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EVENT STUDIES AND THE LAW:

PART II – Empirical Studies of Corporate Law

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Abstract

This paper is the second part of a review of the event study methodology, which has proved to be one of the most successful uses of econometrics in policy analysis. In this part we focus on the methodology's application to corporate law and corporate governance issues. Event studies have played an important role in the making of corporate law and in corporate law scholarship. The reason for this input is twofold. First, there is a match between the methodology and subject matter: the goal of corporate law is to increase shareholder wealth and event studies provide a metric for measurement of the impact upon stock prices of policy decisions. Second, because the participants in corporate law debates share the objective of corporate law, to adopt policies that enhance shareholder wealth, their disagreements are over the means to achieve that end. Hence, the discourse can be empirically informed. The paper concludes by sketching the methodology's use in evaluating the economic effects of regulation. While event studies' usefulness for policy analysis is by now familiar in the corporate law setting, we hope that our two-part review will suggest appropriate applications to other fields of law.

1. Introduction

This paper continues our survey of the event study methodology and its strengths and limitations for policy analysis by reviewing in detail how event studies have been used to evaluate the wealth effects of corporate and securities law and corporate governance.¹ Corporate and securities law are areas in which the event study methodology has had a prominent role in shaping policy debates. This is no doubt because there is a natural fit between the methodology and these fields of law: the benchmark for evaluating the benefit of corporate and securities laws is whether they improve investor welfare, and this can be ascertained by what event studies measure, whether stock prices have been positively affected. While the corporate area is the policy domain in which event studies have been most widely employed, and it is therefore the focus of our review, event studies have also been used to evaluate the wealth effects of regulation. Event studies of regulatory change raise more difficult methodological issues than those involving corporate law and corporate governance, because of the typically long time period in which the event of interest occurs. The paper concludes with a brief sketch of the use of event studies in the field of regulation, and in particular, event-study based empirical evidence on producer- and consumer-protection theories of regulation in the banking area, where given the nature of the regulatory change, some studies are able to avoid the most serious technical difficulties.

2. Event Studies in Corporate Law

Event studies have had a major impact on corporate law. The explanation for this influence is straightforward. The objective of U.S. corporate law is furthering the interest of the owners of the firm, and the event study methodology, measuring the unexpected change in stock price due to new information about firm value, such as adoption of a new corporate law or a firm decision, provides a metric for identifying whether a specific corporate policy or action has the legal regime's desired beneficial impact on firm owners. Moreover, the event study literature serves as a helpful arbiter of corporate law debates because all sides hold the same normative conception of corporate law, shareholder wealth-maximization. This is a setting in which quantitative research can fruitfully be used in policy-making: data can inform debates that are over the means of implementing public policy, as opposed to debates over the ends of public policy.

¹ See Bhagat and Romano (2001 a) for the first part of this survey of the event study literature, which reviews the methodology and its use to evaluate the wealth effects of corporate litigation.

Given the fit between the methodology and the legal benchmark—increasing shareholder wealth and measuring the relation between a particular corporate policy and share value—and the relative ease in operationalizing the technique with contemporary computing, since the 1980s event studies have been used by commentators to further debate over central issues of corporate law, by litigants in federal securities cases to establish liability and damages, and they have even influenced courts’ fashioning of legal doctrine. While there have been far more event studies on takeovers than on any other topic, no important topic of corporate governance has been untouched by the methodology, including the most fundamental question, the production of corporate law itself, whether the federal system in which states compete for corporate charters is for the better.

2.1. Event Studies and the Debate over State Competition for Corporate Charters

In the United States, corporate law is largely a matter for the states. State corporation codes consist primarily of enabling provisions that supply standard contract terms for corporate governance. Firms choose their state of incorporation, a statutory domicile that is independent of physical presence. Midstream domicile changes require the approval of a majority of the shareholders. Firms consequently can particularize their governance arrangements both by the choices made in their charters under state law and by their choice of domicile.

One small state, Delaware, has come to dominate the incorporation process, serving as the domicile for the majority of publicly traded corporations. Its profits from providing corporate charters are significant: for example, franchise fees averaged 17 % of total tax revenues over the past 30 years (Romano, 2001a, table 4.1). Delaware’s success has fueled a running debate among corporate law commentators, mirroring the more general U.S. political debate over the benefits of federalism: are the aims of corporation codes—protecting the interest of the shareholders—best achieved by firms’ ability to choose among domiciles compared to a centralized national regime.

A little over 25 years ago the unquestioned consensus among corporate law scholars followed the position best articulated by William Cary, that the states were competing in a race “for the bottom,” in which Delaware led the pack to produce corporate laws that decidedly favored managers’ over shareholders’ interests (Cary, 1974).² But today Cary’s position is no longer accepted as a self-evident proposition. Indeed, even adherents to Cary’s position in the contemporary discourse advocate federal law as an option in addition to state law, rather than preemption of

² For example, 80 law professors signed a letter endorsing a national corporation law in 1976 (Romano, 1993a, p. 14 n.2).

state law (Bebchuk and Ferrell, 2001). What accounts for such a seismic shift?

Judge Ralph Winter first articulated the flaw in Cary's position from the omission of markets from his analysis of firm behavior. As Winter explained, were managers to choose to incorporate in states whose codes disadvantaged shareholders, they would encounter a higher cost of capital and ultimately a lower job retention rate, compared to competitors operating under codes more favorable to shareholders (Winter, 1977). While Cary's position can be amended to join Winter's argument by asserting that markets are imperfect at disciplining managers when it comes to domicile choice, Winter's insight motivated empirically-oriented scholars to study the effect of incorporation choices on firm value, for the purpose of arbitrating the debate.

The event study methodology meshed neatly with Winter's analysis of the issue. This is because a good proxy for ascertaining whether the legal regime decisions made by firms under competition benefit investors is the effect upon shareholder wealth of a change in domicile. If a change in domicile increases firm value, it would be exceedingly difficult to maintain that charter competition, and particularly, Delaware's legal regime, is harmful to shareholders, as the overwhelming majority of firms reincorporate in Delaware (Romano, 1985; Daines, 2000).

There have been eight event studies investigating the effect on stock prices of a change in incorporation state. The event day 0 is identified as the date of the proxy mailing announcing the proposed reincorporation. All of the studies find positive abnormal returns, with four finding a significant positive stock return at the time of the announcement of the domicile change (although one of these, the earliest study, employs a variant of the event study methodology and uses a difference-in-mean test between price changes of reincorporating firms and the S&P index) (Bradley and Schipani, 1989; Romano, 1985; Wang, 1995; Hyman, 1979), one finding a significant positive return for only a subset of reincorporations on the announcement date with different results on the subsequent shareholder meeting date (Heron and Lewellen, 1998), another finding a significant positive return over two years prior to the reincorporation (Dodd and Leftwich, 1980), and two finding positive returns significant at the 10% confidence level, albeit one of these is only for a subset of reincorporations (Netter and Poulsen, 1989; Peterson, 1988) (see Table 1). As indicated in the table, the sample size in many of the studies finding significant positive abnormal returns is large (over 100 firms), whereas some of the studies that report a significant abnormal return at only a 10% confidence level have small samples (less than 40 firms). Hence the difference could be attributed to the more limited power of the test for small samples, as discussed in Bhagat and Romano (2001 a). Thus, the event study literature suggests

that Winter's core insight is accurate: competition for corporate charters benefits investors. One certainly cannot read the event study literature and conclude that firms reincorporating are reducing their shareholders' wealth, as Cary's position contends.

However, because reincorporations are typically accompanied by changes in business plans (Romano, 1985, p.250), there is a question whether the positive stock price effects are evidence of the market's assessment of the change in business plan rather than the change in domicile. The issue is whether there is a confounding effect, that muddies the interpretation of stock price effects, requiring a more probing examination of the findings. To investigate whether the positive price effect was a function of investors' responses to other changes in business plan accompanying the reincorporation and not their evaluation of the new legal regime, Romano (1985) compared the returns of sample firms grouped by the type of activity accompanying or motivating the reincorporation--engaging in a mergers and acquisitions program, undertaking takeover defenses, and a miscellaneous set of other activities including reducing taxes. Although one might have expected the impact to vary across firms, with the antitakeover reincorporations experiencing negative returns, as prominent commentators have viewed takeover defenses as adverse to shareholders' interest (*e.g.*, Easterbrook and Fischel, 1981), in fact, not only was the sign on that group's abnormal return positive but there was no significant difference across the groups (Romano, 1985, p. 272). This finding implies that the significant positive returns upon reincorporation are due to investors' positive assessment of the change in legal regime, and not a confounding of the impact of reincorporating firms' other future projects.

Table 1
Announcement period abnormal returns for firms changing their state of incorporation.

Study	Sample period	Sample Size	Announcement window: (Event days)	Announcement return (%)	Z-statistic
BS (1989)	1986-88	32	0	1.04*	2.21
Romano (1985)	1961-83	150	(-1,+1)	4.18**	11.92
Romano (1985)	1961-83	63 (m&a)	(-1,+1)	6.94**	11.44
Romano (1985)	1961-83	43 (to)	(-1,+1)	.05	0.77
Wang (1995)	1986-94	145	(-1,+1)	0.97*	1.99
Wang (1995)	1986-94	94 (Del)	(-1,+1)	1.12	1.65
Wang (1995)	1986-94	51 (non-Del)	(-1,+1)	0.69	0.87
HL (1998)	1980-92	294	(0,+3)	-0.15	-0.51
HL (1998)	1980-92	45 (to)	(0,+3)	-0.51	-1.08
HL (1998)	1980-92	59 (ll)	(0,+3)	1.20	1.66
HL (1998)	1980-92	49 (oth)	(0,+3)	-1.23	-0.72
DL (1980)	1927-77	140	0 (month)	1.58	n.r.
Hyman (1979)	1968-76	26	Announcement week	2.73*	2.01
NP (1989)	1986-87	36	(-1,+1)	0.93	1.61
NP (1989)	1986-87	19 (Cal)	(-1,+1)	0.96	1.57
NP (1989)	1986-87	17 (non-Cal)	(-1,+1)	0.89	0.68
Peterson (1988)	1969-84	30	-1	0.27	1.35
Peterson (1988)	1969-84	14 (to)	-1	-0.16	-0.20
Peterson (1988)	1969-84	16 (no to)	-1	0.65	2.04

(*) Significant at .01 (.05) level. Event day 0 = proxy mailing date announcing meeting with reincorporation vote. **n.r.: test statistic not reported

BS (1989): Bradley and Schipani (1989). Romano (1985) subsamples: **m&a**: reincorporations accompanied by acquisition programs; **to**: reincorporations accompanied by takeover defenses.

Wang (1995) subsamples: **Del**: reincorporations into Delaware; **non-Del**: reincorporations to states other than Delaware.

HL (1998): Heron and Lewellen (1998), subsamples: **to**: reincorporations accompanied by takeover defenses; **ll**: reincorporations accompanied by director liability limits; **oth**: reincorporations not accompanied by takeover defenses or director liability limits.

DL (1980): Dodd and Leftwich (1980).

Hyman (1979): calculates AR as difference in mean changes in stock price compared to S&P index.

NP (1989): Netter and Poulsen (1989), subsamples: **Cal**: reincorporations from California; **non-Cal**: reincorporations from states other than California. Peterson (1988) subsamples: **to**: reincorporations accompanied by takeover defenses; **no to**: reincorporations not accompanied by takeover defenses.

In contrast to Romano's study, Heron and Llewellyn (1998, pp. 557-59) find a different price reaction depending on whether the reincorporation is undertaken to limit directors' liability (positive) or to erect takeover defenses (negative). However, the event date they use to obtain this result is problematic for an event study analysis. The takeover defense firms' abnormal returns are negative only on the shareholder meeting day, and James Brickley's investigation of the event study methodology found that, in contrast to random samples of proxy mailing dates, random samples of annual meeting dates—that is, a sample on which there is no *a priori* reason to find a significant price effect—produce significant abnormal returns (Brickley, 1986, pp. 346-47).³

Some corporate law scholars have further questioned the appropriateness of using event study methodology for assessing the efficacy of state competition beyond the issue raised by the potential confounding effect of a domicile change and a change in business operations at the time of reincorporation. For instance, Lucian Bebchuk (1992, pp. 1449-50) has asserted that stock price studies are not probative on whether state competition benefits shareholders because state competition may produce some provisions that are harmful to shareholders even if the overall package of provisions is not, and hence we would not detect any statistically significant price effect upon reincorporation.

Bebchuk's bundling critique is not a troubling objection to the use of the methodology. Bebchuk's premise of shareholders being forced to choose between bundles of offsetting good and bad statutes is founded on the premise that the statistical findings of the event studies are insignificant: yet, as noted above, many event studies report significant positive stock price effects. In any event, from the perspective of shareholders, it is the net wealth effect of a code that is important.

Another class of event studies that provides more tangential evidence on the state competition debate than the reincorporation studies are event studies of changes in Delaware law. Such studies are less reliable tests than studies of domicile switches of the wealth effects of state competition for several reasons. First, reincorporations are more difficult for investors to anticipate and therefore easier to date for statistical testing than legislative changes. Second, reincorporations are firm-specific events, and hence the endogeneity of the event's occurrence is

³ Brickley's explanation of the finding of abnormal returns on randomly selected meeting dates in contrast to mailing dates is that annual meeting dates are known in advance and often contain important management announcements (such as earnings forecasts), which can produce abnormal returns because "risk and expected returns can increase around predictable events likely to contain information" (Brickley, 1986, pp. 347-48).

automatically controlled for by the composition of the test portfolio—it includes only firms experiencing the event. This is not true for the enactment of statutes, which are applicable to all domestic corporations but may actually have divergent effects on different corporations. When their impact is examined for a portfolio of domestic firms that does not control for the potential heterogeneity across firms of the effect of the legal rule change, the test may simply aggregate offsetting effects and therefore not be able to identify any wealth effect.

State takeover statutes have been examined intensively, a legislative context in which Delaware is a laggard rather than the leader of competitive activity (Romano, 1993a, p. 59). One Delaware statutory change has been closely studied, enactment of a statute permitting firms to limit outside directors' liability for negligence.

The results on takeover statutes are less uniform than the reincorporation studies—there are findings of negative, positive and insignificant price effects (*see* Romano, 1993a, pp. 60-68). But the most comprehensive study, by Jonathan Karpoff and Paul Malatesta (1989), which has the largest sample size because it includes 40 statutes enacted in 26 states, finds that the statutes have a significant, albeit small, negative price effect on domestic corporations (-0.4 percent), when the event date is the earliest newspaper report of the legislation. They find no significant price effect when days on which specific legislative events occurred, such as bill introduction, final passage and signing into law, are used as the event dates. Much of the difference in the event study findings can be explained by the type of statute: statutes more likely to raise the cost of a bid tend to produce negative price reactions compared to statutes less likely to affect a bid (*compare* the results for disgorgement, business combination and control share acquisition statutes (*e.g.*, Szewczyk and Tsetsekos, 1992; Karpoff and Malatesta, 1989) *with* those for fair price and other constituency statutes (*e.g.*, Karpoff and Malatesta, 1989; Romano, 1993 b). Differences also depend upon the event interval chosen (*compare* Ryngaert and Netter, 1988 *with* Margotta, MacWilliams and MacWilliams, 1990), which cautions against drawing strict conclusions from any one study without strong justification of the researchers' interval choice.⁴

Most important for the state competition debate, Karpoff and Malatesta find that Delaware's takeover

⁴ The price impact of a statute may be related to the absence of firm-level defenses. When Karpoff and Malatesta's sample is divided according to whether the firm has antitakeover charter amendments or a poison pill, only the portfolio without defenses experiences a significantly negative effect on the event date (p. 308). However, not all studies find the same abnormal return pattern controlling for firm-level defenses (*e.g.*, Romano, 1993b; Jahera and Pugh, 1991). We thus are hesitant to conclude that characteristic differences across firms in sample portfolios explain the variance in the studies' results.

statute had an insignificant stock price effect. A study by Jahera and Pugh (1991) finds a significantly positive effect of the Delaware statute on legislative event dates for some but not all of the excess returns models that they investigate; they also find no significant price reaction on the newspaper announcement dates (Karpoff and Malatesta do not provide information on the price effect of the Delaware statute on legislative event dates). Contrary to Karpoff and Malatesta's finding on firm defenses, Jahera and Pugh find that Delaware firms with antitakeover charter defenses experienced a negative price effect, and those without defenses, a positive price effect on several event dates: the cumulated effect is insignificant for the former group and significant for the latter group only at 10 percent. Thus, they conclude that the statute did not adversely affect the wealth of investors. Table 2 summarizes the results of these event studies, and additional studies evaluating the same statutes as those discussed in the text; for a more complete tabulation of takeover statute event study results see table 4-1 in Romano (1993a).

Table 2
Event studies of takeover statute enactments.

Study	Statute(s) studied	Sample size	Announcement window: (Event days)	Announcement return (%)	Z-statistic
KM (1989)	40 statutes, 26 states, 1982-87	1505	(-1,0)	-0.29	-2.43**
KM (1989)	38 statutes, 26 states (no to)	1107	(-1,0)	-0.39	-2.54**
KM (1989)	33 statutes, 23 states (to)	368	(-1,0)	-0.13	-0.87
Mahla (1991)	49 statutes, 30 states, 1983-89	678	(0)	-0.12	-1.85
PJ (1990)	5 statutes, 1 vetoed bill, 4 states	245	(0,+1)	-0.46	-1.62
KM (1989)	11 BC statutes	1030	(-1,0)	-0.47	-2.70**
Mahla (1991)	BC statutes	248	(0)	-0.24	-2.35*
KM (1989)	Del BC statute, 1987	n.r.	(-1,0)	-0.44	-1.10
JP (1991)	Del BC statute, 1987	920	(0, +1)	-0.09	-0.19
PJ (1990)	Ind BC statute, 1986	15	(0,+1)	-0.94	-1.12
Broner (1987)	NJ BC statute, 1986	51	(-1,+1)	-0.55	-1.13
PJ (1990)	NJ BC statute, 1986	26	(0,+1)	0.48	0.71
Schumann (1988)	NY BC statute, 1985	94	(-1,+1)	-0.96	-2.37*
KM (1989)	NY BC statute, 1985	n.r.	(-1,0)	-0.22	-0.60
PJ (1990)	NY BC statute, 1985	72	(0,+1)	-0.72	-1.71
KM (1989)	12 CSA statutes	271	(-1,0)	-0.01	-0.89
Mahla (1991)	CSA statutes	236	(0)	-0.017	0.18
KM (1989)	Ind CSA statute, 1986	n.r.	(-1,0)	-2.14	-3.46**
PJ (1990)	Ind CSA statute, 1986	15	(0,+1)	-1.8	-2.15*
SW (1990)	Ind CSA statute, 1986	19	(0)	-5.91	1.97
Romano (1987)	Mo CSA statute, 1984	14	(-1,+1)	-0.01	-0.72
PJ (1990)	OH CSA statute, 1986	45	(0,+1)	-0.35	-0.67

Study	Statute(s) studied	Sample size	Announcement window: (Event days)	Announcement return (%)	Z-statistic
KM (1990)	Penn DG, 1990	n.r.	(0,+1)	-1.58	v.n.r.**
Margotta (1991)	Penn DG, 1990	55	(0)	-0.6	-2.47*
ST (1992)	Penn DG, 1990	56	(-1,+1)	-3.33	-4.80**
ST (1992)	Penn DG, 1990	44 (no to)	(-1,+1)	-3.94	-5.06**
ST (1992)	Penn DG, 1990	12 (to)	(-1,+1)	-1.11	-0.65
KM (1989)	11 FP statutes	329	(-1,0)	-0.27	-1.30
Mahla (1991)	FP statutes	74	(0)	0.06	-0.05
Romano (1993 b)	25 OC statutes (pre-1991)	361	(0)	0.02	0.30
ASM (1997)	IN, NY, and OH OC statutes (pre-1993)	318	(0,1)	-0.33	v.n.r
RN (1988)	Oh OC/PP statute, 1986	37	(-1,+1)	-2.08	-2.18*
MMM (1990)	Oh OC/PP Statute, 1986	53	(-1,+5)	1.43	1.69

**(*) Significant at .01 (.05) level. Event is first press report, unless otherwise indicated below.

v.n.r.: value not reported for z-statistic; significance level is reported

BC: Business Combination statute; **CSA:** Control Share Acquisition statute; **FP:** Fair Price statute; **OC:** Other Constituency statute; **PP:** Poison Pill statute; **Penn DG:** Pennsylvania takeover statute including disgorgement, other constituency, control share acquisition and labor protection provisions

KM (1989): Karpoff and Malatesta (1989); they report insignificant abnormal returns on legislative event dates; subsamples: **to**= firms with takeover defenses when statute adopted; **no to** = firms without takeover defenses when statute adopted.

Mahla (1991): event is introduction of bill.

PJ (1990): Pugh and Jahera (1990), event is introduction of bill.

JP (1991): Jahera and Pugh (1991); event is 8 legislative events; significant positive return reported using excess returns model.

Broner (1987): event is committee release of bill.

SW (1990): Sidak and Woodward (1990), 14 legislative events.

Romano (1987): event is introduction of bill.

KM (1990): Karpoff and Malatesta (1990).

ST (1992): Szewczyk and Tsetsekos (1992), event is measured over 4 legislative events; subsamples: **to** = firms with takeover charter defenses when statute adopted; **no to** = firms with no takeover charter defenses when statute adopted

Romano (1993b): 3 legislative events

ASM (1997): Alexander, Spivey and Marr (1997); subsample: **to** = firms with takeover defenses when statute adopted

RN (1988): Ryngaert and Netter (1988), event is legislative action.

MMM (1990): Margotta, McWilliams and McWilliams (1990), event is legislative action.

The nonnegative impact of the Delaware takeover statute is a fact of itself favorable to an assessment of state competition because Delaware is the leading incorporation state, and this result indicates that its action did not adversely affect shareholders, compared to that of other states. Indeed, the findings on takeover statutes are the strongest (and sole) empirical evidence against the efficacy of state competition for charters: they suggest that states other than Delaware may and do enact specific laws that are not in shareholders' interest. Ironically, then, these data cast Delaware in a highly positive light for investors. A fair conclusion from these event studies is that for at least some firms in some states, legislative initiatives making takeovers more difficult were bad news (wealth-decreasing events) for investors.

Delaware's limited liability statute, in contrast to other states' takeover statutes, did not have a significant stock price effect (Bradley and Schipani, 1989; Janjigian and Bolster, 1990; Romano 1990). Delaware firms did experience significant negative returns on the effective date of the statute, which was two weeks after its enactment and two months after the first legislative event date, the day when the corporate law section council of the Delaware Bar Association approved the provision (for corporation code revisions, the Delaware legislature acts upon recommendations of the corporate bar). But the statute's effective date is not a meaningful event date because there was no new information released on it – the statute's enactment was well-publicized and there was no uncertainty regarding whether the statute would become effective on the stated date.

Because the coverage of the limited liability statute was optional, one explanation of the finding of insignificance, besides the length of the legislative interval's creating imprecision as to the dating of events, is that the effect of the statute would not be incorporated into stock prices until investors determined whether or not their firm would elect to be covered. The abnormal returns experienced by firms opting into the statute vary, however, depending on the event window examined or the portfolio of firms. One study finds significant positive returns over two, three and five day intervals, and insignificant returns over a seven day interval (Romano, 1990), another study finds significant negative returns over a seven day interval (Bradley and Schipani, 1989), two studies find insignificant returns over a variety of time intervals (Janjigian and Bolster, 1990; Netter and Poulsen, 1989), and a final study, which uses a four day interval, finds insignificant positive returns for its full sample of 120 firms and positive abnormal returns for poorly performing firms (Brook and Rao, 1994). Brook and Rao's explanation of this finding is that shareholders of poorly performing firms value limited liability provisions more highly than

shareholders of other firms because it is more important for such firms to “attract and retain” the services of high quality outside directors.⁵

One conclusion given the findings of these studies is that the limited liability statute did not adversely affect shareholders. Providing further support for this interpretation of the data is the fact that shareholders vote overwhelmingly to opt into the limited liability statute. It is, of course, possible that shareholders vote for management-sponsored proposals that adversely affect firm value; see Bhagat and Jefferis (1991). But the Bhagat and Jefferis study investigated management-sponsored proposals related to takeover defenses, proposals that institutional investors have vigorously opposed in the same time period in which they have supported the limited liability provisions. Consistent with this distinction, those investors have also sponsored proposals to overturn takeover defenses constructed by management but not to overturn limited liability charter provisions. In the reverse legislative situation, a takeover statute that shareholders did not wish to have applied to their firm (the Pennsylvania disgorgement statute), institutional investors have successfully pressured managers to opt out of the statute’s coverage (Romano, 1993a, pp. 68-69). As previously discussed, the event studies of that statute report a negative wealth effect, in contrast to those of the limited liability statute.

Finally, in addition to the event studies of legislation, there have been event studies of judicial decisions (Bradley and Schipani, 1989; Kamma, Weintrop and Wier, 1988; Ryngaert, 1988; Weiss and White, 1987). Because courts play an important role in Delaware’s market position (*e.g.*, Romano, 1993a, pp. 39-41), determining whether investors benefit from judicial decisions could proxy for determining whether they benefit from state competition.

However, judicial decisions are not “events,” except for the litigants for whom a decision effects a wealth transfer. Decisions in corporate law cases are not likely to effect firms other than the litigants because other firms and investors are able to contract around the rule and recalibrate the costs and benefits. They are therefore only of limited value as subjects for the event study methodology – we can use the methodology to learn how a specific decision affects the parties, but it will not be valid for analyzing the decision’s impact on nonlitigants.

Further complicating event studies of judicial decisions is the interaction between the court and state

⁵ Although these firms also had a smaller percentage of outside directors, there was no relation between the number of outside directors and the value of a limited liability provision (Brook and Rao, 1994, p. 495).

legislature in Delaware, which is a byproduct of the competition for charters. A judicial decision with a significant adverse impact on firms stands an excellent chance of being overturned by the Delaware legislature: the limited liability statute, for instance, was a reaction to a judicial opinion holding outside directors liable for accepting too hastily a takeover premium (Romano, 1990). Since investors can anticipate the legislature's response to a judicial decision that is adverse to their interest, one cannot expect to find a negative stock price effect for a portfolio of Delaware firms after a wealth-decreasing decision. Thus, the stock price reaction would not be distinguishable from such a decision compared to a decision that did not diminish share value.

Not surprisingly, event studies of judicial decisions find insignificant price effects for portfolios of Delaware firms (Bradley and Schipani, 1989; Weiss and White, 1987). These studies are not informative about the value of Delaware law because the methodology is not a good fit for addressing the question. Judicial decisions produce significant abnormal returns to the litigants, and, when the decisions uphold (or invalidate) a specific takeover defense, to concurrent takeover targets as well (Kamma, Weintrop and Wier, 1988; Ryngaert, 1988). The use of the methodology in these latter studies is equivalent to that of the litigation studies discussed in Bhagat and Romano (2001 a). The reincorporation studies provide, by contrast, a clean, and indeed the best, measure of the wealth effect of state competition.

2.2. The Role of Event Studies in Public Policy toward Takeovers

There was an intellectual revolution in corporate law scholarship in the 1980s. Prior to then, corporate law was a dead field of research (Manning, 1962, p. 245 n.37). But corporate law scholarship tends to follow deals, and there was a burst in new acquisitive activity at that time and corporate law became one of the more active and sophisticated fields of interdisciplinary legal scholarship.

Event studies became an important source of information with which to ground policy recommendations in the new context of hostile leveraged bids. The explosion in acquisitions, which occurred shortly after the development of modern finance theory, of which the event study technique is a spinoff, created a cottage industry of event studies. There was a plethora of studies of the price effects of acquisitions and review articles were repeatedly updated in order to keep up with the literature (*e.g.*, Jensen and Ruback, 1980; Jarrell, Brickley and Netter, 1988). These studies highlighted that there were uniformly large and significant positive price effects for shareholders of targets. There is also consensus in the literature that, on average, bidding shareholders do not experience any

significant wealth effect upon announcement of such mergers. Depending on the sample period and sample considered, studies document average bidder returns that cover the range from positive, economically small and statistically insignificant, to negative, economically small and statistically insignificant. Studies that have aggregated the wealth effects of both the target and bidder firms find, however, that despite the lower returns to the generally larger-sized bidders, the combined target and bidder return is positive (e.g., Bradley, Desai and Kim, 1988; Kaplan and Weisbach, 1992; Bhagat, Hirshleifer and Noah, 2001).

Concern has also been raised on the impact of takeovers on other stakeholders, notably, employees, customers and suppliers (see Bhagat, Shleifer and Vishny, 1990; Kim and Singal, 1993; and Akhavein, Berger and Humphrey, 1997). A policy-relevant question is whether the large positive returns to target shareholders are offset by negative (or non-positive) returns to employees, customers and suppliers. Several studies have attempted to measure the losses to these non-shareholder interests and the average effect is generally small and often statistically insignificant, in striking contrast to the significantly larger average target shareholder gain (*see, e.g.*, Rosett, 1990; Pontiff, Shleifer and Weisbach, 1990; Asquith and Wizman, 1990; Denis and McConnell, 1986; Marais, Schipper and Smith, 1989). We are not aware, however, of any study that has attempted to address the question with a consistent sample. A study that considers the impact of a sample of takeovers on target and bidder shareholders and bondholders, employees, customers and suppliers would be a valuable contribution to this literature.

Analogous to the shifting sentiment on state competition, the conclusion from the event study research regarding the benefits of takeovers for target shareholders led commentators and policymakers alike to conclude that takeovers should be encouraged rather than obstructed (*e.g.*, Easterbrook and Fischel, 1991, pp. 175-205; Council of Economic Advisors, 1985, p. 215), and the Delaware courts took note, tightening the fiduciary standard applicable to takeover defenses (*Unocal Corp. v. Mesa Petroleum Co.*, 1985).

The Delaware courts did not, however, go as far as the position advocated by some prominent commentators that all defenses should be banned (*e.g.*, Easterbrook and Fischel, 1981). Indeed, they eventually adopted an approach that provided managers with substantial discretion to react to a takeover as long as the bid is not precluded (*Unitrin v. American General Corp.*, 1995). This restrained, fact-intensive judicial approach is, in fact, consistent with the inconclusive empirical evidence on the efficacy of defenses, despite legal commentators' support for more active judicial intervention. The event study literature does not uniformly find that the adoption of

defenses produces negative price effects. Stock price reactions vary not only with the type of defense, but also with the type of firm. For example, adoption of golden parachutes produces positive price effects (Lambert and Larckner, 1985), elimination of cumulative voting produces negative ones (Bhagat and Brickley, 1984), and the effects of poison pills vary, being negative in the early to mid 1980s (*e.g.*, Ryngaert, 1988) and insignificant in later years (*e.g.*, Comment and Schwert, 1995). In addition, Brickley, Coles and Terry (1994) found positive price effects for poison pill adoptions by firms with independent boards, and Datta and Iskandar-Datta (1996) find pill adoptions produce insignificant effects except for firms subject to a takeover bid, for which the price effect is negative. Bhagat and Jefferis (1991) argue that the earlier studies find conflicting or insignificant results since they do not control for the anticipation of the antitakeover proposal. After controlling for this anticipation effect they find a statistically negative 1% return. The Delaware courts moved to an increasingly restrained approach to managerial resistance over the same time frame as the range in the findings of event studies of defensive tactics increased.

A more troubling issue for corporate law was presented by the event study results regarding the stock price of acquirers. Event studies indicated a change in acquiring firms' abnormal returns from positive or insignificant to negative from the 1970s into the 1990s, paralleling the increasing use of defensive tactics to encourage auctions (*e.g.*, Jarrell, Brickley and Netter, 1988). As corporate law is directed to the shareholders of targets rather than bidders, the owners least likely to benefit from an acquisition as the decade progressed—the shareholders of the acquirers—did not have the opportunity for legal recourse. Courts did not change their traditional response deferring to management on acquisitions compared to the defensive tactic setting where the conflict of interest is more clear-cut. But because even commentators concerned about this issue were divided on whether there ought to be a legal response (*compare, e.g.*, Dent, 1986 with Coffee, 1984; and Black, 1989, pp. 651-652), legislatures' and courts' maintenance of the status quo is unexceptionable.

The uniformity in the empirical findings on takeovers for target shareholders also affected interpretation of the mandate of the securities laws. The Securities and Exchange Commission (SEC) issued rules to overturn defensive tactics (*see* Securities Exchange Act rules 13e-4(f)(8), prohibiting selective self-tenders, and 19c-4, requiring one share one vote), although the federal courts did not always find it had authority to do so (*Business Roundtable v. SEC*, 1990, overturning rule 19c-4). Over 20 years earlier, the agency had successfully lobbied to advantage incumbent managers over bidders in the enactment of the Williams Act. It would be fair to say that the

transformation in perspective on hostile bids was not simply a function of a change in agency personnel, but was caused by a more diffuse change in attitude toward bids that was, no doubt, in part influenced by the event study literature demonstrating the benefits to target shareholders of takeovers.

The event study findings of the positive impact of takeovers on targets also formed the backdrop for the Supreme Court's decision in *Basic v. Levinson* (1988), which held that merger negotiations were sufficiently material to investors that disclosure could be required prior to the firms' reaching an agreement in principle, a bright-line standard that several appeals courts had adopted. The Court's drive to disclose such information as early as possible is an acknowledgment of the significance of the information, which was underscored by the salience of the value of bids as measured by event studies. In reaching this conclusion, the Court rejected the view of the importance of maintaining secrecy until a firm agreement was reached that had been adopted by some appeals courts, stating that the view that secrecy "maximize[d] shareholder wealth" was "at least disputed as a matter of theory and empirical research" (p. 235). Although the Court did not specifically cite the economic literature on takeovers, it is plausible that the event studies detailing the benefits to shareholders of takeovers had an impact on its decision-making as the opinion evidences an awareness of the finance literature.

2.3. Event Studies and Securities Litigation

The Supreme Court decision in *Basic v. Levinson* (1988) had an even more profound impact on the conduct of securities litigation in relation to the event study methodology, than it had on firms' acquisition negotiations. It articulated a doctrine, known as the "fraud on the market theory," that permits plaintiffs to establish reliance, a necessary component of securities fraud, by reference to the integrity of the market price. Namely, rather than having to show that the plaintiff actually saw or heard misleading information from the defendant, the presumption is that the market price of a security reflects its value, and an affirmative misstatement or omission that distorts that value is fraudulent even if the shareholder had no knowledge of the statement: the fraud is on the market as a whole, on whose determination of value the individual shareholder is entitled to rely.

The fraud on the market theory is, in essence, a statement of the semi-strong form of the efficient market hypothesis, the theory on which the event study methodology is grounded. Event studies, relying on the efficient market hypothesis, assume that public information is incorporated into stock prices, and that stock prices change when new information is revealed. This is precisely how the Supreme Court's reliance presumption operates.

Because stock prices are understood as reflecting the value dependent upon a defendant's fraudulent statement, when the misstatement or omission is corrected, the stock price is expected to adjust to the true value, which evinces the harm to investors who had relied on the prices formed by the mix of information that included the fraudulent statement. This presumption dovetails with the Court's definition of materiality, another precondition for establishing liability—a substantial likelihood that the information would have affected the investor's decision to buy or purchase a security (*TSC Industries, Inc. v. Northway, Inc.*, 1976).

The doctrine makes plain that event studies have a dual role in securities litigation. They can be critical for determining both liability and damages. The event study technique permits a demonstration of the change in value due to the fraud, by measuring the firm-specific movement when the fraud was revealed (when the information that counteracted the alleged material misstatement or omission was disclosed). Hence it facilitates the establishment of liability by showing that the information was in fact material—it demonstrates that there was “a fraud on the market.” Without adjusting for general market movements, it would be exceedingly difficult, if not impossible, to ascertain the true effect of the information on the firm. The event study technique provides an anchor for making this determination and eliminates the need to rely on ad hoc judgments concerning information effects. In addition, the demonstration of materiality by the methodology is also useful for the calculation of damages (what the defendant's gain is for the statutory disgorgement penalty in SEC cases, and what the plaintiff's loss is in civil liability cases).

Following this reasoning, the SEC has used the event study methodology in its enforcement of the prohibition on insider trading, both to determine the materiality of information and to calculate the profits that an insider has to disgorge (*see Mitchell and Netter*, 1994). Private parties have similarly used the event study methodology as well in civil litigation. Courts have, for instance, relied on expert witnesses' analyses of stock price movements due to corporate press releases and announcements in their decision-making on liability (*e.g., Sibley v. Mary Kay Cosmetics, Inc.*, 1983). Indeed, even before *Basic v. Levinson*, commentators advocated the use of event studies for measuring damages for securities fraud under the *TSC v. Northways, Inc.* standard (*e.g., Fischel*, 1982).

Cornell and Morgan (1990) provide a comprehensive overview of the strengths and weaknesses of the use of event studies for private securities litigation. In particular, they detail when an event study will under- or over-estimate damages in a class action. In brief, when there is leakage of the true information prior to a public announcement by the corporation, the event study technique will understate the damages, because part of the impact

of the information has been incorporated into the stock price prior to the announcement date. One way to compensate for this problem is by extending the event window, to include the longer period in which the true information was being released, but identifying the appropriate endpoints of the wider interval can be quite difficult. In addition, if there is more than one source of misrepresentation in a securities fraud, and the timing differs for the correction of the misstatements, then the methodology will not be particularly useful because it does not provide a basis for allocating the damages across the different sources (the price impact will be concentrated on the date of the disclosure of the final fraud). Another methodological problem occurs when the securities claim involves a material omission rather than misstatement: it may be difficult to specify on what date the omission occurred, a date that is necessary to determine a predicted price to calculate damages from prices when the fraud was revealed.

While Cornell and Morgan's article is a constructive cautionary note regarding the appropriate application of the event study methodology in adjudicating key issues in securities fraud cases, the greater precision that the methodology offers for measuring the effect of information on stock prices is, nevertheless, an enormous advance over the ad hoc techniques that were formerly used to establish materiality and damages. In addition, the adversary process should mitigate many of the methodological concerns that Cornell and Morgan identify, as experts employed by the parties will highlight them in the litigation. It is therefore safe to conclude that with regard to securities litigation, the methodology's appropriateness for valuation issues is a settled part of the landscape and that it will only disappear from litigants' repertoire when a statistical technique offering even greater precision is developed.

In addition to the application of event study methodology to litigate securities fraud cases, the methodology has been used to assist in policy analysis, as in the state competition and takeover debate contexts, in the evaluation of procedural reforms wrought by the Private Securities Litigation Reform Act of 1995. This congressional initiative was intended to render it more difficult to bring a civil action under the federal securities laws (H.R. Conference Report, 1995). Because the legislation was unexpectedly vetoed by President Clinton and the veto was overridden shortly thereafter (*see* Johnson, Kasznik and Nelson, 2000, pp. 8-9), in contrast to legislation that comes to fruition over a long period of time, fairly clean event dates for the Act can be identified.

Event studies have found that the Act had a significantly positive stock price effect (Spiess and Tkac, 1997; Johnson, Kasznik and Nelson, 2000). This result is interpreted as validating the congressional impetus for the

legislation, concern over the incidence of nonmeritorious lawsuits, because the market valued the legislation's benefits from curtailing frivolous suits as greater than its costs in restricting meritorious suits. Further supporting this conclusion, a court decision adopting the most stringent interpretation of the Act's pleading requirement, which furthered Congress' goal of making filing of a nonmeritorious suit more difficult, had a statistically significant positive effect on stock prices for a sample of high technology firms, which operate in an industry sector with a high probability of securities litigation (Johnson, Nelson and Pritchard, 2000).⁶

4.4. Event Studies and Corporate Governance

Virtually all of the important mechanisms of corporate governance have been subjected to event study analysis. These include boards of directors, shareholder proposals, derivative lawsuits, and executive compensation. Although all of these devices have been posited to perform a critical function of reducing the agency costs of the separation of ownership and control in the U.S. public corporation, empirical studies do not provide strong support for this viewpoint. Neither shareholder proposals nor lawsuits have a significant positive price effect. A positive stock price effect is associated with appointment of an independent director to the board, but board composition has not been found to impact positively on performance. By contrast, the incentive-aligning device of stock-based executive compensation has been found to affect stock prices positively. These findings suggest that widely-shared beliefs concerning what are essential components for effective corporate governance may be mistaken, and that affirmative policies to foster such devices ought to be reconsidered.

2.4.a. Boards of Directors

Directors are seen as performing a pivotal role in the corporation: ensuring that management acts in furtherance of the shareholders' interest. As the repository of the shareholders' agents to monitor the agents directly

⁶ In contrast to state corporate law, the federal securities laws consist of mandatory rules. Firms cannot therefore contract around a court decision in this context as they can in the corporate law context, and decisions can therefore impose wealth effects on nonlitigants. It should be noted that some studies of corporate litigation have focused on securities lawsuits. One motivation for this research was to investigate the issue of concern to Congress in enacting the 1995 reform legislation, whether the suits are typically supported by meritorious or nonmeritorious claims. Most of the empirical studies of securities litigation do not, however, use the event study methodology, and they are accordingly not reviewed in this paper. For example, Alexander (1991) compares settlement value and potential damages for litigation following IPOs of a small number of high technology firms. She concludes that the settlement amounts do not depend on the merits of the cases. For other studies suggesting instead that settlements are related to the merits see Francis, Philbrick, and Schipper (1994) (finding positive correlation between settlements and potential damages) and Skinner (1995) (finding more untimely disclosures of adverse earnings produce less favorable litigation outcomes).

running the firm, the board structure interposes an additional strata of agency problems on the more basic agency relation between managers and owners of the firm. Accordingly, commentators have emphasized the desirability of a board composed of independent or outside directors—directors without a financial or personal connection to management—to ensure that the board structure is not simply creating a further layer of agency problems that is one-step removed from operations (*e.g.*, Eisenberg, 1976). This position has been incorporated into the legal system: stock exchanges require listed firms to have independent directors on audit committees and courts take the board's independence into account when assessing claims in shareholder lawsuits.

Consistent with the monitoring view of outside directors, the market views such directors favorably. An event study of the appointment of an outside director reports a significant positive price effect, even when a majority of the board was already independent (Rosenstein and Wyatt, 1990). This increase, while statistically significant, is economically small and could reflect signalling effects. Appointing an additional independent director could signal that a company plans to address its business problems, even if board composition doesn't affect the company's ability to address these problems.

Bhagat and Black (1999) recently surveyed the literature on how board composition affects firm performance or vice versa. Prior studies of the effect of board composition on firm performance generally adopt one of two approaches. The first approach involves studying how board composition affects the board's behavior on discrete tasks, such as replacing the CEO, awarding golden parachutes, or making or defending against a takeover bid. This approach can involve tractable data, which makes it easier for researchers to find statistically significant results. But it doesn't tell us how board composition affects overall firm performance. For example, there is evidence that firms with majority-independent boards perform better on particular tasks, such as replacing the CEO (Weisbach, 1988) and making takeover bids (Byrd and Hickman, 1992). But these firms could perform worse on other tasks that cannot readily be studied using this approach (such as appointing a new CEO or choosing a new strategic direction for the firm), leading to no net advantage in overall performance. Also, events such as CEO turnover and takeovers are rare occurrences for firms. The greater and more positive contribution of boards may be in the ongoing advice they give to senior management in private meetings; it would be difficult to study this via the traditional event-study method.

The second approach consists of examining directly the correlation between board composition and firm

performance. This approach allows us to examine the "bottom line" of firm performance (unlike the first approach), but involves much less tractable data. Firm performance must be measured over a long period, which means that performance measures are noisy and perhaps misspecified as discussed in Bhagat and Romano (2001 a).

Bhagat and Black (2000) find a reasonably strong correlation between poor performance and subsequent increase in board independence. The change in board independence seems to be driven by poor performance rather than by firm and industry growth opportunities. However, there is no evidence that greater board independence leads to improved firm performance; if anything, there are hints in the other direction. The conventional wisdom that supports a very high degree of board independence and may explain why poorly performing firms increase board independence, appears to rest on a shaky empirical foundation.

It is possible that the failure to find that independent boards improve performance is due to the fact that not all outside directors are truly independent from management, and empirical researchers cannot distinguish between "effective" and "ineffective" independent boards. But a more compelling reason why increasing board independence does not result in improved performance is that having inside directors could add value in strategic planning⁷ or evaluation of potential successors for the CEO (*e.g.*, Vancil, 1987). In addition, independent boards at best improve corporate decision-making in certain extraordinary situations, such as management-buyouts or poor performance (*e.g.*, Weisbach, 1988; Lee, Rosenstein, Rangan and Davidson, 1992), which are very low probability events for most firms.

These data suggest that it would be prudent for companies to consider experimenting with modest departures from the norm of a "supermajority independent" board with only one or two inside directors. The independent directors will still numerically dominate the board, and can take appropriate action in a crisis. In addition, effort should be focused on devising mechanisms to enhance director independence or otherwise improve their incentives to monitor by encouraging greater equity ownership.⁸

2.4.b. Shareholder Proposals

⁷ This is consistent with Klein's (1998) evidence that inside director representation on investment committees of the board correlates with improved performance.

⁸ Hall and Liebman (1998) provide evidence of the sensitivity of management's financial wealth to firm performance. The hypothesis that director incentives affect firm performance is consistent with the evidence in Bhagat, Carey and Elson (1999).

A mechanism of corporate governance used increasingly by certain institutional and individual investors is shareholder proposals, which are included in a firm's proxy materials under SEC Rule 14a-8 and voted on at the annual shareholders' meeting. The most active institutional users of this tool, public pension and union funds, sponsor a variety of proposals that they assert will improve performance, including proposals to enhance the independence of the board, reform executive compensation, remove takeover defensive tactics, and adopt confidential voting (*see, e.g.*, Del Guercio and Hawkins, 1999). The institutions must notify management of their intent to submit a proposal in advance of the meeting under the SEC rule, a requirement that has the beneficial effect for the sponsor that management will frequently negotiate a compromise in order to avoid the proposal's submission (*see id.*).

Numerous event studies have been undertaken to determine whether the introduction of a shareholder proposal affects firm value. The uniform finding is that they do not (*see Romano, 2001b*).⁹ The absence of a significant effect is not likely to be due to imprecision in the event study methodology because in these studies the sample sizes are large and the event dates are precise (*see Bhagat and Romano, 2001 a*). A plausible explanation of the absence of a price effect is that the objects of many shareholder proposals—*independent boards, limits on executive compensation and in particular on incentive pay, and confidential voting*—do not, when investigated by event studies, significantly affect firm value (*see id.*). It is improbable that a proposal to undertake a governance strategy that does not itself significantly affect prices will produce a price effect.

It is troubling that institutional investors, who are, after all, in most cases, fiduciaries, would spend significant effort sponsoring proposals that are not likely to improve firm performance. A lack of information regarding the appropriate governance policy to adopt does not seem to be a plausible explanation for the behavior of at least the most prominent sponsors of proposals, who are sophisticated institutions. Public pension fund managers might well be informed about which proposals are useful and still champion fruitless proposals, however, if the managers obtain private benefits from submitting such a proposal, given the absence of strong incentives of boards

⁹Negotiations with management, by contrast, have been found to produce both significant positive and negative price effects. As discussed in Romano (2001b), the difference may be explained either as evidencing that management selects the highest valued proposals for negotiation (or lowest for the negative effect studies) or that negotiation by indicating management's responsiveness to certain investor concerns, provides a signal of management's quality (the price effect reflects market updating regarding management quality rather than the value to the firm of the omitted proposal).

of public funds to monitor their staff (or the presence of similar private benefits for board members).

The fact that, in contrast to public pension funds, private pension and mutual funds do not engage in activism has been explained by the competitive nature of the industry, or as cost-conscious private funds' free-riding on the expenditures of activist public funds (*e.g.*, Black, 1998, p. 460). This may be so. But there is a further, complementary explanation, that private institutions' managers are less likely to obtain private benefits from engaging in shareholder activism than public and union fund managers.¹⁰ Both explanations are provided with support from survey data indicating that private fund managers perceive the costs and benefits of shareholder activism differently from public pension fund managers (Downes, Houminer and Hubbard, 1999, pp. 32-34).

In short, financial economists have not been able to identify a positive performance effect of shareholder activism because much of that activism would appear to be misdirected. To the extent that this mismatch is due to problematic behavior on the part of fund managers sponsoring proposals involving private benefits, potential solutions are the adoption of better internal control devices for fund boards, such as program audits, or a reduction in the current subsidy of the presentation of proposals by requiring sponsors of losing proposals to reimburse the corporation, in whole or in part, for the cost of the proposal (see Romano, 2001b).

2.4.c. Shareholder Derivative Suits

Several studies have examined the stock price effects of the filing and disposition of shareholder derivative suits. Fiduciary duties enforced by derivative suits in theory perform an important deterrent and compensatory function in the agency cost perspective on the firm. But because the cost of such litigation is generally greater than a shareholder's pro rata benefit, the legal regime relies on the incentives provided by plaintiffs' attorneys' fees to ensure that such lawsuits will be brought. In contrast to the conventional rule in U.S. litigation that parties bear their own legal costs, when the action provides a "substantial benefit" to the corporation, the plaintiff's legal expenses are reimbursed by the defendant firm, even if there is no cash recovery fund from which to pay out such fees. Although this legal response solves the shareholders' collective action problem in policing fiduciary duties, it creates a host of new incentive problems, because the interests of the plaintiff's attorney and the shareholders are not necessarily

¹⁰ For examples of possible private benefits relevant to public pension or union fund officials in contrast to private fund managers, related to furthering political reputations or collective action goals see, *e.g.*, Romano (1993c, p.822); Thomas and Martin (1998, pp.61-62).

aligned (see Coffee, 1985).

Indeed, the agency problem between attorney and client is exacerbated in the derivative suit setting by the terms of directors' and officers' liability insurance. The policies reimburse individual defendants' legal expenses as well as any required payments to shareholders in the absence of an adjudication of deliberate fraud. Thus, even if the probability of an adverse judgment is very small, individual defendants have a powerful incentive to settle, as that strategy guarantees that they will avoid any personal expenditures on the litigation. The attorney-client agency problem, when coupled with the incentives of defendants to settle, appears to produce two problematic trends: frivolous claims tend to be overcompensated and meritorious claims undercompensated, and the plaintiffs' bar is the principal beneficiary of the system (see Romano, 1991).

Researchers have undertaken event studies of shareholder suits to get a handle on the scope of the agency problem. The hypothesis is that if a suit is nonmeritorious or, to put it another way, if a suit will result in a substantial payment to the plaintiff's attorney with only trivial benefits going to shareholders, then its filing will not produce a positive price effect, and may well produce a negative effect on the firm. The effect of the underlying conduct should not be confounded with any effect upon a lawsuit filing because the fraud (whether by affirmative misstatement or omission) or negligence will have been revealed prior to the filing and hence has already been impounded in the stock price—without revelation of the misconduct no suit would be brought. But if investors anticipate the lawsuit's filing upon revelation of the misconduct, then there will be no additional impact on its occurrence and the returns around the filing date will not be able to identify investors' views of the efficacy of shareholder litigation.¹¹

Romano (1991) examines the impact of lawsuit filings. The abnormal returns upon derivative suit filings are insignificant. One explanation of this result is that the market anticipates the outcomes of such suits: derivative suits typically result in no or very low monetary rewards. In Romano's sample, for instance, most derivative suits did not produce a monetary recovery, and for those that did, the value was less than 0.5% of firm assets, or \$0.15 per share net of attorneys' fees (Romano, 1991, pp. 61-62). The principal beneficiary of the litigation was the plaintiffs'

¹¹ Such anticipation could affect the stock price reaction to the news of the underlying misconduct, exacerbating a decline if investors believe that the lawsuit will reduce value (e.g., if they believe it will transfer corporate funds to outsiders, such as the plaintiff's attorney), and mitigating a decline if investors believe that the lawsuit will produce a significant recovery.

attorneys. The data on derivative suit recoveries, in conjunction with the earlier noted distinctive incentives for settling in this context, provide an explanation of the difference between the wealth effects of derivative suits compared to corporate litigation in general, discussed in part one of our review (see Bhagat and Romano 2001 a): derivative suits do not have a significant negative impact, in contrast to most corporate litigation, because the indirect financial distress costs from such disputes are extremely low.

Fischel and Bradley (1986) investigate the stock price reaction to court decisions on motions to dismiss a derivative suit. They find a significant negative reaction to suit terminations and an insignificant positive reaction to decisions not to dismiss. Although this result suggests that the market views derivative suits positively, the authors conclude that the suits have no significant wealth effects because when returns are cumulated around the filing date they are insignificant. In contrast to their study, Romano finds no significant price effect for lawsuit dispositions: dismissed derivative suits have insignificant negative returns, but so do settled suits. These data are in accord with Fischel and Bradley's conclusion that the wealth effects of derivative lawsuits are negligible. Of course, this is simply confirming the aforementioned disposition data, that shareholders do not receive substantial compensation in derivative suits.

The event study methodology is not directed at measuring any potential deterrent effect from the existence of derivative lawsuits. Such a third-party effect would not be incorporated in a sued firm's stock price. Because in order for lawsuits to deter misconduct generally, managers who are sued need to suffer a penalty or sanction (there must be specific deterrence), Romano (1991) investigated whether top management of sued firms experienced a decline in compensation, an increased frequency of termination, or a decrease in directorships held on other companies' boards, compared to management of firms, matched by industry and size, that were not sued. Romano failed to find any significant differences across management on all of the dimensions she measured, compensation, employment, and directorships, and therefore concluded that derivative suits do not provide specific deterrence. This finding throws into question the possibility that much is provided in the way of general deterrence.

The data indicating negligible wealth effects from derivative suits supports consideration of proposals to reform the procedural rules to better align the incentives of plaintiffs' attorneys with the interests of investors. One possible solution proposed by Macey and Miller (1991) is to eliminate the named plaintiff to underscore that the attorney is the real party in interest and to have a court auction the lawsuit to law firms in order to ensure that the

litigating attorney has an incentive to obtain the highest recovery, as well as to screen for meritorious claims. The event study findings are not probative on whether any particular proposal, such as the lawsuit auction idea, would work, but they do bolster the frequently-expressed view that current rules do not compensate shareholders as well as plaintiffs' attorneys, which lends credence to the belief that the claims of misconduct underlying many of the suits are insubstantial and the regime ought to be reformed.

2.4.d. Executive Compensation

A final mechanism of corporate governance that has been the subject of event study analysis is incentive-based executive compensation.¹² Incentive compensation plans that grant stock or stock options to senior management must be approved by shareholders under stock exchange rules, and new plans or amendments to existing plans are accordingly described in the proxy materials distributed prior to the shareholders' annual meeting. Thus, as in the event studies of changes in board composition or shareholder proposals, proxy statements can be used to identify the specific events of interest. Brickley, Bhagat and Lease (1985) report a 2.4% positive abnormal return for the adoption of stock-based compensation plans. This finding follows from a careful screening of proxy materials to ensure exclusion of firms for which there are confounding events disclosed in the proxies, as well as the use of a variety of event dates, given the potential ambiguity over whether the proxy statement is the first public announcement of the compensation plans. In addition, Yermack (1997) finds significant price increases after non-publicly announced grants of executive stock options.

Both of these studies' results are consistent with the view of stock compensation as a critical mechanism for reducing agency costs, as they indicate that the market expects incentive-aligning compensation to improve performance. An alternative explanation, which is less benign, however, is that management adopts stock option programs or approves specific grants when it expects events that are likely to increase stock prices to occur. But this second explanation seems to be somewhat less plausible of the two because Yermack does not find that executives receive larger quantities of stock when the grants occur prior to favorable announcements.

The positive market assessment of the use of stock-based incentive compensation not only provides confirmation of the agency models but also provides additional support for rethinking the shareholder proposal

¹² For a review of the empirical research on executive compensation which consists of numerous approaches in addition to event studies see Murphy (1999).

process. Studies of the aftermath of shareholder activism on executive compensation have found that stock-based incentive compensation declines when firms receive such proposals or are targeted by the California Public Employees' Retirement System (see Romano, 2001b). Because stock-based compensation is positively valued by investors, proposals that result in a decrease in such compensation are not likely to be in shareholders' interest. These proposals do involve, however, a politically-charged subject—high levels of executive pay—that has considerable cachet value for labor union leaders and public pension fund managers with an eye on higher public office.

2.5. Summary of the Role of Event Studies in Corporate Law

Event studies have been influential in the making of corporate law and in corporate law scholarship. They have informed the major policy debates over the production of corporate laws and takeovers, and the jurisprudence on securities law. The impact of empirical research on these issues can be overstated: the strength with which particular corporate law commentators hold priors concerning the appropriate policy will cause them to update those priors differentially. But over time empirical research does have an effect, and its effect has reached beyond the academy to corporate law decision-makers. This is precisely what has occurred in the state competition and takeover debates over the past two decades: academic consensus shifted to a more favorable assessment of state competition and of takeovers as well as defenses, and the approach of the SEC and the Delaware courts has changed accordingly. A similar process may well occur in the current debates over the efficacy of corporate governance devices.

3. Event Studies of Regulation

Since the pathbreaking work of George Stigler (1971), commentators have questioned whether regulation should be interpreted as serving the public interest, or understood as benefitting the interests of the regulated or a subset of the regulated. Event studies can be used to assess the wealth effects of government action on regulated firms and thereby test these different theories of regulation. For instance, if regulated firms suffer stock price declines from unexpected agency action, it is not probable that such firms have captured the regulators. If the action instead produces abnormally positive stock returns, this suggests that regulation has provided a net benefit to regulated firms (the market expects future cash flows to increase), and it is supportive of Stigler's producer-protection theory of regulation, rather than a consumer-benefit theory.

Because to be applied, the event study methodology requires that the regulation under study be unanticipated, it will not be useful for evaluating existing regulation.¹³ Moreover, the methodological difficulties regarding the dating of events that arise in event studies of legislation are equally relevant to those of regulation, as regulatory change often unfolds over a lengthy time interval. Despite these caveats, researchers have been able to identify regulatory changes that can be profitably examined through the lens of the event study methodology. Space does not permit us to provide a detailed review of the use of event studies to arbitrate the debate over theories of regulation. We provide instead a highly selective review of the literature by discussing a subset of event studies of changes in banking regulation. Other regulatory areas that have been studied include changes in the regulation of stock exchanges (Jarrell, 1994) and airlines (Beneish, 1991).

Event studies have been used to estimate the wealth effects of numerous banking rules, and therefore to determine whether banking regulators are captured by regulated financial institutions or act in the public interest. The deregulation of interest rate ceilings in the 1970s has been a particularly interesting focus of research. Constraints on interest rates payable on deposits can be characterized as a government-administered price-fixing agreement which subsidizes depository institutions at the expense of depositors. In this scenario, the removal of the interest rate ceilings in the 1970s will reduce the subsidy, and hence the value, of the thrifts. If banking regulators are captured by financial institutions, however, we would not expect the lifting of ceilings on different types of deposit accounts to reduce the regulated firms' values. Rather, the regulatory changes should result in a net inflow of funds to the thrifts, preventing disintermediation that would otherwise occur as the difference between the bank's rate ceilings and market interest rates increased, and we would expect a positive stock price reaction.¹⁴

Dann and James (1982) investigate the price impact of three rate ceiling changes from 1973-78. These changes were adopted without prior public announcement, which increases the accuracy of the event study

¹³ In such a context a different empirical approach is necessary. If firms earn economic rents due to regulation because, for instance, regulation creates artificial barriers to entry, this value will be reflected in stock prices. The value of the rent can be measured either by subtracting the estimated replacement cost of assets from the stock price, or, equated to the price of a saleable license where one exists, such as a taxicab medallion (Schwert, 1981).

¹⁴ A third hypothesis, the "ceiling circumvention" hypothesis, predicts there would be no change in value from removal of interest rate ceilings; in this characterization, any subsidy that thrifts received from the rate ceiling in the form of limiting price competition would be fully dissipated through non-price competition and depositors would obtain the equivalent of the market interest rate despite the existence of the rate restrictions (see Kane, 1981).

methodology since the regulatory action is both unexpected and readily datable. They find that savings and loan institutions experienced significantly negative stock price reactions on the removal of interest rate ceilings for small accounts and on the introduction of short term variable rate money market certificates (MMCs), but not on the removal of rate ceilings for large accounts. Dann and James conclude from these data that the thrifts had been earning economic rents from the restrictions on small saver accounts. The losses to the thrifts from the regulatory change is evidence against the capture theory of regulation, because under such a theory, regulatory actions should not adversely affect regulated firms.

The insignificance of the removal of the ceiling on large accounts is consistent with either the capture theory or the ceiling circumvention hypothesis. Dann and James therefore examine more closely the thrifts' business to determine which effect, small or large accounts, is more important, in order to evaluate which regulatory theory best explains the data. They note that the subsidy reduction or consumer protection interpretation of a rate ceiling removal is relevant only where the institutions were previously able to engage in price discrimination (that is, for inelastic deposit sources), since only under such circumstances would a rate ceiling produce a subsidy or rent to a thrift. If large accounts are more elastic, then they would not be a significant source of rents under a ceiling restriction. In fact, large deposits constituted less than 2% of the sample firms' financing. In addition, the proportion of small deposits drops dramatically from 1978-80 by a fraction equal to the increase in deposits subject to market-based variable rate ceilings (which are largely MMCs). These facts suggest, as Dann and James conclude, that the data are most consistent with the subsidy reduction hypothesis as opposed to the producer protection or capture theory of regulation in explaining the interest rate ceiling removals.

However, in another study, James (1983) investigates the stock price effects of the same events by type of financial institution. He finds significant differences across banks: while wholesale banks (banks with less than 10% of their deposit portfolio in passbook accounts) experienced significant positive abnormal returns from the regulatory changes, the abnormal returns to retail banks (banks with 20% or more of deposits in passbook accounts) were significantly negative. This suggests that the regulatory regime had substantial redistributive effects across banks, benefitting small retail banks at the expense of wholesale commercial banks, and analogously, that deregulation (liberalization of interest rate ceilings) affected an intra-industry wealth transfer. It further demonstrates the difficulty of testing a simple capture theory of regulation: conflicts of interest regarding particular

regulatory policies within a regulated industry may make identification of a proper hypothesis test difficult. Thus studies of the wealth effects of regulation must be careful to consider the possibility of divergent interests within a regulated industry. A researcher could fail to detect significant wealth effects associated with a regulatory change if he or she does not control for potential intra-industry effects, and could therefore incorrectly conclude that he or she has provided evidence in support or against the economic theory of regulation.

Other studies have also found that changes in banking regulation effect a redistribution across financial institutions, and related such an impact to the regulatory capture theory. Cornett and Tehranian (1989, 1990) find that 1980 banking deregulation and 1982 banking reforms produced positive abnormal returns for large commercial banks but negative abnormal returns for small banks and savings and loans (S&Ls). Moreover, at the one point in the sequence of legislative events when the 1982 reform movement seemed to falter, the signs of the abnormal returns, which were significant, reversed for the two sets of institutions.

The larger institutions were expected by investors to fare better under the regulatory reforms because, as more cost-efficient producers of financial services, they would be less likely to experience failure in the more competitive environment fostered by the legislation.¹⁵ Cornett and Tehranian contend that the wealth redistribution within the industry from these regulatory reforms is consistent with Stigler's capture theory. The reasoning follows two steps. First, large banking institutions were unable to compete with unregulated non-depository financial intermediaries (such as mutual funds) under the existing regulatory regime, which included interest rate ceilings, and the reform legislation was intended to remedy that situation. Second, the large banks' positive abnormal returns indicate that the market expected them to benefit from the legislation permitting competition, a regulatory reform that was backed by the banking regulators. In other words, their large size indicated that they would not be likely to

¹⁵ It should be noted that the divergent interests across the banking sector between big and small banks is a reason why the event study methodology proved useful in this regulatory reform context. Congressional regulatory reforms are likely to be anticipated by the market because of the lengthy legislative process (see Binder, 1985), and hence will not be useful subjects for event study analysis. But when the regulated industry is divided over reform, there is uncertainty over the content and likelihood of enactment of reform legislation, and hence specific legislative actions resolve uncertainty and are genuine "events." Indeed, in the course of the 1980s' banking legislation, there were numerous disagreements among congressional committees, and judicial rulings invalidating regulators' reform-oriented actions, which created substantial uncertainty over statutory enactment; Cornett and Tehranian believe that this is the reason why, in contrast to other studies of regulatory changes, there are so many significant events associated with the passage of the banking reforms.

fail when confronted with increased competition, in contrast to the small banks that experienced negative returns; thus these banks obtained all the benefits and few of the costs of competition. Because the wealth-transfer was intra-industry, in this instance evidence supporting the capture theory of regulation is not necessarily evidence that the regulatory action was contrary to consumers' interest.

4. Conclusion

This two-part review has sought to demonstrate how event studies can have, and have had, an important role in the making of public policy. Using conventional financial econometric techniques, event studies provide an anchor for valuation: they enable a researcher to measure the wealth effect on investors of events, such as litigation, statutory or regulatory change, as well as firm-level actions (actions undertaken by corporate managers, such as an acquisition or a dividend payment). Event studies are, by definition, limited to policies affecting publicly-traded corporations, since the analysis is of stock returns. However, by dollar amount, such entities are the source of the vast majority of business transactions in the economy, and much government regulation is directed at their activities. This is also the reason why the most prevalent use of the methodology in law has been in the corporate law field: there is a natural fit between the legal regime's objective of protecting shareholders' interests and event studies' ability to quantify the impact of firm and governmental policies on their interest.

As the first part of this review (Bhagat and Romano, 2001 a) emphasized, it is important to identify accurately the date of the event under study, and to have a sizeable number of firms subject to the event, in order for the methodology to work well (that is, to detect abnormal performance only when it is present). If these conditions are not met, an event must have a comparatively large wealth effect of several percentage points to be detected by the methodology. Thus, both the practitioner and user of the event study must keep in mind the set-up of the study when evaluating its results. What can be gleaned from the results of a properly conducted event study in the areas of corporate law and regulation? Policies that adversely affect the value of corporations or redistribute wealth across different sectors of an industry might be worthy of greater scrutiny than those that do not.

In this paper, the second part of our survey, we have reviewed in detail how event studies have informed long-standing debates in corporate law—supporting a positive assessment of the competition across states for corporate charters and the benefits to target shareholders from takeovers and suggesting that the wealth effects from much of shareholder activism are insubstantial. The event study methodology has had an even greater influence on

securities litigation than corporate law. The Supreme Court has taken the premise of the methodology—that stocks trade in efficient markets—as the basis for establishing reliance in civil actions for fraud under the federal securities laws and, paralleling the Court’s line of reasoning, the SEC has used the methodology to establish liability and the measure of damages in insider trading actions. Because of the limitations of the methodology when dating of the event is imprecise, the results of event studies evaluating the wealth effects of regulation are likely to be less clear-cut than those of event studies evaluating corporate law and governance matters. But some researchers have been able to identify suggestive evidence of distributional effects of regulation in the banking area, favoring more producer- than consumer-oriented explanations of policy change. Undoubtedly, new uses of the approach will emerge in the future beyond our survey which is admittedly incomplete regarding the diversity of current practices. It is, in fact, our hope that this survey will spark such innovations.

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