

# **INFORMATION TRANSFERS FROM DIVERSE CORPORATE EVENTS: METHODOLOGICAL ISSUES AND FINDINGS**

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## **ABSTRACT**

*This paper presents results from research pertaining to the industry-wide transfer of information from a diverse set of corporate events. Early studies in this area date back to the late 1970s and early 1980s, but the literature indicates that interest in this area of research became more widespread in the 1990s, and the subject remains a fruitful area of study even today. This paper organizes into six categories the results of the bulk of the intra-industry studies in finance. More importantly, though, it discusses several methodological issues involved in conducting such research. Finally, it highlights areas of conflicting evidence that are therefore potential candidates for further research.*

## **INTRODUCTION**

Following the development of the Capital Asset Pricing Model (CAPM) in the 1960s and 1970s, applied research in finance trained much attention through the 1980s on the use of "event study methodology" to assess the information content of various corporate events, such as stock splits and equity offerings. For the most part, this research focused on documenting the equity valuation implications for the firm directly affected by the event of interest. A few studies in this decade, however, sought to widen the scope of enquiry into the information content of firm-specific events by attempting to measure the effects of such events on the stock prices of rival firms. Beginning in the early 1990s, interest in this "intra-industry" perspective gained momentum, and, the sustained stream of research seen since then indicates that interest has not yet ebbed; the study of industry-wide information transfers remains a fruitful area of research.

The current paper has three objectives: First, it seeks to present the results pertaining to the diverse events that have been studied from the intra-industry perspective with the view of impressing upon the reader the fact that many events have valuation effects that are more far-reaching than traditionally understood. Second, the survey seeks to stimulate new ideas for further empirical work in the area of information transfer. Finally, for the benefit of such research, it highlights numerous methodological issues involved in conducting intra-industry studies.

### **A BASIS FOR EXPECTING INTRA-INDUSTRY EFFECTS**

As noted above, since the early 1990s, researchers have devoted considerable attention to the measurement of a possible "ripple effect" stemming from firm-related events that manifests itself in contemporaneous abnormal changes in stock prices of other firms within the same industry. In general, a development at an individual firm could have implications for its competitors in the same resource and product markets because the event may (1) reflect changes in the profitability of the industry as a whole, or (2) suggest competitive shifts within the industry.

Thus, research dealing with intra-industry effects is grounded in the idea that firms within an industry are likely to compete in the same resource and product markets. As such, their values will be affected similarly by a set of common factors, or differentially by a set of firm-specific factors. That is, if an event at one firm (the "originating" firm) is perceived by the market to have been occasioned by an industry-wide factor (such as a decline in market demand), the valuation effects of that event would be in the same direction for the originating and rival firms. On the hand, the firms being placed in a competitive setting, if the market ascribes the event to a firm-specific factor (such as a management problem or law suit), the valuation effect of the event would be of an opposite sign for the originating firm and its competitors (see, for example, Szewczyk (1992)). As will be seen below, a diverse set of events appears to possess industry-wide implications.

### **EARNINGS RELEASES AND FORECASTS**

The early studies in the area of intra-industry information transfers focused on earnings announcements and forecasts, and even precede the steady stream of studies beginning in the 1990s. For instance, Firth's (1976) investigation of the industry-wide impact of earnings announcements in the United Kingdom between 1973 and 1974 constitutes one of the earliest inquiries into the existence of

intra-industry information transfers. The study, which included announcements from four industry groupings (Breweries, Food Retailers, Shipping, and Banks), found that during the ten trading days prior to the announcement, the sample of securities behaved in a manner predicted by the market model, with residuals being randomly distributed around zero and having no cumulative impact. On the announcement day, however, similar-type firms experienced an average excess of 2.1% or -3.7% in their share prices depending on whether the announcement bore "positive" or "negative" news. The residuals for 94% to 98% of the sample firms showed the same sign on that day. In particular, the residuals of competing firms ranged from 50% to 80% of announcing company residuals, and were in the same direction as those of the announcing firms. Firth concluded that the stock market used firm-level annual earnings results to reassess share prices of rival companies, and that virtually the entire price adjustment occurred on the announcement day.

Foster (1982), whose sample included announcements in the Wall Street Journal between 1963 and 1978, similarly found strong evidence of an information transfer between the firm releasing earnings information and other firms in its industry. Employing three alternative definitions of an industry, namely the 4-digit Standard Industrial Classification (SIC), the Homogeneous Line of Business, and the Dominant Firm industry definitions, the author found that the magnitude of impact was stronger for companies having a larger proportion of their revenues in the same line of business as the announcing firm; roughly, these firms are among the less diversified entities within an SIC code. For a sample of Australian firms, Clinch and Sinclair (1987) found results similar to Foster over the period January 1977 to December 1981; earnings releases had a homogeneous impact on the announcing and rival firms. Further, the magnitude of stock price effects diminished for successive earnings announcements within the same industry.

In his attempt to examine the determinants of the industry-wide effects of earnings reports, Bannister (1994) incorporated the correlation between the earnings signals of announcing and rival firms, the information content of the announcer's signal (measured by the announcement period abnormal return), and the level of uncertainty for the rival firms prior to the earnings announcement (measured by the size of the firm and the standard deviation of the rival's distribution of information signals). While the strongest association between these factors and the abnormal returns to rival firms was observed for fourth quarter announcements that represented bad news for the competitors, the market reacted to bad news whenever it occurred. Good news, on the other hand, elicited a stock price response only in

the fourth quarter, presumably because accounting numbers in this quarter were fully audited.

In contrast to the studies mentioned above, Baginski (1987) examined the intra-industry information transfers associated with earnings forecasts made by management. The final sample consisted of 57 forecasts announced in the *Wall Street Journal* between 1978 and 1983. A grouping of similar firms was achieved through a cluster analysis of firms within the same 4-digit SIC code. The clustering was performed on the basis of the estimates from a firm's single-index market model and financial leverage. The results indicated that rival firms experienced positive (negative) abnormal returns when the forecasts for the announcing firm indicated positive (negative) changes in earnings. These findings are consistent with the existence of intra-industry information transfers from management's earnings forecasts.

The existing literature on the announcement effects of earnings releases and forecasts clearly suggests that investors use the information contained in these reports to evaluate the shares of other firms in the same industry. Typically, the stock prices of the announcing firms and their rivals are observed to change in the same direction.

### **CORPORATE BANKRUPTCY ANNOUNCEMENTS**

Much attention has traditionally been paid to the possibility of a contagion effect from bankruptcies within the banking industry. Recently, however, some researchers have demonstrated the occurrence of this phenomenon among industrial and other non-banking firms as well. Lang and Stulz (1992) studied the industry-wide stock price effects from bankruptcy announcements by industrial firms between January 1970 and December 1989. In order to increase the probability of detecting an industry-wide effect, the study restricted its attention to bankruptcies of large firms. Consistent with the majority of intra-industry studies, the authors defined industry rivals as those with the same primary 4-digit SIC code in COMPUSTAT (a database compile by S&P which contains comprehensive accounting and some market data for the firm level). Also, the event date was identified as the day on which the report of a Chapter 11 filing appeared in the *Wall Street Journal*.

The 59 bankrupt firms in the sample experienced significantly negative abnormal returns over the four days prior to the announcement date, and a loss of 18.93% in shareholder wealth on the filing day. These bankruptcies initiated a

dominant contagion effect for the corresponding industries; the portfolios of industry rivals experienced significantly negative abnormal returns over the 11 days surrounding the event date. Thus, it appears that the average bankruptcy was caused by industry-wide shocks rather than by a firm succumbing to competition. However, a closer analysis of the abnormal returns to rivals indicated a heterogeneous effect across industries, and a study of the relationship between the abnormal returns and industry characteristics revealed that the contagion effect was particularly strong in highly levered industries. In industries characterized by a high degree of concentration and low leverage, on the other hand, a competitive effect prevailed, with rival firms profiting from the distress of the bankrupt firm.

In a similar study of industry-wide effects, Cheng and McDonald (1996) examined bankruptcy announcement effects in the airline and railroad industries, which possess vastly different market structures. The sample included 7 airline and 5 railroad bankruptcy announcements over the period 1962 and 1991 that appeared in the Wall Street Journal. Employing the event study methodology, the authors found that the surviving airlines experienced an average abnormal return of 1.89% on the day preceding the announcement, but the surviving railroads suffered a significantly negative average abnormal return (of -0.89%) on Day 0. The difference in the timing of market reaction for the two industries may arise from the fact that the railroad bankruptcies pertain to the early part of the sample period, when the electronic news media was not in wide use.

The authors ascribed the positive abnormal returns for rival airlines to the existence of barriers to entry (into city-pair markets) and hence market power. In such an industry, the bankruptcy of a firm would increase the market power of the surviving firms, whose stock prices will consequently be bid up by investors. The negative abnormal returns to surviving railroads, on the other hand, can be explained by an immobility of assets, which makes it difficult for one railroad to service the regions covered by a failing industry member. Furthermore, the successful operation of the business requires cooperation among two or more railroads. Thus, the railroad industry is characterized by interdependencies, which imply disruptions in operation for surviving companies when a member firm goes bankrupt.

The studies by Lang and Stulz (1992) and Cheng and McDonald (1996) suggest that industry characteristics can play a significant role in determining the nature of the valuation effects events have on rival firms. Asness and Smirlock (1991), who examined the effects of a Real Estate Investment Trust (REIT) bankruptcy, emphasized the importance of discriminating across firm characteristics when investigating intra-industry information transfers. An REIT must, at its

inception, define the type of assets to be purchased and the maximum leverage to be assumed. By thus lending themselves to differentiation by portfolio composition (i.e., as Equity, Financial, and Residual REITs), these institutions allow an investigation of how firms within the industry might differ in their reaction to a given announcement.

The authors studied the impact of the Residential Resources Mortgage Investment Corporation (RES RES ) bankruptcy announcement on a sample of 35 REITs: 18 Equity, 8 Financial, and 9 Residual investment trusts. RES RES belonged to the last category of trusts. An analysis of the 121 day period surrounding the event revealed that the bankruptcy announcement decreased the value and increased the perceived riskiness of REITs; there was a negative stock price effect on the announcement day, and a positive change in systematic risk following the event. In particular, the study showed that these effects were limited to Residual REITs; when studied separately, the Equity and Financial trusts showed no abnormal returns during the event window, nor did they experience any statistically significant change in systematic risk.

Among the Residual REITs, the authors found that the magnitude of the abnormal return varied cross-sectionally by leverage, indicating that the market discriminates among industry members in assessing intra-industry effects of information arrival. The main conclusion offered by this study was that treating rival firms as a homogeneous sample in the examination of information transfers can provide misleading results.

From a methodological viewpoint, it would be useful here to mention the most recent study on the intra-industry effects of bankruptcy announcements. Haensly et al. (2001) replicate the stratification methodology adopted by the Lang and Stulz (1992) study mentioned earlier, but use a sample from a single legal regime. They find that the effects of bankruptcy announcements on competitors are ambiguous, and results are very sensitive to the debt screen employed in sample selection. A study of the ripple effects of bankruptcies appears, therefore, to be a potential subject for further research.

### **CAPITAL STRUCTURE ADJUSTMENTS**

Change in capital structure is another area in which the results of different intra-industry studies disagree. Michael Hertzel (1991) first investigated the stock price effects on rival firms due to stock repurchase tender offers made within the industry. Citing theoretical models that demonstrate strategic changes in a firm's

capital structure can have implications for industry counterparts, he argued that information about the repurchasing firm could cause the market to reassess earnings prospects for rival firms. However, for a sample of 134 offer announcements over the period 1970 to 1984, the author found no significant valuation effects for non-announcing firms, which indicates that the information content of repurchase announcements pertains mainly to the firm making the offer. These results parallel those found by Slovin et al. (1992), who compared the intra-industry effects of seasoned equity issues made by banks and industrials. While no industry-wide valuation effects could be observed for common stock issues by industrial firms, a significantly negative impact on rivals was seen within the banking industry. The authors ascribed these findings to the information structure of bank operations, which in their view limits the dissemination of information necessary for the assessment of individual bank value and riskiness.

In contrast to these studies, Szewczyk (1992) reported significantly negative abnormal returns for the rivals of industrial firms announcing equity and debt issues. The sample included announcements between 1970 and 1983 for which a date could be identified in the Wall Street Journal Index. In all, 128 common stock, 54 convertible debt, and 302 straight debt offerings were employed in the study. Significantly negative abnormal returns were observed for both announcing rival firms in the case of equity and convertible debt offerings. For the issue of straight debt, however, a significant (negative) effect was seen only for the industry rivals. These findings indicate that the market draws inferences about industry prospects from announcements of equity and debt offerings.

Unlike Hertz (1991) and Slovin et al. (1992), Akhigbe and Madura (1999) focused exclusively on the ripple effects of bank stock repurchases, since on account of capital requirements and other regulatory constraints, events at banks are likely to constitute a special case. And in contrast to the two earlier studies, these authors did find that repurchases of stock by banks have a significantly positive effect on both the repurchasing banks and their industry rivals.

Erwin and Miller (1998), on the other hand, find that while the announcement of open market repurchases has a positive effect on the announcing firm, it has a negative effect on rival firms. Thus, these authors discover a net "competitive" rather than a net "contagion" effect from stock repurchase announcements. Further, they find that this competitive effect is stronger in those industries where competition is less and in which the degree of similarity between the announcing firm and its rivals is lower.

### **DIVIDEND CHANGES, INITIATIONS AND OMISSIONS**

Firth (1996) studied the existence of ripple effects from dividend adjustments. He hypothesized that dividend changes by one firm could possess valuation implications for other firms in the same industry since management may revise dividends to signal changes in future earnings and cash flows from: (1) anticipated industry-wide changes, or (2) perceived shifts in competition or market share within the industry. Thus, performance and operating strategy linkages among firms may cause investors to apply information releases of one company to its competitors.

The study included a total of 543 dividend increases and 106 dividend cuts between 1980 and 1991, and measured the impact of these changes on "rival firms" defined as those sharing the 4-digit SIC code of the dividend change firm. The author employed standard event study methodology to assess the market reaction to dividend changes; abnormal returns were calculated as the difference between actual and expected returns, with the latter being generated by estimating the market model using daily returns on the CRSP equally-weighted market index. Firth found that non-announcers on average were re-valued in the same direction as the announcing firm, though by a smaller magnitude. Thus, dividend increases (decreases) by one firm constituted good news (bad news) for that firm as well as for the other members in its industry. This observation is consistent with dividend revisions being based on perceived changes in industry-wide factors rather than anticipated alterations in market share. In addition, Firth tested whether the dividend "surprise" (the abnormal return of the announcing firm) was related to any changes in earnings forecasts of non-reporting firms. He found the unexpected revisions in analysts' earnings forecasts of non-reporting firms to be directly related to the abnormal stock returns of the dividend change announcer. Overall, these results led Firth to conclude that dividend changes by one firm carried informational value for other firms in the same industry.

Laux et al. (1998) studied the intra-industry effects of large dividend revisions, and found a heterogeneous effect on rivals; rivals that are unlikely to be threatened by competitive realignments experience a revaluation in the same direction as the announcing firm, while those likely to be affected by such realignment do not experience statistically significant stock price effects. Finally, Howe and Shen (1998) showed that dividend initiations are purely form-specific events, while Caton et al.(2003) documented the possibility of ripple effects from dividend omissions.



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## CORPORATE TAKEOVERS, MERGERS AND RESTRUCTURING

In an effort to test the hypothesis that horizontal mergers have collusive, anticompetitive effects, Eckbo (1983) measured the stock price effects of merger proposal announcements for merging firms and their horizontal rivals. The collusion hypothesis suggests that a horizontal merger should have a positive valuation effect on the rival firms, since the costs of monitoring any existing collusive agreement will decline with a reduction in the number of independent producers in the industry. Further, rivals outside the collusive agreement should also earn positive abnormal returns since they can free-ride on higher product prices. The sample included a total of 259 merger proposals over the period 1963 to 1978. Horizontal rivals were identified on the basis of the 4-digit SIC code, and abnormal returns around the Wall Street Journal announcement date were calculated using the market model. Even though for a large subset of events rivals experienced positive stock price effects, the behavior of abnormal returns over the merger proposal and subsequent antitrust complaint announcements did not support the collusion hypothesis. Instead, the overall results were consistent with the argument that rivals enjoy positive abnormal returns at the merger proposal announcement because of the potential increase in productive efficiency; the author suggests, for instance, that the announcement can reveal information which allows rivals to imitate the technological innovation prompting the acquisition.

Mitchell and Mulherin (1996) obtained similar results in their test of the proposition that industry fundamentals contribute to takeover and restructuring activity. For the period 1982 to 1989, the authors found distinct patterns in the rate and clustering of these activities across 51 industries. A link between industry shocks and takeover activity implies that the announcement of a takeover at one firm should elicit a positive stock price response from other members of the industry. For 607 announcements of takeover or restructuring activity, significantly positive abnormal returns were observed for rival firms in the event month. As in the case of Eckbo (1983), the authors did not interpret these spillover effects as evidence of anticipated market power. Since industry fundamentals appeared to drive the takeover and restructuring activity, the more benign explanation for the positive abnormal returns could be offered, that investors anticipated ongoing industry-wide restructuring activity.

A significantly positive valuation effect on rival firms was also observed for the 128 going-private transactions between 1980 and 1988 studied by Slovin et al. (1991). In contrast to the case of mergers and takeovers, however, this impact on

rivals could not be attributed to operating synergy or market power because going-private transactions do not involve a consolidation of firms. Instead, the authors suggested that buyout bids revealed information about future cash flows in the industry.

In another study, Slovin et al. (1995) compared the information content of three mechanisms of restructuring: (1) equity carve-outs, which are public offerings of subsidiary equity; (2) spin-offs, which distribute subsidiary equity to the owners of the parent firm through pro rata stock dividends; and (3) asset sell-offs, which are sales of subsidiaries to third parties. The objective of this study was to identify the sources of gain to the parent firm conducting such restructuring activity by focusing on the contemporaneous valuation effects on industry rivals. These rivals were defined as firms belonging to the same 4-digit SIC code as the announcing firm. For a sample period 1980 through 1991, the authors found that equity carve-outs were associated with significantly negative abnormal returns to other industry members. This observation is consistent with two views: that the equity carve-out signals over-valued industry assets, or that it reflects an improved competitive position for the restructured parent. An analysis of equity betas for rivals revealed no shifts round the event dates, suggesting that the observed stock price effects were not an outcome of changes in industry systematic risk.

In contrast to equity carve-outs, spin-off announcements elicited a positive stock price response from industry rivals, indicating that these events constitute a favorable signal about industry value. In particular, managers of the parent company believe the unit to be undervalued, and are therefore unwilling to issue equity in the subsidiary as a method of restructuring. This action therefore constitutes favorable information for rivals if the unit has industry-common elements. Asset sell-offs, the third method of restructuring, did not have any intra-industry valuation effects.

More recently, Akhigbe and Madura (1999; 2001) have examined the industry-wide effects of bank acquisition announcements and insurance company mergers. In the first study, they found that bank acquisition announcements caused, on average, a significantly positive revaluation in the equity of rival firms, though the impact was conditioned by firm-specific characteristics. In the second study, they once again found a positive effect of insurance company merger announcements, on both the announcing firm and on industry rivals, lending credence to the idea that mergers act as signals to the market in the face of information asymmetry.

The final section below provides a brief account of miscellaneous studies which further support the view that a variety of developments at one firm can have important implications for other industry members. These studies consider such events as strikes, bond rating changes, stock splits, layoffs, and announcements of R&D expenditures.

### **OTHER EVIDENCE OF INTRA-INDUSTRY EFFECTS**

The work by Kramer and Vasconcellos (1996) belongs to the class of studies that examines the linkages between non-financial resource markets and stockholder wealth. The authors extended the inquiry into the economic effects of strike activity by measuring the industry-wide stock price impact of strikes. The study included manufacturing firms operating in highly concentrated industries which experienced a strike by 1,000 or more workers between January 1982 and July 1990. The authors limited their definition of industry rivals to a maximum of the top four competitors. The final sample consisted of 21 strikes across 9 industries, and 41 non-struck competitors. Standard event study methodology indicated that the struck firm suffered a statistically insignificant decline in market value over the 30 trading days prior to the strike, but experienced a post-strike increase in value in the post-strike period. These results suggest that concessions made by labor exceeded the quid pro quo costs (such as profit sharing and layoff protection).

The gains to non-struck competitors in the pre-strike period were also not statistically significant. However, over the month following the strike, like the struck firms, these rivals experienced positive abnormal returns, suggesting that investors expected the competitors to secure similar concessions from labor. During the strike period, the struck firms suffered a decline in market value of 1.9%, but these losses were not captured as gains by rivals; the latter earned abnormal returns not statistically different from zero. The authors attributed this absence of spillover during the strike period to the struck firm's ability to stockpile inventory, shift production to other facilities, and subcontract production.

Zantout and Tsetsekos (1994) investigated the nature of information conveyed by the announcement of increases in R&D expenditures. Such an announcement could indicate to investors that the announcing firm will possess a strategic advantage over the competition from being the first to innovate. Alternatively, market participants may anticipate that rivals will benefit from technology spillovers. The authors conducted an event study to test these

hypotheses. Rivals were defined as those operating in the same 4-digit SIC code and which were of the same size (in terms of sale) as the announcing firm. For 114 announcements made by 71 firms between June 1979 and December 1990, the authors found that the announcing firms experienced positive abnormal returns while their rivals suffered negative abnormal returns at the announcement of the planned increase in expenditures. These findings support the hypothesis that first movers enjoy an innovation-induced competitive advantage.

In their study of stock split announcements, Tawatnuntachai and D'Mello (2002) found that the event had a generally positive valuation effect on rival firms, and that this effect is associated with changes in earnings levels (but not changes in earnings volatility) for the rival firms. With regard to corporate downsizing, Sun and Tang (1998) found a negative effect of such announcements on both originating and rival firms. Finally, Akhigbe et al. (1997) found that bond rating downgrades were associated with negative stock price effects for both the re-rated firm and a subset of industry counterparts that were more closely related to the re-rated firm. Thus, the activity of rating agencies such as Moody's and S&P appear to have implications not only for the firm for which they supply the reclassified rating, but also for other firms in the same industry.

## CONCLUSION

A review of the finance literature indicates a sustained interest among academicians in the possibility of industry-wide effects from a diverse set of corporate events. Traditionally considered to be firm-specific, such events as capital structure changes, dividend adjustments, stock splits, and rating reclassifications now are known to have the potential to convey industry-wide information to capital markets. The existing research on intra-industry information effects sheds light on numerous economic and regulatory issues. For instance, the emerging evidence on the far-reaching effects of re-rating activity should be of considerable value to the current debate on the regulation of credit rating agencies and the legally sanctioned barriers to entry in the rating industry.

The evidence provided in this paper also suggests that there is some ambiguity with regard to the spillover effects of some events; for instance, existing studies do not agree on the industry-wide implications of bankruptcy announcements and capital structure adjustments. The potential for research still exists in these and additional areas. Arguably, one of the more challenging areas of study in the intra-industry information arena is the identification of "rational" and

"irrational" contagion; that is, in the instances where rivals are found to be affected in the same direction as the originating firm, there is an evident need to be able to ascertain whether or not the market was justified in generalizing the information provided by the event from the firm to the industry as a whole.

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