghka’s definition of a conglomerate in 1968, then subsequently perform well and become a conglomerate, leading to the spurious conclusion that the Weston–Mansinghka firms performed well from 1966 to 1968 and poorly from 1969 to 1974. There are simply too few candidate firms having those characteristics.

### *3.3. Regression-adjusted comparisons of firm value*

Measures of firm value such as  $q$  depend on observable firm characteristics such as operating efficiency, leverage, and investment. Because the matching procedure for calculating industry-adjusted  $q$  ratios does not match by these characteristics, it is possible that the signs and magnitudes of the industry-adjusted  $q$  ratios are driven by differences between the conglomerates and the matching firms in profitability, leverage, and investment rather than agency costs or access to internal capital markets. Indeed, as Table 4 reveals, the conglomerates and matching firms do differ in operating profit, leverage, and, investment.

To explore this possibility, I pooled the conglomerates and matched portfolios into a single panel and regressed  $q$  on operating profit, leverage, investment, and an indicator variable, “conglomerate dummy,” that distinguishes between conglomerate and matched portfolio observations. This checks for differences in  $q$  while controlling for other known determinants of

firm value. The regressions include a fixed effect for each conglomerate–portfolio pair to control for unobserved heterogeneity among the conglomerates and to explore the effects of within-pair changes in the degree and type of diversification over time. I also included year-fixed effects to control for changes in the economic environment over time. To control for the fact that the paired observations are not independent within each cross section, I compute robust standard errors (White, 1980) treating each conglomerate–portfolio pair, rather than each observation, as an independent unit.

The results, presented in Table 6, largely confirm the results of Table 4. In the first, third, fifth, and seventh columns, only the indicator variable and a constant are used as regressors; the coefficients on the indicator variable thus correspond exactly to the industry-adjusted  $q$  ratios reported in Table 4. The second, fourth, sixth, and eighth columns add operating profit and leverage as additional regressors. Consistent with the literature, there is a positive relation between profitability and value. (Leverage has no systematic effect on  $q$ , however.) For the 1966–68 subperiod industry-adjusted  $q$  increases from 0.27 to 0.36 (and becomes statistically significant). For the 1969–71 subperiod it falls from  $-0.18$  to  $-0.12$  (and becomes insignificant), and for the 1972–74 subperiod it falls from  $-0.20$  to  $-0.17$  (still significant). In other words, when differences in operating efficiency and leverage are taken into account, the average diversification premium is larger for the first subperiod and the average diversification discount smaller for the second two subperiods. Again, this is inconsistent with the claim that conglomerate always destroys value.

[Table 6 about here]

#### 4. The value of internal capital markets: evidence from acquisitions

The evidence presented so far suggests that large conglomerates performed reasonably well before 1970, but poorly afterward. Can the results for the late 1960s be attributed to internal-capital-market advantages? Lamont (1997), Shin and Stulz (1998), and Scharfstein (1998) study the efficiency of internal capital markets by looking directly at the direction of cross-subsidization within the firm. Shin and Stulz (1998), for example, show that diversified firms tend to misallocate investment resources, failing to direct funds to divisions in industries with high growth opportunities.<sup>14</sup> Unfortunately, this exercise requires data on income and capital expenditures by segment; as discussed above, such data are unavailable for the 1960s and early 1970s. Hubbard and Palia (1999) try an indirect approach instead, looking for acquisitions likely to have created internal capital markets. Hubbard and Palia study 392 acquisitions from 1961 to 1970 and classify each bidder and each target according to its access to external finance. If a financially constrained bidder acquires an unconstrained target, or vice-versa, then the acquisition can create value by giving the cash-constrained firm access to the other firm's cash flows. Hubbard and Palia report that diversifying acquisitions generally earned positive abnormal returns during this period, and that the highest returns were generated when acquisitions created internal capital markets in this fashion. This suggests that market participants expected some conglomerate acquisitions to create value by providing opportunities by creating internal capital markets

Following this approach, I examined the acquisition histories of my sample conglomerates to see which ones participated in acquisitions likely to have created internal capital markets (or extended existing internal capital markets). I then compared (annual) industry-adjusted  $q$  and profitability ratios for conglomerates with and without internal capital markets, to see if internal-

<sup>14</sup> Rajan, Servaes, and Zingales (2000), Wulf (1999), Chevalier (1999), and Whited (forthcoming) also study the efficiency of internal capital markets using similar techniques.

capital-market advantages were the source of the relatively strong conglomerate performance results reported for the early years of my sample.

I located acquisition targets for my sample firms using four sources: the NBER Master File Exit List, provided by Bronwyn Hall<sup>15</sup>; the FTC *Statistical Report on Mergers and Acquisitions, 1979* (Federal Trade Commission, 1981); the acquisition data from Kaplan and Weisbach (1992); and an acquisition list provided by Mike Sullivan. From these sources I identified 215 acquisitions made by my 36 conglomerates from 1964 to 1974. Of the 215 targets, 158 had useable data for measuring access to external finance. Following Hubbard and Palia, I classify a target as financially constrained if its dividend payout ratio is lower than the median dividend payout ratio of all targets in the sample, and financially unconstrained otherwise. I use the same technique to classify the 36 conglomerate bidders in each year.<sup>16</sup> I designate an acquisition as having created an internal capital market if during the previous year, the bidder is financially constrained and the target is unconstrained, or the bidder is financially unconstrained and the target is constrained. I was able to classify 131 acquisitions in this fashion. Of these, 54 created internal capital markets (or extended existing internal capital markets). I thus classify a conglomerate as having an internal capital market in a particular year if it participated in at least one internal-capital-market-generating acquisition prior to that year.

Table 7 reports industry-adjusted values for  $q$  and operating profit for conglomerates with and without internal capital markets. As before, the results are segregated by time period. The first row shows the industry-adjusted  $q$  ratios for all firm-years in the sample (taken from Table

<sup>15</sup> The NBER Exit List names all firms that exited from the 1991 version of the NBER Manufacturing Sector Master File, together with the reason for their exit, and the name (and CUSIP, where available) of the acquirer or successor.

<sup>16</sup> Hubbard and Palia (1999) use two indicators for access to external finance: the firm's dividend payout ratio and its investment rate. Unfortunately, only a few of my targets had useable data for the investment rate, so I use only the dividend payout ratio.

4). The second row shows industry-adjusted  $q$  ratios for only those firm-years following acquisitions creating internal capital markets. To distinguish the effects of these particular acquisitions from the effects of acquisitions per se, I also provide industry-adjusted  $q$  ratios for firm-years following other acquisitions. The fourth pair of rows shows the differences between the values reported in the second and third pairs of rows.

[Table 7 about here]

The results are striking. During the 1966–68 subperiod, the average industry-adjusted  $q$  for conglomerates with at least one prior internal-capital-market-generating acquisition was 0.32, while the average industry-adjusted  $q$  for conglomerates without such acquisitions (but with other prior acquisitions) was  $-0.28$ , a difference of 0.60. (The difference in median  $q$  is also 0.60.) During the second subperiod, the average industry-adjusted  $q$  ratios are  $-0.14$  and  $-0.30$ , respectively, a difference of 0.16 (the difference in median  $q$  is 0.12). During the third subperiod, the average industry-adjusted  $q$  ratios are  $-0.12$  and  $-0.07$ , a difference of  $-0.05$  (the difference in median  $q$  is  $-0.03$ ). Thus during the first subperiod, industry-adjusted  $q$  was much higher for firms with internal capital markets than those without them. During the second subperiod, firms with internal capital markets were again valued more highly than those without, though the difference is smaller. During the third subperiod, firms with internal capital markets are not valued more highly than firms without them. Moreover, the differences between the first and second subperiods are driven almost entirely by changes in the value of internal capital markets, not the value of conglomerates per se. That is, industry-adjusted  $q$  varies much less between the subperiods for acquisitive firms that did not create internal capital markets than for firms that did

create them. Firms with internal capital markets were valued at a substantial premium before 1969, and valued at a small discount afterwards.<sup>17</sup>

One interpretation of these valuation results is that investors expected internal capital markets to be efficient during the 1960s, changed their minds at the end of the decade, then revised their expectations downwards. However, the results cannot be explained entirely by market expectations of future performance, because industry-adjusted operating profit—a measure of the efficiency of current operations—is also higher for conglomerates with internal capital markets. As Table 7 shows, average industry-adjusted operating profit over the three subperiods was  $-0.006$ ,  $-0.004$ , and  $-0.011$ , respectively, for firm-years following acquisitions creating internal capital markets, and  $-0.016$ ,  $-0.014$ , and  $-0.016$  for firm-years following other acquisitions. Of course, industry-adjusted operating profit was negative, even for the conglomerates with internal capital markets, which does not imply superior performance relative to the standalones. Still, these firms were more efficient (or less inefficient) than conglomerates without internal capital markets. This suggests that investors' expectations about the value of internal capital markets may have been based on real, underlying factors, not misguided beliefs.<sup>18</sup>

A problem with these calculations is that they assume that once a firm has made a single internal-capital-market-generating acquisition, it retains the benefits of internal capital markets in perpetuity. The results are thus misleading if the effects of these acquisitions diminishes with

<sup>17</sup> The conglomerates continued to make internal-capital-market generating acquisitions throughout the entire sample period, so these results are not driven by a change in the pattern of acquisitions away from those that generated internal capital markets. For example, 38% of conglomerate acquisitions prior to 1966 created internal capital markets; from 1966 to 1968 the figure is 52%; from 1969 to 1971 it is 39%; and from 1972 to 1974 it is 64%.

<sup>18</sup> Malkiel (1990, p. 63) attributes conglomerate valuation premiums entirely to investor irrationality. Conglomerate managers, he says, “almost invented a new language in the process of dazzling the investment community. They talked about market matrices, core technology fulcrums, modular building blocks, and the nucleus theory of growth. No one from Wall Street really knew what the words meant, but they all got the nice, warm feeling of being in the technological mainstream.” Conglomerate mergers, he says, were merely a “con game.”

time. As a robustness check, I performed the same exercise, this time focusing only on observations in the year immediately following an acquisition. The new calculations are reported in the last three pairs of rows of Table 7. The results are roughly the same as before. In all three subperiods, firm-years immediately following acquisitions creating internal capital markets have higher industry-adjusted  $q$  ratios than firm-years immediately following other acquisitions, with the largest difference by far occurring in the 1966–68 subperiod. The results are similar, but weaker, for operating profit. In short, the basic results hold whether acquisitions creating internal capital markets are modeled as having a permanent effect the firm’s capital budgeting policy or only a one-year effect. These may be thought of as upper and lower bounds, so the true effect is almost certainly similar.

## 5. Conclusions

The basic finding of this paper is that conglomerate performance, compared with appropriately defined benchmarks, was better than the conventional wisdom holds. While the conglomerates were poor performers after 1969, during the late 1960s they performed reasonably well. More specifically, some firms—what Williamson (1975) calls “appropriately organized conglomerates”—were able to add value by creating internal capital markets. The stock market rewarded firms creating internal capital markets in the 1960s, but not in the 1970s. This evidence presents problems for the view that conglomerate diversification is always inefficient and that the divestitures of the 1980s show the failures of the 1960s.

Why did the value of internal capital markets fall at the end of the 1960s? A common suggestion is that internal capital markets were always inefficient, but market participants only learned this over time, as information about poor operating performance was revealed. However, as seen in Table 7, the relative profitability of internal capital markets was also highest during the

late 1960s, the period of the valuation premium. Thus the change in conglomerate value over time cannot be entirely attributed to changes in expectations.

Another possibility is that internal capital markets became less important as the external capital market became more efficient. The investment community in the 1960s has been described as a small, close-knit group where competition was minimal and peer influence strong (Bernstein, 1992). As Bhidé (1990) puts it, “internal capital markets may well have possessed a significant edge because the external markets were not highly developed. In those days, one’s success on Wall Street reportedly depended far more on personal connections than analytical prowess.” When capital markets became more competitive in the 1970s, the relative importance of internal capital markets fell. “This competitive process has resulted in a significant increase in the ability of our external capital markets to monitor corporate performance and allocate resources” (Bhidé, 1990). As the cost of external finance has fallen, firms have tended to rely less on internal finance, and thus the value added from internal-capital-market allocation has fallen.<sup>19</sup>

Another possibility is that the potential drawbacks of internal capital markets—divisional rent seeking, bargaining problems, and bureaucratic rigidity—came to outweigh the advantages, independent of the efficiency of external capital markets. Unfortunately, without data on internal-resource-allocation patterns during this period it is difficult to assess this hypothesis. Table 4 does reveal that conglomerates were somewhat more highly leveraged (adjusted for industry) during the 1966–68 subperiod than the subsequent periods. If leverage reduces agency costs, as suggested by Jensen (1986), then changes in capital structure could explain the changes in

<sup>19</sup> Similarly, corporate refocusing can be explained as a consequence of the rise of takeover by tender offer rather than proxy contest, the emergence of new financial techniques and instruments like leveraged buy-outs and high-yield bonds, and the appearance of takeover and breakup specialists like Kohlberg Kravis Roberts which themselves performed many functions of the conglomerate HQ (Williamson, 1992). A related literature looks at the relative importance of internal capital markets in developing economies, where external capital markets are limited (Khanna and Palepu 1999, 2000).

internal organizational efficiency. A systematic examination of the conglomerates' leverage policies could provide insight here.

Ultimately, these issues are most likely to be settled by in-depth case studies of individual firms rather than econometric studies. As this paper shows, conclusions drawn from empirical studies of the conglomerate period are very sensitive to the quality of the underlying segment data, and the limits of hand collection preclude the use of large datasets. Hopefully complementary, qualitative evidence can be brought to bear on this phenomenon.

## References

- Aghion, P. and Howitt, P. "A Model of Growth Through Creative Destruction." *Econometrica*, Vol. 60 (1992), pp. 323–351.
- Alchian, A.A. "Corporate Management and Property Rights." In H. Manne, ed., *Economic Policy and the Regulation of Corporate Securities*. Washington, D.C.: American Enterprise Institute, 1969.
- Barber, B.M., Palmer, D., and Wallace, J. "Determinants of Conglomerate and Predatory Acquisitions: Evidence from the 1960s." *Journal of Corporate Finance: Contracting, Governance and Organization*, Vol. 1 (1995), pp. 283–318.
- Berger, P.G. and Ofek, E. "Diversification's Effect on Firm Value." *Journal of Financial Economics*, Vol. 37 (1995), pp. 39–65.
- Bernstein, P.L. *Capital Ideas: The Improbable Origins of Modern Wall Street*. New York: Free Press, 1992.
- Bhagat, S., Shleifer, A., and Vishny, R.W. "Hostile Takeovers in the 1980s: The Return to Corporate Specialization." In Baily, M.N. and Winston, C., *Brookings Papers on Economic Activity: Microeconomics*. Washington, D.C.: Brookings Institution, 1990.
- Bhide, A. "Reversing Corporate Diversification." *Journal of Applied Corporate Finance*, Vol. 3 (1990), pp. 70–81.
- Campa, J.M. and Kedia, S. "Explaining the Diversification Discount." Mimeo, Harvard Business School, 2000.
- Chevalier, J.A. "Why Do Firms Undertake Diversifying Mergers? An Examination of the Investment Policies of Merging Firms." Mimeo, Graduate School of Business, University of Chicago, 1999.
- Comment, R. and Jarrell, G.A. "Corporate Focus and Stock Returns." *Journal of Financial Economics*, Vol. 37 (1995), pp. 67–87.
- Federal Trade Commission, Bureau of Economics. *Statistical Report on Mergers and Acquisitions, 1979*. Washington, D.C.: U.S. Government Printing Office, 1981.
- Gaver, J.J. and Gaver, K.M. "Additional Evidence on the Association Between the Investment Opportunity Set and Corporate Financing, Dividend, and Compensation Policies." *Journal of Accounting and Economics*, Vol. 16 (1993), pp. 125–160.
- Gertner, R.H., Scharfstein, D.S., and Stein, J.C. "Internal Versus External Capital Markets." *Quarterly Journal of Economics*, Vol. 109 (1994), pp. 1211–1230.
- Graham, J.R., Lemmon, M., and Wolf, J. "Does Corporate Diversification Destroy Value?" *Journal of Finance*, forthcoming 2002.
- Grossman, G.M. and Helpman, E. "Quality Ladders in the Theory of Growth." *Review of Economic Studies*, Vol. 58 (1991), pp. 43–61.
- Hall, B.H. "The Manufacturing Sector Master File: 1959–1987." NBER Technical Working Paper 3366, 1990.
- Heckman, J.J., and Smith, J.A. "Assessing the Case for Social Experiments." *Journal of Economic Perspectives*, Vol. 9 (1995), pp. 85–110.

- Hubbard, R.G., and Palia, D.A. "A Reexamination of the Conglomerate Merger Wave in the 1960s: An Internal Capital Markets View." *Journal of Finance*, Vol. 54 (1999), pp. 1131–1152.
- Jensen, M.C. "Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers." *American Economic Review*, Vol. 76 (1986), pp. 323–329.
- Kaplan, S.N. and Weisbach, M.S. "The Success of Acquisitions: Evidence from Divestitures." *Journal of Finance*, Vol. 47 (1992), pp. 107–138.
- Khanna, T. and Palepu, K. "Policy Shocks, Market Intermediaries, and Corporate Strategy: The Evolution of Business Groups in Chile and India." *Journal of Economics and Management Strategy*, Vol. 8 (1999), pp. 271–310.
- Khanna, T. and Palepu, K. "Is Group Affiliation Profitable in Emerging Markets? An Analysis of Diversified Indian Business Groups." *Journal of Finance*, Vol. 55 (2000): 867–891.
- Lamont, O. "Cash Flow and Investment: Evidence from Internal Capital Markets." *Journal of Finance*, Vol. 52 (1997), pp. 83–109.
- Lang, L.H.P., and Stulz, R.M. "Tobin's  $Q$ , Corporate Diversification, and Firm Performance." *Journal of Political Economy*, Vol. 102 (1994), pp. 1248–1280.
- Lang, L.H.P., Stulz, R.M., and Walkling, R. "A Test of the Free Cash Flow Hypothesis: The Case of Bidder Returns." *Journal of Financial Economics*, Vol. 28 (1991), pp. 315–335.
- Lichtenberg, F.R. "Industrial De-diversification and Its Consequences for Productivity." *Journal of Economic Behavior and Organization*, Vol. 18 (1992), pp. 427–438.
- Liebeskind, J. and Opler, T.C. "The Causes of Corporate Refocusing." Mimeo, Marshall School of Business, University of Southern California, 1995.
- Maksimovic, V. and Phillips, G. "Do Conglomerate Firms Allocate Resources Inefficiently Across Industries?" *Journal of Finance*, forthcoming.
- Malkiel, B.G. *A Random Walk Down Wall Street*. Fifth edition. New York and London: W. W. Norton, 1990.
- Matsusaka, J.G. "Takeover Motives during the Conglomerate Merger Wave." *Rand Journal of Economics*, Vol. 24 (1993a), pp. 357–379.
- Matsusaka, J.G. "Target Profits and Managerial Discipline during the Conglomerate Merger Wave." *Journal of Industrial Economics*, Vol. 41 (1993b), pp. 179–189.
- Matsusaka, J.G. "Did Tough Antitrust Enforcement Cause the Diversification of American Corporations?" *Journal of Financial and Quantitative Analysis*, Vol. 31 (1996), pp. 283–294.
- Matsusaka, J.G. "Corporate Diversification, Value Maximization, and Organizational Capabilities." *Journal of Business*, forthcoming 2001.
- Melicher, R.W. and Rush, D.F. "The Performance of Conglomerate Firms: Recent Risk and Return Experience." *Journal of Finance*, Vol. 28 (1973), pp. 281–288.
- Meyer, B.D. "Natural and Quasi-Experiments in Economics." *Journal of Business and Economic Statistics*, Vol. 13 (1995), pp. 151–161.
- Montgomery, C.A. "Corporate Diversification." *Journal of Economic Perspectives*, Vol. 8 (1994), pp. 163–178.

- Rajan, R., Servaes, H., and Zingales, L. "The Cost of Diversity: The Diversification Discount and Inefficient Investment." *Journal of Finance*, Vol. 60 (2000), pp. 35–80.
- Ravenscraft, D. and Scherer, F.M. *Mergers, Sell-offs, and Economic Efficiency*. Washington, D.C.: Brookings Institution, 1987.
- Romer, P.M. "Endogenous Technological Change." *Journal of Political Economy*, Vol. 98 (1990), pp. S71–S102.
- Rumelt, R.P. *Strategy, Structure and Economic Performance*. Boston: Graduate School of Business Administration, Harvard University, 1974.
- Rumelt, R.P. "Diversification Strategy and Profitability." *Strategic Management Journal*, Vol. 3 (1982), pp. 359–369.
- Scharfstein, D.S. "The Dark Side of Internal Capital Markets II: Evidence from Diversified Conglomerates." NBER Working Paper No. W6352, 1998.
- Scharfstein, D.S. and Stein, J.C. "The Dark Side of Internal Capital Markets: Divisional Rent-Seeking and Inefficient Investment." *Journal of Finance*, Vol. 55 (2000), pp. 2537–2564.
- Servaes, H. "The Value of Diversification during the Conglomerate Merger Wave." *Journal of Finance*, Vol. 51 (1996), pp. 1201–1225.
- Shin, H. and Stulz, R.M. "Are Internal Capital Markets Efficient?" *Quarterly Journal of Economics*, Vol. 113 (1998), pp. 531–552.
- Shleifer, A. and Vishny, R.W. "Takeovers in the '60s and '80s: Evidence and Implications." *Strategic Management Journal*, Vol. 12 (1991), pp. 51–59.
- Smith, C.W. and Watts, R.L. "The Investment Opportunity Set and Corporate Financing, Dividend, and Compensation Policies." *Journal of Financial Economics*, Vol. 32 (1992), pp. 263–292.
- Stein, J.C. "Internal Capital Markets and the Competition for Corporate Resources." *Journal of Finance*, Vol. 52 (1997), pp. 111–133.
- Wernerfelt, B. and Montgomery, C.A. "Tobin's  $q$  and the Importance of Focus in Firm Performance." *American Economic Review*, Vol. 78 (1988), pp. 246–254.
- Weston, J.F. *Mergers and Economic Efficiency, Volume 2: Industrial Concentration, Mergers, and Growth*. Washington, D.C.: U.S. Department of Commerce, 1981.
- Weston, J.F. and Mansinghka, S.K. "Tests of the Efficiency Performance of Conglomerate Firms." *Journal of Finance*, Vol. 26 (1971), pp. 919–936.
- White, H. "A Heteroscedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroscedasticity." *Econometrica*, Vol. 48 (1980), pp. 817–838.
- Whited, T.M. "Is It Inefficient Investment that Causes the Diversification Discount?" *Journal of Finance*, forthcoming 2001.
- Williamson, O.E. *Markets and Hierarchies: Analysis and Antitrust Implications*. New York: Free Press, 1975.
- Williamson, O.E. "Markets, Hierarchies, and the Modern Corporation: An Unfolding Perspective." *Journal of Economic Behavior and Organization*, Vol. 17 (1992), pp. 335–352.

Wulf, J. "Influence and Inefficiency in the Internal Capital Market: Theory and Evidence." Mimeo, Wharton School, 1999.

**Table 1: List of Sample Firms**

- |                        |                                     |
|------------------------|-------------------------------------|
| 1. American Brands     | 19. Litton                          |
| 2. American Standard   | 20. Martin-Marietta                 |
| 3. Bangor Punta        | 21. Midland-Ross                    |
| 4. Boise Cascade       | 22. Occidental Petroleum            |
| 5. City Investing      | 23. Ogden                           |
| 6. Consolidated Foods  | 24. Olin Mathieson                  |
| 7. Continental Oil     | 25. Republic                        |
| 8. Diamond Shamrock    | 26. Rockwell                        |
| 9. Dresser Industries  | 27. Signal                          |
| 10. Eaton Yale & Towne | 28. Singer                          |
| 11. Fuqua              | 29. TRW                             |
| 12. GAF                | 30. Teledyne                        |
| 13. Grace (W. R.)      | 31. Tenneco                         |
| 14. Gulf & Western     | 32. Textron                         |
| 15. ITT                | 33. U. S. Industries                |
| 16. Kidde              | 34. U. S. Plywood (Champion Papers) |
| 17. LTV                | 35. White Consolidated              |
| 18. Lear Siegler       | 36. Whittaker                       |

**Table 2: Descriptive Statistics**

Panel A: Size and earnings.

		<u>Sample Conglomerates</u>	<u>All Manufacturing Firms</u>
		1966–74	1966–74
		( <i>n</i> = 283)	( <i>n</i> = 17,315)
Total assets	Mean	\$ 1,393.439	\$ 306.151
	Median	1,033.459	44.896
Net sales	Mean	\$ 1,546.925	\$ 340.734
	Median	1,275.704	59.407
EBIT	Mean	\$ 126.312	\$ 36.899
	Median	91.091	5.030

Panel B: Degree of diversification.

	Mean	Standard deviation	Minimum	Maximum
Segments per firm-year	5.095	1.689	2	10
Segment sales–weighted Herfindahl	0.293	0.094	0.114	0.698

---

Figures in Panel A in millions of dollars. EBIT (earnings before interest and taxes) defined as operating income less depreciation. “All Manufacturing Firms” includes all firms in NBER Master File (described in Hall, 1990). Segments in Panel B defined at the 4-digit SIC level. 283 firm-years, 1966–74. Herfindahl is the sum of squared segment sales divided by total sales per firm-year.

**Table 3: Unadjusted Value and Performance Measures**

		Total	Subperiods		
		1966–74	1966–68	1969–71	1972–74
Tobin's $q$	Mean	1.336	2.032	1.242	0.937
	Median	1.116	1.498	1.123	0.894
Operating profit	Mean	0.128	0.141	0.119	0.129
	Median	0.128	0.137	0.118	0.128
Cash flow	Mean	0.034	0.038	0.034	0.032
	Median	0.031	0.033	0.032	0.030
Leverage	Mean	0.260	0.238	0.267	0.268
	Median	0.237	0.213	0.252	0.241
Investment	Mean	0.067	0.081	0.064	0.062
	Median	0.063	0.077	0.059	0.051
$n$		273	71	102	100

---

Sample means and medians. Tobin's  $q$  is computed as the market value of common and preferred stock plus the book value of short- and long-term debt, less the net short-term assets, all divided by the book value of capital stock. Operating profit is defined as operating income divided by total assets. Cash flow is defined as income available for common plus depreciation less income taxes paid, all divided by net sales. Leverage is defined as the book value of long-term debt divided by total assets. Investment is defined as gross investment divided by total assets.

**Table 4: Industry-Adjusted Value and Performance Measures**

Panel A: Full period and three subperiods

		Total	Subperiods		
		1966–74	1966–68	1969–71	1972–74
Tobin's $q$	Mean	-0.070	0.270	-0.176**	-0.197***
	Median	-0.083***	-0.077	-0.114***	-0.036***
Operating profit	Mean	-0.023***	-0.027***	-0.023***	-0.021***
	Median	-0.021***	-0.024***	-0.020***	-0.021***
Cash flow	Mean	-0.004*	-0.005	-0.006**	-0.001
	Median	-0.003***	-0.003*	-0.003**	-0.002
Leverage	Mean	0.073***	0.070***	0.075***	0.072***
	Median	0.054***	0.046***	0.060***	0.060***
Investment	Mean	-0.001	0.006	-0.002	-0.005
	Median	-0.003*	0.001	-0.003	-0.007**
$n$		283	72	106	105

Panel B: Subperiod difference tests

		Subperiods		
		1966–68	1969–71	Difference
Tobin's $q$	Mean	.270	-0.176**	-0.446**
	Median	-0.083	-0.114***	-0.051
		Subperiods		
		1969–71	1972–74	Difference
Tobin's $q$	Mean	-0.176**	-0.197***	-0.021
	Median	-0.114***	-0.036**	.078

Sample means and medians. \*\*\*, \*\*, and \* indicate the reported value is statistically different from zero at the 1, 5, and 10% levels, respectively. Industry-adjusted values computed by subtracting from each observation a sales-weighted average of the median industry values corresponding to each segment-year.

**Table 5: Comparison with Servaes (1996)**

**Panel A: Servaes (1996)**

	Adjusted by primary industry only			Adjusted by equally weighted average of all industries		
	1967	1970	1973	1967	1970	1973
Mean	-0.77***	-0.60***	-0.08	-0.64***	-0.53***	-0.06
Median	-0.11***	-0.18***	-0.02	-0.13**	-0.23***	-0.05*

**Panel B: My data and Servaes's methods**

	Adjusted by primary industry only			Adjusted by equally weighted average of all industries		
	1966-68	1969-71	1972-74	1966-68	1969-71	1972-74
Mean	0.08	-0.14**	-0.08**	0.02	-0.17***	-0.08**
Median	-0.23**	-0.23***	-0.06***	-0.41***	-0.21***	-0.05***

**Panel C: My data and my method**

	Adjusted by sales-weighted average of all industries, with control for scale		
	1966-68	1969-71	1972-74
Mean	0.27	-0.18**	-0.20***
Median	-0.08	-0.11***	-0.04***

---

Industry-adjusted  $q$  ratios (sample means and medians) for multiple-segment firms. Panel A reports the results in Servaes (1996), Table III. Panel C reports my results. Panel B reports industry-adjusted  $q$  ratios for my sample conglomerates, constructed using Servaes's two methods (primary-industry-weighted segments with no control for segment scale and equally weighted segments with no control for segment scale, respectively). \*\*\*, \*\*, and \* indicate the reported value is statistically different from zero at the 1, 5, and 10% levels, respectively.

**Table 6: Regression-Adjusted Measures of Value Added from Diversification**

	Total		Subperiods					
	1966–72		1966–68		1969–71		1972–74	
Conglomerate dummy	-0.070 (.066)	0.046 (.073)	0.270 (.222)	0.357* (.212)	-0.176** (.090)	-0.012 (.077)	-0.197*** (.068)	-0.165*** (.056)
Operating profit	—	5.947*** (1.339)	—	7.318 (5.118)	—	5.543** (2.164)	—	4.491*** (1.342)
Leverage	—	0.315 (.629)	—	1.587 (1.783)	—	-0.479 (.791)	—	0.881* (.533)
Constant	1.153*** (.279)	0.220 (.352)	3.452*** (.678)	1.912* (1.170)	1.355*** (.053)	0.735** (.314)	0.759*** (.053)	-0.031 (.202)
R <sup>2</sup>	0.379	0.435	0.401	0.432	0.401	0.480	0.492	0.560
<i>n</i>	566	566	144	144	212	212	210	210

Panel regressions of  $q$  on profitability, leverage, and a constant. The sample pools conglomerate and matched portfolio observations into a single panel and adds an indicator variable, “conglomerate dummy,” to distinguish between them. (The coefficients on the indicator variable in the first, third, fifth, and seventh columns correspond to the industry-adjusted  $q$  ratios reported in Panel A of Table 4.) The models include year-fixed effects and a fixed effect for each conglomerate-portfolio pair. Heteroscedasticity-consistent standard errors, adjusted for within-year clustering among the paired observations, are in parentheses. \*\*\*, \*\*, and \* indicate statistical significance at the 1, 5, and 10% levels, respectively.

**Table 7: Internal Capital Markets and the Value Added from Diversification**

	Industry-adjusted $q$				Industry-adjusted operating profit			
	Total		Subperiod		Total		Subperiod	
	1966-74	1966-68	1969-71	1972-74	1966-74	1966-68	1969-71	1972-74
Full sample								
Mean	-0.070	0.270	-0.176**	-0.197***	-0.023***	-0.027***	-0.023***	-0.021***
Median	-0.083***	-0.077	-0.114***	-0.036***	-0.021***	-0.024***	-0.020***	-0.021***
$n$	283	72	106	105	283	72	106	105
Firm-years following acquisitions creating internal capital markets								
Mean	-0.062	0.320	-0.144**	-0.126***	-0.007***	-0.006	-0.004	-0.011***
Median	-0.124***	0.003	-0.190***	-0.100***	-0.004***	-0.005	-0.002	-0.007***
$n$	120	19	49	52	120	19	49	52
Firm-years following other acquisitions								
Mean	-0.206***	-0.279	-0.302***	-0.073	-0.015***	-0.016***	-0.014***	-0.016***
Median	-0.189***	-0.594*	-0.312***	-0.067	-0.017***	-0.015***	-0.017***	-0.016***
$n$	71	16	27	28	71	16	27	28
Difference								
Mean	0.144*	0.599	0.158	-0.053	0.008**	0.010*	0.010*	0.005
Median	0.065**	0.597**	0.122	-0.033	0.013***	0.010*	0.015**	0.009*
Firm-years immediately following acquisitions creating internal capital markets								
Mean	0.212	0.537	-0.005	-0.035	-0.004	-0.003	-0.004	-0.013
Median	0.003	0.121	-0.182	0.036	-0.002	0.002	-0.002	-0.008
$n$	37	15	19	3	37	15	19	3
Firm-years immediately following other acquisitions								
Mean	-0.198	-0.281	-0.106	-0.272	-0.013***	-0.017***	-0.003	-0.026**
Median	-0.322**	-0.587*	-0.162	-0.129	-0.013***	-0.019***	-0.002	-0.026
$n$	31	16	11	4	31	16	11	4
Difference								
Mean	0.410**	0.818**	0.101	0.237	0.009*	0.014**	-0.001	0.013
Median	0.325**	0.708**	-0.020	0.165	0.011**	0.021**	0.000	0.018

Sample means and medians. \*\*\*, \*\*, and \* indicate the reported value is statistically different from zero at the 1, 5, and 10% levels, respectively. Industry-adjusted values of  $q$  and operating profit computed as above. Acquisitions are defined as creating internal capital markets if financially constrained bidder acquires financially unconstrained target, or financially unconstrained bidder acquires financially constrained target.

