Do Staggered Boards Harm Shareholders?

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This paper contests the results of Cohen and Wang (*JFE* 2013, CW) that staggered board (SB) lowers firm value, based on the stock price reaction to two Delaware court rulings in the case of *Airgas* (2010). The first ruling weakened SB's potency and the second restored it. Contrary to CW's findings of a significant negative effect of SB on the value of affected firms, we find no such affect which is statistically significant for both their sample and for a different sample. Also, we find that firms that de-staggered their boards realized no improvement in their return on assets.

Keywords: staggered board, classified board, corporate governance, antitakeover measures

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Introduction

In companies with staggered (or classified) boards of directors, the board is divided into (usually three) classes and shareholders can elect only one class in each annual election. This is considered a powerful anti-takeover defense because it prolongs the process of gaining a majority control of the board and makes the process more costly to hostile acquirers. In particular, the common defensive measure called shareholder rights plan ("poison pill") can be removed by gaining control of the board, but is made more difficult in a firm with staggered board (henceforth SB). Studies show a negative relation between staggered board and firm value,[1] implying that SB is harmful to shareholders. However, Cohen and Wang (2013, p. 627) point out that this relation "might not imply causation but could reflect the greater propensity of low-value firms to maintain such provisions."

Cohen and Wang (2013, henceforth CW) resolve this problem of identifying causality by studying the value effect of a natural experiment involving SB: two Delaware court rulings in 2010 in the case of *Airgas*. The first ruling weakened the potency of SB and the second restored its potency. Testing the stock price reaction of Delaware firms that were potentially affected by the rulings, CW find that the sum of the price impact of the first ruling that weakened SB and the negatively-signed price impact of the second ruling that strengthened SB is positive and significant for affected firms compared to that of control firms that were not affected by the rulings. The authors conclude that their evidence support the view that SB harms firm value.

We challenge the CW's conclusion, presenting results that are inconsistent with theirs.

(1) Using CW's sample and test method (as well as other common methods), the two Delaware court rulings have *insignificant* effect on stock prices of firms that could be affected by these rulings. Thus, there is *no* evidence that SB is value decreasing.

(2) Using a different sample of Delaware firms, we again find an *insignificant* effect of the two Delaware court rulings on stock prices.

(3) We test the effect of de-staggering of the board of directors – which makes the entire board elected every year – on firm's return on assets (ROA). We find *no significant* evidence that de-staggering improves firm performance. This is notable because de-

[1] In recent years there is a push to de-stagger corporate boards. Steven Davidoff (November 12, 2010). The New York Times. "Staggered Boards and Company Value". http://dealbook.nytimes.com/2010/11/12/staggered-boards-and-company-value

staggering is voluntary (or done under stockholders' pressure) and thus intended to be beneficial.

Thus, *there is no evidence that SB is value decreasing.* This conclusion is consistent with recent evidence by Larcker, Ormazabal and Taylor (2011) that find that legislative proposals that may restrict board structure and possibly weaken the SB provision are not value enhancing. And, Cremers and Ferrell (2014) and Cremers, Sepe and Litov (2014) show evidence that SB is value increasing: SB adoption increase firm value.[2] Another explanation for the insignificant effect of the court rulings is that the tests have low power because of small sample size. It can also be that the *Airgas* rulings are inappropriate to provide information on the value effect of SB.

Below, we brief discuss the Delaware court rulings in the 2010 *Airgas* case (Section 1) and then we present empirical evidence on the value effects of these rulings. Section 2 discusses the samples and test methodology and presents results for CW's sample and for our sample of Delaware firms. In Section 3 we analyze the effect of de-staggering on firms' return on assets (ROA). We review the views on the value effect of SB in Section 4 and conclude in Section 5.

1. Institutional background of the Airgas case

In February 2010, Air Products launched a public tender offer to acquire Airgas. Airgas was protected by a poison pill and its board was staggered. Airgas rejected the offer claiming that it undervalued the company. (The offer was eventually raised to $5.5 billion,) Air Products then sought to win control of the board in order to rescind the pill. At Airgas's annual meeting on September 15, 2010 Air Products succeeded in replacing three of Airgas' nine directors with its nominees and in obtaining a majority shareholder support for a bylaw amendment to accelerate the next Airgas annual meeting to January 2011. Thus, Air Products would have been able to gain control of the board within four months rather than waiting another year. Airgas challenged the validity of the bylaw amendment in the Delaware Court of Chancery stating that it was inconsistent with the firm's corporate charter provision that creates a SB. Air Products responded that the SB provision only specified that one-third of board directors was elected each year without specifying the calendar date for the annual meeting. The Delaware Chancery

[2] These studies use firm fixed effects that control for non-varying firms characteristics, thus effectively controlling for omitted variables; see Roberts and Whited (2011).

Court's ruling on October 8, 2010 permitted the Airgas bylaw. Airgas appealed this ruling and on November 23, 2011 the Delaware Supreme Court overturned the Chancery Court decision, invalidating the Airgas bylaw that would have potentially shortened the time period that some directors would serve on the board.[3] In summary, the October 8 ruling weakened the potency of SB and the November 23 decision restored its potency.

2. Testing the effects of the *Airgas* court rulings on stock prices

CW propose to use the two 2010 Delaware court rulings on *Airgas* as a natural experiment to assess the causal effect of SB on firm value. The rulings are (1) exogenous events and thus their effect on stock prices is not marred by endogeneity, and (2) they provide contrasting effects of the potency of SB within a short period of time. CW study the cumulative abnormal return (CAR) around each court ruling using a sample of Delaware-incorporated firms divided into "treated" firms that could be affected by the ruling and "control" (unaffected) firms. CW use the CAR on October 11 and 12 for the first ruling that was made on October 8 after the market close, and use the CAR on November 23 and 24 for the November 23rd ruling that was announced during the trading day.

2.1. Data samples

We use two samples. The first is that of CW, kindly provided by Alma Cohen (henceforth, "CW sample"). It consists of Delaware-incorporated firms with SB excluding real estate investment trusts (REITs), firms with dual ownership and firms with over 50% insider equity ownership. "Treated" and "control" firms are, respectively, firms whose annual shareholder meeting is between September and December and between January and March. Treated firms could be affected because a potential raider could replace a third of the board in a September-December meeting and then accelerate the following meeting to be early in the following year, thus concluding the takeover within a few months. For the control firms whose meeting is early in the year, this was non-consequential. CW's sample includes 139 firms: 77 treated and 62 control. From this sample, we exclude five firms that have no valid return data in

[3] *Airgas, Inc. v Air Prods. & Chems., Inc.*, 8 A.3d 1182 (Del. 2010). Air Products eventually abandoned its bid after Airgas's board, *including* the three new directors nominated by Air Products, unanimously rejected Air Products final bid of $70/share as inadequate.

the *Center for Research in Security Prices* (*CRSP*) database for the event days around the October or November rulings.[4] One firm, Advansource Biomaterial Inc. (ASB) was delisted on November 24, 2010 when its price was 20 cents and its value was below $6 million. For this firm, we use the November 23 return for the second ruling.

The second sample employs the ISS database[5] that covers the S&P 1500 firms.

Stock return data are obtained from *CRSP* and company financials and 6-digit Global Industry *Classification Standard* (*GICS*) codes are obtained from *Compustat*.

2.2. Hypotheses and test methodology

CW's hypothesize that "the value of the affected companies was increased by the initial ruling weakening the antitakeover force of staggered boards and was decreased by the ruling's subsequent reversal" (p. 628). This is the alternative hypothesis, H1, to the null hypothesis H0 of no effect of these rulings on affected companies' values.

We denote the dates following the first and second court rulings, October 11-12 and November 23-24, by DAY1 and DAY2, respectively, and denote the stocks' two-day cumulative abnormal return on these two periods by CAR1 and CAR2, respectively. CW multiply CAR2 by -1 because the effect of the second ruling contrasted the effect of the first one. CW's test regresses the firms' CAR1 and -CAR2 on a dummy variable *Treated* that equals 1 for treated firms (that could be affected by the rulings), and *Treated* = 0 for the control firms. The coefficient of *Treated*, which we denote by dCAR measures the difference between treated and control firms of CAR1-CAR2. The null hypothesis is dCAR = 0. If dCAR > 0, SB is value decreasing: the weakening of SB raised CAR1 and its restoration lowered CAR2, raising -CAR2.

We use CW sample and their event-study methodology ("Method 1"), and add two tests by conventional methods of calculating CAR. All tests produce similar results.

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[4] Details of the excluded firms: Diamond Management (DTPI) was acquired by PriceWaterHouseCoopers on November 2, 2010; ArcSight (ARST) was acquired by Hewlett-Packard on October 22, 2010. For these firms, the price at the first event were reflecting the outstanding acquisition offer. For Image Entertainment (DISK), ORE Pharmaceuticals (ORXE) and Altigen Communications (ATGN), the last valid observations in *CRSP* were February 2, 2010, March 24, 2010 and March 15, 2010 respectively, i.e., before the first ruling.

[5] This sample is used by Bebchuk, Cohen and Farrell (2009) and Gompers, Ishii and Metrick (2003), among others. It is formerly known as RiskMetrics and IRRC database.

Method 1: This replicated CW's methodology. In the first step, the β coefficients of each stock j are estimated by the following regression model, using daily returns over 120 trading days ending on September 30, 2010:

$$R_{j,t} = \alpha_{1,j} + \beta_{M,j} * MktRf_t + \beta_{SMB,j} * SMB_t + \beta_{HML,j} * HML_t + \beta_{UMD,j} * UMD_t + \varepsilon_{j,t}. \quad (1)$$

MktRf, *SMB*, *HML* and *UMD* are the return benchmark factors due to Fama and French (1993) and Carhart (1997).[6] The second step is a cross-firm regression

$$AnnRet_{j,t} = \alpha_2 + \lambda_M * \beta_{M,j} + \lambda_{SMB} * \beta_{SMB,j} + \lambda_{HML} * \beta_{HML,j} + \lambda_{UMD} * \beta_{UMD,j} + \delta_{j,t} \quad . \quad (2)$$

$AnnRet_{j,t}$ is the announcement return for stock j on day t estimated over four days, two in DAY1 and two in DAY2, and the β coefficients are those obtained from the first step. The abnormal returns are the residuals $\delta_{j,t}$. Then, a stock's $CAR1_j$ and $CAR2_j$ are, respectively, the sum of the two residuals for the two event days of DAY1 and DAY2.

Method 2: In this commonly-used event-study methodology, the abnormal return for stock j on day t is the difference between the stock return for that day and the predicted return, calculated as the sum of the products of the estimated βs (from (1)) by the respective factors' return for that day and the intercept. These daily abnormal returns are then aggregated into $CAR1_j$ and $CAR2_j$.

Method 3: *Portfolio* abnormal returns. This method accommodates possible cross-stocks return correlations on any day, given that the event is on the same day for all stocks. We construct two portfolios of treated and control stocks and calculate the average daily return across stocks in each portfolio. *TMC* is the Treated-Minus-Control portfolio return. We then regress *TMC* on the Fama-French-Carhart factors and on two dummy variables: DUM1 = 0.5 for each the days October 11-12 and DUM2 = 0.5 for each of the days November 23-24. The coefficients of DUM1 and DUM2 estimate the differential CAR1 and CAR2 between treated and control stocks for DAY1 and DAY2, respectively. We also do a regression of *TMC* on the four factors and on DUM1-2 = (DUM1 – DUM2)/2 = 0.25, 0.25, -0.25, -0.25 for the four event days of DAY1 and

[6] *MktRf*, *SMB*, *HML* and *UMD* are, respectively, the excess return on the market portfolio over the risk-free rate, the return on small-minus-large firms, the return on high-minus-low book-to-market ratio firms, and the return on winner minus loser stocks. Data are obtained from Ken French's data library. These factors undergo revisions over time, so there may be small differences between studies that calculate CAR using the factors at different times. But the differences are very small.

of DAY2, respectively. The negative sign for the November event days follows CW's methodology. (These dummy variables equal zero in all other days.) The coefficient of DUM1-2 estimates dCAR, the differential CAR between the treated and control sample for the two event dates together. The data period is April 1-December 31, 2010 (191 days) which straddle the time of the court rulings.

2.3. Test results using CW sample

INSERT TABLE 1 HERE

Table 1 presents the test results. Following CW, we regress each firm's CAR1 and -CAR2 from Method 1 on the dummy variables *Treated* (= 1 for treated firms and 0 otherwise) and *Event2* (= 1 for CAR2 and 0 otherwise). H0 would be rejected in favor of H1 if the coefficient of *Treated* were positive, that is, dCAR > 0. Their regression is also estimated with industry fixed effects that use six-digit *GICS* codes.

CW's report that the coefficient of *Treated* is 0.9612% with $t = 1.87$ ($p = 0.062$, two-tail test, $p = 0.031$ one-tail test) when using industry fixed effects. However, we estimate this coefficient to be 0.376 with $t = 0.84$ ($p = 0.40$), using industry fixed effects. Thus, H0 cannot be rejected. The results are similar under Method 2. The coefficient of *Treated* is 0.339 with $t = 0.70$ ($p = 0.48$) with industry fixed effects. Notably, our point estimate of dCAR is less than half of that reported by CW.

Airgas's stock, included in CW's, was naturally affected by the rulings which directly affected the likelihood of being immediately acquired for a high premium. It had CAR1 = 2.82% and CAR2 = -6.01%, thus CAR1-CAR2 = 8.83% (using Method 2). Excluding Airgas, the coefficient of *Treated* falls to 0.266, less than a third of CW's estimate, with $t = 0.59$ ($p = 0.56$) with industry fixed effects. This is quite insignificant, both statistically and economically.

There is a problem in CW's use of *six*-digit GICS codes for industry fixed effects since in 11 cases there is only one firm per GICS code. When estimating CW's model under Method 1 using *four*-digit GICS codes (and excluding Airgas), the coefficient of *Treated* is 0.0290 with $t = 0.073$. That is, the effect of the Delaware court rulings was practically zero.

Given that the second court ruling reversed the first one, these rulings should affect stock returns in opposite directions and there should be negative correlation between CAR1 and CAR2. Regressing CAR2 on CAR1 from Method 1 we obtain that the slope coefficient is -0.146 with t = 0.66, insignificant (we use robust standard errors to calculate the t-values). The coefficient is similar using Method 2.

Using Method 3, we again obtain an insignificant value effect. The coefficient of DUM1-2 (the total CAR of the two rulings) is 0.360 with t = 0.35. It drops to 0.240 (t = 0.23) when Airgas is excluded.

In summary, *there is no evidence that SB hurts firm value.* The estimated effect of the rulings that affected the potency of SB is insignificant both economically and statistically.

2.4. Tests using an alternative sample

We present results using a sample obtained from the ISS database that covers the S&P 1500 firms. This database, used by Gompers, Ishii and Metrick (2003) and Bebchuk, Cohen and Farrell (2009) to study the effects of antitakeover measures on firm value, is more accessible to researchers than FactSet's database employed by CW. We use only Delaware-incorporated firms and conduct the analysis for the three samples below. (Airgas in not included.) Following CW, we also exclude real estate investment trusts (REITs) and firms with dual ownership.

S1: "Treated" and "control" firms are firms with and without SB, respectively. This assumes that investors viewed the *Airgas* rulings as indicating the Delaware court's stance on the broad legitimacy of SB and on the role of the board beyond being a ruling on the narrow issue of the date of the annual meeting. CW indeed say (p. 636): "In particular, it might be conjectured that the Chancery Court ruling was viewed by the market as significant not only because of its particular conclusion *but also as a signal of greater openness toward takeovers*" (emphasis added). The leading law firm Skadden, Arps, Slate, Meagher & Flom states in its review on February 11, 2011: the Airgas case "essentially tackles the fundamental corporation law question of *'who gets to decide when and if the corporation is for sale?'* The Court ultimately concluded, based on nearly 25 years of existing Delaware Supreme Court precedent in this area, that "the answer must be that the power to defeat an inadequate hostile tender offer ultimately lies with the

board of directors." And, The *New York Times'* "Deal Professor" column of Steven Davidoff, published on November 12, 2010 while the issue was still debated, says:[7] "A background issue in the battle between Airgas and Air Products and Chemicals is *the effectiveness of staggered boards* and what academic research has to bear on the issue… [t]he staggered board is in retreat because of the efforts of the corporate governance movement in reliance on this academic research" (our highlighting). These views suggest that firms with SB may be potentially affected by the court rulings, hence we treat them as "treated" while "control" firms are those with no SB. S1 includes 776 Delaware firms divided into 397 treated and 379 control firms. This sample includes very large firms such as Walmart with market capitalization of $203.6 billion (on Jan 31, 2010) which are less likely to become takeover targets.[8] We thus construct a subsample of smaller firms, S1.s which excludes the largest 5% of firms. S1.s includes 738 firms, the largest having market capitalization of $30.98 billion and the smallest $0.07 billion, divided into 391 with SB and 347 with no SB.

S2: Following CW, "treated" and "control" firms are firms with SB whose annual meeting is between September-December and between January-March, respectively. S2 contains 74 firms of which 32 are "treated" and 42 are "control" firms. The market capitalization of the largest firm in this sample is $41.4 billion. S2.s, the subsample which excludes the largest 5% of firms, includes 71 firms with maximum size of $16.1 billion and minimum size of $0.14 billion, of which 31 and 40 are "treated" and "control" firms, respectively.

S3: Firms with annual meeting dates between September and December, divided into firms with SB and without SB, "treated" and "control," respectively. This accommodates the possibility that the time of the annual meeting is related to an unobserved firm characteristics. S3 includes 74 firms, the largest having market capitalization of $115.6 billion (Oracle), divided into 32 treated and 42 control firms. S3.s, the subsample which excludes the largest 5% of firms, includes 71

[7] Steven Davidoff (November 12, 2010). The New York Times. "Staggered Boards and Company Value". http://dealbook.nytimes.com/2010/11/12/staggered-boards-and-company-value. A review of the case by the law firm Skadden, Arps (February 11, 2011) stated that the case "essentially tackles the fundamental corporation law question of *'who gets to decide when and if the corporation is for sale?'* The Court ultimately concluded, based on nearly 25 years of existing Delaware Supreme Court precedent in this area, that "the answer must be that the power to defeat an inadequate hostile tender offer ultimately lies with the board of directors."

[8] See Bates, Becher and Lemmon (2008), Cremers, John and Nair (2009).

firms with maximum size of $20.6 billion, of which 32 and 39 are “treated” and “control” firms, respectively.

The event-study analysis employs Method 3. The daily portfolio return series *TMC* (Treated-Minus-Control) is regressed on the Fama-French-Carhart factors and on dummy variables with the following coefficients:

(a) The coefficients of DUM1 and of DUM2, denoted respectively by dCAR1 and dCAR2, are the differential CAR between “treated” and “control” firms for DAY1 and DAY2 events, respectively. If SB is harmful, dCAR1 > 0 and dCAR2 < 0; if SB is beneficial, it is the opposite.

(b) The coefficient of DUM1-2 (= (DUM1 – DUM2)/2), dCAR1-2, is the cumulative value effect of the two rulings. If SB is harmful, dCAR1-2 > 0, and if it is beneficial, dCAR1-2 < 0.

The null hypothesis H0 is dCAR1 = dCAR2 = dCAR1-2 = 0. It means that firm value was unaffected by the changes in the potency of SB in the two Delaware court rulings.

INSERT TABLE 2 HERE

As seen in Table 2, the coefficient dCAR1-2 is insignificant for samples S1, S1.s, S2, and S2.s, that is, H0 cannot be rejected, consistent with our results using CW’s own sample (Table 1). The coefficient dCAR1-2 is negative, dCAR1 < 0 and dCAR2 > 0. If these coefficients were statistically significant, it would suggest that SB is value increasing. Surely there is no evidence that SB is value decreasing.

The results for samples S3 and S3.s, where dCAR1-2 is negative and significant, seemingly support the hypothesis that SB is value increasing. However, given the small sample size, these results may be influenced by a few extreme returns. We thus delete firms whose announcements of earnings or dividend overlap – within a three-day window (-1 to +1) – with either DAY1 or DAY2. This deletes from S3 2 treated and 4 control firms. For the remaining 68 firms, the estimated coefficient dCAR1-2 is less negative, -1.580, with t = 1.55, statistically insignificant, meaning that H0 cannot be rejected. The negative sign of dCAR1-2, suggesting a positive albeit insignificant effect of SB on firm value, is consistent with the results of Larcker et

al. (2011) and Cremers et al. (2014) on the beneficial – or at least not harmful – value effect of SB, which contrast the results of CW.

As a robustness check, we delete firms that received an acquisition offer between January and September of 2010 since the prices of these firms' stocks would be insensitive to the court rulings. As before, we delete firms with earnings or dividend announcement around the court ruling days. In addition, for S2 and S2.s, we delete from among the treated firms those whose charter required a supermajority (67% or higher) to amend a bylaw. A supermajority requirement would make it harder for shareholders to accelerate the annual meeting day, which is the subject of the *Airgas* case. Re-estimating the models for these samples, we obtain that the estimated coefficients of DUM1-2 and their *t*-values are almost unchanged.

3. Profitability of firms after de-staggering

In the recent two decades, many firms de-staggered their board of directors, switching to annual election of the entire board. We test whether board de-staggering affected firm profitability measured by return on assets (ROA). Firm ROA should rise after its board is de-staggered if SB does harm by entrenching under-performing management and insulating it from the discipline of the market for corporate control. We do not find that. Instead, board de-staggering has an insignificant negative effect on ROA.

INSERT TABLE 3 HERE

Table 3, Panel A, presents the number of firms that de-staggered their boards in each year between 1990 and 2014. There are 314 such cases, based on ISS data. De-staggering is defined as a case where a firm that has been reported to have had SB is subsequently reported as not having it. The rate of de-staggering accelerated in recent years, partly because of pressure from activist investors and from non-profit organizations such as Harvard University's Shareholder Rights Project.[9]

[9] This project states in its web site: "During the previous three academic years (2011-2012 through 2013-2014), the SRP operated a clinic that assisted institutional investors (several public pension funds and a foundation) in moving S&P 500 and Fortune 500 companies *towards annual elections*" (emphasis added).

We estimate a panel regression of annual return on assets (ROA) on a dummy variable *De-stagger* that equals one in the years after the year of de-staggering, i.e., after the year in which a firm is reported as not having SB after having had it in the year before that, and it equals zero otherwise. The sample uses all firms in the ISS database that qualify to enter our sample. It includes firms that start appearing in the sample with SB and subsequently de-staggered their board and firms that had SB and never de-staggered.[10] Excluded are firms in the financial and utilities industries (2-digit SIC codes of 49 and 60-69). The estimation period is 1990-2014. The model includes firm fixed effects and year fixed effects as well as control variables, using data from Compustat and CRSP.

ROA of firm *j* in year *t* is defined as $EBITDA_{j,t}/TotalAssets_{j,t-1.}$ (Total Assets is item 6 in Compustat.) The control variables are the following: *Size*, the logarithm of market capitalization at the end of the year (source: CRSP). *Age*, the number of years (in logarithm) since the year of the first company observation in CRSP. *CapEx*, capital expenditures divided by lagged assts. *Leverage*, the sum of total long-term debt and total debt in current liabilities scaled by the sum of total long-term debt, total debt in current liabilities and total stockholder's equity, $(DLTT_{j,t}+DLC_{j,t})/(DLTT_{j,t}+DLC_{j,t}+SEQ_{j,t})$. $R\&D_{j,t}$ is research and development expenditures scaled by current sales. This variable equals zero if data are missing, and we include *R&D-Dummy* variable that equals one for missing R&D values and zero otherwise. All continuous variables are winsorized at the top/bottom 1%. Standard errors are clustered at the firm level.

The estimation results are presented in Panel B of Table 3 in two regressions. In addition to the variable *De-stagger*, one regression includes only *Size* and *Age* and the other adds firm variables that are endogenous: *CapEx*, *Leverage* and *R&D*. In column (1), the coefficient of *De-stagger* is negative, -0.0067 with $t = 1.17$, suggesting a statistically insignificant decline of two thirds of one percent in ROA after de-staggering. The coefficient of *De-stagger* remains

[10] We note limitations in this sample, which is widely used in studies of corporate governance. Before 2007, ISS (formerly RiskMetrics) collected governance data once every 2-3 years for all S&P1500 firms (01SEP1990, 01JUL1993, 01JUL1995, 01FEB1998, 01FEB2000, 01FEB2002, 01JAN2004, 01JAN2006). After 2006, ISS reports governance status for each S&P 1500 firm on a firm-by-firm basis once a year for each firm (i.e, different company-specific dates for each firm as reported by the firm. For example, Apple reported SB status on 10MAY2007, 04MAR2008, 25FEB2009, 25FEB2010, 23FEB2011 while American Greetings Corp has ISS report dates on 22JUN2007, 27JUN2008, 26JUN2009, 11JUN2010, and 24JUN2011). In our analysis, De-stagger equals one in the years after the year of de-staggering. Since ISS data ends in 2011, 2012-2013 Compustat observations use the 2011 SB status from ISS. If a firm drops from ISS before 2011 (e.g., because no longer in S&P 1500), Compustat observations after the year of the next ISS report date are dropped from the sample (because we no longer have ISS data for the firm).

negative and insignificant when adding *CapEx*, *Leverage* and *R&D*. The evidence does not support the view that SB harms firm performance, consistent with the evidence on the insignificant effect of the Delaware court's ruling in the *Airgas* case.

4. Review of studies on the value effect of staggered board

A number of studies find that across firms, SB is associated with lower firm value; see Mahoney and Mahoney (1993), Bebchuk, Coates and Subramanian (2002), Bebchuk and Cohen (2005) and Faleye (2007). SB is said to be value decreasing because it reduces the likelihood of takeovers. Indeed, Bates, Becher and Lemmon (2008) find that firms with SB are less likely to receive an acquisition offer and Field and Karpoff (2002) find that antitakeover provisions in IPO firms (including SB) reduce the likelihood of subsequent takeover. This makes the firm's stockholders forgo the potential acquisition premium. Importantly, SB insulates management from the discipline of the market for corporate control that would pressure managers to perform better or eliminate low-quality managers. SB facilitates managerial entrenchment and diminishes board accountability, and this exacerbates the agency problem due to conflicts of interests between stockholders and managers, hurting firm performance. (See review in Shleifer and Vishny (1997).) Faleye (2007) finds that SB reduces the probability of forced CEO turnover, reduces the sensitivity of CEO turnover to the firm performance, and reduces the pay-performance sensitivity in managerial compensation. Guo, Kruse and Nohel (2012) find that de-staggering of corporate boards, following pressure by activist investors, causes a significant increase in stock prices. Masulis, Wang, and Xie (2007) find that bidder firms with SB carry out worse acquisitions, observing that their stock price declines more at the acquisition announcement. However, Rose (2009) finds that the negative relation between firm value and SB exists only in firms with concentrated ownership.

Proponents of SB claim that it is beneficial to firms (Koppes, Ganske, and Haag, 1999; Lipton, Mirvis, Neff, and Katz, 2012). SB ensures stability and continuity within the board and enables firms' management to pursue long-term strategic plans which take time to materialize. Absent SB, such long-term plans may be frustrated by hostile raiders. SB can also strengthens managers' bargaining power against hostile raiders thus enabling to extract better terms for the target firm and it may also benefit stockholder by enabling the target firm to better evaluate competing bids

(Faleye, 2007). SB may encourage director independence because they have a three-year term, thus directors who disagree with management will not be subject to not being re-nominated in the annual elections.[11] These arguments explain the results of Larcker, Ormazabal and Taylor (2001), Cremers, Litov and Sepe (2013) and Cremers and Farrell (2014) that adoption of SB is value-increasing. They also explain the finding by Daines and Klausner (2001) that most corporate charters of firms that go public include SB provision. If issuers design corporate charters to maximize their proceeds at the IPO, SB cannot be viewed as value decreasing. Gallgher and Grundfest (2014) review recent evidence and views on SB, disagreeing with Harvard's Shareholder Rights Program which encouraged firms to de-stagger their board.

As CW point out, the evidence on the negative value effect of SB should be interpreted with care because it is subject to *endogeneity*. Adopting SB (or retaining it) may be the result of poor firm performance rather the cause for it. Also, firm value may rise following board de-staggering because activist shareholders who often press managers to do that target firms where de-staggering is beneficial, but this result would not stay if de-staggering is applied to *all* firms. This endogeneity problem raises a need for an analysis using an *exogenous* event associated with SB. Such an event is the legislating of staggered board by the state of Massachusetts in 1987. Swartz (1998) finds that the law had no significant effect on firm value of all affected firms, which is consistent with our findings. Smith (2013) proposes another way to overcome the endogeneity problem by who employing an estimation method that uses the phenomenon of "over-voting" as an instrument. She finds that shareholder value increases around the passage of antitakeover provisions, including board classification, which is consistent with the evidence in Cremers et al. (2014). In summary, recent evidence cast doubt on early findings that SB is harmful to firm value.

5. Conclusion

This paper tests whether staggered board (SB) affects firm value by studying the effects of two Delaware court rulings in the case of *Airgas* in 2010. The first ruling weakened the potency of SB and the second one restored it. Cohen and Wang (2013) (CW), who study this case, conclude that SB harms firm value. However, we find – both for their sample and for a

[11] On the value of directors' independence in corporate governance, see Adams, Hermalin and Weisbach (2008).

different sample of firms – that the value effect is quite insignificant. Thus, there is no evidence that SB is value decreasing.

We further study the effect of board de-staggering on firm profitability and find that the change in firms' ROA following de-staggering is negative – rather than the anticipated positive – and statistically insignificant. The conclusion that emerges is that SB has no significant effect on firm performance and value.

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Table 1. Cumulative abnormal return (*CAR*) around the two Delaware court rulings, following Cohen and Wang (2013; CW)

The estimation employs three methods of calculating *CAR* for event days DAY1, October 11-12, 2010 and DAY2, November 23-24, 2010. The data sample is that of CW consisting of Delaware-incorporated firms with staggered board that satisfy some criteria, excluding five firms for which CRSP coverage ended before October 12, 2010 or between DAY1 and DAY2. *Treated* is a dummy variable that equals 1 for firms whose annual meeting is between September and December (zero otherwise). The control firms are firms whose annual meeting is between January and March. The indicator variable *Event2* equals1 for the second court ruling (zero otherwise). There are 134 firms. In Methods 1 and 2, each firm's CAR appears twice, once for DAY1 and once for DAY2.

Method 1: First, β coefficients are estimated for each stock over 120 days ending on September 30, 2010 by a regression of stock daily returns on *MktRf, SMB, HML* and *UMD* which are the returns on the benchmark four factors due to Fama and French (1993) and Carhart (1997), and a constant. The second stage does a cross-firm regression for each of the four announcement days (two for DAY1 and two for DAY2) of the firm daily return the firms' four factor β coefficients obtained in the first stage and an intercept. For each firm, CAR1 is the sum of the daily residuals for the two event days of DAY1 and CAR2 is the sum of the daily residuals for the two event days of DAY2. The latter is multiplied by -1 because the second court ruling reversed the first one. CAR1 and CAR2 are then regressed on the dummy variables *Treated* and *Event2*.

Method 2: The first stage is repeated from Method 1. Then, the abnormal return for each of the four event days is the difference between the stock return for that day and its predicted return, calculated as the sum of the products of the estimated β coefficients by the respective factor returns for that day, plus the intercept. These daily abnormal returns are then aggregated into CAR1 and CAR2, the latter being multiplied by -1.

Method 3: *Portfolio* abnormal returns. We calculate the daily average return on two stock portfolios of treated and control firms. *TMC* is the Treated-Minus-Control differential return. The estimation period is April 1-December 31 of 2010, 191 days. We regress *TMC* on the four factors of Fama and French and Carhart and on two dummy variables, DUM1 = 0.5 and DUM2 = 0.5 for each of the two days of DAY1 and DAY2, respectively or instead on DUM1-2 = 0.25, 0.25, -0.25, -0.25 for the four event days of DAY1 and DAY2; the negative sign for DAY2 follows the methodology of CW, thus the coefficient of DUM1-2 provides the cumulative value effect of the weakening of SB. (The dummy variables equal zero in all other days.)

	CAR Method 1		**CAR Method 2**		**CAR Method 3**		
	No FE	Ind. FE	No FE	Ind. FE		(1)	(2)
Treated	0.211	0.376	0.170	0.339	DUM1	0.275	
(*t*-stat)	(0.59)	(0.84)	(0.44)	(0.70)	(*t*-stat)	(0.38)	
Event 2	0.0000	0.0000	0.167	0.167	DUM2	0.0841	
(*t*-stat)	(0.00)	(0.00)	(0.43)	(0.42)	(*t*-stat)	(0.12)	
R^2	0.001	0.097	0.001	0.088	DUM1-2		0.360
					(*t*-stat)		(0.35)
					R^2	0.191	0.191

Table 2: CAR of the two Delaware court rulings, using ISS sample

The dependent variable is the average portfolio daily return, *TMC*, of Treated-Minus-Control stocks, employing Method 3; see the legend in Table 1. The table reports the coefficients of the dummy variables from a regression of *TMC* on the four factors of Fama and French and Carhart, a constant and DUM1 (the first ruling) and DUM2 (the second ruling), or DUM1-2 (the first minus the second ruling). All firms are Delaware-incorporated. In sample (S1), treated firms have SB and control firms have no SB. Sample (S2) follows CW: all firms are with SB; treated and control firms have their annual meeting between September and December and between January and March, respectively. Sample (S3) includes firms whose meeting day is between September and December; treated and control firms are those with and without SB, respectively. Samples (S1.s), (S2.s) and (S3.s) are the respective samples excluding firms whose capitalization is at the top 5% of the sample. The t-statistics in parentheses (don't) employ robust standard errors.

	(S1)		(S1.s)		(S2)		(S2.s)		(S3)		(S3.s)	
	2 days	**Joint**	**2 days**	**joint**	**2 days**	**Joint**	**2 days**	**Joint**	**2 days**	**Joint**	**2 days**	**Joint**
DUM1	-0.094		-0.107		-0.069		-0.048		-1.215		-1.319	
(*t* =)	(0.49)		(0.54)		(0.09)		(0.064)		(1.70)		(1.80)	
DUM2	0.260		0.296		0.187		0.137		1.085		1.132	
(*t* =)	(1.36)		(1.48)		(0.26)		(0.18)		(1.51)		(1.54)	
DUM1-2		-0.353		-0.402		-0.255		-0.184		-2.301		-2.451
(*t* =)		(1.31)		(1.44)		(0.25)		(0.17)		(2.28)		(2.37)
R^2	0.41	0.41	0.23	0.22	0.01	0.01	0.01	0.01	0.18	0.18	0.14	0.14
No. firms	776 (397+379)		738 (391+347)		74 (32 + 42)		71 (31 + 40)		74 (32+42)		71 (32 + 39)	

Table 3. Effect of board de-staggering on return on assets (ROA)

Estimated coefficients from a differences-in-differences model of the effect of board de-staggering on return on assets, *ROA*, using yearly observations. The dummy variable *De-stagger* equals one in the years after the year of de-staggering, and zero otherwise. The return on asset of firm *j* in year *t* is computed as $EBITDA_{j,t}$/Total $Assets_{j,t-1.}$ (Total Assets is item 6 in Compustat.) *Size* is the logarithm, of market capitalization as of the end of the year (source: CRSP). *Age* is the number of years (in logarithm) since the year of the first company observation in CRSP. *CapEx* is capital expenditures divided by lagged total assets. *Leverage* is the sum of total long-term debt and total debt in current liabilities scaled by the sum of total long-term debt, total debt in current liabilities and total stockholder's equity, $(DLTT_{j,t}+DLC_{j,t})/ (DLTT_{j,t}+DLC_{j,t}+SEQ_{j,t})$. $R\&D_{j,t}$ is R&D expenditures scaled by sales. Missing R&D values are replaced with zero; we add an R&D dummy variable that equals one for missing R&D values and zero otherwise. All continuous variables are winsorized at the top/bottom 1%. The estimation is by a panel regression with firm and year fixed effects. Standard errors are clustered at the firm level. Estimation period: 1990-2014. Our sample includes data on Compustat firms between 1990 and 2011 excluding financials and utilities (2-digit SIC codes of 49 and 60-69). We start with all qualified firms that had SB in 1990, of which some de-staggered.

Panel A: Number of firms that de-staggered their boards between 1990 and 2011, using the IRRC data.

1993	1995	1998	2000	2002	2004	2006	2007	2008	2009	2010	2011
10	8	16	23	8	25	63	29	26	24	34	65

Panel B: Panel regression, the effect of board de-staggering on return on assets (ROA). *t*-values are in parentheses and *** and ** indicates significance at 1% and 5%, respectively.

	Dependent variable: $ROA_{j,t}$	
	(1)	(2)
***De-stagger*$_{j,t}$**	-0.0067 (-1.17)	-0.0055 (-0.98)
***Size*$_{j,t-1}$**	-0.0245*** (-6.47)	-0.0245*** (-6.56)
***Age*$_{j,t-1}$**	-0.0020 (-0.26)	-0.0042 (-0.57)
***CAPEX*$_{j,t-1}$**		0.1049*** (3.03)
***Leverage*$_{j,t-1}$**		-0.0502*** (-6.07)
***R&D*$_{j,t-1}$**		-0.2126*** (-6.25)
***R&D Dummy*$_{j,t-1}$**		0.0128** (2.20)
Adj. R-sq **N**	0.5791 14,014	0.5936 13,844