

Value of Fairness Opinions in US Mergers and Acquisitions, 1980-2003

Helen M. Bowers

*University of Delaware, Lerner College of Business and Economics, Department of Finance,
Newark, DE 19716, USA*

and

William R. Latham III

*University of Delaware, Lerner College of Business and Economics, Department of Economics,
Newark, DE 19716, USA*

Draft: November 23, 2004

ABSTRACT

In the market for corporate control, a potential market failure of asymmetric or inadequate information arises if any of the market participants (the acquiring or target firms' management, boards of directors or shareholders) have insufficient knowledge about the real market value of a target firm. This failure may be mitigated by the market's participants choosing to purchase additional information about the value of the target firm. An opinion by a third party regarding this value is known as a "fairness opinion." Although it is often the case that at least one party to an acquisition obtains a fairness opinion, the issue of whether they provide any informational value is still debated. US court rulings have increased the potential costs to firms and their boards of directors of making merger and acquisition decisions without sufficient information, thus potentially raising the value of fairness opinions. The paper examines factors influencing the decisions of firms engaged in merger and acquisition activity during the 1980-2002 period to obtain or not to obtain fairness opinions. For each transaction information is available on the primary industry in which the acquiring and target firms operate and on the numbers and types of additional information, including fairness opinions, each of the parties to the transaction sought during the progress of the transaction. Our results show that, for the acquiring firm in an acquisition, the likelihood of purchasing fairness opinions is influenced significantly by (1) the market values of the acquirer and the target firm, (2) the volatility of excess returns of both firms, (3) whether or not the transaction is a "cash" deal, (3) the degree of asymmetric information as measured by the similarity of the acquirer and target firms, (4) the amount of monopoly power the target firm has, (5) whether the acquisition is "hostile," and (6) whether other financial advisory services have been purchased by either firm. Finally, strong evidence is found indicating that (7) the behavior of acquiring firms, whether incorporated in Delaware or not, has been significantly altered since the 1985 *Van Gorkom v. Smith* decision by a Delaware court regarding fairness opinions. Our results for target firms are not as strong as those for acquirers, nor are the results for financial advisory services more broadly defined.

1. Introduction

“A man’s judgment cannot be better than the information on which he has based it.” Arthur Hays Sulzberger, former publisher, N.Y. Times, in Address to the New York State Publishers Association, August 30, 1948

A fairness opinion, typically presented in the form of a letter to the board, contains the issuer’s opinion regarding the fairness to the shareholders of the corporation of the financial terms of a proposed transaction. Although there are no legally specified credentials qualifying issuers of fairness opinions, the precedent setting court rulings¹ have stressed that the providers of fairness opinions should be “qualified and independent.” Most often, fairness opinions are written by investment banks, but can also be provided by consulting firms, CPA firms, commercial banks, appraisers, or consultants specializing in valuation.²

Fairness opinions help meet a key criterion for protection afforded by the “business judgment rule” which holds that corporate boards are protected from shareholder liability from the consequences of adverse business decisions if the decision was rationally based, made in good faith that the action was in the best interest of the company and arrived at in an informed manner. No other specific document is as universally recognized as evidence of an informed

¹ The 1985 Delaware Supreme Court decision in *Smith v. Van Gorkom* (488 A.2d 858 (Del. 1985)) is usually cited as the precedent setting court ruling (for example, see *Bebchuk*, 1989) that created the obligation that when evaluating a takeover proposal, the corporate boards of target firms must inform themselves of all reasonably available and relevant information to the decision.

² A June 11, 2004 Wall Street Journal article ‘NASD Scrutinizes Conflicts in Bankers’ Fairness Opinions’ summarized the situation succinctly: “Fairness opinions became common after a 1985 ruling by the Supreme Court of Delaware, the leading jurisdiction for M&A law because of the large number of companies that incorporate in Delaware. In that case, which involved allegations that Trans Union Corp. sold itself too cheaply to the Pritzker family, the court held that Trans Union’s board had violated a duty of care and sold the company for too little money. The court stated that getting a fairness opinion would have helped in fulfilling that duty. The decision prompted corporate boards to routinely seek fairness opinions. But their purpose was as much bullet-proofing a board’s decision as exploring valuations.”

board as a fairness opinion. Fairness opinions therefore, are imbued with power to reduce, even eliminate, liability to shareholders for members of corporate boards arising from disagreements in valuation.

In this paper, we examine whether the empirical evidence supports either of two theories offered to explain why acquiring or target firms obtain fairness opinions. The first is a theory of information asymmetry where fairness opinions are more likely to be obtained where there is less information available in the market regarding the value of the target firm. The second theory is a one of increased liability, where fairness opinions are more likely to be sought when there is a perceived higher probability of a successful shareholder lawsuit as a result of the transaction. We find that, for the acquiring firm in an acquisition, the likelihood of purchasing fairness opinions is influenced significantly by (1) the market values of the acquirer and the target firm, (2) the volatility of excess returns of both firms, (3) whether or not the transaction is a “cash” deal, (3) the degree of asymmetric information as measured by the similarity of the acquirer and target firms, (4) the amount of monopoly power the target firm has, (5) whether the acquisition is “hostile,” and (6) whether other financial advisory services have been purchased by either firm. Finally, strong evidence is found indicating that (7) the behavior of acquiring firms, whether incorporated in Delaware or not, has been significantly altered since the 1985 *Van Gorkom v. Smith* decision by a Delaware court regarding fairness opinions. Our results for target firms are not as strong as those for acquirers, nor are the results for financial advisory services more broadly defined.

2. Hypotheses

2.1 Information asymmetry and market value

Information about a particular acquisition can be characterized into two types: market information and costly incremental information. We define market information as the information that is available to all participants in a semi-strong-form efficient market. Information provided by the market includes industry analysis, security analysis, and SEC filings. Incremental information is information that is obtained at a cost by some party to the acquisition. This incremental information may eventually be disclosed and become market information, but this is not necessarily so. The focus of this study is on a particular type of incremental information, the fairness opinion. A fairness opinion contains the issuer's assessment of the fairness of the offer to the firm's shareholders. Although the opinion may state that an offer is fair, this does not necessarily mean that the issuer of the opinion regards this offer as the best offer that the target could reasonably expect. If fairness opinions, while only stating that an offer is fair, mitigate information asymmetry we expect fairness opinions to be more likely to be sought when there is more value at stake.

We measure the size of the transaction in two ways. First we use the actual dollar value of the transaction in terms of the market value of the target measured as the average of the market values over days -25 to -5 relative to the announcement date. We hypothesize that the larger the size of the firm, the more likely it is that a fairness opinion will be sought. Therefore, we hypothesize that a firm is more likely to obtain a fairness opinion when the other firm in the transaction is relatively large. We also hypothesize that, the larger the target is relative to the acquirer, the more likely it is that the acquirer will seek advice in the form of a fairness opinion. We expect this relation for the acquiring firm because the acquirer should be more willing to obtain costly incremental information when the target firm is relatively larger because of the greater potential impact on the acquirer's own equity value.

2.2 *Uncertainty in the information environment*

Dierkens (1991) finds empirical evidence that information asymmetry between the managers of the firms and the market is significant for equity. The magnitude of this information asymmetry is expected to increase with the volatility of the firm's stock because this volatility reflects the underlying uncertainty regarding the firm's future performance. The variance of excess returns ($Ret_{it} - Mkt_{it}$) has been used in several studies, such as Bizak, Brickley, and Coles (1993), Boone, Field, Karpoff, and Raheja (2004), Gaver and Gaver (1993), Lehn, Patro and Zhao (2004), Smith and Watts (1992), and Yermack (1995) as a measure of the uncertainty in the information environment. We argue that when making the decision whether to obtain a fairness opinion, the relative uncertainty regarding the information environment is a critical determinant. The firm would seek to obtain the costly incremental information in a fairness opinion if the other firm in the transactions is in a more uncertain information environment than that of their own firm.

2.3 *Industry "closeness" and structure and the value of information*

Information asymmetry can also arise in the market based on differential experiences of firms. Those with similar experiences will share an information base not shared by those without such experience. One form of experience is simply operating a business in particular markets with all of the institutional details that differentiate real-world markets from each other. We hypothesize that industry "closeness" will affect the value of the kind of information provided by fairness opinions. Firms that are "close" to each other in the sense that they are in the same or similar industries (which is not the same as being close in a geographic distance sense) they may be more likely to have higher levels of prior knowledge about each other than firms in dissimilar

lines of business. It would follow that these firms with higher prior levels of knowledge would find the additional information provided by a fairness opinion less valuable than dissimilar firms. Thus we measure how close firms are to each other and then examine whether or not the closeness of firms to each other reduces the likelihood of obtaining a fairness opinion.

2.3.1 Measuring industry closeness

Every target and acquiring firm is assigned to an industry based on its primary line of business. For firms that produce a wide range of products and services these assignments may not be precisely descriptive of the firm's activities. However, the notion of an "industry" in which a firm participates is an intuitively appealing concept that has also generally been found to be useful in empirical investigations. In fact, most firms produce a range of products from the same or closely related industries. The North American Industry Classification System (NAICS) and its predecessor, the US Standard Industrial Classification system, both have numerical codes that group firms into industries. Industries from related sectors have similar codes: all manufacturing industries have NAICS codes beginning with the 2-digits 31, 32 or 33, wholesale trade begins with 42, etc. Increasingly detailed industries are indicated by codes with more and more digits. For example, NAICS code 325 is chemical manufacturing, 3255 is paint, coating and adhesive manufacturing, and 325520, is adhesive manufacturing. The coding system extends to as many as nine digits, but six digits is more than enough to identify an industry in most cases. The COMPUSTAT data we use have six-digit NAICS (and four-digit SIC codes) for both target and acquiring firms. The structure of the coding systems places firms that produce similar products in industries with codes that are numerically similar. For example, NAICS industry code 325510 is assigned to paint manufacturing which is obviously similar to adhesive manufacturing which is assigned the NAICS code 325520. We construct a measure of industry similarity or closeness based on these codes. Because firms in industries that produce similar

products have industry codes that are numerically close to each, the absolute value of the difference between the numerical values of the target and acquiring firms' NAICS (or SIC) codes might be used as a measure of how similar the industries are in which the target and acquiring firms operate. The closeness measure for firms in paint manufacturing (325510) and adhesive manufacturing (325520) would be 10 while the closeness measure for a firm in paint manufacturing and a firm in any kind of metal fabrication (332***) would be at least 6,490 (332000 - 325510). Within the manufacturing sector, there does seem to be a rough sort of correspondence, at least ordinally, between the absolute differences between codes and the degree of dissimilarity between industries. However, the numerical code numbers were not designed to indicate closeness and do so only imperfectly, especially from one major industry group to another. There are obviously multiple dimensions of closeness that cannot be reflected by such a one-dimensional array of numbers. For example, all financial institutions have NAICS codes that begin with 52 so that their 6-digit codes are 52****. Thus the closeness measure for a financial institution and paint manufacturing would be at least 194,490 (520000 - 325510). Professional services, which may be just as closely related to a manufacturing industry as a financial institution, but in a different dimension, have codes that begin with 54 so their minimum measures of closeness to paint manufacturing would be 214,490. It does not make sense to say that any financial institution is "closer" to paint manufacturing than any professional service. To avoid this problem, which arises from the arbitrariness in the assignment of the first two digits in the codes for major industry groups, we assign a closeness measure of 30,000 whenever the acquirer and the target are from different major industry groups. The value of 30,000 is chosen because the largest maximum within-major-industry-group difference, which is in manufacturing, is 29,999. The final adjustment to the closeness measure we make is to invert

the scale by subtracting each value from 30,000 so that the intuition of low numbers indicating greater closeness and high numbers its absence is established. The result is that we have a measure of the degree of closeness for pairs of firms within the same general classification and for all other pairs we assign a large number.

An alternative approach to industry closeness is to use a 0-1 dummy variable to identify as “close” transactions for which both target and acquiring firms are from the same industry group. The precision of the definition of closeness in this case depends upon how disaggregated the industry groups are. An *a priori* selection must be made of the industry codes to place into specific groups that, for some characteristics, are more homogeneous within the groups than across groups. We choose to implement this alternative using the 48 industry groups used by Fama and French (“Industry Costs of Equity,” *JFE* (43) 1997, pp 153-193).³ Fama and French’s industry groups are aggregations of SIC codes of related industries from different parts of the SIC system. For example, their Business Services group includes the codes for industries from Commercial Printing (SICs 2750-2759, NAICS 323110 and 323114), Signs and Advertising Displays (SIC 39930, NAICS 33995), parts of Business Services other than computers (SICs 7300-7372, NAICS 5418 and 5614), and a variety of other sectors. Table 1 shows the distribution of industries in the Fama and French industry groups for all of the acquisition announcements for which there is financial advisor data available in SDC and for those announcements that were included in our regressions.

³ Other schemes for aggregating industry codes into industry groups exist. For example, Compustat defines a different set of industry groups. In another context it has been found that using Compustat industry definitions rather than Fama-French industries does not affect analytical results (e.g., Boone, et al. [2004]). Because we are not interested in the individual industry results explicitly, but only need to determine whether two firms are in the same or different industries, the particular assignment scheme should not matter as long as the levels of aggregation are similar. The particular assignment scheme might be more important when industry is used as a proxy for other unmeasured factors such as firm complexity and in this context we again rely on finding such as those of Boone, et al. [2004].

2.3.2 Industry structure and the value of information

We hypothesize that industry structure will affect the value of the kind of information provided by fairness opinions. It is relatively easy to find information on firms in highly competitive industries so that they can be compared with other firms to determine the reasonableness of an offer. Monopoly firms, however, by their nature, are unique and consequently more difficult to value by referring to other firms because less information is available and there are not comparable firms. Thus we hypothesize that the more competitive the industry is, the less value a fairness opinion would be expected to have. We measure competitiveness using the percentage of industry sales by the four firms with the highest sales in the industry (the 4-firm concentration ratio). This measure is admittedly somewhat arbitrary, but it is widely used and does, at least, provide an initial measure of competitiveness to test. In addition it is available from the U.S. Bureau of the Census.⁴ While industry competitiveness varies over time it does not vary greatly in many industries within relatively short time spans. Thus we use a competitiveness measure for 1997 for all of the transactions in our sample. If we find that the competitiveness measure has significantly more discernable effects around 1997, we can refine the measure to more closely match the period in which the transaction occurs.

2.4 *Medium of exchange*

The initial terms of the acquisition offer are included in the announcement of the offer, including whether the offer will be cash, stock or some other medium of exchange. Because a

⁴ Concentration measures for 1997 by detailed NAICS codes are available from the U.S. Census Bureau for all industries except Mining (NAICS 21), Construction (NAICS 23) and Management of Companies and Enterprises (NAICS 55). See <http://www.census.gov/epcd/www/concentration.html>. Other measures calculated by the Census Bureau include the 8-firm, 20-firm and 50-firm concentration ratios for all industries included and the Hirshman-Herfindahl Index only for manufacturing industries. The last is viewed by most economists as the best of these measures because it utilizes information from the full distribution of firms within the industry and weights the larger shares more heavily. However, it is not available for industries other than manufacturing, so we choose to use a measure which is available for all of the industries instead.

fairness opinion concerns the fairness of the offer to the shareholders, the less ambiguous the value of the offer, the less incremental information is provided in an opinion. Therefore, we hypothesize that a firm will be less likely to seek a fairness opinion when the medium of exchange is all cash.

3. Increased liability hypothesis

We hypothesize that if fairness opinions can be used to satisfy one of the requirements for protection under the business judgment rule, then opinions are more likely to be sought when there is the perception that the potential for a successful shareholder lawsuit is relatively high.

3.1 Court rulings and the value of information

First, we include a dummy variable for the Van Gorkom decision. Previous studies have found an initial increase in the frequency in the use of fairness opinions after the Delaware Supreme Court decision in 1985 (Bowers 2002) and we expect to confirm this in the present study even after controlling for many factors not considered in the prior work.

3.2 “Attitude” of the deal and the value of information

The initial reaction of the target firm’s management to the announcement of the offer may be an indication of potential litigation resulting from the acquisition. Therefore, we hypothesize that a firm is more likely to obtain a fairness opinion if the acquisition is “hostile.” A finding of a negative sign might indicate that control, not valuation, is the issue in hostile takeovers and that additional valuation information is not sought because the value is not at issue.

3.3 Number of advisory services and the value of information

We regard other advisory services as probably functioning as substitutes for fairness opinions and thus hypothesize that, the larger the number of other advisory services obtained, the lower will be the probability of obtaining a fairness opinion. A finding of a positive sign would

indicate that other advisory services are complements to fairness opinions and not substitutes for them.

3.4 *Time period of the transaction and the value of information*

We use the year that the transaction is announced. We use the time period as a proxy for business cycle and market conditions not related to target and acquirers excess returns or their market values and other unobserved factors that may influence the decision to seek a fairness opinion. We also use a continuous time variable to capture any time trend effect not associated with the calendar years. This variable has a value of 1 on the first day in the sample period (January 1, 1980) and increases linearly each day to the end of the period (December 31, 2002).

4. **Binomial logit regression models**

The following basic model was estimated separately for acquirers and targets for $i=1$ to T transactions⁵

$$FOP_i = \beta_0 + \beta_1 ADVA_i + \beta_2 ADVT_i + \beta_3 CLSE_i + \beta_4 CONA_i + \beta_5 CONT_i + \sum_{g=1}^{48} \gamma_g IND_{gi} + \beta_6 VALA_i + \beta_7 VALT_i + \beta_8 RVAL_i + \beta_9 MP_i + \beta_{10} VG_i + DELA_i + DELT_i + DELB_i + ATT_i + \beta_{11} FAIR_i + \sum_{t=1980}^{2002} \alpha_t YEAR_{ti} + \varepsilon_i$$

Where

$FOP_i = 1$ if a fairness opinion was sought by the firm, 0 otherwise;

⁵ Note that in the empirical analysis the number of observations varies from one estimated equation to another because of missing data for some variables for some observations. We feel that the gain from the additional numbers of observation made possible in many of the estimations by this approach (in terms of precision of estimates) more than offsets the loss of certainty that the particular sample is not driving the results when exactly the same observations are not used in all estimations. However, to ensure that selectivity has not biased the results, Hausman's test have been run and the results indicate that selectivity does not seem to be a problem.

or
 = the number of fairness opinions reported by the firm
 $ADVA_i$ = Number of non-fairness opinion advisory services used by the acquiring firm
 $ADVT_i$ = Number of non-fairness opinion advisory services used by the target firm
 $CLSE_i$ = Closeness = $|NAICSA_i - NAICST_i|$ if 1st 2 digits match, otherwise = 30,000
 or
 = 1 if both firms are in the same Fama-French industry group, 0 otherwise
 $CONA_i$ = 4-firm concentration ratio of acquiring firm's industry
 $CONT_i$ = 4-firm concentration ratio of target firm's industry
 IND_{gi} = 1 if the target firm's industry is in Fama-French industry group g, 0 otherwise
 $VALA_i$ = Total market value of the acquiring firm
 $VALT_i$ = Total market value of the target firm
 $RVAL_i$ = Market value of the target firm relative to the market value of the acquiring firm
 MP_i = Merger premium
 VG_i = 1 for transactions after 1985, the year of the the Van Gorkham decision
 $DELA_i$ = 1 for transactions in which the acquiring firm is incorporated in Delaware
 $DELT_i$ = 1 for transactions in which the target firm is incorporated in Delaware
 $DELB_i$ = 1 for transactions in which both firms are incorporated in Delaware
 $FAIR_i$ = 1 for transactions after 1995, the year of the SEC's Fair Disclosure regulation
 $YEAR_{ti}$ = 1 if the year in which transaction was completed is year t, 0 otherwise
 ATT_i = 1 if the attitude of the deal is Friendly; 0 if it is Hostile

The theoretical considerations that lead to the model specified have strong restrictions on neither the forms of the variables nor the forms of the equations to be estimated. Thus we have considerable freedom to choose forms that lead to functions that fit the data best. Most of the variables are dichotomous dummies for which alternative functional forms are not considered. Several of the other variables have limited ranges of values (*e.g.*, FO which only has integer values between 0 and 7, or CONA or CONT which have values in the 0-1 interval) making them less attractive candidates for transformation also. This leaves the closeness measure, CLSE, based on NAICS codes, the market values of the firms, VALT and VALA and the merger premium, MP. If the Closeness variable has affects that are more attenuated the farther apart the two firms are, this affect can be modeled by using a quadratic form in closeness. Confirmation of the hypothesis of an attenuated effect of closeness with greater distance would be a negative

linear term and a positive squared term (the variable's values are between 30,000, for firms in the same industry to 0, for firms far apart).

5. Data Collection and Summary Statistics

Sample transactions are drawn from a pool of 7,818 merger announcements between 1980 and 2002 obtained from the Securities Data Corporation (SDC) domestic mergers and acquisitions database. These observations include those announcements for which the acquiring and target firms were public and the value of the deal was disclosed. In addition, for an observation to be included in the sample, its SDC classification for the form of the deal had to be as a merger, acquisition, acquisition of stock assets or majority interest. Announcements were excluded from the sample if, according to SDC, the status of the deal was unknown, the transaction was classified as rumored or where either firm had only announced plans to seek out a buyer or seller for all or part of its assets. Also, if SDC classified the deal type as a spin-off, recapitalization, self-tender, minority stake purchase, privatization, or acquisition of remaining interest, or if the proposed transaction was a cross-border deal, it was excluded from the sample. Of the 7,818 merger announcements, fairness opinion data was available for 4,228 of the acquirers and 4,229 of the targets.

Fairness opinions are routinely by not universally sought. Figure 1 shows the number of fairness opinions obtained by acquiring and target firms over the period 1980-2002. Figure 2 shows the firms that obtained fairness opinions as a percentage of all 4,228 of the acquirers and 4,229 of the targets for which fairness opinion data were available from the SDC dataset. The sample period begins in 1980 to capture the any affect of the Van Gorkom court decision in 1985. The number of acquirers and targets obtaining fairness opinions has trended upward since

1980. However, the frequency of firms obtaining fairness opinions, although varying from year to year is relatively much more stable, exhibiting a slight upward trend over the long term.

There are two possible reasons for the drop-off in frequency of firms seeking fairness opinions after 2000. First, the decrease may be due to the purported escalation in the prices of obtaining opinions and the decline in willing providers of opinions because of the increased potential liability after the recent corporate governance scandals. However, the Securities Exchange Commission (SEC) adoption of Regulation Fair Disclosure in October 2000, may have reduced the value of fairness opinions. Eleswarapu, Thompson, Venkataraman (2004) have found that information asymmetry declined following the SEC's adoption of Regulation Fair Disclosure in October 2000, concluding that "the SEC appears to have diminished the advantage of informed investors." If the SEC's adoption of Fair Disclosure has reduced the potential value of fairness opinions and then we would expect there will be fewer fairness opinions sought *ceteris paribus* following October 2000.⁶

The change in percentage of firms seeking fairness opinions on a yearly basis roughly corresponds with change in the number of acquisitions announcements per year as reported in Figure 3. Over the entire sample period 12 percent of acquiring firms announcing acquisitions obtained fairness opinions compared with 31 percent of the targets.

6. Determinants of Fairness Opinions

Table 3 summarizes the results of estimating binary logit regression models for dependent variables that record whether or not acquirers and targets obtained fairness opinions or some form of financial advice. All of the coefficients in this and the following table represent

⁶ The authors are currently investigating which of these is the reason for the decrease in fairness opinions after 2000.

changes in the log of the odds ratio in favor of a firm using a fairness opinion or other financial advice when the independent variable changes by one unit. The values are, consequently, not as easily interpretable in magnitude as “normal” regression coefficients. Fortunately, the signs and significance levels of the individual coefficients, shown as p-values in the table, and the characteristics of the overall regression are the more important results. In Tables 2 and 3 we have chosen to show only a single overall goodness-of-fit measure, McFadden’s R-squared. We choose this measure because of its ease of interpretation as an R-squared showing the relative explanatory power of the equation and its widespread acceptance as a valid measure.⁷

Model 1 in Table 3 presents the results for fairness opinions obtained by acquiring firms. Many of the signs are as expected and most of the variables are highly significant as indicated by the low p-values. Thus a number of our basic hypotheses regarding the major determinants of the decisions of acquirers to obtain a fairness opinion are supported by the data. As expected, the effect of the size of the target firm, as measured by market value, is positive and significant, supporting the hypothesis that information is more valuable when there is more value at stake. In addition we find that the effect of the size of the acquiring firm, also measured by market value, is negative and significant. This may indicate that larger acquirers are simply less concerned about the costs of acquisitions of any given size. In consumer demand theory this phenomenon is known as the budget effect: the smaller the proportion of expenditure on an item is in a consumer’s overall budget, the lower the consumer’s sensitivity to the expenditure.

⁷ Many aggregate measures of goodness of fit have been proposed for logit regressions and statistical software packages often present a number of them. William H. Green is among the econometricians who recommend the use of McFadden’s R-squared. (William H. Greene, *Econometric Analysis*, 4th ed., Prentice-Hall Englewood Cliffs, N.J. 2000) All of the equations are highly significant according to a variety of measures. For example, the p-values of the likelihood ratio statistics for all of the equations are 0.

The information asymmetry variables have mixed effects in Model 1. We find that the relative volatility of excess returns for the two firms has a positive and significant effect on the probability of obtaining a fairness opinion. We interpret this result as showing that firms that have experienced more volatility (and for whom the market assessment is that the market has less relative information about them) are more willing to incur the cost of obtaining a fairness opinion because they do not want to negatively impact their volatility further through an unwise acquisition. Information asymmetry is greater when firms are more dissimilar or when they are not “close” according to our measure. As expected, the closer firms are to each other the lower is the probability of obtaining a fairness opinion. The closeness measure was also found to have a nonlinear effect: its negative effect on the probability obtaining a fairness opinion diminishes as the distance between the firms increases, as shown by the positive sign on closeness squared. The closeness results may also be interpreted as indicating that firms contemplating horizontal mergers are more likely to seek fairness opinions than firms involved in vertical or conglomerate mergers.

Information asymmetry is also expected to increase in more concentrated industries in which one of the results of market power may be less of a need to reveal information. The positive sign in Model 1’s results shows that industry concentration in the target firm’s industry does increase the probability of an acquirer paying for the additional information provided by a fairness opinion. The variable is squared to reflect a nonlinear effect of increasing concentration.⁸ The variable’s p-value is only .2171, indicating insignificance at any of the usual significance

⁸ A Hirshman-Herfindahl Index (HHI) is often used as a measure of concentration. HHI captures the nonlinear nature of the effect of rising concentration by using the square of market shares. HHI values are sometimes computed using only the data in Compustat, which contains data only for exchange listed firms. We felt that being able to use concentration ratios based on complete data for all firms in all industries was more important than not using HHI.

levels. However, because of the theoretical support for the variable, its correct sign, and its z -value exceeding one, we choose to retain it in the equation.

As expected the variable which designates that a transaction will be completed with a cash (or cash-like) payment as the Medium of Exchange has a negative and significant sign showing that when the value of the payment component of a transaction is certain, there is a reduced probability of a fairness opinion being obtained. This effect is independent of the market value of the transaction as indicated by a low correlation between the target's market value and the use of cash. The results for the Attitude of the Deal being "Hostile" according to the SDC data are not as hypothesized: instead we adopt an alternative explanation that our negative and significant coefficient indicates that, when a transaction is hostile, the acquirer may have committed to gain control by purchasing the assets and value is no longer an issue to the acquirer. In this case the acquirer does not need a fairness opinion to help with the decision.

In the positive and significant coefficient for Other Financial Advice Obtained, we find evidence of complementarity rather than the substitutability among types of information that we had hypothesized. It appears that, when acquirers obtain other kinds of financial advice, they are more likely to obtain a fairness opinion. There may be a behavioral interpretation of this result as well: more risk-averse acquirers can attempt to reduce risk as much as possible by obtaining as much information as possible including not only fairness opinions but also other kinds of financial advice. The positive and significant value for the coefficient on Fairness Opinion Obtained, Target may be evidence that, to some extent, there is symmetry in the need for information in some transactions such that whatever the circumstances are which compel target firms to obtain fairness opinions, the same circumstances may also motivate acquirers to obtain fairness opinions. For example, when general market conditions produce a high degree of

uncertainty regarding the future value of a target, both the target itself and the acquirer will be more likely to obtain a fairness opinion.

The final variable in Model 1 is the dummy variable which divides the sample time period into pre- and post- the Smith v. Van Gorkom decision, indicated by the Van Gorkom Dummy variable. The finding that it is positive and significant (at the 6.6% level) is as expected: following the Van Gorkom decision, boards of directors have become less willing to make merger and acquisition decisions without a formal fairness opinion. However, the expectation that, because Smith v. Van Gorkom was decided in a Delaware court, this effect would be especially strong for firms incorporated in Delaware was not supported by the data. Dummy variables for Delaware incorporation for the acquirer, for the target and for both were all found to be insignificant in all models. We believe that there are several reasons for this finding. First, the Van Gorkom decision has been used outside of Delaware and thus it is of significance to firms not incorporated in Delaware. Westlaw shows it cited in 90 non-Delaware cases since the year of the decision (1985). Second, Van Gorkom's primary holding inspired a Delaware statute the following year that actually superseded it and then as many as 36 other states followed suit with similar statutes. Finally, a number of states have adopted Delaware statutory or decisional law on corporations and, hence, would automatically follow Van Gorkom or the Delaware statute without explicit action.

After examining the results of estimating Model 1, a number of alternative specifications were considered. An obvious alternative measure for the market values is relative market value, measured as the size of the acquirer relative to the size of the target which also provides a way to combine these effects. Table 3 also shows the results of several alternative specifications for Model 1. In Table 3, Model 3 shows the results of using the ratio of the two market values in the

specification. As can be seen, the result is that the relative value measure is insignificant and that the R-squared value falls as well. However, as seen in Model 4 when the log of the relative market value measure is used, the coefficient is significant and the R-squared value improves as well. When the two market values are entered separately as logs, the variable representing the relative volatility of returns becomes insignificant. When it is dropped from the equation, the result is Model 2. Model 2 has the highest R-square of any of the alternative specifications tried for Model 1. We prefer Model 1's specification only because the relative volatility measure has such strong theoretical justification. In Model 5 we show an alternative which utilizes the merger premium and the log of the ratio of excess returns. The latter is highly significant (with a p-value of .01) just as it was in level form in three of the first four models. However, the merger premium is not significant in this equation, nor was it found to be significant in any of the other equations for acquirer fairness opinions.

Other variables that were introduced into the equations but were found to either have no meaningful significance or, when introduced as alternative measures of concepts already in the model, were found not to produce as strong results. The level of annual aggregate merger activity, as measured by the number of transactions among the 7818 in our sample, was found not to be significant in any of the specifications. The book value of assets is an alternative measure of firm size that was entered into the equations but did not provide as much explanatory power as market value. We attempted to use industry dummy variables as these have often been found to be significant conditioning variables in other studies. We used Fama and French's industry definitions and introduced a full set of dummy variables into the regressions but found them to be insignificant as a group. In fact, only 2 individual industries had even modest significance. For this reason we omitted the industry dummies from the models reported herein.

We also attempted to use the Fama and French industries to obtain an alternative measure of closeness. We defined a dummy variable that had a value of 1 if both the acquirer and the target were from the same Fama-French industry and 0 otherwise, but the results were that this variable had less explanatory value in the models than the combination of our Closeness and Closeness-squared variables.

We attempted to introduce either of the time variables identified in section 3, the year of the transaction and a continuous time variable for the days within the period, but neither was found to contribute any significance to the explanatory power of the equations.

Table 4 presents results of estimating the models for the decision of the target firm to obtain a fairness opinion. The models whose estimation results are in Table 4 parallel those for acquirers in Table 3. Again the alternative models represent experiments with the functional form of the regression equations, especially regarding whether the two firm size measures should enter separately or as a ratio with both forms either linear or logged. In contrast to the acquirer models, the target models do not provide support for many of the theoretical hypotheses. Perhaps this should not be surprising given that the distribution of the asymmetric information in the market favors the target firms. However, this consideration should also lead target firms to less frequently obtain fairness opinions while the observed distribution goes the other way. Only 12% of acquirers and over 30% of targets obtained fairness opinions. Examining the results variable by variable in an attempt to gain an understanding of why the target models do not work well is not very revealing. None of the five models in Table 4 has significant coefficients for both market value and the ratio of excess returns. Probably an as yet undiscovered combination of these concepts needs to be found. Some results are very surprising, such as the failure of the cash transaction variable to contribute as it did for the acquirer models. Similarly, it appears that

targets are unconcerned about the ramifications of the Van Gorkom decision since it is not significant in any of the models. The asymmetric information variables, closeness and concentration appear to have no effect on the targets' decisions to obtain fairness opinions. There are only two consistently significant explanatory variables. The first is the complimentary input variable, indicating that other financial services were obtained by the target. The second is the indicator that there are as-yet unmeasured general conditions affecting the firm value, of which both acquirer and target are aware, as measured by a fairness opinion being obtained by the acquirer. Given the much less significant results it is not surprising that the McFadden R-squared values in Table 4 are also significantly lower, the largest being only .18 whereas in Table 3 Model 2 has an R-squared of .29.

Are fairness opinions really a special kind of information not contained in other types of information that firms can obtain? We have attempted to address this question. The SDC database records the numbers of financial advisors listed by both acquiring and target firms. It is possible that this kind of financial advice is a substitute for a formal fairness opinion. In our sample almost half (49.5%) of all acquiring firms that had any information of this type listed financial advisors whereas only 12.1% obtained a fairness opinion. Because a small number of firms obtained fairness opinions and did not list other financial advisors, the total percentage of acquiring firms with either a fairness opinion or a financial advisor rises to 50.8%. The figures for target firms are: 31.1% fairness opinions, 71.8% financial advisors and 71.9% either.

To get an idea of whether the inclination of firms to obtain any kind of financial services, including but not limited to fairness opinions, is different from their decisions regarding fairness opinions alone, the models in Table 5 were estimated. In this case both the models for the acquirers and for the targets are better in some ways than the models for targets shown in Table 4

but neither is as good as the acquirer models in Table 3. Surprisingly, Model 12 for targets has a higher R-squared value than Model 11 for acquirers. Models 11 and 12 also exhibit some curious signs, such as the positive value of cash for target firms, although this result might indicate that the when cash is going to be received, and there is no possible additional upside gain following the closing of the transaction, the target may want to obtain some additional assurances that full value is being received. Such behavior could be revealing a bias on the part of targets to believe that noncash receipts are likely to appreciate in value. In both Models 11 and 12 the Van Gorkom dummy variable is significant indicating that, while the Van Gorkom decision addressed only fairness opinions in a narrow sense, it's broader implications have been to induce a higher level of consumption of financial advisory services of all kinds.

7. Results

Our results show that for the acquiring firm in an acquisition, the likelihood of purchasing fairness opinions is influenced significantly by (1) the market values of the acquirer and the target firm, (2) the volatility of excess returns of both firms, (3) whether or not the transaction is a “cash” deal, (3) the degree of asymmetric information as measured by the similarity of the acquirer and target firms, (4) the amount of monopoly power the target firm has, (5) whether the acquisition is “hostile,” and (6) whether other financial advisory services have been purchased by either firm. Finally, strong evidence is found indicating that (7) the behavior of acquiring firms, whether incorporated in Delaware or not, has been significantly altered since the 1985 Van Gorkom v. Smith decision by a Delaware court regarding fairness opinions. Our results for target firms are not as strong as those for acquirers, nor are the results for financial advisory services more broadly defined.

8. Work in Progress

The results reported above are encouraging, especially those for the acquirers. More systematic exploration of alternative model specifications and variable forms will probably be productive even for acquirers. Considerable work is needed to refine a model for targets to the point of having results as reliable and reasonable as those for acquirers. Fruitful work can also be done to tie the models in this paper more directly to those in the information asymmetry literature. Further exploration of the legal and corporate governance aspects (board structure, etc.) also seems warranted.

The authors are continuing to pursue each of the above issues and welcome criticism and comments.

9. References

- Bebchuk, Lucian Arye and Marcel Kahan, 1989, Fairness Opinions: How Fair Are They and What Can Be Done About It?, *Duke Law Review*, 29-45.
- Berger, Philip G. and Eli Ofek, 1995, Diversification's Effect on Firm Value, *Journal of Financial Economics*, 39-65.
- Bizjak, J., J. Brickley, and J. Coles, 1993, "Stock-based Incentive Compensation and Investment Behavior," *Journal of Accounting and Economics* 16, 349-372.
- Boone, Audra, Laura Casarer Field, Jonathan M. Karpoff and Charu G. Raheja, 2004, The Determinants of Corporate Board Size and Composition: An Empirical Analysis, Working paper College of William and Mary.
- Bowers, Helen M., 2002, Fairness Opinions and The Business Judgment Rule: An Empirical Investigation of Target Firms' Use Of Fairness Opinions, *Northwestern University Law Review*, 567-578.
- Dierkens Nathalie, 1991, Information Asymmetry and Equity Prices, *Journal of Financial and Quantitative Analysis*, 191-199.
- Eleswarapu, Venkat R., Rex Thompson, and Kumar Venkataraman, 2004, The Impact of Regulation Fair Disclosure: Trading Costs and Information Asymmetry, *Journal of Financial and Quantitative Analysis*, 209-25.
- Elson, Charles M., 1995. The Duty Of Care, Compensation, And Stock Ownership, *University of Cincinnati Law Review*, 649-677.
- Fama, Eugene F. and Kenneth R. French, 1997, The Industry Costs of Equity, *Journal of Financial Economics*, 153-193.
- Fama, Eugene F. and Kenneth R. French, 1995, Size and Book-to-Market Factors in Earnings and Returns, *Journal of Finance*, 131-55.
- Fan, Joseph P. H. and Larry H. P. Lang, 2000, The Measurement of Relatedness: An Application to Corporate Diversification, *Journal of Business*, 629-60.
- Frankel, Richard and Xu Li, 2004, Characteristics of a Firm's Information Environment and the Information Asymmetry between Insiders and Outsiders, *Journal of Accounting and Economics*, 229-59.
- Gaver, J. and K. Gaver, 1993, "Additional Evidence on the Association Between the Investment Opportunity Set and Corporate Financing, Dividend, and Compensation Policies," *Journal of Accounting and Economics* 16, 125-160.

- Haire, M. Breen, 1999, Comment, The Fiduciary Responsibilities Of Investment Bankers In Change-Of-Control Transactions: In Re Daisy Systems Corp., *New York University Law Review*, 277- .
- Jensen, Michael C., 1986, Agency Costs Of Free Cash Flow, Corporate Finance, And Takeovers, *American Economic Review*, 323-29.
- Kahle, Kathleen M. and Ralph A. Walkling, 1996, The Impact of Industry Classification on Financial Research, *Journal of Financial and Quantitative Analysis*, 309-335.
- Kole, S., 1997, "The complexity of compensation contracts," *Journal of Financial Economics* 43, pp 79-104.
- Lang, Larry H. P. and Rene M. Stulz, 1994, Tobin's q, Corporate Diversification, and Firm Performance, *Journal of Political Economy*, 1248-80.
- Lehn, Kenneth, Sukesh Patro and Mengxin Zhao, 2003, Determinants of the Size and Structure of Corporate Boards: 1935-2000, Working Paper University of Pittsburgh.
- Moeller, Sara B., Frederik P. Schlingemann and Rene M. Stulz, 2004, Do Acquirers With More Uncertain Growth Prospects Gain Less From Acquisitions? Forthcoming *Journal of Finance*.
- Moeller, Sara B., Frederik P. Schlingemann and Rene M. Stulz, 2004, Wealth Destruction on a Massive Scale? A Study of Acquiring-Firm Returns in the Recent Merger Wave, Forthcoming *Journal of Finance*.
- Rhodes-Kropf, Matthew David Robinson and S. Viswanathan, 2001, Valuation Waves and Merger Activity: The Empirical Evidence, Working Paper Columbia University.
- Rhodes-Kropf, Matthew and S. Viswanathan, 2004, Market Valuation And Merger Waves, Forthcoming *Journal of Finance*.
- Shaw, Bill and Edward J. Gac, 1995, Fairness Opinions In Leveraged Buy Outs: Should Investment Bankers Be Directly Liable To Shareholders?, *Securities Regulation Law Review*, 293- .
- Shleifer, Andrei and Robert W. Vishny, 2003, Stock Market Driven Acquisitions, *Journal of Financial Economics*, 295-311.
- Smith, C. and R. Watts, 1992, The Investment Opportunity Set and Corporate Financing, Dividend, and Compensation Policies, *Journal of Financial Economics* 32, 263-292.

Walker, M. Mark, 2000, Corporate Takeovers, Strategic Objectives, and Acquiring-Firm Shareholder Wealth, *Financial Management*, 53-66.

Yermack, D. 1995, Do Corporations Award CEO Stock Options Effectively? **Journal of Financial Economics** 39, 237-269.

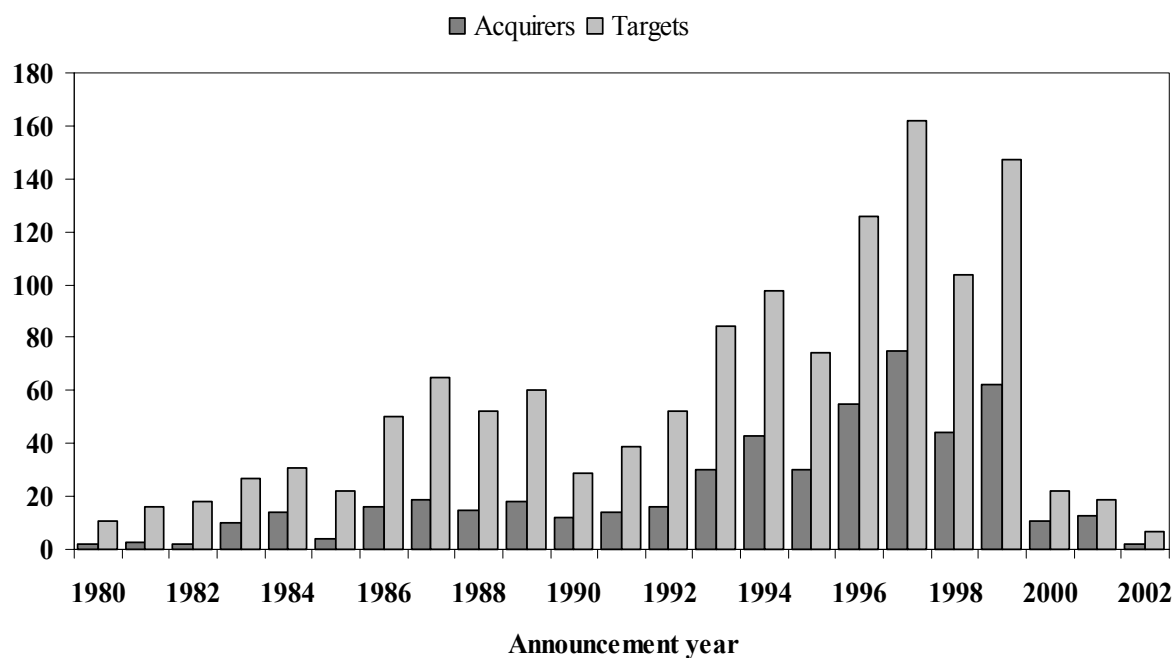
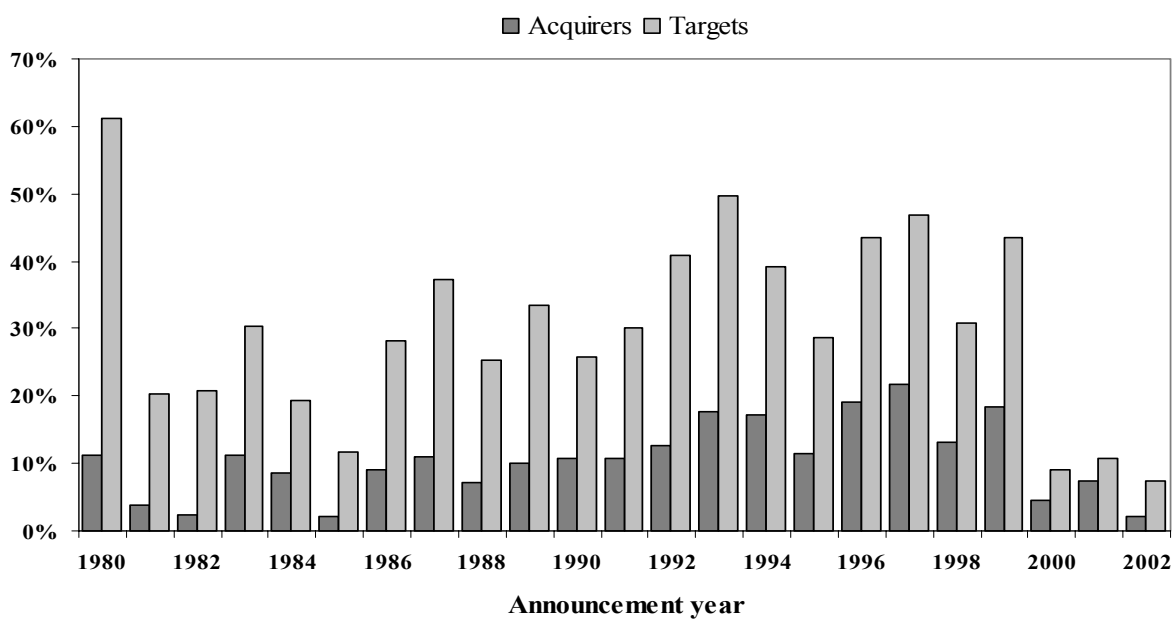
Figure 1**Number of firms obtaining fairness opinions by year 1980-2002****Figure 2****Percentage of firms obtaining fairness opinions by year 1980-2002**

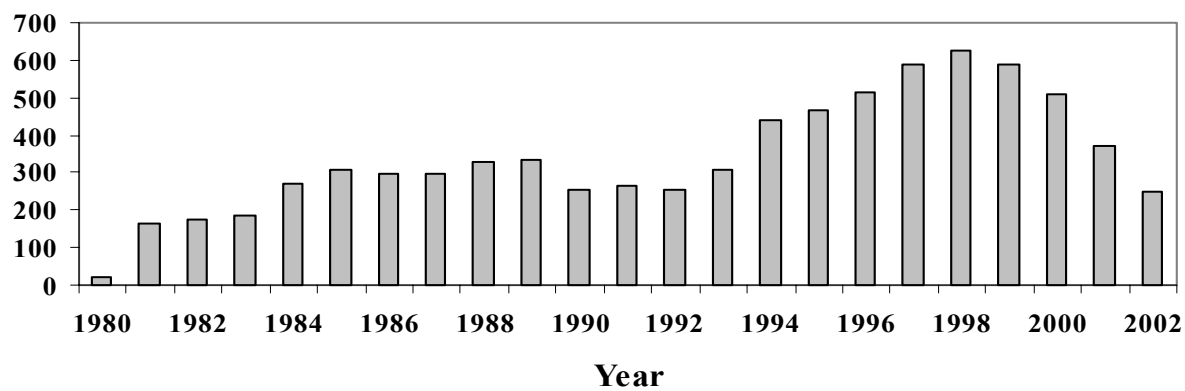
Figure 3**Distribution of acquisition announcements by year**

Table 1
Distribution of acquisition announcements by Fama and French (1997) industry groups

	All acquisition announcements from 1980-2002 (Source: SDC)				All acquisition announcements included in regression results			
	Acquirers		Targets		Acquirers		Targets	
	N	%	N	%	N	%	N	%
Agriculture	15	0.19%	22	0.28%	1	0.07%	6	0.41%
Food Products	99	1.27%	75	0.96%	34	2.31%	24	1.63%
Candy and Soda	14	0.18%	16	0.20%	4	0.27%	5	0.34%
Alcoholic Beverages	11	0.14%	10	0.13%	5	0.34%	5	0.34%
Tobacco Products	5	0.06%	1	0.01%	0	0.00%	1	0.07%
Recreational Products	57	0.73%	54	0.69%	10	0.68%	12	0.82%
Entertainment	122	1.56%	133	1.70%	21	1.43%	17	1.15%
Printing and Publishing	44	0.56%	39	0.50%	15	1.02%	5	0.34%
Consumer Goods	124	1.59%	104	1.33%	42	2.85%	31	2.11%
Apparel	34	0.43%	44	0.56%	5	0.34%	10	0.68%
Healthcare	211	2.70%	226	2.89%	25	1.70%	28	1.90%
Medical Equipment	170	2.17%	194	2.48%	30	2.04%	46	3.13%
Pharmaceutical Products	213	2.72%	172	2.20%	51	3.46%	40	2.72%
Chemicals	102	1.30%	80	1.02%	29	1.97%	25	1.70%
Rubber and Plastic Products	45	0.58%	52	0.67%	11	0.75%	19	1.29%
Textiles	34	0.43%	36	0.46%	8	0.54%	6	0.41%
Construction Materials	98	1.25%	113	1.45%	44	2.99%	35	2.38%
Construction	65	0.83%	59	0.76%	10	0.68%	8	0.54%
Steel Works, Etc.	76	0.97%	60	0.77%	15	1.02%	6	0.41%
Fabricated Products	12	0.15%	19	0.24%	6	0.41%	7	0.48%
Machinery	193	2.47%	164	2.10%	54	3.67%	56	3.80%
Electrical Equipment	68	0.87%	56	0.72%	17	1.15%	11	0.75%
Miscellaneous	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Automobiles and Trucks	82	1.05%	62	0.79%	21	1.43%	17	1.15%
Aircraft	53	0.68%	37	0.47%	20	1.36%	12	0.82%
Shipbuilding, Railroad Equipment	9	0.12%	14	0.18%	1	0.07%	6	0.41%
Defense	15	0.19%	14	0.18%	7	0.48%	6	0.41%
Precious Metals	24	0.31%	26	0.33%	5	0.34%	6	0.41%
Nonmetal Mining	23	0.29%	14	0.18%	7	0.48%	3	0.20%
Coal	5	0.06%	5	0.06%	0	0.00%	0	0.00%
Petroleum and Natural Gas	340	4.35%	337	4.31%	65	4.42%	67	4.55%

Table 12 (cont'd)

Distribution of acquisition announcements by Fama and French (1997) industry groups

	All acquisition announcements from 1980-2002 (Source: SDC)				All acquisition announcements included in regression results			
	Acquirers		Targets		Acquirers		Targets	
Industry	N	%	N	%	N	%	N	%
Utilities	264	3.38%	223	2.85%	48	3.26%	39	2.65%
Telecommunications	381	4.87%	302	3.87%	47	3.19%	36	2.45%
Personal Services	49	0.63%	42	0.54%	9	0.61%	9	0.61%
Business Services	676	8.65%	802	10.27%	136	9.24%	158	10.73%
Electronic Equipment	266	3.40%	310	3.97%	60	4.08%	75	5.10%
Measuring and Control Equipment	89	1.14%	114	1.46%	23	1.56%	38	2.58%
Business Supplies	67	0.86%	61	0.78%	27	1.83%	23	1.56%
Shipping Containers	11	0.14%	17	0.22%	2	0.14%	3	0.20%
Transportation	147	1.88%	163	2.09%	37	2.51%	42	2.85%
Wholesale	188	2.40%	203	2.60%	26	1.77%	26	1.77%
Retail	254	3.25%	312	3.99%	50	3.40%	55	3.74%
Restaurants, Hotel, Motel	151	1.93%	165	2.11%	19	1.29%	26	1.77%
Banking	1888	24.15%	1929	24.69%	258	17.53%	269	18.27%
Insurance	269	3.44%	183	2.34%	42	2.85%	27	1.83%
Real Estate	60	0.77%	63	0.81%	9	0.61%	5	0.34%
Trading	453	5.79%	386	4.94%	51	3.46%	45	3.06%
	7818	100%	7812	100%	1472	100%	1472	100%

Table 2:

Summary Statistics for Variables Included in the Main Reported Regressions

	Mean (N=1472)	Standard Deviation	Minimum	Maximum
Market Value, Acquirer (<i>Billions of \$</i>)	7.8530	329.4781	0.0177	585.0000
Market Value, Target (<i>Billions of \$</i>)	0.6585	28.8130	0.0150	64.7169
Variance of Returns, Acquirer	0.0259	0.0149	0.0074	0.1484
Variance of Returns, Target	0.0367	0.0222	0.0085	0.2819
Attitude of the Deal: Hostile	0.06	0.23	0	1
Medium of Exchange: Cash	0.3578	0.4795	0	1
Firm Closeness	7.6265	12.3529	0.0000	30.0000
Target Industry Concentration	15.0343	12.4019	0.6000	67.6000
Fairness Opinion Obtained, Acquirer	0.1216	0.3269	0	1
Other Financial Advisory Obtained, Acquirer	0.5802	0.4937	0	1
Fairness Opinion Obtained, Target	0.3376	0.4731	0	1
Other Financial Advisory Obtained, Target	0.3376	0.4004	0	1
Van Gorkom Dummy	0.8845	0.3197	0	1

Table 3**Dependent Variable: Acquiring firm obtains fairness opinion***(Coefficient p-values for H_0 : Coefficient = 0 are reported in italics below coefficients.)*

	Model 1	Model 2	Model 3	Model 4	Model 5
Market value, acquirer	-0.015 <i>0.03</i>				
Market value, target	0.043 <i>0.05</i>				
Log(market value, acquirer)		-0.301 <i>0.00</i>			
Log(market value, target)		0.295 <i>0.00</i>			
Ratio(target to acquirer market value)			-0.020 <i>0.01</i>		
Log(ratio of target to acquirer market value)				-0.317 <i>0.00</i>	-0.378 <i>0.00</i>
Ratio(acquirer to target variance of returns)	0.355 <i>0.00</i>		0.079 <i>0.58</i>	-0.096 <i>0.53</i>	
Log(ratio of acquirer to target variance of returns)					-0.059 <i>0.68</i>
Log(premium)					0.071 <i>0.39</i>
Medium of Exchange Cash	-0.699 <i>0.00</i>	-0.622 <i>0.00</i>	-0.670 <i>0.00</i>	-0.656 <i>0.00</i>	-0.719 <i>0.00</i>
Firm closeness	-0.109 <i>0.02</i>	-0.116 <i>0.01</i>	-0.112 <i>0.01</i>	-0.115 <i>0.01</i>	-0.114 <i>0.01</i>
Firm closeness squared	0.003 <i>0.03</i>	0.004 <i>0.01</i>	0.003 <i>0.02</i>	0.004 <i>0.02</i>	0.004 <i>0.02</i>
Target industry concentration squared	0.000 <i>0.19</i>	0.000 <i>0.21</i>	0.000 <i>0.22</i>	0.000 <i>0.21</i>	0.000 <i>0.15</i>
Fairness opinion obtained by target	0.887 <i>0.00</i>	0.970 <i>0.00</i>	0.922 <i>0.00</i>	0.974 <i>0.00</i>	0.912 <i>0.00</i>
Other services obtained by acquirer	0.778 <i>0.00</i>	0.648 <i>0.00</i>	0.619 <i>0.00</i>	0.640 <i>0.00</i>	0.550 <i>0.00</i>
Van Gorkom dummy	0.450 <i>0.03</i>	0.652 <i>0.00</i>	0.525 <i>0.01</i>	0.581 <i>0.01</i>	0.527 <i>0.02</i>
Attitude of the deal: hostile=1	-0.859 <i>0.00</i>	-1.064 <i>0.00</i>	-0.971 <i>0.00</i>	-1.046 <i>0.00</i>	-1.474 <i>0.00</i>
Constant	-2.412 <i>0.00</i>	-1.688 <i>0.00</i>	-1.885 <i>0.00</i>	-1.548 <i>0.00</i>	-1.381 <i>0.00</i>
McFadden's R-squared	0.24	0.28	0.28	0.28	0.30

Table 4**Dependent Variable: Target firm obtains fairness opinion***(Coefficient p-values for H_0 : Coefficient = 0 are reported in italics below coefficients.)*

	Model 6	Model 7	Model 8	Model 9	Model 10
Market value, acquirer	0.000 <i>0.70</i>				
Market value, target	0.007 <i>0.62</i>				
Log(market value, acquirer)		0.068 <i>0.02</i>			
Log(market value, target)		-0.040 <i>0.25</i>			
Ratio(target to acquirer market value)			0.000 <i>0.05</i>		
Log(ratio of target to acquirer market value)				0.063 <i>0.02</i>	0.036 <i>0.24</i>
Ratio(acquirer to target variance of returns)	0.105 <i>0.02</i>	0.044 <i>0.41</i>		0.035 <i>0.50</i>	
Log(ratio of acquirer to target variance of returns)			0.125 <i>0.01</i>		0.228 <i>0.03</i>
Log(premium)					-0.099 <i>0.16</i>
Medium of Exchange Cash	0.036 <i>0.65</i>	0.044 <i>0.58</i>	0.039 <i>0.63</i>	0.037 <i>0.65</i>	-0.025 <i>0.76</i>
Firm closeness	-0.006 <i>0.79</i>	-0.005 <i>0.84</i>	-0.004 <i>0.87</i>	-0.006 <i>0.81</i>	-0.008 <i>0.74</i>
Firm closeness squared	0.000 <i>0.83</i>	0.000 <i>0.86</i>	0.000 <i>0.92</i>	0.000 <i>0.84</i>	0.000 <i>0.73</i>
Target industry concentration squared	0.000 <i>0.73</i>	0.000 <i>0.65</i>	0.000 <i>0.76</i>	0.000 <i>0.64</i>	0.000 <i>0.60</i>
Fairness opinion obtained by acquirer	0.935 <i>0.00</i>	0.997 <i>0.00</i>	0.936 <i>0.00</i>	1.001 <i>0.00</i>	0.959 <i>0.00</i>
Other services obtained by target	2.156 <i>0.00</i>	2.106 <i>0.00</i>	2.154 <i>0.00</i>	2.133 <i>0.00</i>	2.037 <i>0.00</i>
Van Gorkom dummy	0.031 <i>0.81</i>	-0.017 <i>0.90</i>	0.039 <i>0.76</i>	-0.006 <i>0.97</i>	0.039 <i>0.77</i>
Attitude of the deal: hostile=1	-0.202 <i>0.26</i>	-0.146 <i>0.43</i>	-0.198 <i>0.26</i>	-0.127 <i>0.48</i>	0.015 <i>0.94</i>
Constant	-2.671 <i>0.00</i>	-3.006 <i>0.00</i>	-2.694 <i>0.00</i>	-2.677 <i>0.00</i>	-2.529 <i>0.00</i>
McFadden's R-squared	0.18	0.18	0.18	0.18	0.15

Table 5

Dependent Variable: Acquiring and target firm obtains fairness opinion or any financial advisory services

(Coefficients p-values for H_0 : are reported in parenthesis.)

	Acquirer Model 11	Target Model 12
Market value, acquirer	-0.0126 (0.00)	0.1560 (0.05)
Market value, target	0.1300 (0.00)	-0.3490 (0.00)
Ratio of target to acquirer σ^2 excess returns	0.4964 (0.01)	0.2956 (0.01)
Medium of exchange: cash=1	-0.1420 (0.26)	0.4662 (0.00)
Firm closeness	0.0118 (0.76)	-0.0316 (0.49)
(Firm Closeness) ²	-0.0002 (0.85)	0.0013 (0.40)
(Target Industry Concentration) ²	0.0000 (0.96)	0.0004 (0.03)
Fairness opinion or any financial advisory services by other firm	2.0616 (0.00)	2.1083 (0.00)
Van Gorkom dummy	0.4002 (0.03)	0.7129 (0.00)
Attitude of the deal: hostile=1	-0.02 (0.95)	0.83 (0.04)
Constant	-2.2702 (0.00)	-1.1994 (0.00)
McFadden's R-Squared	0.1795	0.2255