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DOES GREATER PUBLIC SCRUTINY HURT A FIRM'S PERFORMANCE?

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ABSTRACT

Public attention to a firm may provide valuable monitoring, but it may also have a dark side by constraining management's decisions and distracting it. We use inclusion in the S&P 500 index as a positive shock to public attention. Media coverage, Google searches, SEC downloads, SEC comment letters, shareholder proposals, analyst coverage, and lawsuits increase following inclusion. Post-inclusion performance falls and is negatively related to the increase in attention. Included firms' investment and payout policies become more similar to those of index peers and the increase in similarity is positively related to the size of the attention increase.

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1. Introduction

The media, investors, analysts, regulators, policymakers and, more generally the public, can only focus on a limited number of firms. Greater public attention can potentially lead to more monitoring of firms, which may improve firm performance. For instance, the literature shows that when shareholders are momentarily distracted, firms take actions adverse to their interests (Kempf, Manconi, and Spalt, 2016), that media attention can cause firms to change questionable actions and be subject to regulatory actions (Dyck, Volchkova, and Zingales, 2008), and that the greater scrutiny of public firms can cause firms to increase workplace safety (Liang, Qi, Zhang, and Zhu, 2021). However, greater attention can have adverse effects. It can distract managers and force them to change policies in ways that are detrimental. It may make it harder for them to maximize shareholder wealth as interests of diverse segments of the public may interfere. Founders can be reluctant to take their firm public, to quote Elon Musk, because of "the additional painful scrutiny that comes with being public".[2] CEOs of public firms also invoke this scrutiny as a reason to take their firms private. Bandiera, Guiso, Prat, and Sadun (2011) provide support for the costs of this scrutiny as they find evidence that time spent by a CEO with outsiders, which can result from greater public attention, is less productive than time spent with insiders. Consequently, while public attention has a positive side, in that it may lead to valuable monitoring, it may also have a dark side. In this paper, we investigate whether public scrutiny benefits firm performance. We find evidence that an increase in public scrutiny has an adverse effect on firm performance.

Public attention varies among public firms. Some firms consistently receive more attention because they are more prominent or salient. For firms subject to more scrutiny, mistakes may have larger consequences as they are noticed more. Policy differences with comparable firms will be better known and raise more questions. Firm actions may be more likely to be noticed and criticized by politicians. The CEO may be more at risk to testify in front of Congress. The firm may become more exposed to legal and regulatory actions. As a result, greater attention could affect performance negatively and may force firms to take actions they would not take absent the greater attention. For instance, greater public

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[2] See Vance (2015).

attention might cause management to choose policies more similar to those of peers even if it would not do so in the absence of greater public scrutiny. Management might do so because it does not want its policies to stand out, because sectors of the public push for such policies, or because these policies are optimal given the heightened attention. We therefore investigate whether one channel through which greater public attention affects performance is in causing firms with greater attention to have policies more similar to their peers.

The identification challenge in examining whether an increase in public attention causes a firm's performance to fall and its corporate policies to become more similar to those of peers with a similar level of attention is that typically an increase in public attention is caused by firm developments that themselves can affect performance. For instance, a firm may have a great improvement in performance that draws an increase in attention. The econometrician might then incorrectly conclude that firm performance and policies changed because of a change in attention when the increase in attention was caused by the increase in performance. Our identification approach is to use S&P 500 inclusion as a shock to the level of attention that a firm receives. For our purpose, index addition is exogenous to the increase in public attention we focus on. It seems implausible that the S&P committee would pick firms to include in the index because it believes that these firms will receive greater attention in the future for reasons other than being included in the index or that it would be able to identify such firms.

We show that firms joining the index receive more public attention. The identifying assumption is that firms are not selected into the index because they are expected to receive more attention in the future regardless of selection into the index and, therefore, firms selected into the index experience an increase in attention because they join the index.

Given the lack of transparency of inclusion decisions, a possible identification concern is that the S&P 500 selection committee could be selecting firms based on information about future performance or that selection itself could cause a firm to have different performance.[3] Viewed this way, inclusion

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[3] We address the lack of transparency by creating a pool of potential control firms that meet the official inclusion criteria of the selection committee. Most included firms come from the pool we construct. We then compare included firms with firms from the same industry that met the inclusion criteria the year before the inclusion but were not included. We further control for firm characteristics in our regressions as well as for firm fixed effects. Li, Liu, and Wei (2021) argue that firms curry favor of S&P to be included in the index by purchasing services from S&P. If firms were able to affect inclusion that way, it would be unlikely to affect our conclusions as firms that would find it valuable to pay more attention to index peers for reasons other than belonging in the index could do so without being in the index.

would be a performance shock and an attention shock. However, if the S&P 500 selection committee were to have private information about future performance that it would use in selecting firms into the index, it would surely select firms that are expected to perform well, which would create a bias against finding results of worse performance after selection. As a result, this possible identification concern does not weaken the interpretation of our results since we find that the attention shock causes a worsening of performance. In addition, any other argument for S&P 500 inclusion as a performance shock again would suggest better performance. For instance, if inclusion increases the demand for shares, it would decrease a firm's cost of capital which would then allow the firm to perform better.

In our empirical approach, we use a difference-in-differences (DiD) design that accounts for the selection methodology of the S&P 500 selection committee. Specifically, for firms newly added to the S&P 500 index, we choose matched firms in the same industry from a candidate pool, which is constructed following the official methodology for the selection of S&P 500 index constituents.[4] The matched firms, selected based on data from the year before index inclusion, serve as control firms mimicking how newly-indexed firms would evolve if not included into the S&P 500 index. We then carry out difference-in-differences analyses using the matched sample.[5]

We show first that firms included in the index experience a large increase in public attention. As far as we know, we are the first to show that inclusion in the S&P 500 has a broad-based, permanent, and substantial impact on public attention. We show that media coverage, analyst coverage, Google searches, SEC downloads, SEC comment letters, lawsuits, and shareholder proposals all increase following inclusion. We find that the increase in attention does not occur for firms that are comparable to the included firms before inclusion but that are not included in the index.

After having shown that a firm added to the index experiences an increase in public attention, we investigate whether the performance of the firm changes after inclusion and whether this change in

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[4] We use the index additions but not deletions in our empirical design because the majority of deletions are caused by acquisitions, which means we do not have the data for the deleted firms after the deletions.

[5] Specifically, we use the stacked regression estimator in our DiD analysis. Goodman-Bacon (2021) illustrates potential issues when using staggered shocks in DiD analysis. Baker, Larcker, and Wang (2022) propose the stacked regression estimator as one effective approach to deal with the potential issues. In particular, our clean control candidates only include firms never included in S&P 500 index and the event window is four years before and four years after an index inclusion.

performance is related to the change in attention. Specifically, we study the impact of increased public scrutiny on two measures of performance: return on assets (ROA) and cumulative abnormal returns (CAR). We find that these measures fall following inclusion, so that firm performance falls following index inclusion. To examine whether the decrease in performance is related to the increase in attention caused by inclusion, we construct an index of attention using our various proxies for attention and extract the component of attention changes related to S&P 500 inclusion. We then show that there is a negative relation between the measure of the change in attention and the performance measures for included firms. In other words, the performance decreases more for firms that experience a greater increase in attention when they join the S&P 500 index. We conduct a placebo test to support our approach by assuming that control firms are hypothetically selected into the index instead of the focal firms. Using this approach, we find that hypothetical selection is not associated with a decrease in performance that is greater for firms that experience a greater increase in attention.

Why would performance drop following an increase in attention? A possibility is management distraction since, generally, management will have to spend more time on less productive tasks involving interactions with sectors of the public. In addition, management and boards typically try to avoid controversy. Recent evidence shows that boards are sensitive to controversy and are willing to sacrifice shareholder wealth to avoid controversy. Specifically, Edmans, Gosling and Jenter (2022), in a survey of directors, find that "67% of directors admit that they are willing to sacrifice shareholder value to avoid controversy on CEO pay." When we decompose the change in ROA, we find that the increase in attention is followed by higher costs and lower margins. These changes are consistent with management being more reluctant to face controversy because of aggressive actions to reduce costs. We find directly that idiosyncratic volatility falls following inclusion, which is consistent with management becoming more conservative. Another way for a firm to reduce controversy is to adopt investment and financial policies that are more suited to the higher level of public scrutiny. Such policies are likely to be more similar to the policies of their industry peers that have a similar level of attention, namely their industry peers in the index. Firms with very different policies are more vulnerable to criticism by stakeholders since they have to defend their choices.

If optimal policies for firms change because of greater public attention as a result of being included in the index, we would expect firms to gather more information about the policies of their peers, to add board members with experience in similar levels of attention, and to incentivize management through compensation to pursue policies that are pursued by peers with similar levels of attention. We show that firms make changes that help them be better informed about the policies of their index peers. In particular, included firms pay more attention to the SEC filings of their index industry peers after inclusion and this effect is large. Further, firms that join the index increase the number of board members with S&P 500 experience. Such board members would be more knowledgeable about the issues that arise due to the heightened public scrutiny of firms in the index. Included firms also change the benchmark peer group for managerial compensation so that it includes more S&P 500 firms. Both effects are strong. Before joining the index, a firm's board has a median of 16% of members with S&P 500 experience. After inclusion, the median is 23%. With the composition of the compensation peer group, we find that an added firm has 41.3% of firms in the S&P 500 before addition and 50.9% after addition, or a relative increase of 23.2%.

We next investigate whether firms added to the index change their investment policies so that they become more similar to those of comparable firms in the index. We find that, in general, S&P 500 firms invest less than other firms controlling for relevant characteristics. We therefore expect added firms to decrease investment. We show that this is the case. The decrease in investment is driven by a decrease in spending on acquisitions rather than spending on capital expenditures. Such a result is consistent with firms receiving more attention from regulators, so that they may get more pushback for acquisitions. Further, we expect the investment of included firms to comove more with their S&P 500 peers. We find strong evidence supportive of this prediction. Specifically, the investment of included firms after inclusion increases by $0.74 for every dollar of increase in investment for S&P 500 peers. Before inclusion, investment increases only by $0.29.

We also study whether firms added to the index make their payout policies more similar to those of firms in the index. In general, S&P 500 firms repurchase more than other firms. The difference is substantial as it corresponds to 1.9% of assets. We show that when a firm is added to the index, repurchases increase by 1.6% of assets. This effect holds controlling for firm characteristics and with

5

both year and firm fixed effects. We further show that the repurchases of an added firm comove more with the repurchases of index industry peers after inclusion. The effect is large. Before inclusion, the included firm's repurchases increase by $0.22 for each dollar of increase in index peer firms' repurchases. After inclusion, a one-dollar increase in repurchases of index peers is accompanied by a $0.76 increase in repurchases for the included firm.

If the policy changes we document are the results of increased attention to firms added to the S&P 500 index, we expect the changes to be stronger for firms that experience greater increases in public attention as a result of inclusion. To test this hypothesis, we regress the policies on the inclusion-driven changes in attention. We find that the greater the increase in attention, the greater the increase in the similarity of corporate policies.

It is well-known that index inclusion leads to an increase in ownership by passive investors. We address the possibility that the increase in policy similarity we document is driven by an increase in passive institutional ownership. We find that the increase in similarity is not related to the increase in passive ownership.

The recent literature on the effects of index additions focuses on the annual reconstitution of the Russell indices because the process for changes to the S&P 500 index is not as transparent.[6] Specifically, the reconstitutions of the Russell indices make it possible to implement an econometric technique that compares firms that are very similar in market capitalization but belong to different indices. We show that Russell reconstitutions do not cause an increase in public attention of the type we document for inclusion in the S&P 500 index. Therefore, Russell indices reconstitutions would not be suitable as an instrument for attention for our study because inclusion in a Russell index does not provide a shock to attention.

In this paper, we focus on public attention. Another way to put this is that we focus on stakeholder attention, where stakeholder is understood in the broadest sense. The corporate finance literature has focused more on the implications of distracted investors than on the implications of attentive investors

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[6] Li, Liu, and Wei (2021) argue that firms curry favor of S&P to be included in the index by purchasing services from S&P. If firms were able to affect inclusion that way, it would be unlikely to affect our conclusions as firms who would find it valuable to pay more attention to index peers for reasons other than belonging in the index could do so without being in the index.

for the behavior of corporations. This literature shows that managers take actions detrimental to shareholders when the shareholders are distracted (Kempf, Manconi, and Spalt, 2016). The literature also shows that managers time disclosures to take advantage of investor distraction (e.g., DeHaan, Shevlin, and Thornock, 2015; Frederickson and Zolotoy, 2016; Bonsall, Green, and Muller, 2020). Abramova, Core, and Sutherland (2020) argue that changes in institutional investor attention affect disclosure choices, but not in a way that is economically significant. Focusing on distracted investors helps with identification when the source of distraction is unrelated to the focal firm. With our identification, we can focus on an increase in public attention rather than on the impact of distracted investors.

We also contribute to a large and growing literature examining how attention by the media affects a firm's governance. This literature, at least in part, relies on the impact of media attention on CEO human capital (Dyck, Volchkova, and Zingales, 2008; Liu and McConnell, 2013). Liu, McConnell, and Xu (2017) show that both the level and the tone of media attention to a firm affect its CEO's board opportunities after retirement. Kuhnen and Niessen (2012) show that media attention to managerial compensation affects the components of pay, and Weisbach (2007) argues that firms may structure pay to avoid public attention. The literature also has evidence of the negative effects of media attention. He and Tian (2013) show that analyst coverage can have an adverse impact on innovation, while Dai, Shen, and Zhang (2020) find that media attention can have both positive and negative effects on innovation. With our investigation, we consider firms that experience a lasting shock to attention for reasons unrelated to specific actions by these firms.

Our paper contributes to the large literature on index additions and the impact of changes in passive ownership on firms. Two papers in the index addition literature examine greater investor awareness of a company as a potential benefit from addition to the S&P 500. Denis, McConnell, Ovtchinnikov, and Yu (2003) find that EPS forecasts improve after inclusion and argue that this improvement could result from greater investor awareness that could lead to more monitoring. EPS are affected by the increase in repurchases. We find a significant decrease in net income over assets (ROA). ROA is not affected by the number of shares. Chen, Noronha, and Singal (2004) use greater investor awareness to explain why inclusion is associated with a stock price increase but deletion is not associated with a stock price

decrease. Our paper is focused on performance subsequent to inclusion rather than on the stock price impact of inclusion.

The existing literature uses changes in indices as an instrument for changes in passive institutional ownership. It examines how changes in passive ownership affect firm governance and policies. For instance, Boone and White (2015) find that the increase in quasi-indexer ownership associated with the demotion of a firm from the Russell 1000 index to the Russell 2000 index results in more information dissemination from managers and analysts. Appel, Gormley, and Keim (2016) find that passive mutual funds influence governance positively through their voting choices at the annual shareholder meeting, but Schmidt and Fahlenbrach (2017) examine high-cost governance activities requiring continuous monitoring throughout the year and conclude that an increase in passive institutional membership increases the CEO's power at the expense of shareholders. Some papers in the literature on the impact of an increase in passive ownership focus on corporate policies and show that increases in passive ownership affect corporate policies. In particular, Billett, Diep-Nguyen, and Garfinkel (2020) argue that S&P 500 index inclusion decreases a firm's investment-stock price sensitivity because it reduces the informativeness of stock prices, Cao, Gustafson, Velthuis (2019) find that firms joining the Russell 2000 index use more equity financing and less bank financing, and Crane, Michenaud, and Weston (2016) show, using index inclusion, that increases in institutional ownership increase dividends and repurchases. The results we document are distinct from the results in that literature since changes in passive ownership cannot explain why the investment and payout policies of included firms comove more with the policies of their index peers after inclusion in the S&P 500.

2. Sample construction

Daily and monthly stock data are from CRSP. Corporate accounting data are from Compustat. Data on media coverage are from RavenPack News Analytics. Google search volume index data for individual firms are from Google Trends. Data on financial analysts are from IBES. Data on SEC comment letters and lawsuits are from Audit Analytics. Shareholder proposal data are from Institutional Shareholder Services (ISS). Institutional ownership data are from Thomson Reuters 13F. Mutual fund holdings data are from the CRSP Mutual Fund Database and Thomson Reuters Mutual Fund Holdings

(S12). The data on comparison groups in executive compensation contracts, available from 2006, are from IncentiveLab. The data on board characteristics are from BoardEx. S&P 500 index addition data are from Siblis Research. Our sample starts in 1997 and ends in 2017, covering a period of the past two decades. Our sample includes 659 S&P 500 additions. Variables are defined in the Appendix. Table 1 shows summary statistics.

3. Empirical design of the difference-in-differences analysis

To investigate the impact of an increase in public attention on a firm's corporate policies, we carry out difference in differences (DiD) analyses where treatment is the attention shock resulting from S&P 500 index addition. We first use DiD analyses to show that S&P 500 inclusion causes an increase in attention. Specifically, we first identify all S&P 500 additions in our sample period. Added firms are our treated firms. Control firms in the DiD analysis are expected to be similar to treated firms except being treated, so that treated firms would have evolved in a similar way as control firms if they were not added to the S&P 500 index.

To identify control firms, we start by limiting our sample to firms that have the potential to be added to the S&P 500 index, which covers leading firms in leading industries of the US economy. In practice, the S&P 500 index is maintained by the US Index Committee that meets monthly and makes decisions on index constituents including index additions. The Index Committee follows published guidelines when selecting index constituents. For example, candidates for S&P 500 index constituents are usually industry leaders, and should be US firms satisfying requirements on profitability, market capitalization, stock liquidity, and trading records.[7] We use these requirements to create a pool of control candidate firms. Though the Index Committee has discretion to deviate from the guidelines, we find that such deviations are rare in our sample (less than 5% of the firms selected are firms that may deviate in some way from the guidelines other than the float guideline that we cannot check as the data is not publicly available).[8]

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[7] Please see more details about the official methodology for the selection of S&P 500 index constituents at https://www.spglobal.com/spdji/en/documents/methodologies/methodology-sp-us-indices.pdf

[8] Li, Liu, and Wei (2021) find that only 78.26% of firms that are included from 2015 to 2018 meet the float guideline, but that is based on their own choices about how to exclude ownership stakes from the float. We cannot

Specifically, based on firms covered by CRSP and Compustat, we require potential control firms to be US firms that are not S&P 500 firms. The other criteria apply only the year before the inclusion of a firm. To start with, we keep the ten largest firms (by market capitalization) in an industry as industry leaders, where we define an industry at the 2-digit SIC level. For remaining firm-years, we apply filters following the S&P official guidelines for S&P 500 index selection. In particular, we require a firm's market capitalization to be larger than the threshold shown by the official guidelines for that year. We only keep liquid stocks with turnover ratios above one.[9] We require firms' annual net income (excluding discontinued operations) to be positive. We require a firm to have at least a one-year stock trading record (i.e., at least one year after its IPO). These firms have the potential to be added to the S&P 500 index and be a potential control firm for our DiD analysis. We then match each included firm with two firms from the control candidate pool, which are in the industry of the included firm and have the closest market capitalization to the included firm at the end of the calendar year before the year of the index inclusion. The logic for matching on market capitalization is that the S&P Index Committee uses market capitalization as its metric for selecting industry leaders. We find that there is no significant difference in market capitalization between the treated firms and the control firms. We use an event window of four years before and four years after an index addition and the addition year is excluded.

We carry out a DiD analysis for a sample of treated and control firms using the following specification:

$$Y_{it} = \beta_0 + \beta_1 \cdot \text{SP500Add}_{it} + \beta_2 \cdot Pre\text{SP500Add}_{it} + X_{it} \cdot \Gamma + \mu_i + \nu_t + \epsilon_{it}, \tag{1}$$

where i is for firm i and t is for year t. Y is the dependent variable of interest, SP500Add is an indicator variable for S&P 500 index addition, which equals one for a treated firm after its addition year and zero

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assess whether their conclusion is based on a different approach from S&P in computing the float or whether S&P deviates from its guidelines. The float guideline is the guideline that Li, Liu, and Wei (2021) conclude is violated the most.

[9] In the S&P official guideline, the turnover is defined based on the share float. Unfortunately, the data on share float that they use is no publicly available for our sample period. We therefore calculate the annual stock turnover ratio as the annual dollar trading value divided by market capitalization, which is smaller than the turnover ratio based on share float. Nevertheless, we apply the requirement that turnover must exceed one to our measure.

otherwise, and PreSP500Add is an indicator variable for the pre-treatment trend, which equals one for a treated firm in the year before its addition and zero otherwise, X is a vector of control variables, Γ is a vector of regression coefficients on the controls, μ_i is the firm fixed effect, ν_t is the year fixed effect, and ϵ_{it} is the error term.

The treatment effect of the DiD analysis is captured by the coefficient of SP500Add, β_1. In a DiD analysis, it is important to check the parallel trend condition. In our design, the coefficient of PreSP500Add, β_2, is for the test of the parallel trend condition. Specifically, an insignificant β_2 coefficient indicates that the treated group and the control group are not statistically different from each other before addition, which suggests the parallel trend condition is satisfied.

To study the impact of S&P 500 inclusion on the similarity of firm policies, we use the following specification:

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\begin{aligned}
Y_{it} = \beta_0 &+ \beta_1 \cdot Y_{\text{SP500Peer}_{it}} \times \text{SP500Add}_{it} + \beta_2 \cdot Y_{\text{SP500Peer}_{it}} + \beta_3 \cdot \text{SP500Add}_{it} \\
&+ \beta_4 \cdot Y\_\text{SP500Peer}_{it} \times \text{PreSP500Add}_{it} + X_{it} \cdot \Gamma + \mu_i + \vartheta_t + \varepsilon_{it},
\end{aligned}
\tag{2a}
$$

where Y is the dependent variable of interest, such as investment or repurchases, and Y_SP500Peer is the corresponding average of industry peers in the S&P 500 index. X represents control variables. A positive coefficient β_1 is evidence that the relevant policy of a firm comoves more with that of its S&P 500 index peers following S&P 500 inclusion.

We also consider the comovement of included firms' policies with their non-S&P 500 peers. As a newly included firm may put more weight on policies of S&P 500 peers, it may put less weight on some policies of non-S&P 500 peers. We thus expect the firms' policies to comove less with some policies of non-S&P 500 peers, which contrasts with the greater comovement we expect with the policies of S&P 500 peers. We use the following specification:

$$Y_{it} = \beta_0 + \beta_1 \cdot \text{Y\_SP500Peer}_{it} \times \text{SP500Add}_{it} + \beta_2 \cdot \text{Y\_NonSP500Peer}_{it} \times \text{SP500Add}_{it} + \beta_3$$

$$\cdot \text{Y\_SP500Peer}_{it} \times \text{PreSP500Add}_{it} + \beta_4 \cdot \text{Y\_NonSP500Peer}_{it} \times \text{PreSP500Add}_{it}$$

$$+ X_{it} \cdot \Gamma + \mu_i + \vartheta_t + \varepsilon_{it}, \tag{2b}$$

where Y is the dependent variable of interest, and Y_SP500Peer (Y_NonSP500Peer) is the corresponding average of industry peers (not) in the S&P 500 index. X represents the stand-alone items of the relevant interactions and other control variables. A positive (negative) coefficient β_1 (β_2) is evidence that the relevant policy of a firm comoves more (less) with that of its (non-)S&P 500 peers following index inclusion.

In the results highlighted in the text, we match included firms with firms of similar market capitalization among the set of eligible firms before inclusion. For robustness, we use an alternative approach in selecting control firms. Specifically, we use a propensity score match on market capitalization, ROA, and 2-digit SIC industry (exact match) in the year before a treated firm is added to the index, so that the matching process is not affected by index additions. This match controls for accounting performance, so that the included firm is matched with firms of similar performance before selection, which addresses the concern there could be mean reversion in performance after selection. We report the results in Internet Appendix Table IA7. We find similar results with this match.

4. S&P 500 inclusion draws greater public attention to firms: Evidence and implications

In this section, we show that inclusion in the index represents a positive shock to the level of public scrutiny a firm receives. We consider successively media attention, measures used in the literature as proxies for investor attention, and regulatory and legal attention. These proxies for attention measure different dimensions of public scrutiny.

4.1. Media attention

Joining the index increases the prominence of a firm, which is expected to attract more media attention, which is one dimension of public attention. Furthermore, the increased prominence may lead to more scrutiny by the media and more criticism of adverse events affecting firms in the index, such

12

as mistakes made by managers. In this section, we study the effect of S&P 500 inclusion on media coverage of newly added firms.

We measure media attention by the number of news stories closely related to a firm. The news data are from RavenPack News Analytics (Dow Jones edition), which covers all news stories and press releases reported by the Dow Jones Newswires, the Wall Street Journal, Barron's, and MarketWatch. RavenPack applies machine learning techniques to analyze news concerning firms and creates a relevance score (between 0 and 100), indicating how strongly related a firm covered is to the underlying news story. In particular, a relevance score above 75 is considered significantly relevant and a relevance score above 90 indicates that the firm covered is referenced in the main title or headline of the news item.

Specifically, we define two media attention measures based on the relevance score: News_Re75 (News_Re90) is the natural logarithm of one plus the number of news stories covering a firm with a relevance score above 75 (90). To study whether inclusion in the S&P 500 increases media attention to the included firm compared with other comparable firms, we use equation (1) described in Section 3 and the dependent variable is News_Re75 or News_Re90.

Models 1 and 2 of Panel A in Table 2 report the results. Model 1 (2) shows that media attention increases by 12% (14%) after inclusion and the coefficient on SP500Add is positive and statistically significant at the 5% (1%) level.[10] There is no difference in media attention between the newly added firm and control firms in the year before inclusion.

4.2. Investor attention

We measure investor attention using the Google search volume index (SVI) for a firm. Da, Engelberg, and Gao (2011) explain the advantages of SVI as a measure of attention and call it a "*revealed* attention measure". This index is the average monthly search volume index from Google Trends (on a scale from 0 to 100) within a firm-year measured from 2004 to 2020 or from the first year

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[10] In our DiD analysis, the year of S&P 500 inclusion is dropped to make sure that the increase in media attention we document is not driven by news associated with the event of the firm being added to the index.

that it becomes available for a firm. We first show that attention to firms increases in the month of inclusion in the S&P 500 but not in the month of inclusion in the Russell 1000.

Figure 1 shows averages of the monthly search volume for firms added to the S&P 500 and to the Russell 1000 from 2004 to 2017 from month -6 before inclusion to month +6 after inclusion. The results for month zero are striking as there is no evidence of an increase in attention in month zero for Russell 1000 inclusions but there is strong evidence of such an increase for S&P 500 inclusions. The Google search index in the month of S&P 500 addition is 6.44 percentage points higher than the average of months -2 and -1, or 18.84% higher. The sample has 265 (1,257) S&P 500 (Russell 1000) additions. This difference is significant at the 1% level. In contrast, the index in the month of Russell 1000 addition is 0.18 percentage point higher than the average of the two months before the addition or 0.52%. The difference between the percentage point increase for S&P 500 inclusions and for Russell 1000 inclusions is significant at the 1% level.[11]

We turn next to an examination of whether inclusion in the S&P 500 increases attention to the included firm compared to other firms over the same time period. To conduct that examination, we use equation (1) described in Section 3. The dependent variable is Google, which is the average monthly SVI (scaled by 100) within a firm-year. Model 1 of Panel B in Table 2 reports the result. Model 1 shows that SVI increases by 3.3% after inclusion. The coefficient on SP500Add is positive and statistically significant at the 5% level. There is no difference in SVI in the year before inclusion.

We turn next to a measure of attention to a firm that includes mostly institutional investors and corporations, namely the number of clicks and downloads of firms' SEC 10K and 10Q filings, following Loughran and McDonald (2017). The data are originally from SEC's (EDGAR) server log. Loughran and McDonald cleaned the data and made it publicly available.[12] This data is available between 2003 and 2015. However, as discussed by Loughran and McDonald (2017), there are data issues before March 2003 and between September 23, 2005 and May 10, 2006. Therefore, we use as our sample period the years between 2007 and 2015. To assess whether S&P 500 inclusion leads to an increase in clicks and downloads of firms' SEC 10K and 10Q filings, we use equation (1) with the dependent

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[11] The relevant results are reported in Internet Appendix Table IA1.
[12] https://sraf.nd.edu/data/edgar-server-log/

variable Log(Views), which is the number of clicks and downloads of firms' SEC filings (in natural logarithm). Model 2 shows the result. We find that SEC filing clicks and downloads increase by 17.9% after index inclusion.

Next, we focus on analyst coverage. In an earlier study on earnings management, Yu (2008) finds a positive relation between firms in the index and analyst coverage. Here, we focus specifically on whether inclusion increases analyst coverage. Because analysts are responsive to the needs of institutional investors, we expect analyst coverage to increase when investors pay more attention to a firm. We use equation (1) with the dependent variable Log(Analysts), which is the number of analysts following a firm (in natural logarithm). Model 3 reports the results. The coefficient of SP500Add is positive and statistically significant at the 5% level. The results confirm that more analysts follow a firm after it is included into the S&P 500 index.

Finally, we examine whether inclusion changes the number of shareholder proposals. We would expect that, when shareholders pay more attention to firms, they tend to have more proposals to exert greater influence on firm policies, which is more likely to distort the original plans of managers. We thus use the number of shareholder proposals as a proxy of investor attention and study the effect of S&P 500 inclusions on the attention to newly added firms. Specifically, we use equation (1) with the dependent variable SH Proposals, which is the natural logarithm of one plus the number of shareholder proposals for a firm in a year. Model 4 shows that the coefficient of SP500Add is positive and statistically significant at the 1% level. In particular, S&P 500 inclusion increases SH Proposals by 18.9%. The result implies that S&P 500 inclusions tend to trigger greater shareholder attention in form of a larger number of shareholder proposals.

4.3. Regulatory and legal attention

After a firm is included in the S&P 500 index, it may also attract more attention from regulators, such as the Securities and Exchange Commission (SEC). It may also be more likely to be involved in lawsuits. The greater regulatory and legal attention can both exert pressure on firms and, in turn, push them to behave more like their peers in the S&P 500 index. In this section, we show that firms receive more regulatory attention and are involved in more lawsuits after joining the S&P 500.

We first consider evidence of greater attention from the SEC. Holzman, Marshall, and Schmidt (2018) examine the intensity with which SEC-owned IP addresses download firm financial filings, and they find that financial filings of firms in the S&P 500 index are downloaded with greater intensity. We measure a firm's regulatory attention using the number of comment letters from the SEC. To monitor and enhance compliance with the applicable disclosure and accounting requirements, the SEC's Division of Corporation Finance selectively reviews corporate filings.[13] The selection criteria are not publicly disclosed. However, Section 408 of the Sarbanes-Oxley Act requires the SEC to consider certain criteria, such as paying attention to firms whose operations significantly affect any material sector of the economy.[14] Inclusion in the S&P 500 could be an indicator of whether a firm affects a sector of the economy. The filing review can result in a comment letter requesting the selected firm to provide additional information. To measure a firm's regulatory attention, we define an indicator variable, SEC Letter, which is equal to one if a firm receives an SEC letter within a year and zero otherwise. We use equation (1) with the dependent variable SEC Letter. Model 5 of Panel B in Table 2 reports the result. The coefficient of SP500Add is positive and statistically significant at the 5% level, which shows that a firm is more likely to be selected in the filing review process and receive SEC comment letters after the firm is included in the S&P 500 index.

We measure a firm's legal attention by the extent to which it is involved in lawsuits. Specifically, we define Lawsuits as the natural logarithm of one plus the number of federal district lawsuits within a firm-year. We use equation (1) with the dependent variable Lawsuits. Model 6 reports the result. The coefficient of SP500Add is positive and statistically significant at the 10% level. This means a firm tends to be involved in more lawsuits and attract greater legal attention after it is included in the S&P 500 index.

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[13] More details are available at https://www.sec.gov/divisions/corpfin/cffilingreview.htm.
[14] https://viewpoint.pwc.com/dt/us/en/pwc/sec_comment_letters/comment_letter_trends_DM/The_comment_letter_process.html.

5. Public attention shock and firm performance

We have shown that S&P 500 inclusion represents an attention shock. In this section, we investigate whether the attention shock has real effects on firm performance.

5.1. Inclusion and firm performance

We first investigate whether the increase in public attention caused by index inclusion has real effects on firm performance. We consider two measures of firm performance, which are ROA and the one-year cumulative abnormal return (CAR).

Specifically, ROA is defined as the ratio of net income over assets, which is an accounting performance measure not depending on the number of shares outstanding, so that it is not mechanically affected by repurchases. The one-year CAR is the long-run cumulative abnormal return of a firm within one year. To calculate the one-year CAR, we first subtract a firm's monthly stock return by that of a portfolio matched based on market capitalization, book-to-market, and the prior-year return, following Daniel, Grinblatt, Titman and Wermers (1997). We then cumulate the monthly abnormal returns within a fiscal year as the one-year long-run CAR.

Figure 2 shows how these performance measures evolve from year -4 to year +4. Specifically, ROA (Panel A) and the one-year CAR (Panel B) are regressed on yearly indicator variables relative to the year of S&P 500 inclusion, which equal one for treated firms in the corresponding year and zero otherwise, and the control variables used in Table 3. The Y-axis plots the coefficient estimates on the yearly indicator variables. The X-axis shows the year relative to the S&P 500 inclusion year. The year before inclusion is set as the base year and the year of inclusion is dropped. The grey bars show the 95% confidence intervals of the coefficient estimates, where the confidence intervals are based on standard errors clustered at the firm level. The figure shows that the performance of treated firms is indistinguishable from that of control firms before S&P 500 inclusion and falls below the performance of control firms after inclusion.

Our regression analysis uses the model shown in equation (1). We first investigate how ROA changes with inclusion. Model 1 of Panel A in Table 3 reports the result. The coefficient of SP500Add is negative and statistically significant at the 1% level. In particular, ROA falls by 1.3 percentage points

17

when a firm joins the S&P 500 index, which corresponds to 15.1% of its standard deviation. The result demonstrates that firm performance measured by ROA worsens following S&P 500 index inclusion.

We conduct a placebo test using control firms. Specifically, for a given included firm, in the set of firms eligible to be included we choose the industry peer firm that has the closest market value to the included firm. We then assume that this matching firm is hypothetically selected into the index instead of the firm that is actually included in the index. We then select a control firm for this hypothetically selected firm using a propensity score matching by market capitalization and the same industry. Following this approach, we re-estimate Model 1 assuming that the treated firm is the hypothetically selected firm. Model 2 shows that hypothetically treated firms do not experience worse performance after the hypothetical treatment.

ROA can fall because a firm's revenue falls or its expenses increase. We estimate separately whether treatment causes a change in revenue to assets or in expenses to assets. Model 3 shows that the coefficient of SP500Add is positive but statistically insignificant, which means revenue does not change significantly following inclusion. In contrast, Model 4 shows that expenses increase following inclusion. This is consistent with the greater attention making management unwilling to cut costs aggressively in a way that could generate controversy. We also calculate the profit margin as the ratio of net income over revenue. In Model 5, we find that the profit margin falls for treated firms.

We turn next to the effect of treatment on CAR. Model 6 reports the estimate. The coefficient of SP500Add is negative and statistically significant at the 5% level. In particular, the one-year CAR decreases by 3.9 percentage points when a firm joins the S&P 500 index, which corresponds to 10.5% of its standard deviation. Our estimation does not use the CAR of the year of inclusion. One might be concerned that inclusion has a positive valuation effect, so that overall inclusion could have a positive long-run effect on returns if the year of inclusion is included. This is not so. Over our sample period, the year of inclusion CAR is significantly negative at -0.36% per month.[15]

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[15] This is consistent with evidence that the positive reaction to inclusion that puzzled financial economists has disappeared (see Greenwood and Sammon, 2022, for possible explanations for the disappearance of the positive reaction to inclusion in the index).

In sum, the results in Panel A of Table 3 are consistent with an adverse impact of the attention shock of S&P 500 inclusion on firm performance. Panel A of Internet Appendix Table IA7 shows that the results of Panel A of Table 3 hold when we select control firms taking into account their ROA before inclusion. We turn next to showing that the decrease in firm performance is directly related to the magnitude of the attention shock.

5.2. Is the change in public attention related to the change in performance?

To extract the fraction of the attention change related to S&P 500 inclusion, we use principal component analysis (PCA) to construct a measure of attention based on the three attention measures used in Section 4 for which we have data for the whole sample period: Log(Analysts), SEC letters, and Lawsuits.[16] In particular, we extract the first principal component in the PCA and denote it as Attention. We then calculate the part of Attention related to S&P 500 inclusion through the following regression estimated at the firm level:

$$\text{Attention}_{it} = \beta_0 + \beta_1 \cdot \text{SP500Add}_{it} + \varepsilon_{it}, \tag{3}$$

where Attention is as defined above, SP500Add is the indicator variable that equals one for a treated firm after its addition year and zero otherwise, and ε_{it} is the error term. Specifically, we use the fitted value, Attention_SP500$_{it}$, as the attention increase resulting from S&P 500 inclusion for firm i at time t.

To investigate the relation between the attention shock and firm performance, we use the following specification:

$$Y_{it} = \beta_0 + \beta_1 \cdot \text{Attention\_SP500}_{it} + X_{it} \cdot \Gamma + \mu_i + \nu_t + \varepsilon_{it}, \tag{4}$$

where Y is ROA, Rev/Assets, Expenses/Assets, Profit margin, or one-year CAR, Attention_SP500 is the attention increase resulting from S&P 500 inclusion as described above. Panel B of Table 3 reports

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[16] For other attention measures we only have data for about half of our sample period, however. PCA only works for observations in which all related variables are non-missing. Nevertheless, we run robustness tests using 6 attention measures (available in a much shorter period) and the results are consistent, as shown in Internet Appendix Table IA2.

the results. Model 1 shows that the treatment effect on ROA is negatively related to the increase in attention, so that firms that experience a greater increase in attention from being included in the index have a greater decrease in ROA. The coefficient of Attention_SP500 in Model 1 is negative and statistically significant at the 5% level. The economic impact is also significant. In particular, a one-standard-deviation increase in Attention_SP500 decreases ROA by 0.66 percentage point ($-0.012 \times$ 0.553), which is about 12.2% of the average ROA in our sample.[17] Panel B of Internet Appendix Table IA7 shows that the result of Panel B of Table 3 for ROA holds when we select control firms taking into account their ROA before inclusion.

We implement our placebo test for Model 1 as well. To do that, we estimate equation (3) for the hypothetically selected firms. We then repeat the estimation of Model 1 using as treated firms the hypothetically selected firms. Model 2 shows that, in contrast to the results for actually included firms, there is no relation between post-selection performance and attention for hypothetically selected firms.

Model 3 shows that the greater the increase in attention, the greater the increase in revenue. Though being included in the index does not increase revenue significantly, firms that have a greater increase in attention experience a statistically significant greater increase in revenue. We find next in Model 4 that the increase in expenses is greater for firms with a greater increase in attention. In Model 5, the profit margin falls more for firms that experience a greater increase in attention. Lastly, the coefficient Attention_SP500 in Model 6 is negative and statistically significant at the 10% level. A one-standard-deviation increase in Attention_SP500 reduces the one-year CAR by 2.49 percentage points, which corresponds to 37.7% of the average CAR in our sample. In sum, the findings in Panel B of Table 3 suggest that the impact of the attention shock on performance increases with the magnitude of the attention shock.

In these tests using equation (4), Attention_SP500$_{it}$ is estimated at the firm level using equation (3), so that there is a concern about errors in variables. One way to address this issue is to estimate equation (3) across panels of subsets of observations. We do that in two ways. First, we estimate the regression at the industry level (4-digit SIC). We then estimate equation (4) using Attention_SP500 for the

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[17] In the test sample the standard deviation of Attention_SP500 is 0.553.

industry. The results are similar. Further, all three coefficients on Attention_SP500 are larger in absolute value. We show the results in Models 1 and 2 of the Internet Appendix Table IA3. A second approach to address the issue of errors-in-variables is to use an indicator variable for firms that experience a larger increase in attention. The results are shown in Columns 3 and 4 of Table IA3. The results are similar to those in the table. Lastly, we estimate equation (3) using the whole sample but with firm and year fixed effects and use fitted values in equation (4). We show the results in Columns 5 and 6 of Table IA 3. In that case, the coefficient on Attention_SP500 is negative and statistically significant in each regression.

The evidence in this section shows that the performance of treated firms is lower following the attention shock and that the extent of the decrease in performance is increasing in the size of the attention shock. For these facts to be explained by something other than the attention shock, one would need to find a variable that is correlated with the attention shock and the size of the attention shock. This variable would then have to be negatively related to performance and would have to explain the evidence we turn to next. We are not aware of a variable that the literature has suggested that could perform this role.

6. Newly-included firms' attention to index peers, CEO incentives, and board structure

We would expect firms to react to the increase in public attention by taking steps to minimize the potentially adverse effects of increased attention. To do so, they would want to understand better how other firms cope with the level of attention that comes with belonging to the S&P 500 index and they would want management to have incentives to pay attention to the policies of these firms. In this section, we show that, after inclusion, firms search the filings of S&P 500 firms and S&P 500 industry peers more, they increase the number of S&P 500 firms in their compensation benchmark peer group, and their board experiences an increase in the number of members with experience at S&P 500 firms.

As a firm is included in the index and experiences an increase in attention, we would expect it to pay more attention to its peers in the index for at least two reasons. First, it can learn from firms that are in a similar situation. Second, it will be questioned by stakeholders as to why its policies differ from those of its index peers because these firms are the most natural comparables for the included firm. We

find consistent evidence following the approach of Bernard, Blackburne, and Thornock (2020).[18] Specifically, Bernard, Blackburne, and Thornock (2020) use the logs of SEC's EDGAR repository and construct a novel measure for firms' search activities on SEC filings. In particular, this measure identifies a pair of firms including both the searching firm and the target firm that is searched, where the searching firm is identified by its IP address. This measure makes it possible to identify which firms are the search targets of firms newly included in the S&P 500 index. Accordingly, we calculate a firm's views of SEC filings of S&P 500 firms and views of SEC filings of its S&P 500 peers using this measure.

The relevant results are reported in Table 4. Model 1 uses equation (1) and the dependent variable is a firm's views of S&P 500 firms, which is the sum of a firm's clicks and downloads of SEC filings of all S&P 500 firms (excluding the firm itself, in natural logarithm) in a year. We see that a firm increases its views of other S&P 500 firms after S&P 500 inclusion. When we narrow the set of target firms to S&P 500 peers where a peer is a firm with the same one-digit SIC code, we see that included firms also increase their views of S&P 500 peers, as reported in Model 2.

Next, we examine whether index inclusion affects how management is evaluated. To the extent that the firm rationally pays more attention to index peers because they face a similar environment to the one faced by the included firm in terms of attention, we would expect the board to want to incentivize management to pay attention to index peers. As a result, we expect a change in how management is compensated. Boards usually specify a list of peer firms in executive compensation contracts and use these peers as the benchmark of executive performance in the relative performance evaluation (Aggarwal and Samwick, 1999; Gong, Li, and Shin, 2011). This relative performance determines the performance-based portion of the CEO's compensation. If a board includes more S&P 500 firms in a CEO's peer group following the addition of the firm to the index, we would expect that this leads the CEO to take actions more similar to those of the firm's peers in the index.

We collect the data on peer firms from IncentiveLab and define a variable %SP500Peer as the portion of S&P 500 peer firms in a firm's peer group for the relative performance evaluation. This data

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[18] We thank Bernard, Blackburne, and Thornock (2020) for sharing the data. We use the pairwise downloads based on the predicted IP addresses.

is available since 2006. We first show univariate results that compare the average of %SP500Peer in newly added firms before and after S&P 500 addition. These results are reported in Panel A of Table 5. The results show that before index addition, the average portion of S&P 500 peers is 41.3% and the average is 50.9% after index addition, which is 9.6 percentage points higher or relatively 23.2% higher. The difference in the averages is statistically significant at better than the 0.01 probability level.

We further carry out a DiD analysis and use %SP500Peer as the dependent variable. Results are reported in Panel B. The coefficient of SP500Add in Model 1 is positive and statistically significant at the 1% level. The coefficient of 0.068 means that a newly added firm increases the portion of S&P 500 peers in the relative performance evaluation peer group by 6.8 percentage points, which is 16.5% of the average proportion before the index addition. Note that the coefficient on PreSP500Add is small and insignificant, which indicates that there is no difference in the fraction of S&P 500 peers in the performance evaluation peer group of the treated firms and of the control firms before index addition. The evidence is consistent with the hypothesis that corporate boards incentivize managers to pay more attention to S&P 500 peers after inclusion. One might argue that the board does not necessarily know about the index inclusion when it selects the peer group in the event year. Therefore, we also estimate the regression lagging the control variables. Model 2 shows that the results are similar.

We also look at how the composition of the board changes after inclusion. As firms joining the index experience greater attention, we would expect the board to attempt to find members that have experience with the type of attention S&P 500 firms receive. We use equation (1) for the analysis. The dependent variable is the fraction of board members with S&P 500 experience (in other S&P 500 firms). Table 6 shows that a firm has more board members with S&P 500 experience after inclusion. We see that the fraction of board members with S&P experience increases significantly after inclusion. In economic terms, Model 2 shows that the fraction of board members with S&P 500 experience increases by 12.4% of its sample mean after inclusion.

It is important to note, however, that the increase in the fraction of board members with S&P 500 experience could be due to an increase in the supply of such members. It is plausible that board members with S&P 500 experience might prefer being members of boards of firms that belong in the index. In

this case, as a firm joins the index, it would be in a better position to recruit board members with S&P 500 experience.

7. How does an increase in attention affect firm corporate policies?

In this section, we investigate a specific testable channel through which an increase in attention can have real effects on firms. This channel is that greater attention leads firms to choose policies that are more similar to those of peers with similar levels of attention. Firms are likely to want to do that for at least two separate reasons. First, firms in the index have found ways to cope with increased attention and their policies reflect that. Hence, choosing such policies amounts to choosing policies that are likely optimal given the level of attention of these firms. Second, these firms are less likely to stand out if they adopt policies similar to those of their peers that have similar levels of attention.

Our approach has two steps. In the first step, we show that index inclusion results in firms changing their corporate policies so that they become more similar to those of their index peers. In the second step, we show a direct connection between policy similarity and the change in attention resulting from S&P 500 inclusion, as we find that the comovement of policies with index peers is greater for firms that experience a greater increase in attention.

We expect a level effect and a comovement effect for corporate policies from index inclusion. Consider investment. We expect an included firm to decrease investment if S&P 500 firms invest less (the level effect) and we expect an included firm's investment to comove more with the investment of its index peers (the comovement effect). We examine these two effects for investment and payouts. Further, as an included firm pays more attention to the policies of index peers, it follows that it should pay less attention to the policies of its non-index peers. We show evidence supportive of this prediction.

We interpret our results to show that policies of included firms move towards the policies of peers in the S&P 500. A concern is that instead firms in the index could change their policies to become more similar to those of the included firm. If they were to do so, the policies of index peer firms would become more similar. We investigate this possibility by examining as a placebo test whether the policies of the index peer of the included firm with the closest market capitalization comove more with the

24

policies of the other index peers after the inclusion of the new firm. We find that this is not the case and report the results in Table IA4 of the Internet Appendix.

We would expect included firms' idiosyncratic risk to fall if their policies become more similar to those of their index peers. We argue that firms under greater scrutiny will become more conservative, which again would suggest a decrease in idiosyncratic risk. In Internet Appendix Table IA8, we show that idiosyncratic falls after inclusion.

7.1. Investment

We first examine whether the investment rate of S&P 500 firms differs from that of other firms. We measure investment by the growth of total assets, which is the annual change in total assets scaled by lagged total assets. We call this measure investment. This measure has now become a standard measure of investment in the asset pricing literature (see, for instance, Fama and French, 2015). We regress investment on an indicator variable for inclusion in the S&P 500 index and control variables. Industry fixed effects are included to capture the within-industry cross-sectional heterogeneity in investment between S&P 500 firms and non-S&P 500 firms.[19] Year fixed effects are also included. The test sample includes all S&P 500 firms and the largest 500 non-S&P 500 firms (by market capitalization) each year. The results are reported in Panel A of Table 7. The coefficient on the S&P 500 membership indicator variable SP500 is negative and statistically significant at the 1% level in both models.

We then investigate the treatment effect on investment of joining the index. We use equation (1) with investment as the dependent variable. Firm fixed effects and year fixed effects are included. The test sample includes treated firms that join the S&P 500 index and control firms for the DiD analysis. The results are reported in Panel B of Table 7. The coefficient on the treatment indicator variable SP500Add is negative and statistically significant at the 1% level in Models 1 and 2. The results show that newly added firms significantly decrease their investment following index addition.

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[19] The purpose of these tests is to capture the cross-sectional variation in investment between S&P 500 firms and non-S&P 500 firms rather than the within-firm variation. We thus include industry fixed effects rather than firm fixed effects.

Instead of using the change in assets as a measure of investment, we also use the total of capital expenditures (net of divestiture), R&D, and acquisitions. In general, R&D expenses are not capitalized, but they constitute an important form of investment for firms. We show in Model 3 that there is a negative treatment effect on this measure of investment. We then look at each component of this measure of investment. We find that all three components have a negative treatment effect, but the treatment effect is significant only for acquisitions. Note that firms with greater public attention, including greater attention from possibly anti-trust authorities, might be especially leery of making large acquisitions that could become controversial.

Figure 3 shows how investment measured as the change in total assets evolves from year -4 to year +4. Specifically, investment is regressed on yearly indicator variables for each year relative to the year of S&P 500 inclusion, which equal one for treated firms in the corresponding year and zero otherwise, and the control variables (as in Model 2 of Panel B in Table 7). The Y-axis plots the coefficient estimates on the yearly indicator variables. The X-axis shows the year relative to the S&P 500 inclusion year. The year before inclusion is set as the base year and the year of inclusion is dropped. The grey bars show the 95% confidence intervals of the coefficient estimates, where the confidence intervals are based on standard errors clustered at the firm level. The figure shows that the investment of treated firms is indistinguishable from that of control firms before S&P 500 inclusion and falls below the investment of control firms after inclusion.

To study the treatment effect on the association between the added firm's investment and its industry peers in (out of) the index, we define a variable Y_SP500Peer (Y_NonSP500) as the average investment of (non-) S&P 500 peers in a firm's industry (4-digit SIC, excluding the firm itself). Panel C of Table 7 shows results on investment comovement. Model 1 uses equation (2a) of Section 3. Model 1 shows that the coefficient on the interaction Y_SP500Peer x SP500Add is positive and statistically significant at the 1% level. This result means that the investment comovement significantly increases following index inclusion. Model 2 uses equation (2b), which further considers the investment comovement with non-S&P 500 peers. The result shows that the coefficient on the interaction Y_SP500Peer x SP500Add remains positive and statistically significant at the 1% level. The coefficient on the interaction Y_NonSP500Peer x SP500Add is negative but not statistically significant. This result

shows that after S&P 500 inclusion, a firm's investment comoves more with that of S&P 500 peers. In contrast, the firm does not comove more with non-S&P 500 peers.

7.2. Payout policy

We first examine whether the payouts of S&P 500 firms differ from the payouts of other firms. We consider separately dividends, repurchases, and total payouts. We regress dividends, repurchases, and payouts on an indicator variable for whether a firm belongs to the S&P 500 index, industry and year fixed effects, and control variables. The test sample includes all S&P 500 firms and the largest 500 non-S&P 500 firms (by market capitalization) in each year. The results are reported in Panel A of Table 8. Model 1 shows that S&P 500 firms pay significantly fewer dividends than other firms do. In contrast, Model 2 shows that, within an industry, S&P 500 firms repurchase more than other firms after controlling for total assets, Tobin's q, cash flow, cash, leverage, stock return, return volatility, stock liquidity, and firm age, by about two percentage points of assets. Model 3 shows that the result for total payouts is similar to the result for repurchases.

We then investigate the treatment effect on payout policy of joining the index. Firm fixed effects and year fixed effects are included. The test sample includes treated firms included in the S&P 500 index and control firms for the DiD analysis. Panel B of Table 8 reports the results. Model 1 documents that dividends significantly increase following index addition, but the size of increase is much smaller than that in repurchases shown in Model 2. This increase is surprising given our results that S&P 500 firms pay less dividends than other firms. Model 2 shows that index addition increases repurchases by 1.6% of assets, which is 47.1% of the sample mean for repurchases of 3.4%. Model 3 shows a similar result for total payouts.

Figure 4 shows how dividends, repurchases, and payouts of the treated group evolve from year -4 to year +4 relative to the control group. We find no significant difference in years before inclusion. After inclusion, the difference is significant every year for payouts and repurchases. For dividends, the difference is significant in year +4 only.

To study the treatment effect on the comovement between the added firm's payout policies and its industry peers in (out of) the index, we define Y_SP500Peer (Y_NonSP500Peer) for dividends,

repurchases, and payouts, which are the average dividends, repurchases, and total payouts of (non-)S&P 500 peers in a firm's industry (4-digit SIC, excluding the firm itself), respectively. Equations (2a) and (2b) are used for the relevant tests. The focus is on the coefficient of the interactions Y_SP500Peer x SP500Add and Y_NonSP500Peer x SP500Add.

Results on payouts comovement are reported in Panel C of Table 8. Models 1, 3, and 5 use equation (2a) and focus on the comovement with S&P 500 peers. Model 1 shows the result for dividends. In practice, firms usually smooth dividend payments, so comovement may not be important for dividends. Nevertheless, Model 1 shows that the coefficient on Y_SP500Peer x SP500Add is positive and statistically significant at the 5% level, which means that after index inclusion, dividend payouts of newly included firms comove more with those of their industry peers in the S&P 500 index. Similarly, Model 3 shows that index inclusion increases repurchase comovement between newly included firms and their industry peers in the S&P 500. Not surprisingly, the effect on comovement is stronger for repurchases than for dividends. In particular, the magnitude of the coefficient on Y_SP500Peer x SP500Add in Model 3 for repurchases is more than twice that in Model 1 for dividends. Model 5 shows that the treatment effect on the comovement of total payouts is consistent with that of its two components as shown in Models 1 and 3.

Models 2, 4, and 6 further consider the comovement with non-S&P 500 peers using equation (2b). All coefficients on Y_SP500Peer x SP500Add in Models 2, 4, and 6 are positive and statistically significant at the 1% or 5% level, which means that following S&P 500 inclusion a firm's payout policy comoves more with that of S&P 500 peers. These findings are consistent with those in models using equation (2a). Regarding the coefficients on Y_NonSP500Peer x SP500Add, Models 2 and 6 show that, following S&P 500 inclusion, a firm's dividends and total payouts comove significantly less with those of non-S&P 500 peers, but there is no significant change in the comovement of repurchases of included firms with the repurchases of their non-S&P 500 peers, as shown by Model 4.

To address the concern that our results depend on how we define the index industry peers, we repeat the analysis using industry peers from the text-based network industry classifications (TNIC) from the

Hoberg and Phillips data library to define industry peers.[20] The results are reported in Internet Appendix Table IA5. Panel A shows that following the S&P 500 inclusion, a firm comoves more with its S&P 500 peers (TNIC) in investment and payout policies. Panel B further considers comovement with non-S&P 500 peers and the results show that following S&P 500 inclusion the comovement with S&P 500 peers all remains positive and significant, and the comovement with non-S&P 500 peers in investment (payout policies) decreases (does not change) significantly.

7.3. Increase in attention and increase in similarity of corporate policies

In this section we show that the increase in corporate policy similarity between included firms and index peers is positively related to the size of the attention shock.

To investigate the attention effect on similarity of firm policies, we use the following specification:

$$Y_{it} = \beta_0 + \beta_1 \cdot Y\_SP500Peer_{it} \times Attention\_SP500_{it} + \beta_2 \cdot Y\_SP500Peer_{it} + \beta_3 \cdot Attention\_SP500_{it} + X_{it} \cdot \Gamma + \mu_i + \nu_t + \varepsilon_{it}, \tag{5}$$

where Y stands for a firm policy, such as investment or payout, Y_SP500Peer is the average Y of S&P 500 peers in a firm's industry (4-digit SIC, excluding the firm itself). Attention_SP500 is the fitted value using equation (3) in Section 5.2. The coefficient of the interaction, β_1, captures the amplification effect of the attention increase from S&P 500 inclusion on the similarity of firm policies. Table 9 reports the results.

The results show that the coefficients of the interaction items are positive and statistically significant for investment and dividends at the 10% level and at the 1% level for repurchases and payouts. It follows that for investment, dividends, repurchases, and total payouts, the increase in attention from S&P 500 inclusion significantly amplifies the increase in similarity of firm corporate policies. The economic impacts are also significant. For example, in Model 1 on Investment, a one-standard-deviation increase in Attention_SP500 leads to an increase in corporate policy similarity of 0.122, which is 55% of the increase in similarity for a benchmark firm.[21] Panel E of Internet Appendix Table IA7 shows that the

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[20] https://hobergphillips.tuck.dartmouth.edu/
[21] The corresponding economic impacts for Models 2 to 4 are 30%, 48%, and 57%, respectively.

result of Table 9 for the similarity in policies holds when we select control firms taking into account their ROA before inclusion.

8. Do changes in institutional ownership explain the increase in corporate policy similarity?

We have shown that S&P 500 inclusion causes an increase in public attention to a firm, that performance is negatively related to the attention shock, and that one channel for this effect of the increase in attention is that the included firm changes its investment and payout policies so that they resemble more those of its index peers. It is well-known that index inclusion causes an increase in passive investment. In this section, we investigate whether our results could be due to the increase in passive investment instead of the increase in attention.

When a firm is added to the S&P 500 index, index funds rebalance their portfolios to include the firm in their holdings. We show that for our sample period index inclusion is associated with an increase in passive institutional ownership and a decrease in active institutional ownership, so that the net effect is no change in institutional ownership. The literature has emphasized that increases in passive institutional ownership cause increases in common ownership of stocks in an index. It is plausible that passive institutional investors might push similar firms in which they have an ownership stake to have similar corporate policies. For instance, the CEO of BlackRock has an influential annual letter to CEOs where he comments on firm practices. BlackRock is typically among the largest passive investors in S&P 500 firms. He has commented on corporate policies in these letters. As an example, in 2017, it was stated that "While we certainly support returning excess capital to shareholders, we believe companies must balance those practices with investment in future growth."[22] Therefore, we investigate whether the change in passive institutional ownership explains the change in corporate policy similarity.

We estimate the change in passive holdings of added stocks relative to that of comparable firms using our DiD model. We define a firm's passive holdings as the percent of the firm's shares held by passive mutual funds. To assess whether a fund is a passive fund, we use the active share measure proposed by Cremers and Petajisto (2009). Specifically, the active share measures the percentage of

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[22] See "Larry Fink's 2017 Letter to CEOs," https://www.blackrock.com/corporate/investor-relations/2017-larry-fink-ceo-letter.

fund holdings with weights that differ from the weights in the S&P 500 index. We define a fund to be an S&P 500 passive mutual fund if it is a fund with a name that includes both "index" and "500" or a fund with an active share using the S&P 500 as a benchmark that is below 60%.[23]

We report the results of our DiD analysis in Table 10. The dependent variable in equation (1) is passive holdings as defined above. Model 1 shows that the coefficient of SP500Add is positive and statistically significant at the 1% level (*t*-value 25.72). The coefficient estimate of 0.034 means that after index addition passive holdings increase by 3.4 percentage points. Model 2 shows the estimate of the regression for active mutual funds—the mutual funds that are not passive. We find that holdings by active mutual funds decrease when a stock is added to the index.

Model 3 shows the effect of index additions on total holdings by all 13F institutions. The holding data is from Thomson Reuters 13F. The coefficient of SP500Add is not statistically different from zero. It means that when looking at all institutional investors, there is no significant change in holdings for newly added firms. This implies that when institutional investors tracking the S&P500 index closely (e.g., passive mutual funds) have to buy newly added stocks mechanically, other institutional investors tend to sell their holdings. This is consistent with our findings in Model 2 and the findings by Patel and Welch (2017) who show that S&P 500 addition no longer increases total investor demand. All tests in this section have statistically insignificant PreSP500Add coefficients, signifying that the parallel trends condition is satisfied.

We now investigate whether there is a relation between the change in passive institutional ownership and the increase in the similarity of corporate policies. We estimate regressions in Table 11 that are similar to the regressions in Table 9, except that now we add the change in passive ownership and the interaction of the change in passive ownership with the corporate policies of index peers. The first important result of Table 11 is that the interaction between the change in attention and the change in corporate policy similarity is robust to the addition of the change in the passive ownership variable. Specifically, the effects on investment, repurchases, and payouts remain significantly positive. The coefficient is positive as expected but not statistically significant for dividends, which is perhaps not

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[23] Our results are robust to alternative cutoffs such as 40%.

surprising given the stickiness of dividends. The second important result of that panel is that the coefficients of the interaction Ch(Passive) x Y_SP500Peer are not significant, which means that the increase in corporate policy similarity is unrelated to the increase in passive ownership. As shown in the Internet Appendix Table IA 6, these results hold up if we use our alternative approaches to estimate the impact of index inclusion on attention.

9. Conclusion

In this paper, we investigate whether an increase in public attention to a firm affects its performance. The benefit of increased public attention is that it leads to more monitoring of management, which could prevent the firm from taking actions that would be adverse to stakeholders and could punish management for taking such actions. However, increased attention also has a dark side. Public attention can distract management as it has to address concerns expressed by various segments of the public. Greater public attention also constrains management as it has less freedom to act and to experiment. It is more likely to be questioned if it chooses a path that differs from its peers, which can lead management to avoid such a path even if it would be optimal for shareholders.

The difficulty with investigating whether an increase in public attention has net positive effects for the performance of a firm is that firms may receive more attention when their fundamentals change. As a result, the increase in attention could proxy for the impact of changes in fundamentals on performance. For instance, a firm with unusually good performance is likely to receive more attention. In such a situation, it is difficult, if not impossible, to separate the impact on performance from attention from the impact on performance of changes in the firm's fundamentals. To resolve this issue, we use inclusion in the S&P 500 index as a public attention shock. Our identifying assumption is that the S&P 500 index committee does not select firms because it has information that these firms will have higher attention in the future for reasons other than their inclusion in the index.

When a firm is added to the S&P 500 index, it attracts more attention from, among others, market participants, the media, regulators, and other firms. We document that after inclusion media attention, SEC clicks and downloads, Google searches, analyst coverage, SEC letters, shareholder proposals, and lawsuits all increase. We then show that the performance of included firms decreases after inclusion

and that the extent of the decrease in performance is higher for firms that receive a greater increase in attention from stakeholders. This result holds for ROA and stock returns.

As discussed, there are multiple reasons why an increase in public attention can have real effects that lead to lower corporate performance. We investigate one channel through which an increase in attention has real effects, namely the corporate policy channel. If attention is costly, firms will attempt to reduce its costs. One way to do that is to stand out less and to adopt policies that peers find valuable under similar circumstances. We show that firms adopt policies that are more similar to those of their index peers. We tie this result back to the increase in attention by showing that the increase in comovement of the investment and payout policies of included firms with those of index peers is an increasing function of the increase in stakeholder attention for the included firms. We show that this result cannot be explained by the change in shareholder composition that results from index inclusion. An alternative interpretation of our results would require the existence of a variable that is highly correlated with index inclusion, predicts a decrease in performance that is positively correlated with the variable, and predicts an increase in similarity in investment and payout policies between included firms and index peers that is increasing in the level of the variable. Though one cannot exclude the existence of such a variable, we are not aware of a plausible candidate.

Our evidence shows that greater public attention for a firm has a dark side. On net, the distractions and constraints from public attention more than offset the potential benefits of greater monitoring. This result shows a new determinant of firm policies and performance for listed firms. It also contributes to the literature exploring why some firms prefer to be private rather than public. Further research should explore additional channels through which an increase in attention affects firm policies and performance.

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Appendix: Variable Definitions

Acquisitions	acquisition expenses scaled by lagged total assets, where data on acquisition expenses is from Compustat.
Amihud	Amihud (2002) illiquidity
Attention	the first component of the PCA based on Log(Analysts), SEC letter, and Lawsuits
Attention_SP500	the fitted value using equation (3) in Section 5.2, estimated firm by firm
CAR	the cumulative abnormal return within a fiscal year, where the abnormal returns are the differences between monthly stock returns of a firm and the matched portfolio based on market capitalization, book-to-market, and prior-year return, following Daniel, Grinblatt, Titman and Wermers (1997)
Capex	capital expenditures (less divestitures) scaled by lagged total assets
Cash	cash and cash equivalents scaled by total assets
Cashflow	income before extraordinary items plus depreciation and amortization all scaled by total assets
Dividend	the dollar amount of dividends paid to common stock scaled by total assets
Expenses/Assets	revenues scaled by total assets less net income scaled by total assets
Firm Age	the number of years since a firm appeared in the Compustat database
Google	the Google search volume index, which is the average monthly volume index from Google Trends (scaled by 100) within a firm-year
Idio. Volatility	the standard deviation of the residuals when regressing stock returns on market returns within a firm-year, calculated using daily stock returns from CRSP
Investment	the annual change in total assets scaled by lagged total assets
Lawsuits	the natural logarithm of one plus the number of federal district lawsuits within a firm-year.
Leverage	the sum of short term and long-term debt scaled by total assets
Log(Analysts)	natural logarithm of the number of financial analysts covering a firm
Log(Assets)	the natural logarithm of total book assets

Log(Assets) Sq	square of Log(Assets)
Log(Analysts)	the natural logarithm of the number of financial analysts covering a firm
Log(Views)	the natural logarithm the number of clicks and downloads of firms' SEC 10K and 10Q filings
News_Re75	the natural logarithm of one plus the number of news covering a firm with relevance score above 75 (from Ravenpack).
News_Re90	the natural logarithm of one plus the number of news covering a firm with relevance score above 90 (from Ravenpack).
PreSP500Add	an indicator variable equal to one for treated firms one year prior to an addition year and zero otherwise (always equal to zero for control firms)
Profit Margin	the natural logarithm of one plus net income scaled by revenue
R&D	research and development (R&D) expense scaled by lagged total assets
Rev/Assets	revenues scaled by total assets
Repurchase	the dollar amount of repurchases scaled by total assets
ROA	net income scaled by total assets
%SP500 Directors	the fraction of directors with board experiences in other S&P500 firms in or before the addition years.
%S&P500Peer	percent of a firm's compensation peer group comprised of firms in the S&P 500
SEC letter	an indicator variable equal to one if a firm receives an SEC letter within a firm-year and zero otherwise.
SH Proposals	natural logarithm of one plus the number of shareholder proposals for a firm in a year
SP500	an indicator variable equal to one if a firm is a member of the S&P 500 and zero otherwise
SP500Add	an indicator variable equal to one for treated firms after the addition year and zero otherwise (always equal to zero for control firms)
Tobin's q	the sum of total assets plus market value of equity minus book value of equity divided by total assets
Volatility	the standard deviation of stock returns in a year, calculated using daily stock returns from CRSP

Y_SP500Peer   the average Y of S&P 500 peers in a firm's industry (4-digit SIC), where Y corresponds to the dependent variable in the regression.

Y_NonSP500Peer   the average Y of non-S&P 500 peers in a firm's industry (4-digit SIC), where Y corresponds to the dependent variable in the regression.

Figure 1: Google search index around index additions: S&P 500 vs. Russell 1000

This figure shows the Google search index around additions to the S&P 500 index (orange solid line) and to the Russell 1000 index (blue dashed line) from 2004 to 2017. The X-axis shows the months relative to months of index additions, which is denoted as month 0 (red vertical dashed line). Y-axis shows the average Google search index of firms added to the relevant indices. The sample includes 265 (1,257) S&P 500 (Russell 1000) additions with Google search index data available.
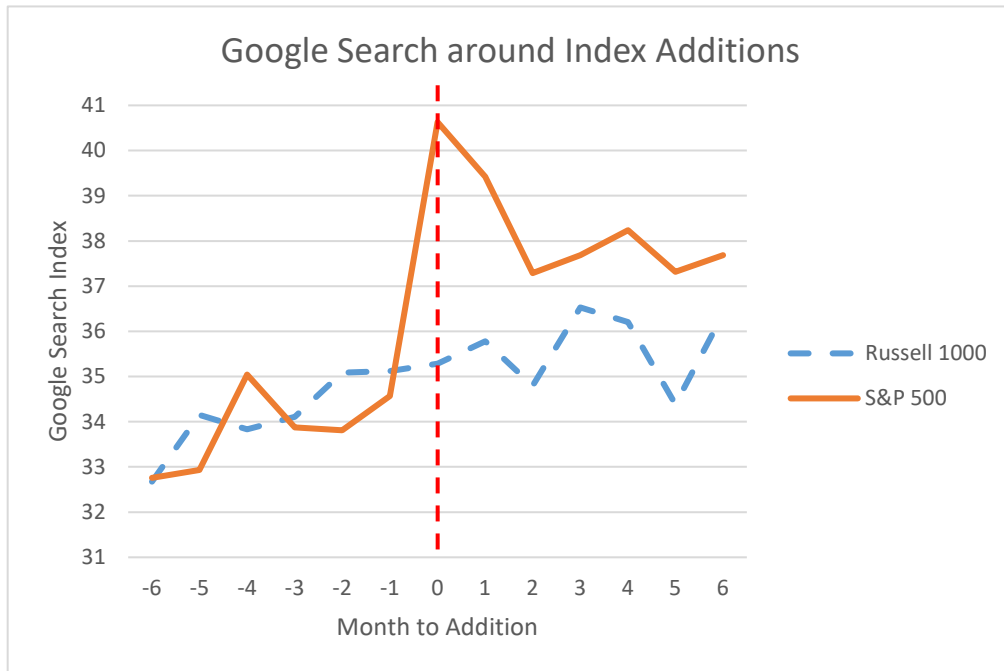
Figure 2. Performance and increase in attention

This figure illustrates the effects of S&P 500 inclusion on firm performance measures year by year. The performance measures include ROA and one-year CAR. ROA is net income scaled by total assets. CAR is the cumulative abnormal return within a fiscal year, where the abnormal returns are the differences between the monthly stock returns of a firm and the matched portfolio based on market capitalization, book-to-market, and prior-year return, following Daniel, Grinblatt, Titman and Wermers (1997). ROA (Panel A) and CAR (Panel B) are regressed on yearly indicator variables for each year relative to the year of S&P 500 inclusion, which equal one for treated firms in that year and zero otherwise, and control variables (as in Table 3). The Y-axis plots the coefficient estimates on the yearly indicator variables. The X-axis shows the year relative to an S&P 500 inclusion year. The year before inclusion is set as the base year and the inclusion year is dropped. The grey bars show the 95% confidence intervals of the coefficient estimates, where the confidence intervals are based on standard errors clustered at the firm level.

Panel A: ROA
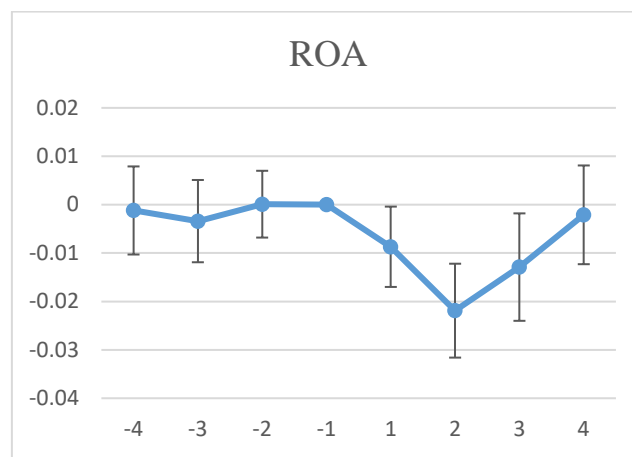
Panel B: One-year CAR
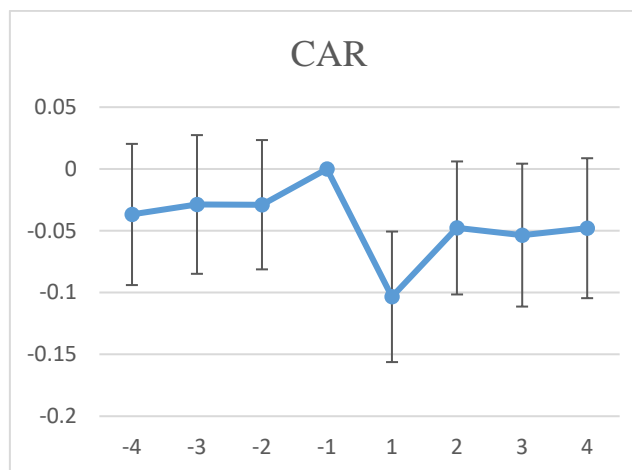
Figure 3: Investment and shocks to attention

This figure illustrates the effects of S&P 500 inclusion on Investment year by year. Investment is regressed on yearly indicator variables for each year relative to the year of S&P 500 inclusion, which equal one for treated firms in that year and zero otherwise, and control variables (those of Table 7). The Y-axis plots the coefficient estimates on the yearly indicator variables. The X-axis shows the year relative to an S&P 500 inclusion year. The year before inclusion is set as the base year and the inclusion year is dropped. The grey bars show the 95% confidence intervals of the coefficient estimates, where the confidence intervals are based on standard errors clustered at the firm level.
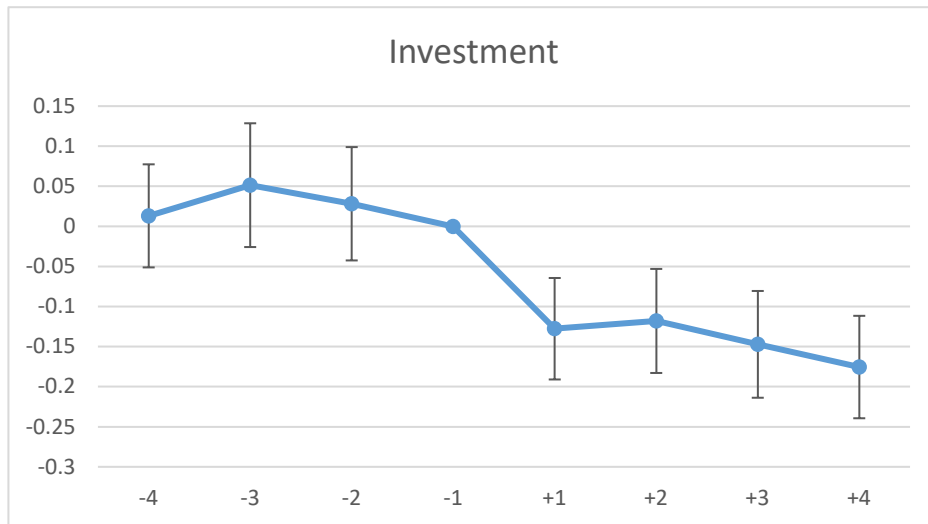
Figure 4: Payouts and shocks to attention

This figure illustrates the effects of S&P 500 inclusion on Payouts (Panel A), Dividends (Panel B), and Repurchases (Panel C) year by year. The relevant variables are regressed on yearly indicator variables for each year relative to the year of S&P 500 inclusion, which equal one for treated firms in that year and zero otherwise, and control variables (as of Table 8). The Y-axis plots the coefficient estimates on the yearly indicator variables. The X-axis shows the year relative to an S&P 500 inclusion year. The year before inclusion is set as the base year and the inclusion year is dropped. The grey bars show the 95% confidence intervals of the coefficient estimates, where the confidence intervals are based on standard errors clustered at the firm level.

Panel A: Total payouts
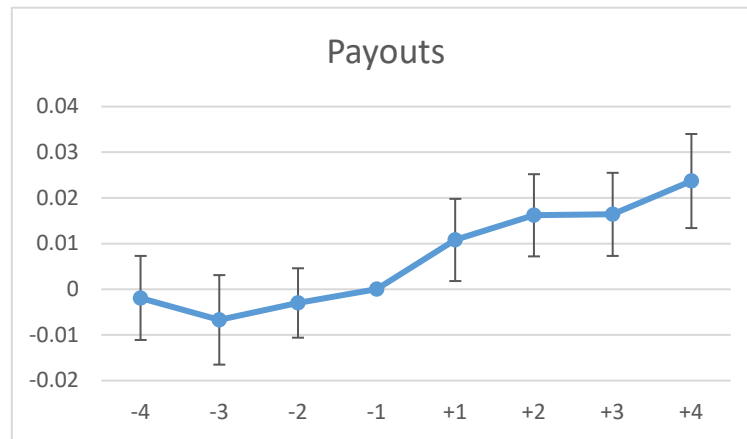
Panel B: Dividends
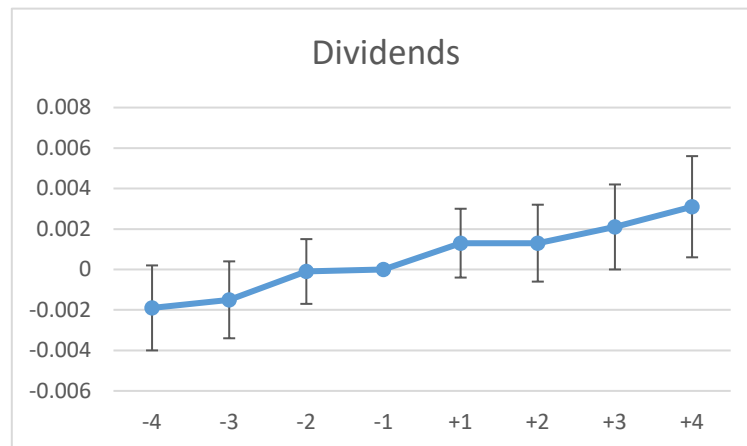
Panel C: Repurchases
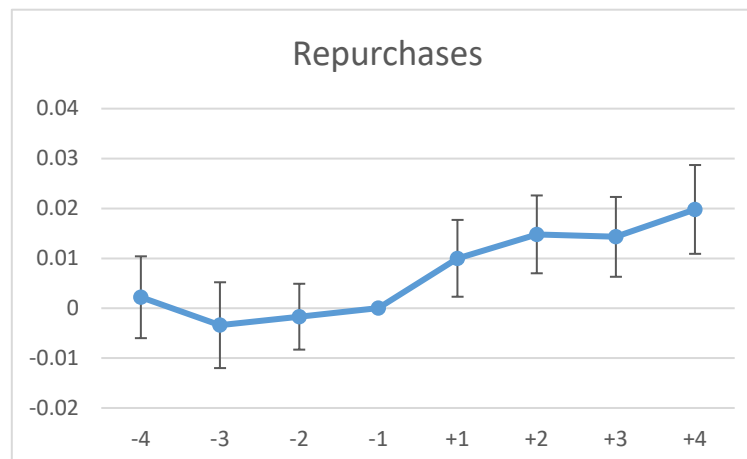
Table 1: Summary statistics

This table presents summary statistics. The sample includes treated firms added to the S&P 500 index and the matched control firms. Each treated firm is matched with two control firms from the control candidate pool, which are in the same industry (2-digit SIC) of the treated firm and have the closest market capitalization to the treated firm at the end of the calendar year before the year of the index inclusion. The control candidate pool is constructed following the official guidelines of S&P 500 index additions. The sample period is 1997 to 2017. All variables are winsorized at the 1st and 99th percentiles. Variable definitions are in the Appendix.

Variable	Mean	SD	p25	p50	p75	N
Log(Assets)	8.463	1.320	7.572	8.422	9.278	7,510
Tobin's q	2.355	1.817	1.239	1.719	2.697	7,510
Cash	0.141	0.159	0.025	0.078	0.200	7,507
Leverage	0.252	0.197	0.093	0.230	0.373	7,510
Block	0.161	0.133	0.066	0.139	0.234	2,878
Capex	0.062	0.071	0.016	0.040	0.081	7,501
Cashflow	0.115	0.102	0.058	0.104	0.167	7,150
%SP500Peers	0.459	0.231	0.289	0.455	0.636	2,781
% SP500 Directors	0.267	0.232	0.100	0.222	0.400	5,049
Investment	0.198	0.43	0.010	0.089	0.224	7,501
Dividends	0.013	0.022	0.000	0.003	0.017	7,510
Repurchases	0.034	0.06	0.000	0.005	0.039	6,799
ROA	0.054	0.086	0.018	0.050	0.095	7,510
Return	0.202	0.514	-0.086	0.142	0.400	7,335
Volatility	0.025	0.013	0.016	0.022	0.031	6,804
Firm Age	23.763	17.097	10	18	36	7,510
Log(Analysts)	2.505	0.615	2.197	2.603	2.944	5,576
SEC Letter	0.234	0.438	0	0	0.693	7,510
Lawsuits	0.477	1.657	0	0	1	7,510
News_Re75	5.566	0.914	5.193	5.568	5.991	4,869
News_Re90	5.449	0.892	5.100	5.472	5.881	4,869

Table 2. Attention following S&P 500 index inclusion

This table shows the treatment effect of S&P 500 index inclusion on attention. Panel A reports the results about media news coverage. News_Re75 (News_Re90) is the natural logarithm of one plus the number of news covering a firm with relevance score above 75 (90), in which the relevance score is from RavenPack with the range between 0 and 100. Panel B reports the results about public attention, analyst attention, regulatory and legal attention, and shareholder proposal. Google is the average monthly Google search volume index from Google Trends (scaled by 100) within a firm-year. Log(Views) is the natural logarithm of the number of clicks and downloads of firms' SEC 10K and 10Q filings. Log(Analysts) is the natural logarithm of the number of analysts following a firm. SEC Letter, which is an indicator variable equal to one if a firm receives an SEC letter within a firm-year and zero otherwise. Lawsuits is the natural logarithm of one plus the number of federal district lawsuits within a firm-year. SH Proposals is the natural logarithm of one plus the number of a firm's shareholder proposals in a year. Sample periods for relevant tests depend on the data availability of the corresponding dependent variables. Specifically, sample for Panel A is 2000-2017. Sample for panel B is 2004-2017 for Column 1, 2007-2015 for Column 2, 1997-2017 for Columns 3, 4, 5, and 2003-2017 for Column 6. All specifications include firm and year fixed effects. The *t*-statistics are reported in brackets. Robust standard errors are clustered at the firm level. Variable definitions are in the Appendix. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Media attention

	(1)	(2)
VARIABLES	News_Re75	News_Re90
SP500Add	0.119**	0.140***
	[2.33]	[2.86]
PreSP500Add	-0.040	-0.025
	[-1.26]	[-0.81]
Log(Assets)	0.658***	0.608***
	[3.17]	[3.15]
Log(Assets) Sq	-0.017	-0.015
	[-1.46]	[-1.38]
Tobin's q	0.084***	0.080***
	[5.62]	[5.63]
Cash	0.478	0.471
	[1.45]	[1.47]
Leverage	0.207	0.189
	[1.64]	[1.54]
Return	-0.096***	-0.089***
	[-4.68]	[-4.27]
Firm Age	0.023	0.016
	[0.73]	[0.53]
Volatility	6.070***	5.943***
	[4.88]	[4.77]
Observations	4,825	4,825
R-squared	0.836	0.836
Firm FE	Y	Y
Year FE	Y	Y

Panel B: Investor attention, analyst attention, regulatory attention, and legal attention

VARIABLES	(1) Google	(2) Log(Views)	(3) Log(Analysts)	(4) SH Proposals	(5) SEC Letter	(6) Lawsuits
SP500Add	0.033**	0.179**	0.072**	0.189***	0.038**	0.040*
	[2.38]	[2.28]	[2.44]	[3.37]	[1.96]	[1.87]
PreSP500Add	0.011	0.046	0.031	-0.018	-0.006	0.022
	[1.39]	[0.68]	[1.51]	[-0.40]	[-0.27]	[1.07]
Log(Assets)	-0.005	0.57	1.137***	0.043	-0.115**	-0.191**
	[-0.06]	[1.57]	[8.77]	[0.10]	[-1.99]	[-2.32]
Log(Assets) Sq	0.002	-0.018	-0.051***	0.012	0.009**	0.017***
	[0.37]	[-0.85]	[-6.90]	[0.42]	[2.41]	[3.32]
Tobin's q	0.012***	-0.008	0.042***	0.030	-0.010*	0.004
	[3.28]	[-0.19]	[5.09]	[1.22]	[-1.94]	[0.73]
Cash	-0.003	-0.480***	-0.123	-0.186	0.019	-0.133*
	[-0.05]	[-3.12]	[-1.30]	[-0.70]	[0.27]	[-1.75]
Leverage	-0.013	-0.005	-0.199***	0.013	0.071	-0.063
	[-0.36]	[-0.03]	[-2.95]	[0.07]	[1.18]	[-0.91]
Return	-0.016***	-0.084**	-0.107***	-0.007	0.006	-0.034***
	[-2.75]	[-2.06]	[-7.46]	[-0.18]	[0.55]	[-2.63]
Firm Age	-0.014	0.127*	-0.01	0.102	-0.017	-0.022
	[-0.96]	[1.87]	[-0.33]	[0.85]	[-0.51]	[-0.97]
Volatility	1.335***	4.391***	-1.163	5.917**	0.82	2.037**
	[2.78]	[3.38]	[-1.04]	[2.30]	[1.25]	[2.45]
Observations	3,430	2,182	4,720	3,545	5,952	5,952
R-squared	0.827	0.912	0.859	0.602	0.506	0.435
Firm FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y

Table 3: Increase in attention and firm performance

Panel A shows the treatment effect of inclusion on ROA, revenues (scaled by assets), expenses (scaled by assets), profit margin (log(1+net income / revenue)), and one-year CAR. Panel B shows the corresponding effects of the increase in attention from S&P 500 inclusion. Attention_SP500 is the fitted value of the firm by firm regression: $\text{Attention}_{it} = \beta_0 + \beta_1 \cdot \text{SP500Add}_{it} + \varepsilon_{it}$, where Attention is the first component of PCA based on Log(Analysts), SEC letter, and Lawsuits, which are available in the full sample period. Column 2's in both panels report the results of placebo tests for ROA. The event window is four years before and four years after an addition year. The addition year is excluded. The sample period is 1997 to 2017. All specifications include firm and year fixed effects. The *t*-statistics are reported in brackets. Robust standard errors are clustered at the firm level. Variable definitions are in the Appendix. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A. S&P 500 inclusion effects on ROA and CAR

VARIABLES	(1) ROA	(2) ROA(Placebo)	(3) Rev/Assets	(4) Expenses/Assets	(5) Profit Margin	(6) CAR
SP500Add	-0.013***	-0.006	0.021	0.034*	-0.020***	-0.039**
	[-3.03]	[-1.00]	[1.13]	[1.87]	[-2.77]	[-2.11]
PreSP500Add	0	0.007	0.011	0.011	-0.003	0.029
	[0.01]	[1.28]	[0.96]	[0.98]	[-0.48]	[1.32]
Log(Assets)	0.011**	0.008	-0.203***	-0.213***	0.028***	0.149***
	[2.55]	[0.42]	[-10.53]	[-10.93]	[3.37]	[6.67]
Tobin's *q*	0.018***	0.026***	0.030***	0.011***	0.020***	0.147***
	[11.62]	[2.78]	[6.38]	[2.62]	[6.61]	[18.38]
Cash	0.043*	0.033	-0.500***	-0.537***	0.125***	0.139
	[1.91]	[0.43]	[-7.14]	[-7.81]	[3.02]	[1.54]
Leverage	-0.130***	-0.194***	-0.167**	-0.045	-0.169***	-0.124*
	[-7.50]	[-4.19]	[-2.14]	[-0.59]	[-5.48]	[-1.72]
Volatility	-2.285***	-4.013***	-0.244	2.022***	-4.058***	-3.246***
	[-9.79]	[-3.81]	[-0.40]	[3.25]	[-9.44]	[-3.14]
Dividend	0.006	0.006	0.02	0.014	0.012	0.005
	[1.23]	[0.55]	[1.25]	[0.89]	[1.63]	[0.18]
Firm Age	0.007	0.009	0.036*	0.029	-0.001	-0.013
	[1.37]	[1.18]	[1.83]	[1.40]	[-0.09]	[-0.75]
Amihud	0.001	-0.015*	-0.031***	-0.032***	0.005	0.187***
	[0.40]	[-1.74]	[-4.25]	[-4.29]	[1.17]	[14.52]
Observations	5,495	3,303	5,495	5,495	5,449	4,971
R-squared	0.611	0.411	0.952	0.95	0.509	0.407
Firm FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y

Panel B. Increase in attention around S&P 500 inclusion and firm performance

VARIABLES	(1) ROA	(2) ROA(Placebo)	(3) Rev/Assets	(4) Expenses/Assets	(5) Profit Margin	(6) CAR
Attention_SP500	-0.012**	0.006	0.051**	0.063***	-0.018**	-0.045*
	[-2.28]	[0.63]	[2.55]	[3.30]	[-2.13]	[-1.72]
Log(Assets)	0.008*	-0.015	-0.239***	-0.245***	0.032***	0.172***
	[1.71]	[-1.50]	[-8.57]	[-8.83]	[3.40]	[6.18]
Tobin's q	0.017***	0.016***	0.028***	0.011**	0.017***	0.151***
	[8.92]	[4.58]	[4.94]	[2.08]	[5.39]	[17.10]
Cash	0.039	0.034	-0.438***	-0.470***	0.111**	0.232**
	[1.54]	[0.80]	[-5.37]	[-6.21]	[2.32]	[2.26]
Leverage	-0.134***	-0.130***	-0.180*	-0.055	-0.193***	-0.08
	[-7.19]	[-3.86]	[-1.87]	[-0.57]	[-5.66]	[-0.98]
Volatility	-2.197***	-2.075***	-1.188	0.992	-4.411***	-2.858**
	[-8.24]	[-5.16]	[-1.63]	[1.45]	[-9.24]	[-2.21]
Dividend	0.006	0.012	0.004	-0.001	0.008	-0.005
	[1.28]	[1.38]	[0.25]	[-0.07]	[1.08]	[-0.17]
Firm Age	0.005	0.008	0.036**	0.031	-0.006	-0.017
	[0.87]	[1.24]	[2.05]	[1.64]	[-0.71]	[-0.95]
Amihud	-0.003	-0.027***	-0.035***	-0.032***	0.003	0.192***
	[-1.00]	[-4.95]	[-3.93]	[-3.69]	[0.72]	[11.46]
Observations	4,273	2,294	4,273	4,273	4,252	3,918
R-squared	0.615	0.672	0.958	0.958	0.519	0.406
Firm FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y

Table 4: Attention of included firms to other firms in the S&P 500 index

This table shows the treatment effect of S&P 500 inclusion on the attention of included firms to other S&P 500 firms. SP500 Views is the sum of a firm's downloads of SEC filings of all S&P 500 firms (excluding the firm itself) in a year. SP500 Peer Views is the sum of a firm's downloads of SEC filings of its S&P 500 peers (1-digit SIC) in a year. Log(·) is the natural logarithm function. The sample period is 2003-2016 due to data availability. All specifications include firm and year fixed effects. The *t*-statistics are reported in brackets. Robust standard errors are clustered at the firm level. Variable definitions are in the Appendix. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

VARIABLES	(1) Log(SP500 Views)	(2) Log(SP500 Peer Views)
SP500Add	0.390**	0.313***
	[2.40]	[2.60]
PreSP500Add	0.085	0.141
	[0.58]	[1.31]
Log(Assets)	-0.096	-0.590
	[-0.13]	[-0.94]
Log(Assets) Sq	0.004	0.036
	[0.10]	[0.95]
Tobin's q	0.043	0.041
	[0.84]	[1.02]
Cash	-1.120**	-1.061**
	[-2.05]	[-2.41]
Leverage	-0.864**	-0.711**
	[-2.28]	[-2.47]
Return	-0.086	-0.052
	[-1.10]	[-0.87]
Firm Age	-0.423	-0.384
	[-1.49]	[-1.50]
Volatility	5.985	4.705
	[1.09]	[1.11]
Observations	3,637	3,637
R-squared	0.591	0.645
Firm FE	Y	Y
Year FE	Y	Y

Table 5: S&P 500 peer firms as performance benchmark in executive compensation

This table shows the treatment effect of S&P 500 index inclusion on CEO performance evaluation in executive compensation. %SP500Peer is the portion of S&P 500 peers in a CEO's peer group for the relative performance evaluation in her compensation contract. The data is available from 2006. Panel A shows the univariate evidence and compares %SP500Peers before and after a firm is added to the S&P 500 index. The p-value is for the t-test of mean equality. Panel B shows results of multivariate regressions. SP500Add is the S&P 500 addition indicator variable that is equal to one for treated firms after an addition year and zero otherwise. PreSP500Add is an indicator variable equal to one for treated firms one year prior to an addition year and zero otherwise. Both SP500Add and PreSP500Add equal zero for control firms. Model 1 (2) uses contemporaneous (lagged) control variables. Peer group data is from IncentiveLab. The event window is four years before and four years after an addition year. The addition year is excluded. The sample period is 2006 to 2017. All specifications include firm and year fixed effects. The t-statistics are reported in brackets. Robust standard errors are clustered at the firm level. Variable definitions are in Appendix. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Univariate evidence

	%SP500Peer	p-value (mean equality)
Before addition	0.413	0.001
After addition	0.509	

Panel B. DiD regressions

	(1)	(2)
VARIABLES	%SP500Peers	%SP500Peers
Controls	Contemporaneous	Lagged
SP500Add	0.068***	0.045***
	[3.63]	[2.69]
PreSP500Add	0.017	0.017
	[1.23]	[1.23]
Log(Assets)	0.118***	0.134***
	[7.47]	[7.46]
Tobin's q	0.015**	0.019***
	[2.55]	[3.36]
Cash	-0.082	0.011
	[-1.42]	[0.18]
Leverage	0.001	-0.028
	[0.02]	[-0.52]
Return	-0.030***	-0.019**
	[-4.23]	[-2.55]
Cashflow	-0.006	0.140*
	[-0.11]	[1.91]
Firm Age	-0.016	-0.035
	[-1.07]	[-1.46]
Observations	2,184	2,004
R-squared	0.846	0.838
Firm FE	Y	Y
Year FE	Y	Y

Table 6: Board member changes around S&P 500 inclusion

This table shows the treatment effect of S&P500 inclusion on the firms' board structure. % SP500 Directors is the fraction of directors with board experiences in other S&P500 firms in or before the addition years. The board director data is from BoardEx since 1999. SP500Add is the S&P 500 addition indicator variable that is equal to one for treated firms after the addition year and zero otherwise. PreSP500Add is an indicator variable that is equal to one for treated firms one year prior to an addition year and zero otherwise. Both SP500Add and PreSP500Add equal zero for control firms. The event window is four years before and four years after a year of addition. The addition year is excluded. The sample period is 1999 to 2017. All specifications include firm and year fixed effects. The t-statistics are reported in brackets. Robust standard errors are clustered at the firm level. Variable definitions are in the Appendix. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

VARIABLES	(1) % SP500 Directors	(2) % SP500 Directors
SP500Add	0.036***	0.033**
	[2.66]	[2.40]
PreSP500Add	0.010	0.011
	[1.26]	[1.33]
Log(Assets)	0.010	0.012
	[0.71]	[0.81]
Tobin's q	-0.001	-0.000
	[-0.21]	[-0.11]
Cash	-0.017	-0.025
	[-0.41]	[-0.60]
Leverage	-0.003	0.003
	[-0.08]	[0.08]
Firm Age	0.020	0.019
	[1.38]	[1.33]
Return		-0.002
		[-0.38]
Volatility		-0.366
		[-0.89]
Observations	4,389	4,307
R-squared	0.821	0.822
Firm FE	Y	Y
Year FE	Y	Y

Table 7: Corporate investment and increase in attention

This table shows the treatment effect of S&P 500 index inclusion on corporate investment. Investment is the annual change in total assets scaled by lagged total assets. Panel A shows differences in investment of S&P 500 firms and non-S&P 500 firms. SP500 is an indicator variable equal to one if a firm is a member of the S&P 500 index and zero otherwise. The test sample in Panel A includes all S&P 500 firms and the largest 500 non-S&P 500 firms (by market capitalization). Panel B shows the effect of S&P 500 additions on investment, capital expenditure (net of divestiture), R&D, acquisition, and the sum of the last three. SP500Add is the S&P 500 addition indicator variable that is equal to one for treated firms after an addition year and zero otherwise. PreSP500Add is an indicator variable equal to one for treated firms one year prior to an addition year and zero otherwise. Both SP500Add and PreSP500Add equal zero for control firms. Panel C shows the newly added firms' investment comovement with S&P 500 peers. Y_SP500Peer (Y_NonSP500Peer) is the average Investment of (non-)S&P 500 peers in a firm's industry (4-digit SIC, excluding the firm itself). The event window in Panels B and C is four years before and four years after an addition year. The addition year is excluded. The sample period is 1997 to 2017. Specifications in Panel A include year and industry fixed effects to capture cross-sectional variation within industries (comparing S&P 500 firms and non-S&P 500 firms). Specifications in Panels B and C include firm and year fixed effects. The t-statistics are reported in brackets. Robust standard errors are clustered at the firm level. Variable definitions are in the Appendix. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Investment of S&P 500 and non-S&P 500 firms

| | (1) | (2) |
VARIABLES	Investment	Investment
SP500	-0.181***	-0.121***
	[-8.85]	[-6.13]
Log(Assets)	0.175***	0.241***
	[2.83]	[3.89]
Log(Assets) Sq	-0.007**	-0.002
	[-2.29]	[-0.72]
Tobin's q	0.068***	0.044***
	[10.39]	[7.28]
Cashflow	-0.177*	0.019
	[-1.82]	[0.21]
Cash		0.043
		[0.71]
Leverage		0.195***
		[4.31]
Return		0.108***
		[10.81]
Firm Age		-0.023***
		[-20.27]
Volatility		-1.101***
		[-3.21]
Observations	18,914	15,368
R-squared	0.280	0.288
Industry FE	Y	Y
Year FE	Y	Y

Panel B. S&P 500 addition effects on investment

VARIABLES	(1) Investment	(2) Investment	(3) Capex + R&D + Acq	(4) Capex	(5) R&D	(6) Acq
SP500Add	-0.210***	-0.179***	-0.016**	-0.004	-0.002	-0.010*
	[-8.30]	[-7.00]	[-1.99]	[-1.39]	[-1.17]	[-1.67]
PreSP500Add	-0.040	-0.039	-0.007	0.001	-0.001	-0.008
	[-1.47]	[-1.48]	[-0.85]	[0.36]	[-0.29]	[-1.37]
Log(Assets)	-0.205*	0.079	-0.076**	-0.059***	-0.036***	0.026
	[-1.93]	[0.87]	[-2.50]	[-4.62]	[-3.07]	[1.59]
Log(Assets) Sq	0.024***	0.009*	0.005***	0.003***	0.002***	-0.001
	[3.80]	[1.70]	[2.83]	[4.76]	[2.67]	[-0.51]
Tobin's q	0.076***	0.037***	0.015***	0.006***	0.006***	0.001
	[7.16]	[4.01]	[5.30]	[5.28]	[4.95]	[1.10]
Cashflow	0.146	0.314***	-0.031	0.090***	-0.032*	-0.051**
	[1.12]	[2.77]	[-0.65]	[5.53]	[-1.87]	[-2.10]
Cash		0.299***	-0.218***	-0.048***	-0.027**	-0.142***
		[2.83]	[-6.04]	[-3.99]	[-2.13]	[-6.94]
Leverage		0.262***	0.141***	-0.007	0.002	0.142***
		[3.32]	[4.95]	[-0.70]	[0.35]	[7.69]
Return		0.098***	0.000	-0.007***	0.000	0.007**
		[5.86]	[0.10]	[-3.64]	[0.26]	[2.51]
Firm Age		-0.008	-0.008	-0.001	0.003**	-0.011
		[-0.33]	[-0.95]	[-0.71]	[2.25]	[-1.26]
Volatility		1.000	0.092	0.402***	0.059	-0.383**
		[1.02]	[0.33]	[3.36]	[0.70]	[-2.09]
Observations	6,255	5,924	5,924	5,924	5,924	5,924
R-squared	0.336	0.331	0.501	0.721	0.864	0.301
Firm FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y

Panel C. Investment comovement with S&P 500 peers

VARIABLES	(1) Investment	(2) Investment
Y_SP500Peer x SP500Add	0.450***	0.433***
	[3.63]	[3.48]
Y_SP500Peer	0.294***	0.290***
	[5.41]	[5.31]
Y_NonSP500Peer x SP500Add		-0.001
		[-0.46]
Y_NonSP500Peer		0.001
		[0.91]
Y_SP500Peer x PreSP500Add	0.083	0.087
	[0.55]	[0.58]
Y_NonSP500Peer x PreSP500Add		-0.001
		[-0.22]
SP500Add	-0.222***	-0.219***
	[-7.65]	[-7.49]
PreSP500Add	-0.039	-0.038
	[-1.13]	[-1.09]
Log(Assets)	-0.036	-0.034
	[-0.38]	[-0.35]
Log(Assets) Sq	0.013**	0.013**
	[2.30]	[2.28]
Tobin's q	0.034***	0.034***
	[3.32]	[3.35]
Cash	0.385***	0.380***
	[3.49]	[3.42]
Leverage	0.270***	0.267***
	[3.39]	[3.35]
Cashflow	0.216**	0.212*
	[1.97]	[1.91]
Return	0.085***	0.087***
	[4.48]	[4.57]
Firm Age	0.007	0.007
	[0.55]	[0.55]
Volatility	-0.422	-0.411
	[-0.43]	[-0.41]
Observations	4,923	4,904
R-squared	0.396	0.393
Firm FE	Y	Y
Year FE	Y	Y

Table 8: Payouts and increase in attention

This table shows the treatment effect of S&P 500 index inclusion on corporate payouts. Dividends is the dollar amount of dividends paid to common stock scaled by total assets. Repurchases is the dollar amount of repurchases scaled by total assets. Payouts is the sum of Dividends and Repurchases. Panel A shows differences in payouts of S&P 500 firms and non-S&P 500 firms. SP500 is an indicator variable equal to one if a firm is a member of the S&P 500 index and zero otherwise. The test sample in Panel A includes all S&P 500 firms and the largest 500 non-S&P 500 firms (by market capitalization). Panel B shows the effect of S&P 500 additions on payouts. SP500Add is the S&P 500 addition indicator variable that is equal to one for treated firms after an addition year and zero otherwise. PreSP500Add is an indicator variable equal to one for treated firms one year prior to an addition year and zero otherwise. Both SP500Add and PreSP500Add equal zero for control firms. Panel C shows the newly added firms' payout comovement with that of S&P 500 peers. Y_SP500Peer (Y_NonSP500Peer) is the average Dividends, Repurchases, or Payouts of (non-)S&P 500 peers in a firm's industry (4-digit SIC, excluding the firm itself), corresponding to the dependent variable in the regression. The event window in Panels B and C is four years before and four years after an addition year. The addition year is excluded. The sample period is 1997 to 2017. Specifications in Panel A include year and industry fixed effects to capture cross-sectional variation within industries (comparing S&P 500 firms and non-S&P 500 firms). Specifications in Panels B and C include firm and year fixed effects. The *t*-statistics are reported in brackets. Robust standard errors are clustered at the firm level. Variable definitions are in the Appendix. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Payouts of S&P 500 and non-S&P 500 firms

VARIABLES	(1) Dividends	(2) Repurchases	(3) Payouts
SP500	-0.002**	0.019***	0.017***
	[-2.56]	[11.05]	[9.35]
Log(Assets)	0.000	-0.004***	-0.003***
	[1.12]	[-5.66]	[-4.62]
Tobin's *q*	0.003***	0.003***	0.007***
	[6.81]	[4.36]	[6.92]
Cashflow	0.097***	0.200***	0.313***
	[14.90]	[16.02]	[21.29]
Cash	-0.001	0.027***	0.026***
	[-0.18]	[3.62]	[2.99]
Leverage	0.006**	0.022***	0.031***
	[2.08]	[4.05]	[5.05]
Return	-0.006***	-0.009***	-0.016***
	[-10.45]	[-8.30]	[-11.98]
Volatility	-0.426***	-0.398***	-0.819***
	[-12.12]	[-6.14]	[-10.70]
Amihud	0.000	-0.001***	-0.001***
	[1.50]	[-4.25]	[-2.82]
Firm Age	0.000***	-0.000**	0.000
	[5.45]	[-2.02]	[0.98]
Observations	15,713	14,693	14,693
R-squared	0.376	0.328	0.417
Industry FE	Y	Y	Y
Year FE	Y	Y	Y

Panel B. S&P 500 addition effects on payouts

VARIABLES	(1) Dividends	(2) Repurchases	(3) Payouts
SP500Add	0.002**	0.016***	0.019***
	[2.45]	[4.03]	[4.56]
PreSP500Add	0.001	0.002	0.004
	[1.37]	[0.60]	[1.29]
Log(Assets)	-0.004***	-0.018***	-0.024***
	[-5.15]	[-5.95]	[-6.62]
Tobin's q	0.000**	0.001	0.002
	[2.09]	[0.62]	[1.31]
Cashflow	0.007*	0.154***	0.170***
	[1.95]	[7.63]	[7.82]
Cash	-0.001	-0.037**	-0.038**
	[-0.17]	[-2.17]	[-1.99]
Leverage	0.003	0.044***	0.061***
	[1.05]	[3.09]	[3.67]
Return	-0.001	-0.008***	-0.009***
	[-1.51]	[-3.96]	[-3.98]
Volatility	-0.134***	-0.469***	-0.637***
	[-4.76]	[-3.30]	[-4.05]
Amihud	-0.002***	-0.009***	-0.012***
	[-4.40]	[-5.85]	[-6.53]
Firm Age	0.002	0.006*	0.008*
	[0.92]	[1.81]	[1.89]
Observations	5,243	4,756	4,756
R-squared	0.818	0.575	0.625
Firm FE	Y	Y	Y
Year FE	Y	Y	Y

Panel C. Payouts comovement with S&P 500 peers

VARIABLES	(1) Dividends	(2) Dividends	(3) Repurchases	(4) Repurchases	(5) Payouts	(6) Payouts
Y_SP500Peer x SP500Add	0.187**	0.213**	0.537***	0.539***	0.524***	0.548***
	[2.07]	[2.34]	[6.01]	[5.93]	[6.17]	[6.48]
Y_SP500Peer	0.304***	0.293***	0.221***	0.215***	0.313***	0.301***
	[4.68]	[4.56]	[4.74]	[4.63]	[5.36]	[5.19]
Y_NonSP500Peer x SP500Add		-0.082**		0.032		-0.193**
		[-2.10]		[0.71]		[-2.35]
Y_NonSP500Peer		0.065***		0.004		0.218***
		[2.73]		[1.23]		[3.65]
Y_SP500Peer x PreSP500Add	-0.034	-0.027	0.020	0.011	0.020	0.021
	[-0.55]	[-0.41]	[0.31]	[0.17]	[0.28]	[0.28]
Y_NonSP500Peer x PreSP500Add		-0.036		0.153		-0.051
		[-1.09]		[0.94]		[-0.45]
SP500Add	-0.000	0.001	-0.007	-0.007	-0.010*	-0.006
	[-0.06]	[0.55]	[-1.45]	[-1.57]	[-1.93]	[-1.04]
PreSP500Add	0.001	0.002	0.001	-0.001	0.003	0.004
	[1.07]	[1.37]	[0.31]	[-0.29]	[0.62]	[0.84]
Log(Assets)	-0.003***	-0.003***	-0.018***	-0.018***	-0.021***	-0.021***
	[-4.02]	[-4.07]	[-5.81]	[-5.76]	[-5.95]	[-5.94]
Tobin's q	0.000	0.000	-0.001	-0.001	0.001	0.001
	[1.61]	[1.57]	[-0.49]	[-0.48]	[0.32]	[0.31]
Cashflow	0.010***	0.009***	0.125***	0.126***	0.140***	0.137***
	[2.89]	[2.79]	[6.05]	[6.04]	[6.43]	[6.44]
Cash	-0.000	-0.001	-0.036**	-0.035*	-0.038*	-0.038*
	[-0.10]	[-0.26]	[-2.01]	[-1.92]	[-1.86]	[-1.89]
Leverage	0.002	0.002	0.027**	0.027**	0.036**	0.036**
	[0.67]	[0.66]	[1.98]	[1.97]	[2.24]	[2.30]
Return	-0.000	-0.000	-0.003	-0.003	-0.004*	-0.004*
	[-1.25]	[-1.14]	[-1.44]	[-1.43]	[-1.88]	[-1.81]
Volatility	-0.105***	-0.107***	-0.319**	-0.319**	-0.441***	-0.462***
	[-3.51]	[-3.57]	[-2.31]	[-2.30]	[-2.78]	[-2.87]
Amihud	-0.002***	-0.002***	-0.010***	-0.010***	-0.012***	-0.012***
	[-4.01]	[-4.14]	[-6.08]	[-6.03]	[-6.58]	[-6.60]
Firm Age	0.002	0.001	0.007**	0.007*	0.008**	0.008*
	[0.98]	[0.94]	[1.98]	[1.91]	[2.09]	[1.88]
Observations	4,531	4,514	4,063	4,044	4,063	4,044
R-squared	0.847	0.844	0.633	0.631	0.685	0.681
Firm FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y

Table 9: Increase in attention and similarity of firm policies

This table shows the effect of the increase in attention from S&P 500 inclusion on the similarity of firm policies. Y_SP500Peer is the average policy variable of S&P 500 peers in a firm's industry (4-digit SIC, excluding the firm itself), corresponding to the dependent variable in the regression. Attention_SP500 is the fitted value of the firm-by-firm regression: $Attention_{it} = \beta_0 + \beta_1 \cdot SP500Add_{it} + \varepsilon_{it}$, where Attention is the first component of PCA based on Log(Analysts), SEC letter, and Lawsuits, which are available in the full sample period, SP500Add is an indicator variable that equals one for a treated firm after its addition year and zero otherwise, and ε_{it} is the error term. The event window is four years before and four years after an addition year. The addition year is excluded. The sample period is 1997 to 2017. All specifications include firm and year fixed effects. Control variables are same to that in Tables 7 and 8, respectively, and coefficients of controls are not reported here. The *t*-statistics are reported in brackets. Robust standard errors are clustered at the firm level. Variable definitions are in the Appendix. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

VARIABLES	(1) Investment	(2) Dividends	(3) Repurchases	(4) Payouts
Y_SP500Peer x Attention_SP500	0.221*	0.130*	0.318***	0.335***
	[1.76]	[1.78]	[4.48]	[5.01]
Y_SP500Peer	0.338***	0.237***	0.363***	0.323***
	[6.35]	[4.77]	[8.38]	[7.63]
Attention_SP500	-0.223***	-0.000	0.003	-0.000
	[-5.56]	[-0.11]	[0.71]	[-0.03]
Observations	3,634	3,492	3,168	3,168
R-squared	0.395	0.857	0.639	0.689
Controls	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y

Table 10: Passive mutual fund holdings and S&P 500 index additions

This table shows the effect of S&P 500 index additions on passive fund holdings, active fund holdings, and total 13F-institutional holdings. A mutual fund is defined as an S&P 500 passive mutual fund if its active share is less than 0.60 (following Cremers and Petajisto, 2009) or its fund name contains both "index" and "500". *Passive* is the proportion of a firm's outstanding shares held by S&P 500 passive mutual funds. *Active* is the proportion of a firm's outstanding shares held by active mutual funds that are not passive mutual funds (as defined above). *All 13F* is the proportion of a firm's outstanding shares held by all 13F institutions. *SP500Add* is the S&P 500 addition dummy that is equal to one for treated firms after the addition year and zero otherwise. *PreSP500Add* is a dummy variable that is equal to one for treated firms one year prior to an addition year and zero otherwise. Both *SP500Add* and *PreSP500Add* equal zero for control firms. The event window is four years before and four years after a year of addition. The addition year is excluded. The sample period is from 1997 to 2017. All specifications include firm and year fixed effects. Robust standard errors are clustered at the firm level. Variable definitions are in the Appendix. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively

	(1)	(2)	(3)
VARIABLES	Passive	Active	All 13F
SP500Add	0.034***	-0.115***	-0.007
	[25.72]	[-2.72]	[-0.28]
PreSP500Add	0.001	0.021	-0.005
	[1.43]	[0.44]	[-0.35]
Log(Assets)	0.002**	0.033	0.028
	[2.43]	[1.32]	[1.55]
Tobin's q	0.001***	0.01	0.002
	[2.86]	[1.37]	[0.35]
Cash	0.001	-0.025	0.037
	[0.50]	[-0.56]	[0.60]
Leverage	0.001	0.090**	0.091*
	[0.30]	[2.23]	[1.96]
Return	0.000	-0.004	0.025**
	[0.38]	[-0.20]	[2.43]
Observations	4,501	4,501	3,027
R-squared	0.816	0.594	0.803
Firm FE	Y	Y	Y
Year FE	Y	Y	Y

Table 11: Increase in attention and similarity of firm policies, controlling for changes in passive holdings

This table shows the effects of the increase in attention from S&P 500 inclusion on firm policies. Y_SP500Peer is the average policy variable of S&P 500 peers in a firm's industry (4-digit SIC, excluding the firm itself), corresponding to the dependent variable in the regression. Attention_SP500 is the fitted value of the firm-by-firm regression: $\text{Attention}_{it} = \beta_0 + \beta_1 \cdot \text{SP500Add}_{it} + \varepsilon_{it}$, where Attention is the first component of PCA based on Log(Analysts), SEC letter, and Lawsuits, which are available in the full sample period, SP500Add is an indicator variable that equals one for a treated firm after its addition year and zero otherwise, and ε_{it} is the error term. Ch(Passive) is the change in a firm's passive ownership. The event window is four years before and four years after an addition year. The addition year is excluded. The sample period is 1997 to 2017. All specifications include firm and year fixed effects. Control variables are same to that in Tables 7 and 8, respectively, and their coefficients are not reported here. The *t*-statistics are reported in brackets. Robust standard errors are clustered at the firm level. Variable definitions are in the Appendix. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

VARIABLES	(1) Investment	(2) Dividends	(3) Repurchases	(4) Payouts
Y_SP500Peer x Attention_SP500	0.226*	0.084	0.310***	0.331***
	[1.82]	[1.43]	[4.40]	[4.95]
Y_SP500Peer	0.343***	0.208***	0.350***	0.313***
	[6.14]	[4.43]	[7.79]	[6.91]
Attention_SP500	-0.237***	0.000	0.005	0.001
	[-5.55]	[0.47]	[0.92]	[0.18]
Ch(Passive) x Y_SP500Peer	5.339	0.043	2.911	2.437
	[1.36]	[0.05]	[1.38]	[1.21]
Ch(Passive)	-0.570	0.005	-0.164**	-0.184*
	[-1.50]	[0.44]	[-2.18]	[-1.91]
Observations	3,244	3,099	2,816	2,816
R-squared	0.424	0.876	0.661	0.705
Controls	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y

Internet Appendix

Table IA1. Google search index around index additions: S&P 500 vs. Russell 1000

This table shows the changes in Google search index around additions to the S&P 500 index and to the Russell 1000 index. The second column shows the average Google search index across two months prior to the corresponding index additions. The third column shows the average Google search index in the month of the corresponding index additions. *Diff* shows the relevant differences and *t*-tests for zero difference are carried out. The *t*-statistics are reported in brackets. *** denotes significance at the 1% level.

	Months [-2,-1]	Addition month	Diff
S&P 500	34.19	40.63	6.44***
			[5.59]
Russell 1000	35.10	35.28	0.18
			[0.48]
Diff	-0.91	5.35***	
	[0.56]	[3.19]	
Diff-in-diffs			6.26***
			[6.39]

Table IA2. Increases in attention, firm performance, and policy comovement: alternative attention measure

This table shows the treatment effect of S&P 500 inclusion on firm performance. Panel A shows the effect of increase in attention around S&P 500 inclusion on ROA and one-year CAR. ROA is net income scaled by total assets. CAR is the cumulative abnormal return within a fiscal year, where the abnormal returns are the differences between the monthly stock returns of a firm and the matched portfolio based on market capitalization, book-to-market, and prior-year return, following Daniel, Grinblatt, Titman and Wermers (1997). Attention_SP500 is the fitted value of the following specification: $Attention_{it} = \beta_0 + \beta_1 \cdot SP500Add_{it} + \mu_i + \nu_t + \varepsilon_{it}$, where Attention is the first component of PCA based on 6 attention measures that are available in a shorter period: Log(Analysts), SEC letter, and Lawsuits, Google search, News coverage, and shareholder proposal, and SP500Add is the S&P 500 addition indicator variable that is equal to one for treated firms after an addition year and zero otherwise. Panel B shows the effect of increase in attention around S&P 500 inclusion on the comovement in investment and payout policies. Y_SP500Peer is the average Investment, Dividends, Repurchases, or Payouts of S&P 500 peers in a firm's industry (4-digit SIC, excluding the firm itself). The sample period is 2004 to 2017. All specifications include firm and year fixed effects. The t-statistics are reported in brackets. Robust standard errors are clustered at the firm level. Variable definitions are in the Appendix. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Increases in attention and firm performance

VARIABLES	(1) ROA	(2) CAR
Attention_SP500 (6 vars)	-0.018*	-0.142***
	[-1.77]	[-2.67]
Log(Assets)	0.007	0.205***
	[0.94]	[6.64]
Tobin's q	0.016***	0.169***
	[5.60]	[10.43]
Cash	0.027	0.237*
	[0.79]	[1.78]
Leverage	-0.191***	-0.104
	[-6.40]	[-1.22]
Volatility	-0.452	1.503
	[-1.57]	[0.92]
Dividend	0.007	-0.003
	[0.99]	[-0.09]
Firm Age	0.008	-0.008
	[1.56]	[-0.47]
Amihud	-0.005	0.231***
	[-1.34]	[9.93]
Observations	2,618	2,325
R-squared	0.647	0.416
Firm FE	Y	Y
Year FE	Y	Y

Panel B: Increases in attention and policy comovement

VARIABLES	(1) Investment	(2) Dividends	(3) Repurchases	(4) Payouts
Y_SP500Peer x Attention_SP500	0.176***	0.073	0.096**	0.071
	[2.64]	[1.55]	[2.03]	[1.37]
Y_SP500Peer	0.330***	0.275***	0.392***	0.364***
	[4.58]	[4.19]	[6.81]	[6.50]
Attention_SP500	-0.206***	-0.002	0.020*	0.021*
	[-3.87]	[-0.64]	[1.94]	[1.76]
Controls	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y
Observations	2,269	2,113	2,019	2,019
R-squared	0.422	0.862	0.676	0.718

Table IA3. Robustness tests: attention related to S&P 500 inclusion and firm performance

This table shows robustness tests for Panel B of Table 3, which reports the effect of the increase in attention from S&P 500 inclusion on firm performance (measured by ROA and one-year CAR). Attention from S&P 500 inclusion, Attention_SP500, is the fitted value of the specification $\text{Attention}_{it} = \beta_0 + \beta_1 \cdot \text{SP500Add}_{it} + \varepsilon_{it}$, where Attention is the first component of PCA based on Log(Analysts), SEC letter, and Lawsuits, which are available in the full sample period. In Columns 1 and 2, Attention_SP500 is estimated industry by industry (4-digit SIC). In Columns 3 and 4, Attention_SP500 is estimated firm by firm as in the main tests. Then in the analysis we use an indicator variable *High_Attention_SP500* that is equal to one if Attension_SP500 is in the top tercile for treated firms and zero otherwise. In Columns 5 and 6, Attention_SP500 is estimated by panel regression using the whole sample and including firm fixed effects and year fixed effects. The event window is four years before and four years after an addition year. The addition year is excluded. The sample period is 1997 to 2017. All specifications include firm and year fixed effects. Control variables are same to that in Panel B of Table 3. The *t*-statistics are reported in brackets. Robust standard errors are clustered at the firm level. Variable definitions are in the Appendix. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

VARIABLES	(1) ROA	(2) CAR	(3) ROA	(4) CAR	(5) ROA	(6) CAR
Attention_SP500	-0.016**	-0.101***	-0.013**	-0.071**	-0.028**	-0.151**
	[-2.57]	[-4.24]	[-2.09]	[-2.53]	[-2.36]	[-2.57]
Observations	4,506	4,117	4,283	3,927	4,536	4,136
R-squared	0.623	0.407	0.610	0.406	0.621	0.407
Controls	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y

Table IA4. Placebo tests: whether policies of industry peers in the Index comove more

This table reports the results of placebo tests to check whether existing peer firms in the Index increase the comovement of their policies with the newly added firms, which would lead to larger policy comovement among existing index peer firms. Specifically, the index peer closest to the corresponding newly-added firm (by market capitalization) is first identified. We then test whether policies of this closest index peer comove more with other index peers following an index inclusion using the following specification Y_ClosestIndexPeer = Y_OtherIndexPeers x Post + Y_OtherIndexPeers + Post + Controls, where Y_ClosestIndexPeer is the policy Y of the closest index peer, Y_OtherIndexPeers is the average policy Y across index peers (excluding the closest index peer), and Post is a dummy variable equal to one in years following an index inclusion and zero otherwise. The control variables are the same as in the analysis of Panel C of Table 7. The event window is four years before and four years after an addition year. The addition year is excluded. The sample period is 1997 to 2017. All specifications include firm and year fixed effects. The *t*-statistics are reported in brackets. Robust standard errors are clustered at the firm level. Variable definitions are in the Appendix. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

VARIABLES	(1) Investment	(2) Dividends	(3) Repurchases	(4) Payouts
Y_ OtherIndexPeers x Post	-0.196	-0.069	0.020	-0.076
	[-1.64]	[-1.07]	[0.25]	[-0.92]
Y_ OtherIndexPeers	0.671***	0.424***	0.706***	0.724***
	[6.47]	[4.61]	[7.48]	[7.58]
Post	0.006	0.001	0.001	0.007
	[0.28]	[0.63]	[0.29]	[1.27]
Controls	Y	Y	Y	Y
Observations	1,991	1,675	1,553	1,553
R-squared	0.483	0.883	0.716	0.721
Firm FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y

Table IA5. Similarity of firm policies and S&P 500 index inclusion: TNIC peers

This table shows the treatment effect from S&P 500 index inclusion on corporate policy comovement with S&P 500 peers. The peers are identified by text-based network industry classifications (TNIC icode400). Panel A (B) shows the comovement with S&P 500 peers (both S&P 500 peers and non-S&P 500 peers). Y_SP500Peer (Y_SP500Peer) is the average policy of (non-)S&P 500 peers in a firm's TNIC industry, corresponding to the dependent variable in the regression. SP500Add is the S&P 500 addition indicator variable that is equal to one for treated firms after an addition year and zero otherwise. PreSP500Add is an indicator variable equal to one for treated firms one year prior to an addition year and zero otherwise. Both SP500Add and PreSP500Add equal zero for control firms. The event window is four years before and four years after an addition year. The addition year is excluded. Control variables are same to that used in Tables 7 and 8, respectively. The sample period is 1997 to 2017. Firm and year fixed effects are included. The *t*-statistics are reported in brackets. Robust standard errors are clustered at the firm level. Variable definitions are in the Appendix. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Comovement with S&P 500 peers

VARIABLES	(1) Investment	(2) Dividends	(3) Repurchases	(4) Payouts
Y_SP500Peer x SP500Add	0.505**	0.211**	0.539***	0.579***
	[2.19]	[2.10]	[4.07]	[4.58]
Y_SP500Peer	0.390***	0.141***	0.259***	0.245***
	[5.34]	[3.05]	[6.17]	[5.32]
Y_SP500Peer x PreSP500Add	0.421	-0.030	0.005	0.061
	[1.15]	[-0.47]	[0.06]	[0.76]
SP500Add	-0.234***	0.000	-0.003	-0.010
	[-4.69]	[0.24]	[-0.43]	[-1.00]
PreSP500Add	-0.013	0.001	0.000	-0.005
	[-0.18]	[0.70]	[0.00]	[-0.59]
Observations	3,542	3,265	2,978	2,978
R-squared	0.411	0.837	0.638	0.680
Controls	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y

Panel B: Comovement with S&P 500 peers and non-S&P 500 peers

VARIABLES	(1) Investment	(2) Dividends	(3) Repurchases	(4) Payouts
Y_SP500Peer x SP500Add	0.557**	0.215**	0.568***	0.593***
	[2.39]	[2.14]	[4.02]	[4.62]
Y_SP500Peer	0.376***	0.139***	0.248***	0.235***
	[5.18]	[2.98]	[5.84]	[5.05]
Y_NonSP500Peer x SP500Add	-0.021**	0.025	-0.270	-0.143
	[-2.57]	[0.31]	[-1.34]	[-1.09]
Y_NonSP500Peer	0.006*	0.059*	0.205**	0.185**
	[1.89]	[1.78]	[2.36]	[2.51]
Y_SP500Peer x PreSP500Add	0.406	-0.023	-0.003	0.058
	[1.11]	[-0.36]	[-0.03]	[0.70]
Y_NonSP500Peer x PreSP500Add	0.009	0.028	0.084	0.000
	[0.33]	[0.31]	[0.39]	[0.00]
SP500Add	-0.226***	0.000	0.001	-0.006
	[-4.53]	[0.12]	[0.17]	[-0.56]
PreSP500Add	-0.016	0.001	-0.002	-0.004
	[-0.21]	[0.42]	[-0.21]	[-0.48]
Observations	3,537	3,261	2,974	2,974
R-squared	0.413	0.836	0.641	0.682
Controls	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y

Table IA6. Robustness tests: attention increase from S&P 500 inclusion and similarity of firm policies, controlling for changes in passive holdings

This table reports the robustness tests for Table 11, which shows the effects of the increase in attention from S&P 500 inclusion on firm policies. Y_SP500Peer is the average policy variable of S&P 500 peers in a firm's industry (4-digit SIC, excluding the firm itself), corresponding to the dependent variable in the regression. Attention related to S&P 500 inclusion, Attention_SP500, is the fitted value of the specification $Attention_{it} = \beta_0 + \beta_1 \cdot SP500Add_{it} + \varepsilon_{it}$, where Attention is the first component of PCA based on Log(Analysts), SEC letter, and Lawsuits, which are available in the full sample period, SP500Add is the S&P 500 inclusion indicator variable equal to one for treated firms after an addition year and zero otherwise, and ε_{it} is the error term. In Panel A, Attention_SP500 is estimated industry by industry (4-digit SIC). In Panel B, Attention_SP500 is estimated firm by firm as in the main tests. Then in the analysis we use an indicator variable *High_Attention_SP500* that is equal to one if Attention_SP500 is in the top tercile for treated firms and zero otherwise. In Panel C, Attention_SP500 is estimated by panel regression using the whole sample and including firm fixed effects and year fixed effects. The event window is four years before and four years after an addition year. The addition year is excluded. The sample period is 1997 to 2017. All specifications include firm and year fixed effects. Control variables are same to that in Panel B of Table 3. The *t*-statistics are reported in brackets. Robust standard errors are clustered at the firm level. Variable definitions are in the Appendix. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Industry-by-industry estimation of S&P 500 inclusion related attention

VARIABLES	(1) Investment	(2) Dividends	(3) Repurchases	(4) Payouts
Y_SP500Peer x Attention_SP500	0.325***	0.044	0.347***	0.280***
	[3.79]	[0.62]	[4.77]	[3.41]
Y_SP500Peer	0.361***	0.214***	0.365***	0.335***
	[6.52]	[4.39]	[8.23]	[7.10]
Attention_SP500	-0.222***	0.001	0.004	0.006
	[-5.16]	[0.71]	[0.63]	[0.70]
Ch(Passive) x Y_SP500Peer	-1.119	0.071	2.516	2.037
	[-0.24]	[0.09]	[1.31]	[1.11]
Ch(Passive)	0.051	0.007	-0.149**	-0.159*
	[0.11]	[0.68]	[-2.13]	[-1.80]
Observations	3,466	3,294	2,994	2,994
R-squared	0.427	0.881	0.671	0.711
Controls	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y

Panel B. Indicator variable based on S&P 500 inclusion related attention

VARIABLES	(1) Investment	(2) Dividends	(3) Repurchases	(4) Payouts
Y_SP500Peer x High_Attention_SP500	0.325**	0.128	0.316***	0.359***
	[2.00]	[1.57]	[2.88]	[3.37]
Y_SP500Peer	0.309***	0.192***	0.311***	0.277***
	[5.27]	[3.91]	[6.67]	[5.92]
High_Attention_SP500	-0.167***	0.001	0.002	-0.002
	[-3.95]	[0.69]	[0.32]	[-0.22]
Ch(Passive) x Y_SP500Peer	5.180	0.074	2.746	2.253
	[1.29]	[0.09]	[1.31]	[1.13]
Ch(Passive)	-0.633	0.005	-0.148**	-0.163*
	[-1.63]	[0.50]	[-1.97]	[-1.69]
Observations	3,244	3,099	2,816	2,816
R-squared	0.407	0.876	0.655	0.702
Firm FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y

Panel C. S&P 500 inclusion related attention estimated using the whole sample

VARIABLES	(1) Investment	(2) Dividends	(3) Repurchases	(4) Payouts
Y_SP500Peer x Attention_SP500	0.176**	0.103*	0.213***	0.185***
	[2.16]	[1.85]	[4.51]	[3.77]
Y_SP500Peer	0.378***	0.194***	0.352***	0.317***
	[6.55]	[4.50]	[7.65]	[6.66]
Attention_SP500	-0.355***	0.003	0.032***	0.038***
	[-4.90]	[1.08]	[2.71]	[2.78]
Y_SP500Peer x Ch(Passive)	-1.566	0.280	3.047	2.362
	[-0.33]	[0.37]	[1.63]	[1.32]
Ch(Passive)	0.170	0.004	-0.160**	-0.167*
	[0.37]	[0.42]	[-2.27]	[-1.90]
Controls	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y
Observations	3,493	3,319	3,019	3,019
R-squared	0.422	0.884	0.672	0.713

Table IA7. Robustness tests for firm performance and policies: Matching on market capitalization and ROA

This table reports the robustness tests for Table 3, Table 7 (Panels B and C), Table 8 (Panels B and C), and Table 9. In these tests we perform our propensity score match on market capitalization and ROA as well as the SIC 2-digit industry one year before S&P 500 addition. Panel A (B) replicates Panel A (B) of Table 3, Panel C replicates Panel B of Tables 7 and 8, Panel D replicates Panel C of Tables 7 and 8, and Panel E replicates Table 9. *SP500Add* is the S&P 500 addition dummy that is equal to one for treated firms after the addition year and zero otherwise. *PreSP500Add* is a dummy variable that is equal to one for treated firms one year prior to an addition year and zero otherwise. Both *SP500Add* and *PreSP500Add* equal zero for control firms. *Attention_SP500*, is the fitted value of the specification $\text{Attention}_{it} = \beta_0 + \beta_1 \cdot \text{SP500Add}_{it} + \varepsilon_{it}$, where Attention is the first component of PCA based on Log(Analysts), SEC letter, and Lawsuits, which are available in the full sample period. and ε_{it} is the error term. *Y_SP500Peer* is the average policy variable of S&P 500 peers in a firm's industry, corresponding to the dependent variable in the regression. The event window is four years before and four years after a year of addition. The addition year is excluded. The sample period is from 1997 to 2017. All specifications include firm and year fixed effects. Robust standard errors are clustered at the firm level. Variable definitions are in the Appendix. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Increase in attention and firm performance

VARIABLES	(1) ROA	(2) CAR
SP500Add	-0.020***	-0.133***
	[-4.02]	[-6.16]
PreSP500Add	-0.003	-0.018
	[-0.90]	[-0.69]
Observations	4,679	4,246
R-squared	0.602	0.362
Controls	Y	Y
Firm FE	Y	Y
Year FE	Y	Y

Panel B: Increase in attention around S&P 500 inclusion and firm performance

VARIABLES	(1) ROA	(2) CAR
Attention_SP500	-0.019***	-0.108***
	[-3.10]	[-3.76]
Observations	3,278	3,027
R-squared	0.615	0.353
Controls	Y	Y
Firm FE	Y	Y
Year FE	Y	Y

Panel C: S&P 500 addition effects on investment and payout

VARIABLES	(1) Investment	(2) Dividends	(3) Repurchases	(4) Payouts
SP500Add	-0.187***	0.002*	0.014***	0.017***
	[-6.50]	[1.92]	[3.19]	[3.53]
PreSP500Add	-0.040	0.001	0.001	0.003
	[-1.37]	[1.18]	[0.34]	[0.81]
Observations	4,467	4,449	3,976	3,976
R-squared	0.359	0.796	0.553	0.598
Controls	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y

Panel D: Investment and payout comovement with S&P 500 peers

VARIABLES	(1) Investment	(2) Dividends	(3) Repurchases	(4) Payouts
Y_SP500Peer x SP500Add	0.529***	0.239***	0.588***	0.565***
	[3.97]	[3.26]	[5.05]	[5.35]
Y_SP500Peer	0.256***	0.237***	0.383***	0.365***
	[4.32]	[5.93]	[6.47]	[6.54]
SP500Add	-0.239***	-0.001	-0.010*	-0.014**
	[-7.43]	[-0.92]	[-1.95]	[-2.31]
Y_SP500Peer x PreSP500Add	0.102	-0.001	-0.012	0.033
	[0.65]	[-0.02]	[-0.14]	[0.46]
PreSP500Add	-0.041	0.001	0.000	-0.000
	[-1.08]	[0.90]	[0.03]	[-0.07]
Observations	3,990	3,974	3,519	3,519
R-squared	0.422	0.830	0.607	0.652
Controls	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y

Panel E. Increase in attention and similarity of corporate policies

VARIABLES	(1) Investment	(2) Dividends	(3) Repurchases	(4) Payouts
Y_SP500Peer x Attention_SP500	0.237***	0.236***	0.476***	0.439***
	[2.87]	[4.87]	[7.77]	[7.67]
Y_SP500Peer	0.284***	0.145**	0.277***	0.281***
	[5.13]	[2.24]	[3.40]	[3.79]
Attention_SP500	-0.247***	0.000	0.007	0.005
	[-5.66]	[0.09]	[1.11]	[0.68]
Observations	2,778	2,769	2,479	2,479
R-squared	0.424	0.852	0.617	0.662
Controls	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y

Table IA8. Idiosyncratic volatility around S&P 500 inclusion

This table shows the treatment effect of S&P 500 inclusion on firms' idiosyncratic volatility. Idio. Volatility is the idiosyncratic volatility of a firm's stock, SP500Add is the S&P 500 addition indicator variable that is equal to one for treated firms after an addition year and zero otherwise. PreSP500Add is an indicator variable equal to one for treated firms one year prior to an addition year and zero otherwise. Both SP500Add and PreSP500Add equal zero for control firms. The event window is four years before and four years after an addition year. The addition year is excluded. All specifications include firm and year fixed effects. The *t*-statistics are reported in brackets. Robust standard errors are clustered at the firm level. Variable definitions are in the Appendix. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

VARIABLES	(1) Idio. Volatility	(2) Idio. Volatility
SP500Add	-0.001**	-0.001***
	[-2.29]	[-2.68]
PreSP500Add	-0.000	-0.000
	[-1.31]	[-1.19]
Log(Assets)	-0.002***	-0.002***
	[-4.37]	[-4.37]
Tobin's q	0.000	0.000*
	[0.51]	[1.94]
Cash	0.003	0.003
	[1.48]	[1.64]
Leverage	0.004**	0.004**
	[2.31]	[2.48]
Cashflow	-0.024***	-0.023***
	[-9.02]	[-8.75]
Amihud	0.004	0.005
	[0.67]	[0.84]
Return		-0.001***
		[-3.72]
Firm Age		0.000
		[0.24]
Observations	5,248	5,243
R-squared	0.797	0.799
Firm FE	Y	Y
Year FE	Y	Y

13