

The Systemic Governance Influence of Universal Owners: Evidence from an Expectation Document

Finance Working Paper N° 625/2019

August 2021

Ruth V. Aguilera

Northeastern University

Vicente J. Bermejo

Universitat Ramon Llull

Javier Capapé

IE University

Vicente Cuñat

London School of Economics and ECGI

© Ruth V. Aguilera, Vicente J. Bermejo, Javier Capapé and Vicente Cuñat 2021. All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that full credit, including © notice, is given to the source.

This paper can be downloaded without charge from:
http://ssrn.com/abstract_id=3411566

www.ecgi.global/content/working-papers

ECGI Working Paper Series in Finance

The Systemic Governance Influence of Universal Owners: Evidence from an Expectation Document

Working Paper N° 625/2019

August 2021

Ruth V. Aguilera
Vicente J. Bermejo
Javier Capapé
Vicente Cuñat

We would like to thank Renee Adams, Miguel Antón, Bruno Biais, Alon Brav, Catherine Cassamatta, Miguel Ferreira, Caroline Flammer, Denis Gromb, Oghuzan Karakas, Anya Mkrtchyan, Rafael Zambrana as well as the audiences at the London School of Economics, NOVA SBE, GCGC 2019-ECGI, Bocconi University, SAEI, ESADE, the Brattle Group, Toulouse School of Economics, HEC-Paris, Northeastern University, Cambridge University, The Seventh Public Investors Conference, Strategic Management Society, Refinitiv, AEFIN, CNMV, URiV, EDHEC, University of Manchester, ESCP, and University of British Columbia for their useful comments. We also thank Albert Lazaro for the excellent research assistance. This paper received the CNMV Best Paper Award in the 25th Finance Forum at Pompeu Fabra University. Vicente J. Bermejo acknowledges financial support from Banc Sabadell and the Spanish Ministry of Science, Innovation and Universities under PGC2018-099700-A-100.

© Ruth V. Aguilera, Vicente J. Bermejo, Javier Capapé and Vicente Cuñat 2021. All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that full credit, including © notice, is given to the source.

Abstract

Universal owners can systemically diffuse their investment preferences to a large share of the market. We use the unexpected release of a corporate governance expectation document by Norway's sovereign wealth fund as a natural experiment to understand how active universal investors can influence firms' governance. Expectation documents are an emerging activism tactic used to enhance a broad range of sustainability practices. We introduce a novel decomposition to explore the effectiveness of expectation documents. We show how firms adapted to the fund's new portfolio wide governance expectations expressed in the document and explore their heterogeneous response across ownership levels and firm characteristics. We also show how the fund changed its investment policy to meet its new stated preferences, even at the expense of financial returns. Overall, our research uncovers the potential wide-spread effectiveness of a low-cost activism tactic that universal owners can deploy to influence sustainability globally.

Keywords: Corporate Governance; Institutional Ownership. Expectation Documents

JEL Classifications: F30, G32, G34

Ruth V. Aguilera

Distinguished Professor for International Business and Strategy
Northeastern University, D'Amore-McKim School of Business
360 Huntington Avenue
Boston, MA 02115, United States
phone: +1 617 373 4639
e-mail: r.aguilera@northeastern.edu

Vicente J. Bermejo

Assistant Professor of Finance
ESADE Business School, Universitat Ramon Llull
Avenida Torreblanca, 59
08172 Sant Cugat, Barcelona, Spain
phone: +34 932 806 162
e-mail: vicente.bermejo@esade.edu

Javier Capapé

Adjunct Professor
Instituto de Empresa Business School
Calle Maria de Molina 6
Madrid 28006, Spain
phone:
e-mail: javier.capape@ie.edu

Vicente Cuñat*

Associate Professor of Finance
London School of Economics, Department of Finance
Houghton Street
WC2A 2AE London, United Kingdom
phone: +44 207 955 6203
e-mail: v.cunat@lse.ac.uk

*Corresponding Author

The Systemic Governance Influence of Universal Owners: Evidence From an Expectation Document

Ruth V. Aguilera (D'Amore-McKim School of Business, Northeastern University)

Vicente J. Bermejo (ESADE Business School, Universitat Ramon Llull)

Javier Capapé (IE University)

Vicente Cuñat* (The London School of Economics)

July 2021

Universal owners can systemically diffuse their investment preferences to a large share of the market. We use the unexpected release of a corporate governance expectation document by Norway's sovereign wealth fund as a natural experiment to understand how active universal investors can influence firms' governance. Expectation documents are an emerging activism tactic used to enhance a broad range of sustainability practices. We introduce a novel decomposition to explore the effectiveness of expectation documents. We show how firms adapted to the fund's new portfolio-wide governance expectations expressed in the document and explore their heterogeneous response across ownership levels and firm characteristics. We also show how the fund changed its investment policy to meet its new stated preferences, even at the expense of financial returns. Overall, our research uncovers the potential wide-spread effectiveness of a low-cost activism tactic that universal owners can deploy to influence sustainability globally.

JEL classification: F30, G32, G34

Keywords: Corporate Governance; Institutional Ownership. Expectation Documents

* We would like to thank Renee Adams, Miguel Antón, Bruno Biais, Alon Brav, Catherine Cassamatta, Miguel Ferreira, Caroline Flammer, Denis Gromb, Oghuzan Karakas, Anya Mkrtchyan, Rafael Zambrana as well as the audiences at the London School of Economics, NOVA SBE, GCGC 2019-ECGI, Bocconi University, SAEE, ESADE, the Brattle Group, Toulouse School of Economics, HEC-Paris, Northeastern University, Cambridge University, The Seventh Public Investors Conference, Strategic Management Society, Refinitiv, AEFIN, CNMV, URiV, EDHEC, University of Manchester, ESCP, and University of British Columbia for their useful comments. We also thank Albert Lazaro for the excellent research assistance. This paper received the CNMV Best Paper Award in the 25th Finance Forum at Pompeu Fabra University. Vicente J. Bermejo acknowledges financial support from Banc Sabadell and the Spanish Ministry of Science, Innovation and Universities under PGC2018-099700-A-100. Corresponding author: Vicente Cuñat, London School of Economics, Houghton St, London WC2 2AE, UK; email: v.cunat@lse.ac.uk.

It is increasingly common that companies are required by investors to engage into strategies that go beyond shareholder value, incorporate a broader stakeholder-view, and fill in a purpose. These strategies may often include broader objectives, such as benefits for employees, the mitigation of carbon dioxide emissions to the atmosphere or the selection of suppliers that foster less-developed communities (Liang and Renneboog, 2017). Investors are aligned with these environmental, social, and governance (ESG) goals which get integrated in global investors' portfolios at large-scale. Indeed, according to a recent Bloomberg research, "global ESG assets are on track to exceed \$53 trillion by 2025, representing more than a third of the \$140.5 trillion in projected total assets under management" (Diab and Martin, 2021). Yet, it seems clear that to explore long-term advances on the social and environmental fronts, changes should take place at the corporate governance level first (Flammer, 2015), since it is boards and managers that must be willing to invest in sustainability. This study explores how universal investors can foster change at the corporate governance level using expectation documents, a less known but systemic engagement tactic that is increasing in importance and use.

Institutional investors have multiple governance mechanisms to exert external control, including private negotiations with boards (Carleton, Nelson and Weisbach, 1998; Doidge et al, 2019), shareholder proposals (Cuñat, Giné, and Guadalupe, 2016), requesting board representation (Appel, Gormley and Keim, 2016) or launching proxy fights (Fos and Tsoutsoura, 2014). These mechanisms tend to be costly and resource demanding (Gantchev, 2013), which is particularly relevant for universal owners—large, active, long-term investors with a globally diversified investment portfolio. Universal owners are constrained to conduct individual costly monitoring as they invest in a significant part of the globe's public market,

comprising thousands of companies. Even when engaging with individual firms as active owners, the monitoring costs may be substantial while the individual firm may represent a small fraction of their portfolio. Therefore, it may be efficient to complement their engagement with individual companies with expectation documents, a high-reach governance tool that systemically affects their entire portfolio of firms.

The systemic influence of expectation documents has not been studied in the finance literature nor we know about their effectiveness as an activism tool to diffuse investors' preferences. Yet, their importance is growing as universal owners such as BlackRock, Vanguard, and State Street –collectively controlling over 80 percent of all indexed funds—increasingly use this mechanism to widen their influence on their portfolio firms. Some recent examples are the “Letters to CEOs” by BlackRock’s CEO Larry Fink requesting to disclose “company’s purpose beyond shareholder value maximization” or the Vanguard’s “Investment Stewardship Reports.”¹ Beyond these individual investor efforts, several platforms such as the Institutional Investors Group on Climate Change (IGCC), allow multiple investors to exert systemic influence by jointly adhering to collective expectation documents.² This form of activism is particularly attractive for owners that are both universal and active. Universal owners can use their visibility and worldwide impact to diffuse their preferences to the entire market through expectation documents, a unique document applicable to their whole portfolio. The owner publicly reveals its preferences, increasing their credibility and implicitly committing to the disclosed strategy. Moreover, this activism

¹ Another example is that of Japan’s Government Pension Investment Fund, the world’s largest public pension fund. They revised its investment principles in 2017 to incorporate ESG issues and have encouraged its portfolio companies to improve and disclose their carbon efficiency.

² Platforms that put together multiple investors share with large universal investors the limitations for active monitoring. IGCC has 230 members across 15 countries, with over €30 trillion in assets under management.

tool is more effective for active owners, since the announcement may be complemented with a credible threat of exit (Levit, 2019).

We follow the governance practices of the Norwegian sovereign wealth fund to study the effectiveness of the systemic influence of active universal owners via expectation documents. Norges Bank Investment Management (NBIM) is the asset manager of the largest sovereign wealth fund and holds on average 1.5% of all listed stocks globally. In November 2012, NBIM unexpectedly released an expectation document (hereinafter “the Note”) presenting its preferences on the corporate governance practices of all its investee firms.³ The Note’s request was an explicit call for the improvement of certain corporate governance dimensions of their investee firms. NBIM’s rationale for this call was to strengthen companies’ long-term financial performance “through better governance.” NBIM identifies its set of “good” corporate governance practices that we measure with a governance score. NBIM’s Note is an early example of an expectation document for which we have detailed data on the dimensions of corporate governance practices that it targets (i.e., effective board monitoring and strong minority shareholder rights) and hence useful to analyze its effects on firms.

While there is a growing literature exploring the preferences and interactions between active owners and firms, isolating the direct systemic influence of active owners on investee firms’ policies has proved difficult, given that both the investors’ decisions and firms’ policies are jointly codetermined.⁴ A correlation between investor preferences and firm

³ <https://www.nbim.no/en/publications/discussion-notes/2012/corporate-governance/>, November 19th 2012.

⁴ For example, Parrino, Sias, and Starks (2003) explore the entry and management strategies of institutional investors. Edmans and Manso (2011) show theoretically how exit strategies that are incentive-compatible for investors can affect firms’ actions. Aggarwal, Erel, Ferreira, and Matos (2011) provide evidence regarding how investors and firms match in terms of their policies and preferences. Dimson, Karakas, and Li (2015) find that

policies could be driven by the investment policy of the investor, by firms catering to the specific preferences of the investor or by the adjustment of the investor expectations to the characteristics of each firm. This creates an inherent problem of endogeneity. To disentangle the causal impact of the investor's preferences on firm policies, one would need an unexpected change in the perception of investor preferences that operates across all firms in a systemic way. The unexpected nature of the Note for portfolio companies, its significance within the active ownership strategy of NBIM (the Note is the first exercise of discussion released by NBIM to set expectations on specific governance dimensions and had a big echo in the media), and the fact that the Note is applicable to the entire portfolio universe, provides us with a valuable source of variation that can be considered exogenous from the point of view of firms.⁵

We introduce a novel quantitative decomposition to analyze the overall governance effect generated by the change in NBIM's preferences stated in the Note. By introducing this new decomposition, we lay out a useful analytical roadmap to empirically assess the consequences of expectation announcements made by other universal owners. This methodology can be generalized to other settings to uncover the effectiveness of any investor activism tool that targets a broad population of firms. In our setting, we show that the overall increase in the governance score of the NBIM portfolio following the release of the Note can be analytically decomposed into three components: i) the increase in the governance score of

institutional investor activism on specific firms leads to changes in the firms' CSR policies and is followed by positive abnormal stock returns.

⁵ More generally, sovereign wealth funds provide useful evidence about shareholder influence, as they often have public, time-varying preferences on issues beyond stock returns. In this paper, we focus on the Norwegian sovereign wealth fund's fostering "good corporate governance" as part of our empirical strategy. Other examples are New Zealand's fund open stance towards environmentally friendly investments or United Arab Emirates' funds objective of diversifying the country's economy.

those firms that were already present in the fund's portfolio at the time of the announcement; ii) the change in the composition of the firms that integrate the fund's portfolio, that is, the entry or exit of firms in the NBIM portfolio; and iii) the new correlation between the firms' changes toward higher governance scores and the fund's changes in the investment weights. We next summarize our results regarding each of these components.

We first show, using a difference-in-differences estimation strategy, how, indeed, firms which were part of NBIM's portfolio at the time of the announcement, changed their corporate governance to meet NBIM's corporate governance expectations. Investee firms increased their governance score, aligning themselves with the fund's new governance preferences. We provide ample evidence showing that firms' changes in governance are effectively driven by the preferences in the Note, and not by aggregate governance trends or other alternative explanations. This increase in the governance score is clearly present in the extensive margin (i.e., firms inside versus outside of the portfolio). The firm's intensive margin also shows a monotonic influence. That is, firms for which NBIM represents a higher ownership fraction, react more intensely to the Note. We also analyze how the effect of the expectation document varies with the fund's intensive margin (i.e., different levels of importance of the firm for NBIM). We find a weak monotonicity of the effect along this dimension, suggesting that NBIM's influence is rather independent of its portfolio weights. This is a distinctive feature of expectation documents as an engagement tool in that they are a single Note that targets all firms in the same way and aims to achieve a systemic influence.

We further explore the heterogeneous reactions of investee firms according to different firm and institutional characteristics. We find that firms that are smaller, less liquid and exhibit worse financial performance, change more their governance characteristics to

align with the stated preferences of the expectation document. Interestingly, smaller firms are precisely those for which it is less cost-effective for a universal owner to conduct a firm-specific stewardship role. Less liquid firms are also those for which the threat of exit is less credible (Edmans and Manso 2011). Our results, therefore, suggest that expectation documents can help to offset some of the inherent limitations in the stewardship strategy of large universal owners. In addition, we uncover a complementarity between the country and pre-existing firm governance scores on the one hand, and the firms' reaction to the Note on the other. Firms in countries where the quality of investor protection is below the median do not significantly improve their governance score following the Note. Moreover, within each country, firms in the lowest pre-existing governance score bracket do not significantly react to NBIM's announcement. This seems to indicate that there is a minimum governance threshold to enact change.

Second, we show that the fund changed its investment policy to meet their preferences, as stated in the Note. The fund increased its investments in firms with higher pre-existing governance scores (i.e., inherently aligned to the fund's preferences) and decreased its investments in firms with lower pre-existing governance scores. This effect is only significant when we focus on NBIM's discretionary investments and exclude the investments driven by NBIM's benchmark investment policy, demonstrating that this outcome was a deliberate shift in investment strategy. We also provide further evidence of NBIM's commitment to the expectations mentioned in the Note by showing that NBIM is willing to accept lower financial returns in exchange for "better governance." This set of results, which focus on corporate governance, are in line with other findings in the literature illustrating that broader ESG measures matter in investors' preferences beyond returns

(Bauer, Ruof, and Smeets, 2021; Hartzmark and Sussman 2019; Riedl and Smeets 2017).⁶

This group of results regarding the fund's investment strategy has several roles within our analysis. First, it shows how the fund made changes in its investment strategy aligned with the Note's objectives and plausibly complementing its effectiveness. Second, these results help to validate the identification strategy of our study, showing that the release of the Note coincides with the implementation of effective changes in the fund's investment policy.

In the third component of our decomposition analysis, we explore the new correlations between the firms' changes in governance and the changes in the investment stance of the fund. We uncover that, following the Note, the changes in governance and changes in investment weights become more closely correlated.

Taken together, our results illustrate that all three components are critical to account for the systemic influence in the Note's governance effectiveness. We quantitatively decompose the relative influence of each component on the total governance score of NBIM's portfolio. The most important explanatory factor of the change in the governance score of NBIM's portfolio is the reaction by the firms to the announcement of the Note.

Our work contributes to the existing literature in several ways. First, we analyze the effect of an expectation document—more specifically, a systemic request of alignment in governance preferences of a universal active owner. We causally estimate the investee firms' reaction to investor preferences that are exogenous to the individual firm's characteristics. This novel evidence reveals how changes in the preferences of universal active owners disseminated via expectation documents can change firms' policies in a systemic way. In this

⁶ Our findings are also in line with an announcement made by the chief investment officer of Japan's Government Pension Investment Fund: "as a universal owner, instead of trying to beat the market, our responsibility at GPIF is to make capital markets more sustainable."

sense, we depart from most pre-existing studies examining specific engagement interactions between given funds and given firms which could be driven by the firms' particular needs or properties. Second, we introduce a decomposition methodology to evaluate the overall impact of a portfolio-wide activism tool, i.e., expectation documents. We show evidence of reactions on both sides of the investment relationship following the announcement. That is, we observe how investee firms reacted to NBIM's new governance preferences and how NBIM effectively adapted its investment policies to fulfill its new stated preferences. Third, we explore the effectiveness of portfolio-wide expectation documents as a key corporate governance mechanism. In so doing, we fill a gap in the literature, as the release of expectation documents is becoming part of the toolbox of shareholder engagement and it has not attracted much scholarly attention thus far.⁷ We uncover a heterogeneous response of firms to the release of the Note, across ownership levels and firm characteristics, which speaks to the effectiveness of expectation documents. Finally, we shed some light on the dual objectives of universal owners to maximize financial returns and increase global influence. We show that NBIM is indeed willing to sacrifice financial returns in the short run to achieve its influence and increase the governance level of its portfolio in the long run. These dual objectives may allow universal owners to affect global practices in a systemic way.

1. RELATED LITERATURE

Institutional investors and their influence on firms has been studied extensively (i.e., Maug, 1998; Bushee, 2001; Gillan and Starks, 2003; Ferreira and Matos, 2008; Brav, Jiang,

⁷ By analyzing the effect of expectation documents, we depart from the literature that focuses on individual firm interventions that target firm-specific governance issues (as in Dimson, Karkas, and Li, 2015), a firm's social and environmental issues (as in Smith 1996, on CalPERS' targeted firms), or preferences that apply to subgroups of firms within a portfolio (as in Barber 2007).

and Kim, 2010; Denes, Karpoff, and McWilliams, 2017). Some early work focuses on pension fund activism, such as the CalPERS' focus list, targeting specific companies (Smith, 1996; Del Guercio and Hawkins, 1999). However, most recently the attention has shifted to the highly vocal activist institutional investors, such as hedge funds, that accumulate substantive ownership and engage in aggressive shareholder activists' campaigns (Gillan and Starks, 2000; Klein and Zur, 2009; Bebchuk, Brav, and Jiang, 2015 and Brav, Jiang, and Kim, 2015). At the other end of the activism spectrum are institutional owners passively managing their broad portfolios, through index and exchange-traded funds. Hawley and Williams (2000) suggest a point of complementarity between these two forms of influence such as when passive investors can vote with activist investors to enact change (Appel, Gormley, and Keim, 2016). Somewhere in between these two poles—activists and passive investors—are those institutional investors who hold minority positions in hundreds or thousands of firms (universal owners) and with the potential to exert systemic influence on the market, and particularly on their portfolio firms, via *active institutional ownership* (Aghion, Van Reenen, and Zingales, 2013).⁸ These active owners often seek to enhance their portfolio firms' corporate governance practices because it is believed to lead to better firm financial performance in the long run (Appel, Gormley, and Keim, 2016; Dimson, Karakas, and Li, 2015).

The focus of our paper is on these active institutional owners. These investors tend to have long-term mandates in highly diversified minority holdings, and as such, they are

⁸ Our paper may be included in the recent debate about the role of universal owners affecting systemic corporate governance. For example, Bebchuk and Hirst (2019) suggest that the renewed stewardship effort by Vanguard, BlackRock, and State Street should be insufficient due to their incentive structure. However, Fisch, Hamdani, and Davidoff Salomon (2018) suggest that the competition between passive and active managers for investors would foster stewardship among passive managers, as described by Appel, Gormley, and Keim (2016).

incentivized to monitor managers and strengthen minority shareholder rights to increase the value of their assets under management (Del Guercio and Hawkins 1999). Either directly or through proxy advisors, active owners vote, coordinate, and engage with investees' managers and boards to improve corporate governance practices, such as board independence, board diversity, or minority shareholder protection (Gillan and Starks 2000; Gompers, Ishii, and Metrick, 2003; Bebchuk, Cohen, and Ferrell, 2009). Indeed, active owners can exercise "voice" strategies in various ways, including formal engagements via proxy voting in general annual meetings, informal behind-the-scenes conversations with portfolio companies' managers and board members, or by releasing negative screening lists.⁹ In this paper we analyze a rather novel, less costly, universally diffused engagement channel of active ownership: a publicly announced expectation document. This type of call to action has recently become quite popular among institutional asset managers, given the benefits of immediately reaching wide audiences in the increasingly digital world.¹⁰ Others, such as Gormley et al. (2020) have started to investigate the ability of active universal owners to influence firms' governance policies. Our paper proposes a framework to analyze this type of systemic influence and provides evidence of how resource-effective expectation documents can exert change, not only on easily monitored governance issues but also on more complex governance practices.

⁹ These engagement strategies may vary across types of investors. For example, Briere et al. (2018) contrasted the voting behavior of NBIM with respect to that of BlackRock.

¹⁰ An example of this is Larry Fink's "Letter to CEOs" of 2019 and 2020, where the CEO of BlackRock, the world's largest asset manager with over \$7 trillion in assets under management, asked companies to change specific governance and risk management issues. Specific changes were required in areas such as long-term strategy and purpose, board oversight responsibilities, and climate-change and sustainability reporting. Those who fail to comply will be signaled and face higher capital costs in the future (Fink, 2018 and 2019). Goldman Sachs (GS) provides another example of how universal owners and advisory firms may exert a systemic influence in the market. With \$1.5 trillion in assets under management, the CEO of GS announced that the advisory firm will not take companies public if they have all-male corporate boards (Son 2020).

Our study differs from existing research which has explored private interactions between active institutional investors and specific companies. This literature has taken advantage of either access to private information (i.e., conversations, letters, phone calls) from a single investor, such as TIAA-CREF (Carleton, Nelson, and Weisbach, 1998), Hermes fund (Becht et al. 2009), or an unidentified responsible investor (Dimson et al. 2015); or survey data research, detailing the behind-the-scenes engagement strategies (McCahery et al. 2016). Other studies looked at investors, mostly on CalPERS, targeting a few selected firms and the negative screening effects on their financial performance (Smith, 1996; Nelson 2006; Barber, 2007) which proved to be less effective as an engagement strategy (Kim et al., 2019). Our approach is then unique in that we investigate the response of thousands of companies, and we do not focus on a “negative screening” mechanism, but rather on a positive or “inspiring” expectation document which intends to improve the governance of its targets instead of signaling those who fail to comply. Lastly, this particular expectation document is publicly available and is released by an active universal owner, Norway’s sovereign wealth fund, which we describe in the next section.

2. CONTEXT: NORGES BANK INVESTMENT MANAGEMENT

Sovereign Wealth Funds (SWFs) are government-owned investment funds without explicit liabilities that typically pursue long-term investment strategies (Aguilera, Capapé, and Santiso, 2016). An important characteristic of SWFs is that they often pursue multiple objectives (Clark, Dixon, and Monk, 2013), pairing financial returns with broader goals (Bernstein, Lerner, and Schoar, 2013; Megginson and Fotak 2015). In this paper we focus on NBIM, which manages the world’s largest SWF by assets under management, the

Government Pension Fund – Global.¹¹ As of December 2019, NBIM had assets under management worth 10,088 billion kroner (US\$1.15 trillion) with minority positions in more than 9,200 companies in 74 countries. Equity investments represented more than 70% of its portfolio, and it owns, on average, 1.5% of all equities listed globally.

NBIM fits nicely in the above description of an active owner. It also has an explicit publicly disclosed investment strategy, since it uses the FTSE Global Cap index as its benchmark. Norwegian firms are excluded from the index, and the fund also applies time-invariant country corrections that reweight each country to account for its links with the Norwegian economy. However, the fund can *deviate* from this investment benchmark by including, excluding, overweighting, or underweighting any firm in the portfolio. Moreover, the fund can drop firms based on lack of engagement with the fund or inconsistencies with the fund’s ethical guidelines. We are precisely interested in this fund discretion as an engagement tool to shape systemic governance change.

More formally, the investment intensity of NBIM in a given firm i , from country c , at time t can be represented as follows:

$$\text{Investment}_{ict} = I(\text{Ethics}_{it}=1) \times I(\text{Engage}_{it}=1) \times (\text{FTSE Global}_{it} \times \text{Country}_c + \text{Stance}_{it}) \quad (1)$$

where $I(\text{Ethics}_{it}=1)$ indicates that the firm fulfills the NBIM’s Council on Ethics requirements, $I(\text{Engage}_{it}=1)$ indicates that the firm has not been excluded due to lack of individual engagement with the fund, FTSE Global_{it} would be the investment in the firm according to the FTSE Global Cap index and Country_c are time-invariant factors that correct

¹¹ In spite of the term “pension” in its name, it does not pay pensions; instead it preserves and builds financial wealth for future generations to prepare for the time when oil and natural gas reserves are depleted.

the index at a country level. $Stance_{it}$ is the specific stance (overinvestment or underinvestment) that the fund may have on a given firm relative to the benchmark.

The rich information disclosed by NBIM allows us to (1) identify why a firm is included/excluded in the portfolio, and (2) which changes in investment emanate from discretionary elements ($Ethics_{it}$, $Engage_{it}$, or $Stance_{it}$) or from the mechanical rebalancing of the fund ($FTSE\ Global_{it} \times Country_c$). We use these discretionary and automatic elements of NBIM's investment strategy as part of our identification strategy since they reveal the changes in investment that are exogenous or endogenous to NBIM's preferences.

2.1. Natural Experiment: NBIM Changes its Focus on Corporate Governance in 2012

NBIM's initial shareholder engagement efforts as an active owner started in 2004 led by the Council on Ethics and focused on negative ethical targeted screening—similar to that of CalPERS. In the expectation document released by NBIM on November 19th, 2012, a “Note” titled *Corporate Governance* stated that an effective corporate governance has a positive, direct, and long-term impact on the value of companies. In this Note, NBIM explicitly declares that from that point onwards, it would request all its portfolio firms to meet certain “corporate governance expectations.”¹² The Note has two unique features: it is the first and only publicly available note expecting investee firms to adopt specific corporate governance practices during our sample period, and it portrays an unequivocal universal expectation applicable to every single firm in which NBIM invests (NBIM 2012:7). We

¹² The language of the Note contains statements such as “NBIM's primary corporate-governance focus will consequently be on mechanisms shareholders can use directly and indirectly to influence companies toward sustained business success” and “NBIM operates a corporate-governance program. Setting out generic expectations for good corporate governance is one of several steps in this program and the topic of this discussion note” (NBIM, 2012:3).

remain agnostic on whether the Note marks a critical turning point in NBIM's corporate governance strategy, or it serves to publicly announce to the market a relevant shift in internal preferences. Either of these two options are valid to carry out our analyses. In October 2011 NBIM announced it was in the process of changing its approach to corporate governance and it would launch an expectation document with its specific preferences in 2012. This process takes place during 2012 and crystalizes with the publication of the Note in November 2012. Indeed, a few months before the publication of the Note, NBIM dismantled its separate corporate governance unit, created in 2005, which had been supporting ethical issues, and incorporated governance professionals into its equity investment team. This illustrates that the Note gives visibility to a key turning point in the internal governance preferences of the fund, making the Note a legitimate signal for external stakeholders on NBIM's governance expectations.¹³

3. DATA

3.1. Sample

Our sample consists of a full panel of all firms in the "Environmental, Social and Governance" (ESG) dataset from Eikon (Thomson Reuters), which provides firm-level governance, financial, and accounting data. We merge the Eikon universe with NBIM's dataset that provides the yearly equity holdings of NBIM since its inception in 1998. We

¹³ In fact, the novelty of this strategy was covered by the financial media in the weeks that followed the Note release in November 2012. For example, CNBC wrote the following: "Norway has just published an important note on what it expects in terms of corporate governance from the companies it invests with" (Carney, 2013). Comments from the CEO, Mr. Slyngstad, reported in the *Financial Times* stressed how the fund shifted into active ownership, as follows: "We think it is the responsibility of the larger investors to be more involved in what in the UK is referred to as stewardship and have a dialogue not just with the CEO and CFO but also the chairman of the board" (Milne, 2013).

complement these data with data on the constituents of the FTSE Global Cap Index from the FTSE Russell Help Desk. The Eikon database provides firm-level ESG variables for more than 4,200 public companies, listed in multiple stock exchanges since 2002. Our sample starts in 2006, which is the first year in which NBIM invested in small and mid-cap firms. Given the structure of our analysis and the timing of the Note, in our main specifications, we use yearly data for the period 2009–2015. We collect yearly firm-level information on governance, accounting, and financials for the period 2009–2015. Given the availability of governance and financial data, we obtain a final sample of 4,200 companies per year.¹⁴ All our yearly data is measured at the end of December.

As a measure of firm-level corporate governance, throughout the study we use a single governance index that we obtain from Eikon ESG's management score. According to Eikon, the management score "measures a company's commitment and effectiveness towards following best practice corporate governance principles." It is the index, from the population of pre-constructed Eikon indices, that most closely matches the content of NBIM's expectation document. The index incorporates 34 corporate governance indicators, including board independence; CEO–Chairman separation; board diversity; board skills and background; staggered boards; or the existence of audit, nomination, and compensation committees.¹⁵

¹⁴ For consistency and to avoid sample attrition, in our main analysis we drop firms that have one or more missing values on our main variable of interest (the governance index) during our main period of analysis (2009–2015). We are left with a sample of approximately 15,000 observations.

¹⁵ Eikon provides index scores at the firm level, grouped in the following 3 categories: environmental, social and governance. Within the category of governance, Eikon provides 3 indexes, as follows: Management, Shareholders and CSR. We use the Management Score since it best matches the Note's focus on governance expectations, and it is Eikon's most complete index on governance (it includes 34 indicators). The other 2 indexes within the Governance category are Shareholders and CSR, which are much more restrictive and only include 12 and 8 indicators, respectively. A detailed explanation on the construction of the *governance index* is provided in Table A.I of the Online Appendix.

Each governance indicator is first transformed into a “percentile score,” from 0 to 100 according to the ranking of each company for each indicator across the whole sample. Then, the governance index equally weights the 34 rank indicators to assign an overall governance score to each company. This re-ranking procedure is useful, since it nets out aggregate trends in corporate governance and facilitates the interpretation of the results. Since we employ differences-in-differences specifications (comparing treatment and control firms), this re-ranking should not have any qualitative impact in the results. As a robustness check, we also report results based on the indicators themselves, without the ranking transformation.¹⁶ We run additional tests by decomposing the ESG management index into three sub-indices based on whether each indicator is explicitly mentioned, partly mentioned, or not mentioned in NBIM’s Note (see Section 5.2.2).

Finally, we draw on some additional databases. We measure country-level minority shareholder protection from the Doing Business report of the World Bank. We obtain stock prices and market related data from Eikon, and the global factors (*RMRF*, *SMB*, *HML* and *UMD*) from Kenneth French’s website. To construct monthly returns in U.S. dollars, we employ the *total return index* (which incorporates reinvested dividends) from Eikon.

3.2. Descriptive Statistics

Table I reports the summary statistics for our main sample. The governance index takes scores from 0 to 100, with scores closer to 100 indicating that the company has good governance quality relative to all the companies in Eikon ESG. In our sample, the average

¹⁶ More specifically, to have results on aggregate governance changes that can be interpreted as changes in the “number of indicators” and not as changes in a “ranking index,” we also construct a governance index in levels following Eikon’s methodology. All information and results are included in Section 6.2.2.

company has a governance score of 52.8. The standard deviation is 28.7. The average weight of a firm in NBIM (what we define as the fund weight, which is the fraction of NBIM's portfolio represented by a firm's market value) is 0.04%. The average weight that NBIM represents in a firm (what we define as the firm weight, which is the fraction of the firm's market value held by NBIM) is 0.84%.

Table A.II in the Online Appendix presents the evolution of the NBIM total equity holdings, as well as the percentage of NBIM holdings that we track in our final sample. Table A.III in the Online Appendix reports summary statistics for firm characteristics, splitting the sample into those that belong to NBIM in December 2011, just before the announcement of the Note and those that do not. Finally, Tables A.IV and A.V in the Online Appendix report the industry and country composition of our sample when the Note was announced.

4. A THREE-STEP DECOMPOSITION

We propose a decomposition to analyze the effect of the expectation document on the aggregate governance of NBIM's portfolio. This decomposition can be applied to analyze the impact of alternative expectation documents focused on any sustainability topic. We define G_{it} as an aggregate governance index of the NBIM portfolio $G_{it} = \sum_{i=0}^I w_{it} g_{it}$ that measures the overall corporate governance quality of NBIM's portfolio according to the preferences stated by NBIM in the Note . Where w_{it} is the investment weight of firm i at time t in the NBIM portfolio and g_{it} is the governance score of firm i at time t . The definition of G_{it} allows us to decompose the changes of G_{it} into three different elements.

The changes in the overall corporate governance level of the NBIM portfolio (ΔG_{it}) can be decomposed as follows:

$$\Delta G_{it} = \sum_{i=0}^I w_{it+1} g_{it+1} - \sum_{i=0}^I w_{it} g_{it} \quad (2)$$

We define $\Delta w_{it} = w_{it+1} - w_{it}$ and $\Delta g_{it} = g_{it+1} - g_{it}$ to obtain:

$$\Delta G_{it} = \sum_{i=0}^I (w_{it} + \Delta w_{it})(g_{it} + \Delta g_{it}) - \sum_{i=0}^I w_{it} g_{it} \quad (3)$$

Re-arranging terms, we can express the specification as follows:

$$\Delta G_{it} = \sum_{i=0}^I (w_{it} \Delta g_{it}) + \sum_{i=0}^I \Delta w_{it} g_{it} + \sum_{i=0}^I \Delta w_{it} \Delta g_{it} \quad (4)$$

Each term in Equation (4) has a clear economic interpretation. The first term depends on the decision of the firms to change their governance, potentially to meet NBIM governance expectations. This term has fixed NBIM weights prior to the release of the Note and allows for the firm governance scores to change. Intuitively, it is similar to a standard intent to treat specification in which the treatment depends on fixed predetermined (2011) NBIM investment weights. Similarly, it can be interpreted as a reduced form of an instrumental variables (IV) regression, in which we instrument NBIM's post 2012 weights with a cross-sectional snapshot of 2011 weights. In this first term, G_{it} changes are driven by changes in the corporate governance score of NBIM's investee companies. The second term is the reweighting conducted by NBIM following its new governance strategy. NBIM can exit (enter) firms with worse (better) governance or decrease (increase) its portfolio holdings of firms with worse (better) governance. In this second term, the firms' governance score is fixed prior to the release of the Note, and the changes in G_{it} are only driven by NBIM's investment strategy. Finally, the third term measures firms' changes in corporate governance

that come with changes in NBIM's weights. In equilibrium, it can be that NBIM changes its holdings of a firm due to changes in the governance of the firm or vice-versa.¹⁷

5. EMPIRICAL ANALYSIS

We use the three way decomposition analysis to organize the remainder of the paper, following the econometric counterparts in Equation (4). We analyze each term of the decomposition in a separate section. Section 5.1 explores the overall change in the governance score of the NBIM portfolio after the release of the Note. Section 5.2, analyzes the first term in Equation (4), fixing the NBIM weights prior to the release of the Note and allowing for the firm governance scores to change. In this way, this section measures the response of firms to the release of the Note in an intent-to-treat structure that uses the fixed holdings of NBIM before the release of the Note as proxies of the NBIM influence after its release. Next, Section 5.3 focuses on the changes in the investment strategy of NBIM, our second term in Equation (4). It takes the governance scores of each firm as given and predetermined, and explores the impact of the investment strategy changes in the overall change in governance. Section 5.4 explores the third term in Equation (4) and shows how the correlation between the changes in governance scores and the changes in investment weights is altered by the Note.

5.1. Overall change in the governance index of the NBIM portfolio

¹⁷ We explicitly calculate the scores for each of the terms of the analytical decomposition in Equation (4) and show the results at the end of the Online Appendix (see Table A.XXIII).

We first conduct a baseline analysis to explore whether the overall governance score of firms included in the NBIM portfolio changes with the announcement relative to the governance score of firms outside the NBIM portfolio. This analysis is instrumental to the rest of the paper as it measures the overall effect (the term ΔG_{it} in Equation (2)) that we then decompose. It is also a useful descriptive result given that NBIM's stakeholders may be interested in knowing whether their investments are backing firms whose governance is aligned with the Note's objectives.

We estimate for every year t (2007 – 2015) the following cross-sectional regression:

$$Governance_i = \alpha + \sigma NBIM_i + \varepsilon_i \quad (5)$$

where the dependent variable $Governance_i$ is the governance score of firm i in year t , and $NBIM_i$ is a dummy variable that equals one if firm i belongs to the NBIM portfolio at time t , and zero otherwise. The coefficient of interest σ estimates for every year t the average differential governance between firms in the NBIM portfolio and firms outside it.

Figure 1 and Table II show our results.¹⁸ Before the event (2012), we find no significant governance differences across firms inside and outside the NBIM portfolio and no particular trend of this difference. However, the firms in the NBIM portfolio exhibit significantly higher governance scores in the period following the event (2012-2015) relative to the firms outside the portfolio. The difference between the periods is statistically significant and economically large, amounting to 4.8 to 7.5 score points in the governance index. That is, if there were 100 representative companies, the firms inside the NBIM portfolio would increase their governance rankings by 4.8 to 7.5 positions in the ranking of

¹⁸ In Table A.VI of the Online Appendix we show that our results are qualitatively similar when we weight our regressions by firm size.

all firms, on average, after the announcement. As we discussed above, this positive overall effect on governance quality can be due to firms reacting to the NBIM's new governance preferences (the firms in the NBIM portfolio receive treatment and change their governance practices), or due to a "rebalancing" channel (NBIM drops firms with low governance scores and invests in firms with high governance scores). We explore these components in detail in the following sections.

In addition, we find similar results when using continuous measures of the NBIM investment weights and carrying out pooled OLS regressions to estimate the overall effect of the Note on the governance of NBIM's portfolio.¹⁹

Taken together, this set of results shows that the overall governance characteristics of the NBIM portfolio became closer to NBIM's governance preferences after the 2012 Note. In the next two sections, we analyze which part of this governance change can be attributed to changes in the governance characteristics of the firms in the NBIM portfolio and which part to changes in the investment strategy of NBIM.

5.2. Changes in the Governance of NBIM Portfolio Firms

5.2.1 The Effect on the Governance of NBIM Portfolio Firms

¹⁹ The results are shown in Table A.VII of the Online Appendix. We include the full sample of firms in this analysis (including those firms outside the NBIM portfolio with a weight of zero). We use both NBIM fund and firm weights. The NBIM fund weight is the fraction that NBIM's holding of a given firm represents over the total NBIM portfolio. The NBIM firm weight is the fraction of the firm's market value held by NBIM. Results show how the portfolio of firms constructed with fund weights increases its average governance score after the announcement by an average of 9.5 percentile scores. This means that firms that increase their average governance score after the release of the Note gain more weight in NBIM's total portfolio. The results are not statistically significant when we focus on firm weights.

In this section, we analyze the change in the governance of NBIM portfolio firms after the release of the 2012 Note. Following the decomposition explained in Section 4, we instrument NBIM's post 2012 weights with the cross-sectional weights in 2011. In this way, this section measures the response of firms to the release of the Note in an intent-to-treat structure that uses the fixed holdings of NBIM before the release of the Note as proxies of the NBIM influence after its release. By fixing the weights in 2011, we prevent that changes in the investment strategy of NBIM could act as a confounding factor for the changes in the governance of NBIM portfolio firms (for example, firms with a higher governance score are more likely to be added to the NBIM portfolio after the announcement). We use both reduced form regressions and two-stage least squares (2SLS) regressions. The reduced form results are informative about the direction of the effect of the announcement on the governance changes of firms in the portfolio of NBIM; however, only the 2SLS estimates can be quantitatively interpreted as the treatment on the treated firms.

The reduced form regression we use is as follows:

$$\text{Governance}_{izt} = \sigma_1 \text{Post}_{(t \geq 2012)} * \text{NBIM}_{iz2011} + \text{Post}_{(t \geq 2012)} * \delta_z + \alpha_t + \mu_i + \varepsilon_{izt} \quad (6)$$

where Governance_{izt} is the governance score of firm i , in country z , in year t , $\text{Post}_{(t \geq 2012)}$ is a dummy variable that takes the value of one after the Note's release (2012–2015), and zero for previous years (2009–2011), NBIM_{iz2011} is a dummy variable equal to one if firm i belongs to the NBIM portfolio in 2011, and zero otherwise. δ_z , α_t and μ_i are country, year and firm dummies, respectively.²⁰

²⁰ Results are similar if we exclude δ_z from $\text{Post}_{(t \geq 2012)} * \delta_z$, or replace it with country-year dummies ($\text{Year}_t * \delta_z$). We opt for an intermediate approach that neutralizes potential country confounding effects, while retaining more degrees of freedom.

In the reduced-form regression we employ a differences-in-differences estimator that compares the evolution of the governance score of the firms included in the portfolio of NBIM in December 2011 (a year before the release of the Note), relative to the governance of those not included.²¹ In the two-stage least squares (2SLS) regressions, we explicitly instrument the NBIM holdings of the years after the release of the Note (2012–2015), with the NBIM holdings of December 2011.²² Results are shown in Table III. The first two columns report results for reduced form regressions, and columns 3, 4 and 5 report results for 2SLS regressions. The results show a significant increase in the governance scores of firms' in the NBIM portfolio starting in 2012. On average, the 2SLS regressions indicate that firms in the NBIM portfolio enhance their governance score by 7 score points yearly after the disclosure of the Note relative to firms that are not in the NBIM portfolio. Moreover, by interacting $NBIM_i$ with year dummies (with 2009 as the omitted category) in the 2SLS specification, we can interpret the lagged effects of the changes in governance. The magnitude of the difference in governance among the two groups increases quite sharply in 2012 but also monotonically increases with time after the Note. This momentum, post 2012, is consistent with the idea that some corporate governance changes take time to be implemented.

5.2.2 Validity of the Empirical Strategy and Robustness Tests

²¹ Results are similar if we do not include $Post_{(t \geq 2012)} * \delta_z$, or if we include a more saturated model with country-year dummies ($Year_i * \delta_z$). We opt for an intermediate approach that neutralizes potential country confounding effects, while retaining more degrees of freedom.

²² See Table A.VIII of the Online Appendix for first stage regressions showing that the relevance condition of our instrument is satisfied. Note that the first-stage shows that there is enough persistence in NBIM's holdings to make the instrument valid for holdings four years after the release of the Note; allowing us to analyze its long-term effects.

In this section, we show further evidence that firms' changes in governance are driven by the Note hence validating our empirical strategy and ruling out alternative explanations. First, we compare the average characteristics for NBIM and non-NBIM firms in 2010 and 2011. Overall, we find no significant differences between the two groups, evidencing that both groups are indeed comparable, and mitigating concerns that omitted variables could be driving our findings (see Table A.III of the Online Appendix).²³

Second, given that NBIM partially tracks the FTSE Global Cap Index, we show that the results of the estimations in Table III are not driven by global differential trends in governance practices or common aggregate shocks such as the 2007 financial crisis. For this purpose, in Table IV we classify firms in 2011 into the following four groups: firms in the portfolio of NBIM that are not in the FTSE Global Cap Index (discretionary portfolio of NBIM), firms in the FTSE Global Cap Index that belong to the NBIM portfolio (nondiscretionary firms, since NBIM's investment strategy follows this benchmark), firms in the FTSE Global Cap Index not held by NBIM, and firms excluded by NBIM's Ethics Council. The omitted group contains firms that belong neither to FTSE nor to NBIM and have not been excluded by the NBIM's Ethics Council.²⁴ We observe that firms that significantly improve their governance score after the Note are the firms in which NBIM is invested. After the announcement, relative to the excluded category, we do not observe a significant increase in the governance scores of firms exclusively listed in the FTSE Global Cap Index. Only firms that are held by NBIM (independently of whether they are also in

²³ In Tables A.IV and A.V of the Online Appendix we also compare summary statistics by country and industry for NBIM and non-NBIM firms in 2011. We find a similar composition for both groups. Still, to account for heterogeneity at the country level, all our main specifications include Country*Post-event fixed effects.

²⁴ Sample size for each group is 1,946 observations for OnlyNBIM₁₁, 13,076 observations for NBIMFTSE₁₁, 658 observations for OnlyFTSE₁₁, 161 observations for Excluded-ethics₁₁, and 1,547 observations for the omitted group.

FTSE) exhibit improvements in governance. Overall, the results in Table IV demonstrate that the general evolution of the governance score of the firms in the FTSE Global Cap Index (NBIM's benchmark) is not a relevant confounding factor for our results,

Third, we conduct a series of additional tests that add further robustness to the results shown in Table IV. In Table A.IX of the Online Appendix we show that our results are robust to using regressions weighted by firm size and are not exclusively driven by small firms. Moreover, to avoid potential biases caused by a reweighting of the NBIM portfolio in 2011 (the year before the event), we lag the instrument a further year to fix the weights of NBIM in 2010 (see Table A.X of the Online Appendix).²⁵ We also rebalance the number of firms in the control group to be make it equal to the number of firms in the treated group. We do this by using nearest-neighbor propensity score matching with replacement (see Table A.XI of the Online Appendix), and find results very similar to those of Table IV.

Fourth, it is important to highlight that our dependent variable (the governance index provided by Eikon ESG) re-ranks firms every year across the whole sample. This procedure offers additional reassurance (beyond the difference-in-differences structure) that our results are not driven by aggregate governance changes. It also reduces the potential effects caused by outliers. However, it is also interesting to replicate the results expressing the different governance elements of the index in levels (i.e., without transforming them into a ranking each year). The qualitative results are likely to be similar, given that both the differences-in-differences procedure and the re-ranking of firms net out aggregate trends. While in our main

²⁵ Fixing the weights in 2010 reinforces the exogeneity of the instrument (strengthens the validity of the exclusion restriction) but decreases its relevance. In Table A.X of the Online Appendix we show that results are unchanged when we fix NBIM portfolio weights in 2010 as our treatment.

analysis the coefficients can be interpreted as changes in a ranking, the coefficients on a specification in levels can be interpreted directly as changes in the number of governance indicators. We replicate our analysis but replace the ranked governance index provided by Eikon with a governance index in levels in which we do not re-rank firms every year. We find qualitatively similar results to those in Table IV (see Table A.XII of the Online Appendix). After the Note, on average, firms in the NBIM portfolio in 2011 improve 0.84 governance indicators per year more than firms outside the NBIM portfolio in 2011.²⁶

Fifth, throughout the paper, we use the Eikon ESG management index, given that it is the pre-constructed index in Eikon that most closely tracks the content of the Note. However, as a robustness check, we also manually classify the governance indicators of the Eikon management index according to whether these governance practices are highlighted in the Note or not. To do so, we classify the 34 indicators of the governance index into 3 groups. The first group includes the 13 indicators that are explicitly mentioned in the Note. Following the same criteria used for the governance index in levels, we create an index with these 13 indicators. We then create an index with 9 indicators that are partially mentioned or related to the Note and, finally, we create an index with the remaining 12 indicators that are not explicitly mentioned in the Note. We find that the effect is only significant for the index that includes the indicators that are clearly mentioned in the Note (see Table A.XIII of the Online

²⁶ To construct a governance index in levels, we follow the methodology used by Eikon to construct indexes. However, instead of ranking the firms for each of the 34 indicators, each firm takes an absolute value between 0 and 1 for each indicator (independently of other firms' governance), where 1 is good governance and 0 is poor governance. Eikon provides a value between 0 and 1 for 29 of the 34 indicators. For the other 5 indicators on board composition and executive compensation (values are reported in €), we linearly rescale and normalize the values to set them between 0 and 1. As in Eikon, the governance index is the equally-weighted sum of the non-missing indicators, so a firm-year observation can take a value between 0 and 34. The weights are calculated excluding indicators with missing data. We drop firms with more than 10% of missing indicators. A detailed explanation of the 34 indicators and the construction of Eikon's index is provided in Table A.I of the Online Appendix.

Appendix.). In fact, the coefficient on $NBIM_{11}$ is monotonically increasing as the governance index gets closer to the specific content of the Note. Even when we use the specification used in Table IV, we find that the coefficient on $OnlyNBIM_{11}$ and $NBIMFTSE_{11}$ are only significant for the subgroup of provisions that are mentioned in the Note. That is, the more closely we define the index to the specific content of the Note, the stronger is the reaction of NBIM relative to non-NBIM firms. This provides strong further evidence that the change in governance that we observe after 2012 is a direct reaction to NBIM's expectation document and not due to other governance trends.²⁷

Sixth, we expand our sample years and include 2006, 2007 and 2008 in our analysis. We then replicate Table III and confirm that there are no pre-existing differential trends on a longer pre-period sample. The treatment and control groups follow parallel trends before the Note is released in 2012 (see Table A.XIV of the Online Appendix). Finally, we also conduct several placebo tests, defining the placebo pre- and post- periods within the period before the Note (2006–2011) and find no significant results (see Table A.XV of the Online Appendix).

All these results put together provide strong evidence that our findings are driven by the release of the Note and not by aggregate governance changes or other confounding factors. To sum up, we show that before the Note, the treatment and control groups exhibit similar governance quality and there are no pre-trends in the governance index. Additionally, we demonstrate that our results are not driven by global differential trends in governance or

²⁷ In Table A.XIII in the Online Appendix we explain how we classify the 34 indicators into the 3 groups. Note that we prefer not to use this subindex in our main analyses since there is some degree of discretion when classifying indicators. Thus, we restrict all our analyses to the preconstructed governance index provided by Eikon.

NBIM's benchmark, and that in fact the changes in governance that we capture are dictated by the indicators that are highlighted in the Note.

5.2.3 Skin in the Firm Versus Strong Voice

Institutional investor monitoring is likely to depend on both the fraction of the firm held by the institution and the fraction of the institution's portfolio represented by the firm. Fich, Harford, and Tran (2015) showed that institutional monitoring is greater when the firm represents a higher fraction in the institution's portfolio. However, expectation documents constitute a unique form of activism in which a single document is released to influence all portfolio firms equally. In this section, we show that the weight of the firm in NBIM's portfolio will not be as determinant as the weight of NBIM in the firm. The former occurs because through expectation documents the fund exerts the same influence independently of the weight that the firm represents in its portfolio. The latter occurs because the reaction of the firm to the Note may depend on how important of an investor NBIM is for the firm.

In Table V, we analyze whether the increase in the governance score after the announcement depends on the fraction of the firm held by NBIM or the fraction that the firm represents for NBIM. We use a quantile specification of the following form:

$$\text{Governance}_{izt} = \sum_{q=1}^Q \sigma_q \text{Post}_{(t \geq 2012)} I_q(\text{NBIM}_{\text{Weight}_{iz2011}}) + \text{Post}_{(t \geq 2012)} * \delta_z + \alpha_t + \mu_i + \varepsilon_{izt} \quad (7)$$

where Governance_{izt} is the governance score of firm i , in country z , in year t . I_q are dummies allocated to the quartiles of the NBIM weights (zero weight is the omitted category) and $\text{NBIM_Weight}_{iz2011}$ represents the fraction of the firm held by NBIM in 2011 or the

fraction of NBIM's portfolio represented by the firm in 2011. The coefficients of interest are σ_q and are shown in columns 4 and 5 of Table V.

In columns 1, 2 and 3 of Table V, we use a linear regression model, and instead of using quartiles we include a continuous measure of ownership intensity $NBIM_Weight_{iz2011}$. This continuous measure can either be the fraction of the firm held by NBIM in 2011 (column 1), the fraction of NBIM's portfolio represented by the firm in 2011 (column 2) or both (column 3). The results with the linear specification seem to indicate a positive relation with the firm weights. The firms in which NBIM has a higher weight increase more their governance score after the announcement. However, the quantile specifications in Table V reveal a much richer structure.²⁸

Table V shows that firms in which NBIM has a higher weight show a greater increase in their governance score after the announcement (column 1). Moreover, as expected, we do not find a significant effect when analyzing fund weights (column 2). The quantile specifications in Table V reveal a much richer structure.²⁹ In column 4, the reaction of firms is largely driven by the intensive margin. While firms in the bottom quantile (below 0.062%) of the participation of NBIM in their shareholdings do not significantly react to the announcement, the effect grows monotonically to 7.7 rank points for those firms in which NBIM has a substantial weight within its shareholders.³⁰ It seems that NBIM's influence grows with its share of firm ownership and that it needs a minimum threshold of ownership to exert influence on their investee firms. This is an interesting characteristic of expectation

²⁸ The thresholds for the firm weight quartiles are 0.062%, 0.654% and 0.972% respectively. The thresholds for the fund weight quartiles are 0.005%, 0.013%, and 0.033% respectively.

²⁹ The thresholds for the firm weight quartiles are 0.062%, 0.654%, and 0.972% respectively. The thresholds for the fund weight quartiles are 0.005%, 0.013%, and 0.033% respectively.

³⁰ We conduct Wald tests and find that the differences between the coefficient of the highest quartile and the other three lower quartiles are significant for the firm weights.

documents, given that Fich, Harford, and Tran (2015), Kempf, Manconi, and Spalt (2017) and Liu et al. (2020) showed that investors rationally devote less monitoring time to firms that have a smaller weight in their portfolio.

The analysis of funds' weights in column 5 reveals a different pattern. The reaction of firms seems to be largely driven by the extensive margin. It makes a large difference (4.2 reduced-form score points) to be part of the NBIM portfolio, even if the firm represents a small part of NBIM's investments. This shows that the Note clearly had an effect on firms inside the portfolio of NBIM relative to firms outside the portfolio. However, we do not find important differences when comparing the different quartiles, which suggests that the systemic influence of the Note across all its investee firms does not depend on the weight that firms have in NBIM's portfolio. This result matches the systemic influence that would be expected from a single expectation document applicable to NBIM's entire portfolio. Moreover, this shows that expectation documents can help to cover the gaps left by other forms of stewardship that tend to be more focused on larger investments.

Overall, the results of this section suggest that NBIM has a significant and similar influence on firms that exhibit different levels of importance within its portfolio. This is a unique characteristic of the influence exerted through expectation documents. However, the reaction of firms to this homogeneous influence may be different, and in fact we find that the larger NBIM's shareholder presence, the larger the reaction of firms. This is in line with Appel, Gormley, and Keim (2016), who observed how increasing ownership by passive institutional investors, accelerates changes in governance dimensions such as board independence or the removal of takeover defenses. It is also worth emphasizing that the monotonicity of the quantile coefficients in the firm weights lends further support to our

hypothesis that the effects that we are capturing are driven by NBIM's influence and not by other potential confounding factors.

5.2.4 Heterogeneous Effects

In this section, we explore the heterogeneous reactions of the firms' responses to the Note, contingent on their characteristics before the announcement in 2011. We evaluate the following features: firm total assets, firm total market value, firm performance (EBITDA over revenues), firm liquidity, firm governance score, and the minority investors protection score of the firm's country of incorporation. We use the following specification:

$$\text{Governance}_{izt} = \text{Post}_{(t \geq 2012)} * \delta_z + \sum_{q=1}^Q \sigma_q \text{Post}_{(t \geq 2012)} * I_q(\text{Feature}_{iz2011}) + \sum_{q=1}^Q \vartheta_q \text{Post}_{(t \geq 2012)} * I_q(\text{Feature}_{iz2011}) * \text{NBIM}_{iz2011} + \alpha_t + \mu_i + \varepsilon_{izt} \quad (8)$$

where Governance_{izt} is the governance score of firm i , in country z , in year t . I_q are dummy variables equal to one for firms in the i th quartile in 2011 of the analyzed feature. All other variables are analogous to those defined in Equation (7). The coefficients of interest are ϑ_q , which indicate for each feature and quartile the average governance difference after 2011 between firms that belong to the NBIM portfolio in 2011 and firms that do not belong to the NBIM portfolio in 2011.

The results are shown in Table VI and show heterogeneity in the reaction of firms to the Note and how the expectation document can fill a void in investor engagement. First, we observe that the increase in the governance score after the announcement is larger for smaller firms (columns 1 and 2). This finding suggests that expectation documents can serve as an

engagement tool to reach precisely those firms for which a more dedicated stewardship role is less cost-effective. Indeed, Schwartz-Ziv and Wermers (2020) argued that investors have limited capacity to monitor smaller firms and they focus on bigger firms. Interestingly, we find that the largest firms in the portfolio (top quartile) show a statistically insignificant reaction to the expectation document.

In column 3, we notice that the firms with the worst pre-existing financial performance react more to NBIM's announcement and increase their governance score. This may be because poor performing firms seek to improve their governance to compensate for poor financial results and to remain attractive to NBIM. Conversely, we observe that firms in the highest quartile of pre-existing financial performance do not significantly change their governance. This may be because NBIM might be less demanding in terms of governance scores for firms with higher financial performance. We explore this potential trade-off in Section 5.3.2 and provide further insights to these results. Moreover, these results contribute to the debate on whether active owners should target and engage with profitable or poorly performing firms (Klein and Zur, 2009; Becht et al., 2009; Dimson, Karaka, and Li, 2015).

In column 4, we observe that firms with high stock liquidity do not react to the announcement, while firms with lower liquidity are much more sensitive to the announcement. This result is interesting, as less liquid firms may be the ones for which the exit mechanism is less of a credible threat (Edmans and Manso, 2011). It also extends McCahery, Suatner and Starks (2016)'s finding that active owners pursue high touch engagement with the most illiquid firms. According to both arguments, our results show that the expectation document has a more intense impact on those firms for which other, more resource-consuming engagements are less likely to be cost-effective.

Interestingly, the logic seems to be completely different if we move from the firms' financial characteristics to their institutional features. In column 5 we show that firms in the two middle quartiles of pre-existing governance scores are the ones who react the most to the announcement. The firms in the lowest quartile of the past governance scores do not react to the expectation document. It may be more costly for these firms to improve their governance score, or they may find themselves too far from NBIM's newly expected standards. Similarly, firms in the highest quartile of the past governance scores react less. This reduced effect might occur either because there is scant room to improve their governance score or because they already fulfill NBIM's expected governance standards.

Finally, in column 6 we observe that firms incorporated in countries with weak national investor protection do not improve their governance scores, while the opposite is true for firms incorporated in countries with stronger investor protection. These findings suggest that the influence of active owners on firm policies is contingent on the quality of the national corporate governance in which firms are embedded (Doidge, Karolyi, and Schultz, 2007). Interestingly, there seems to be a minimum national governance threshold for active owners to have an influence through expectation documents. These results speak to whether the country or the firm drives firm corporate governance changes. To address this issue, we include country fixed effects for all our specifications, to capture changes in the firm's governance within a country.

5.3 Changes in the Investment Strategy of NBIM

We now turn to examine whether NBIM was active and it rebalanced its portfolio according to its new governance preferences stated in the expectation document. For several

reasons, it is important to determine whether the announcement of NBIM was met with an effective change in its investment policy. First, it validates our identification strategy by showing that the announcement of the fund was met with actual changes in the investment preferences of the fund. Second, it gives some insight on how the content in expectation documents is reinforced with other governance-related actions of the fund. And third, it analyzes the second element of the quantitative decomposition of the overall governance effect of the portfolio (see Equation (4)).

We provide two independent sets of tests. First, we show that the governance level of firms becomes more relevant after the announcement in determining the entry and exit of firms in NBIM's portfolio. Second, we show that a trade-off between returns and governance arises after the announcement. NBIM is willing to sacrifice financial returns to achieve better governance.

5.3.1 Walk the Talk? The Rebalancing of NBIM's Portfolio to Align with the Note

We first explore whether NBIM walks the talk and rebalances its portfolio to align with the Note. We do this by analyzing the entry and exit channel—that is, whether after the announcement NBIM invests in firms with higher governance scores, and exits firms with lower governance scores. To avoid the issue that endogenous changes in the governance of firms that are due to the announcement can act as a confounding factor for the changes in the investment strategy of the fund, we keep the governance index fixed at a point in time before the announcement (2011). Intuitively, we are fixing the firms' governance levels before the announcement and keeping them constant throughout the analysis, as in the second term of the decomposition in Equation (4).

To analyze the entry channel, we estimate the following logistic model:

$$\text{Prob}(y_{it} = 1) = \frac{\exp(z_{it})}{1 + \exp(z_{it})} \quad (9)$$

where $y_{it} = \text{NBIM_entry}_{it}$, which is a dummy variable that takes the value of one if firm i enters the NBIM portfolio in year t , and it takes a value of zero according to two different control groups. We can compare the governance of firms that enter the portfolio of NBIM to the governance of firms that do not belong to the NBIM portfolio (*NonNBIM* control group) or to the firms that belong to the NBIM portfolio (NBIM control group). We estimate $z_{it} = \sigma_1 \text{Post}_{(t \geq 2012)} * \text{Governance}_{i2011} + \sigma_2 \text{Governance}_{i2011} + \alpha_t + \varepsilon_{it}$ where $\text{Governance}_{i2011}$ is the governance index score of firm i fixed in year 2011 (before the announcement), and $\text{Post}_{(t \geq 2012)}$ is a dummy variable that takes a value of one after the Note's release (2012–2015) and is zero for previous years (2009–2011).

We report odds ratios of a probit model in Table VII.³¹ Each column compares the predetermined governance score of entrants to the score of a different control group (Non NBIM firms and NBIM firms). We find that the coefficient of $\text{Post} * \text{Governance}_{2011}$ is positive in both specifications. That is, the fund puts more weight on corporate governance when selecting entrants after the announcement (columns 1 and 2). The effect is large and statistically significant. Being 10% higher in the governance score ranking increases the chances of entering the portfolio by 6% – 7%. The coefficient on Governance_{2011} is significantly below one in all columns. The coefficient is lower in column 2 than in column

³¹ Table A.XVI in the Online Appendix shows the estimates from logistic regressions and average marginal effects that correspond to the odds ratios shown in Table VII.

1 reflecting that, in general, the firms inside NBIM have higher scores than the firms outside NBIM.³²

In columns 3 and 4 of Table VII we exclude those entries that coincide with a change in the composition of the FTSE Global Cap index. The entries induced by the recomposition of the FTSE index are mechanical changes driven by the fund's benchmark. By excluding these exogenous changes, we keep only those entries that are more discretionary to the fund. Indeed, when we focus only on the discretionary entries selected by NBIM (non-FTSE), we find stronger results. Being 10% higher in the score ranking increases the chances of entering the portfolio by 8% – 10%.³³ In columns 5 and 6 we show the same analysis for those changes in the NBIM portfolio that occur simultaneously with FTSE reconstitutions. Although NBIM retains some discretion not to follow these reconstitutions, in general, reconstitutions of the index entail rebalancings of the NBIM portfolio that are less discretionary and more exogenous to the fund's preferences. Consistently, results for this subsample do not show a significant effect on the Post * Governance₂₀₁₁ coefficient. This indicates that the results in columns 1 and 2 are driven by the non-FTSE transitions analyzed in columns 3 and 4.

Overall, the results in Table VII show that, on average throughout the whole sample (2009–2015), firms entering the NBIM portfolio tend to have lower governance scores than those inside or outside the portfolio. However, after the announcement of the Note, NBIM starts to put more weight on the inherent governance score of firms (i.e., fixed at 2011 levels)

³² This can also be seen in Table A.XVII in the Online Appendix, where we compare the average governance score, before and after the release of the Note, for firms inside and outside NBIM, and also for firms that enter and exit the NBIM portfolio. More importantly, when comparing the exits (entries) of NBIM before and after the release of the Note, we find that NBIM exits (enters) firms with lower (higher) average governance scores after the announcement.

³³ Table A.XVIII in the Online Appendix reports the yearly number of companies' entries and exits carried out by NBIM during our sample period. We further classify whether these entries and exits are discretionary or driven by the composition of the FTSE Global Cap Index.

when deciding to include a firm inside the portfolio. This provides support for the thesis that the fund did indeed change its investment strategy after the announcement.³⁴

We develop a similar analysis to test for exit effects. The results of odds ratios are shown in Table VIII.³⁵ Consistent with the entry analysis, after the announcement, a better governance score reduces the probability of exiting NBIM. The effect is quantitatively important; ten rank positions in the governance score reduce the probability of exit by about 7%. Again, once we focus on the more discretionary exits of the fund (columns 3 and 4), this probability increases to 9%. Conversely, in columns 5 and 6 we focus on exits driven by NBIM's benchmark and show odds ratios that are statistically indistinguishable from one and, in fact, exhibiting point estimates in the opposite direction. The effect of the governance level before the announcement is inconclusive.

Jointly, we show that after the Note NBIM puts more weight on the governance of firms when deciding which firms to include and exclude in its discretionary investments. This effect is driven by the more discretionary decisions of the fund and is not present in the more mechanical investments of NBIM driven by reconstitutions of its benchmark, the FTSE Global Cap Index.

5.3.2 Trade-off Between Financial Returns and Governance

³⁴ This improvement occurs despite the large increase in the number of holdings of NBIM from 2011 to 2012 (see Table A.II in the Online Appendix), which would make cherry-picking stocks with high governance scores after the announcement more difficult.

³⁵ Table A.XIX in the Online Appendix shows the estimates from logistic regressions and average marginal effects that correspond to the odds ratios shown in Table VIII. Table A.XX in the Online Appendix shows that these results are robust to excluding the year 2011.

Another way to examine NBIM's change in preferences is to explore whether the choices of NBIM's portfolio reflect a different trade-off between financial returns and governance after the announcement. That is, to test whether, after the announcement, NBIM is willing to forgo some financial returns in exchange of governance characteristics that are more aligned with the preferences stated in the Note. To explore this idea, we construct portfolios that track the financial performance of NBIM's investments before and after the announcement. We decompose the investment portfolio of NBIM into non-discretionary (firms that also belong to the FTSE Global Cap Index) and discretionary (firms that do not belong to the FTSE Global Cap Index). Focusing on discretionary investments, we can compare the returns between high vs. low governance portfolios to understand whether NBIM is willing to trade returns in exchange for better corporate governance. The nondiscretionary portfolio is composed of firms where NBIM is mechanically forced to invest by its benchmark strategy and acts as a control group that captures the general evolution of the governance–returns trade-off in the economy.

We compute rolling monthly abnormal returns for each firm in the portfolio of NBIM following Carhart (1997)'s four-factor model. For each year t , we decompose the discretionary and non-discretionary portfolio of NBIM into five equal-sized portfolios by ranking firms according to their governance index. For all the firms in each of the 10 portfolios, we average the monthly alphas and obtain the equally-weighted monthly alpha of each portfolio. Next, for each portfolio we average the equally-weighted monthly alphas of periods 2009–2011 (pre-event alphas) and average the equally-weighted monthly alphas in the period 2012–2015 (post-event alphas).³⁶

³⁶ We also compute market value weighted results. Each month we calculate the average alpha of each portfolio and then we weight firms' alphas with the market value weight that each firm has in the portfolio of NBIM.

The alphas of the low governance portfolio are reported in row 1 of Panel A in Table IX. The alphas of the high governance portfolios are reported in row 5. We report the difference between the highest and lowest governance portfolio alphas in the last row. Before the NBIN announcement (columns 1 and 3), we do not appreciate any significant difference between the alphas in the low governance and high governance portfolio. In column 2 we observe this is also the case post announcement for non-discretionary investments (non-significant alpha differential of -0.036%). However, we do observe a trade-off between governance and returns post announcement for discretionary investments. There is a differential return between the high and the low governance portfolio of -0.793%. In fact, the alpha of the low-governance portfolio is positive and statistically significant (0.574%), indicating that NBIM is only willing to include low-governance firms in its discretionary portfolio if their returns are expected to be high. Moreover, the alpha of the high-governance portfolio post announcement is negative (-0.219%). This indicates that NBIM is willing to incorporate “better” governance firms into its portfolio, even if their expected abnormal returns are low. Results are qualitatively similar for the value-weighted portfolios in Panel B of Table IX.

In conclusion, in Section 5.3 we show that NBIM rebalanced its portfolio according to its new governance expectations. After the announcement, entrants in NBIM have better inherent governance and firms exiting NBIM have worse inherent governance. These effects are driven by the discretionary investment changes made by NBIM. Moreover, we provide insight into NBIM’s change in preferences across returns and governance after the announcement. Jointly, these results validate the identification assumption that NBIM did indeed change its preferences following the 2012 event. In the next section, we analyze if the change in firms’ governance is correlated to the change in NBIM’s investment weights.

5.4 Correlation of NBIM Investment Changes and Governance Changes

In this section, we explore the third term in Equation (4) and analyze whether the changes in firms' governance are linked to NBIM's investment changes. Although establishing causality in this last part of the analysis is challenging, we explore this last term to complete the decomposition of the effects of the Note.

We estimate pooled OLS regressions to analyze whether there is a correlation between the changes in the governance of firms and the changes in the investments made by NBIM, and whether this correlation changes before and after the announcement. The results shown in Table A.XXI of the Online Appendix indicate that the correlation between the changes in governance and changes in investment weights becomes high and statistically significant only after the announcement, whereas the two seem uncorrelated before the announcement. We also perform Granger causality tests to better understand the relation between innovations in governance and innovations in investment changes. We find that lagged changes in governance predict changes in fund weights after the announcement. The reverse effect is not statistically significant. These results provide evidence that NBIM reacts and increases its investment weights in firms that improve their governance index after the release of the Note. NBIM reweights its portfolio holdings not only according to the levels of governance of the firms but also according to the changes in those levels of governance. On the other hand, we do not find evidence that lagged changes in fund weights predict changes in firm governance. This implies that firms do not react differently to the Note if their weight in NBIM's portfolio changes, which is consistent with a uniform activism provided by a single expectation document. These results are shown in Table A.XXII of the Online Appendix.

6. DISCUSSION and CONCLUSION

Understanding the scope and channels of influence of active owners—such as pension funds, mutual funds, or SWFs—on firm sustainability policies continues to be an important and relevant topic. Institutional investors hold a large fraction of firm ownership globally, but they have been criticized for not being proactive enough regarding firm policies. Given their universal nature and their long-term investment horizons, it may not be cost-effective for universal investors to engage with many of their smaller investee firms. At the same time, active universal owners have the opportunity via expectation documents and portfolio-wide preferences to increase value by setting unique, systemic preferences for their diversified portfolios. In this paper, we use an early example of such expectation documents to estimate its effectiveness. More generally, estimating how active institutional investors' engagement results in effective or ineffective governance remains a key empirical question. Against this backdrop, SWFs can be useful, as they often have investment policies with preferences that depart from the solely standard maximization of short-term profits. We show that unanticipated changes in these preferences can be useful to extract information about how firms cater to the preferences of their investors.

We use as a quasi-natural experiment NBIM's expectation document in November 2012, which outlined what Norway's sovereign fund expected from its global portfolio companies in terms of corporate governance practices. We introduce an analytical decomposition that serves as a roadmap to explore expectation documents or any portfolio-wide governance tool. This decomposition analyzes the different components of the change in the corporate governance of NBIMs portfolio within a difference-in-differences

specification. This decomposition is focused on three elements: the change in governance of the firms that are part of the fund (in an intent-to-treat structure), the change of the fund into the one-off reweighting of its portfolio, and the change in the dynamics of the fund investment that follows the initial rebalancing.

We uncover the following results: i) the overall governance level (index score) of the fund increased following the announcement; ii) firms reacted to the fund's new policy by improving their governance score—these results are heterogeneous across firm characteristics and monotonically increasing in NBIM's stake holdings in the firm; iii) the investment stance of the fund changed, willing to sacrifice financial returns to achieve higher governance, and focusing more on firms with high governance scores and less on firms with low-governance scores; and iv) following the announcement, the fund's marginal changes in investment weights became more reactive to the recent changes in the firms' governance scores. We decompose the overall improvement of the fund's governance quality and uncover that most of the effect comes from the reaction of investee firms.

Our findings shed light on the literature on shareholder activism and contribute to the debate on the monitoring role of universal active owners. In our application, we can estimate this influence in a causal way and show large and significant results, both from an economic and statistical perspective. In particular, our study illustrates how through a cost-effective tool, expectation documents, today's large active owners can exert systemic influence and have an impact on their investee firms' policies.

REFERENCES

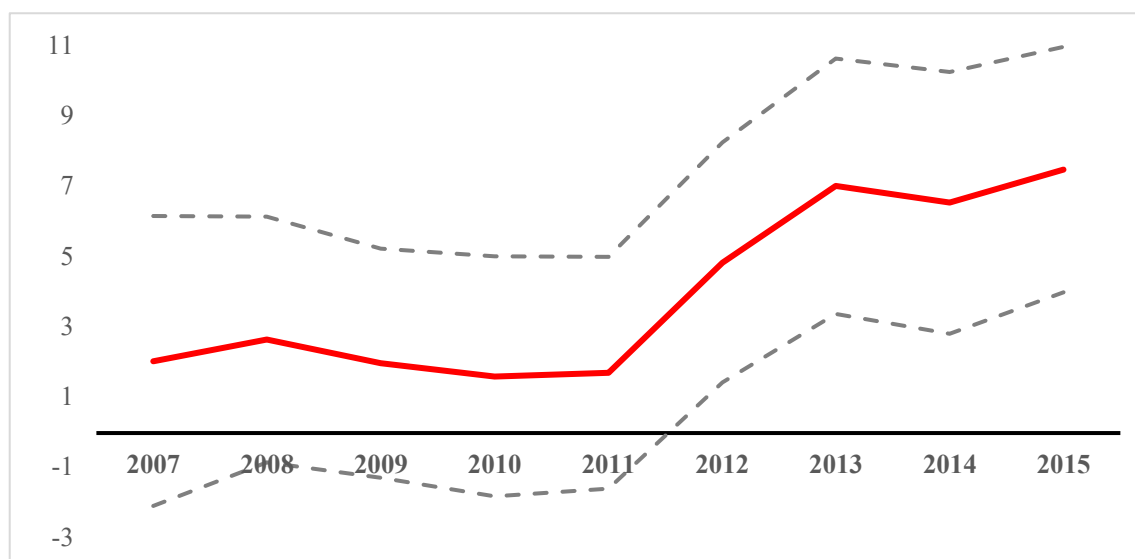
- Aghion, P., Van Reenen, J., and Zingales, L. (2013): Innovation and institutional ownership, *American Economic Review* 103, 277–304.
- Aggarwal, R., Erel, I., Ferreira, M., and Matos, P. (2011): Does governance travel around the world? Evidence from institutional investors, *Journal of Financial Economics* 100, 154–181.
- Aguilera, R., Capapé, J., and Santiso J. (2016): Sovereign wealth funds: A strategic governance view, *Academy of Management Perspectives* 30, 5–23.
- Appel, I. R., Gormley, T., and Keim, D. (2016): Passive investors, not passive owners, *Journal of Financial Economics* 121, 111–141.
- Barber, B. M. (2007): Monitoring the monitor: Evaluating CalPERS' shareholder activism, *The Journal of Investing* Dec 1.
- Bauer, R., Ruof, T., and Smeets, P. (2021): Get real! Individuals prefer more sustainable investments, *Review of Financial Studies*, Forthcoming.
- Bebchuk, L., Brav, A., and Jiang, W. (2015): The long-term effects of hedge fund activism, *Columbia Law Review* 115, 1085–1155.
- Bebchuk, L., Cohen, A., and Ferrell. (2009): What matters in corporate governance? *Review of Financial Studies* 22, 783–827.
- Bebchuk, L., and Hirst, S. (2018): Index funds and the future of corporate governance: Theory, evidence, and policy. Working paper, Boston University, Harvard University.
- Becht, M., Franks, J., Mayer, C., and Rossi, S. (2009): Returns to shareholder activism: Evidence from a clinical study of the Hermes UK Focus Fund, *Review of Financial Studies* 22, 3093–3129.
- Bernstein, S., Lerner, J., and Schoar. A. (2013): The investment strategies of sovereign wealth funds, *Journal of Economic Perspectives* 27, 219–238.
- Brav, A., Jiang, W., and Kim, H. (2010): Hedge fund activism: A review, *Foundations and Trends in Finance* 4, 185–246.
- (2015): The real effects of hedge fund activism: Productivity, asset allocation, and labor outcomes, *Review of Financial Studies* 28, 2723–2769.
- Briere, M., Pouget, S., and Ureche, L. (2018): Blackrock vs Norway fund at shareholder meetings: Institutional investors' votes on corporate externalities. Working paper.
- Bushee, B. (2001): Do institutional investors prefer near-term earnings over long-run value? *Contemporary Accounting Research* 18, 207–246.
- Carhart, M. M. (1997): On persistence in mutual fund performance, *Journal of Finance* 52, 57–82.
- Carleton, W.T., Nelson, J.M., and Weisbach, M. S. (1998): The influence of institutions on corporate governance through private negotiations: Evidence from TIAA-CREF, *The Journal of Finance* 534, 1335–1362.
- Carney, J. (2013): World's biggest fund blasts corporate governance rules, *CNBC*, February 19. <https://www.cnbc.com/id/100470486>
- Clark, G., Dixon, A., and Monk, A. (2013): *Sovereign wealth funds: Legitimacy, governance, and global power*, Princeton, NJ: Princeton University Press.
- Cuñat, V., Giné, M., and Guadalupe, M. (2016): Say pays! Shareholder voice and firm performance, *Review of Finance* 20, 1799–1834.

- Del Guercio, D. and Hawkins, J. (1999): The motivation and impact of pension fund activism, *Journal of Financial Economics* 52, 293–340.
- Denes, M., Karpoff, J. and McWilliams, V. (2017): Thirty years of shareholder activism: A survey of empirical research, *Journal of Corporate Finance* 44, 405–424.
- Diab, A. and Martin, G. (2021): Bloomberg Intelligence. ESG assets may hit \$53 trillion by 2025, a third of global AUM, Bloomberg Intelligence, <https://www.bloomberg.com/professional/blog/esg-assets-may-hit-53-trillion-by-2025-a-third-of-global-aum/>
- Dimson, E., O. Karakas, and Li, X. (2015): Active ownership, *Review of Financial Studies* 28, 3225–3268.
- Doidge, C., Karolyi, A. and R. Schultz. (2007): Why do countries matter so much for corporate governance? *Journal of Financial Economics* 86, 1-39.
- Doidge, C., Dyck, A., Mahmudi, H. and Virani, A. (2019): Collective action and governance activism, *Review of Finance* 23, 2019, 893–933
- Edmans, A., and Manso G. (2011): Governance through trading and intervention: A theory of multiple blockholders, *Review of Financial Studies* 24, 2395–2428.
- Ferreira, M. and Matos, P. (2008): The colors of investors' money: The role of institutional investors around the world, *Journal of Financial Economics* 88, 499–533.
- Fich, E., Harford, J., and Tran, A. (2015): Motivated monitors: The importance of institutional investors' portfolio weights, *Journal of Financial Economics* 118, 21–48.
- Fink, L. (2018): Letter to CEOs: Purpose and profit, *BlackRock*, January 17. <https://www.blackrock.com/corporate/investor-relations/2019-larry-fink-ceo-letter>
- , 2019. Letter to CEOs: A fundamental reshaping of finance, *BlackRock*, January 14. <https://www.blackrock.com/corporate/investor-relations/larry-fink-ceo-letter>
- Fisch, J., A. Hamdani, and Davidoff Salomon, S. (2018): Passive investors. Working paper, University of Pennsylvania, Tel Aviv University, University of California – Berkeley.
- Flammer, C. (2015): Does corporate social responsibility lead to superior financial performance? A regression discontinuity approach, *Management Science* 61, 2549–2568.
- Fos, V., and Tsoutsoura, M. (2014): Shareholder democracy in play: career consequences of proxy contests, *Journal of Financial Economics* 114, 316–340.
- Gantchev, N. (2013): The costs of shareholder activism: evidence from a sequential decision model, *Journal of Financial Economics* 107, 610–631.
- Gillan, S., and Starks, L. (2000): Corporate governance proposals and shareholder activism: The role of institutional investors, *Journal of Financial Economics* 57, 275–305.
- , 2003. Corporate governance, corporate ownership, and the role of institutional investors: A global perspective, *Journal of Applied Finance* 13, 4–22.
- Gompers, P., J. Ishii, and Metrick, A. (2003): Corporate governance and equity prices, *Quarterly Journal of Economics* 118, 107–156.
- Gormley, T.A., Gupta, V.K., Matsa, D.A., Mortal, S.C., Yang, L. (2020): The Big Three and board gender diversity: the effectiveness of shareholder voice. Working paper, Washington University in St. Louis.
- Hawley, J. P., and Williams, A. T. (2000): *The rise of fiduciary capitalism: How institutional investors can make corporate America more democratic*, Philadelphia, PA: University of Pennsylvania Press.

- Hartzmark, S. M., and Sussman, A.B. (2019): Do investors value sustainability? A natural experiment examining ranking and fund flows, *The Journal of Finance* 74, 2789–2837.
- Klein, A., and Zur, E. (2009): Entrepreneurial shareholder activism: Hedge funds and other private investors, *The Journal of Finance* 64, 187–229.
- Kempf, E., Manconi, A., and Spalt, O. (2017): Distracted shareholders and corporate actions, *The Review of Financial Studies* 30, 1660–1695
- Kim, I., Wan, H., Wang, B., and Yang, T. (2019): Institutional investors and corporate environmental, social, and governance policies: Evidence from toxics release data, *Management Science* 65, 4901–4926.
- Levit, D. (2019): Soft shareholder activism, *The Review of Financial Studies*, 32, 2775–2808.
- Liang, H., and Renneboog, L. (2016): On the foundations of corporate social responsibility, *The Journal of Finance* 72, 853–910.
- Liu, C., Low, A., Masulis, R., and Zhang, L. (2020): Monitoring the Monitor: Distracted Institutional Investors and Board Governance, *The Review of Financial Studies*, forthcoming.
- Maug, E. (1998): Large shareholders as monitors: Is there a trade-off between liquidity and control? *The Journal of Finance* 53, 65–98.
- McCahery, J., Z. Sautner, and Starks, L. (2016): Behind the scenes: The corporate governance preferences of institutional investors, *Journal of Finance* 71, 2905–2932.
- Meggison, W. L., and Fotak, V. (2015): Rise of the fiduciary state: A survey of sovereign wealth fund research, *Journal of Economic Surveys* 29, 733–778.
- Milne, R. (2013): Norway’s oil fund to become active investor, *Financial Times*, 25 April. <https://www.ft.com/content/b2083798-acd0-11e2-9454-00144feabdc0>
- Nelson, J. M. (2006): The “CalPERS effect” revisited again, *Journal of Corporate Finance* 12, 187–213.
- NBIM. (2012): *Corporate Governance*. November 19. Norges Bank Investment Management Discussion Note. <https://www.nbim.no/en/publications/discussion-notes/2012/corporate-governance/>
- Parrino, R., R. Sias, and Starks, L. (2003): Voting with their feet: institutional ownership changes around forced CEO turnover, *Journal of Financial Economics* 6, 3–46.
- Riedl, A., and Smeets, P. (2017): Why do investors hold socially responsible mutual funds? *The Journal of Finance* 72, 2505–2550.
- Schwartz-Ziv, M., & Wermers, R. (2020): Do Institutional Investors Monitor their Large-Scale vs. Small-Scale Investments Differently? Evidence from the Say-On-Pay Vote. Working Paper, Robert H. Smith School, University of Maryland.
- Smith, M. P. (1996): Shareholder activism by institutional investors: Evidence from CalPERS, *The Journal of Finance* 51, 227–252.
- Son, H. (2020): Goldman won’t take companies public without ‘at least one diverse board candidate’, *CNBC*. January 23. <https://www.cnbc.com/2020/01/23/goldman-wont-take-companies-public-that-dont-have-at-least-one-diverse-board-candidate-ceo-says.html>

FIGURES & TABLES

Figure 1. Governance Index differences among NBIM and non-NBIM firms



Notes. This graph plots the estimates from year-by-year cross-sectional regressions and 90% confidence intervals. The dependent variable is the Governance Index. Only one regressor is used, a dummy variable that takes the value of one if the firm belongs to the NBIM portfolio in year t and zero otherwise. The estimates plotted are yearly differences in governance between treated firms (firms that belong to the NBIM portfolio) and control firms (firms that do not belong to the NBIM portfolio).

Table I. Summary Statistics

	Mean	Standard Deviation	25%	Median	75%	Obs.
Governance Index	52.849	28.68	28.424	53.880	78.125	17388
NBIM Weight (fund)	0.037	0.10	0.003	0.010	0.028	17388
NBIM Weight (firm)	0.842	1.23	0.008	0.513	0.907	17388
Δ governance Index _(t+1,t)	1.117	18.24	-8.351	0.379	10.655	14904
$ \Delta$ governance Index _(t+1,t)	13.195	12.64	3.632	9.386	18.881	14904

Notes. This table reports mean, standard deviation, 25th-percentile, median, 75th-percentile, and number of observations for each variable by firm. The Governance Index is an index ranked from 0 to 100 that measures a company's commitment and effectiveness toward following best practice corporate governance principles. NBIM Weight (fund) is the fraction of the NBIM's portfolio represented by the firm's market value. NBIM Weight (firm) is the fraction of the firm's market value held by NBIM. Δ governance Index_(t+1,t) measures the difference between the firm's score in t+1 and t. $|\Delta$ governance Index_{(t+1,t)|} measures the difference in absolute value between the firm's score in t+1 and t.

Table II. Governance differences among NBIM and non-NBIM firms

	2007 (1)	2008 (2)	2009 (3)	2010 (4)	2011 (5)	2012 (6)	2013 (7)	2014 (8)	2015 (9)
NBIM	2.048 (2.102)	2.667 (1.782)	1.983 (1.663)	1.606 (1.740)	1.714 (1.681)	4.845*** (1.739)	7.016*** (1.851)	6.548*** (1.899)	7.489*** (1.780)
Observations	1,422	2,123	2,484	2,484	2,484	2,484	2,484	2,484	2,484
R-squared	0.001	0.001	0.001	0.000	0.000	0.003	0.006	0.005	0.007

Notes. This table presents estimates of yearly cross-sectional OLS regressions of governance index differences among NBIM and non-NBIM firms. The dependent variable is the Governance Index. For each year t , one explanatory variable is used (NBIM), a dummy variable that takes the value of one if the firm belongs to the NBIM portfolio in that year and zero otherwise. Standard errors are shown in parentheses.

***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Table III. The effect of NBIM on firm governance: instrumental variables

	Reduced form		2SLS		
	(1)	(2)	(3)	(4)	(5)
NBIM ₁₁ *Post	4.798*** (1.255)	4.666*** (1.142)	7.437*** (1.677)	7.283*** (1.769)	
NBIM ₁₁ *year2010					1.372 (1.342)
NBIM ₁₁ *year2011					2.149 (1.379)
NBIM ₁₁ *year2012					6.322*** (1.927)
NBIM ₁₁ *year2013					7.379*** (2.460)
NBIM ₁₁ *year2014					9.985*** (3.117)
NBIM ₁₁ *year2015					14.269*** (3.474)
Year dummies	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	No	Yes	No	Yes	Yes
Post*Country dummies	Yes	Yes	Yes	Yes	Yes
Observations	17,388	17,388	17,388	17,388	17,388
R-squared	0.021	0.731			

Notes. This table reports instrumental variables estimates of the effect of the announcement on the governance of NBIM portfolio firms. The dependent variable is the Governance score measured at the firm level. Column 1 reports estimates of a pooled OLS regression. Columns 2 and 3 include firm fixed effects. NBIM (NBIM₁₁) is a dummy variable equal to one for firms in the portfolio of NBIM (in 2011) and zero otherwise. Post is a dummy variable equal to one for the period 2012–2015 and equal to zero for the period 2009–2011. In columns 3 and 4, Post*NBIM is instrumented with Post*NBIM₁₁. In column 5, year* is a dummy variable for the years 2010, 2011, 2012, 2013, 2014 and 2015, the reference year is 2009. NBIM*year2012, NBIM*year2013, NBIM*year2014 and NBIM*year2015 are instrumented with NBIM₁₁*year2012, NBIM₁₁*year2013, NBIM₁₁*year2014 and NBIM₁₁*year2015. Year dummies and dummies on the interaction of the dummy Post and country dummies are included. Standard errors clustered at the firm level are shown in parentheses.

***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Table IV. The effect of NBIM on firm governance – discretionary investments

	(1)	(2)	(3)	(4)
NBIM ₁₁ *Post	4.666*** (1.142)		4.011*** (1.290)	
FTSE ₁₁ *Post		2.836*** (0.980)	1.215 (1.101)	
OnlyNBIM ₁₁ *Post				4.008** (1.736)
NBIMFTSE ₁₁ *Post				4.993*** (1.372)
OnlyFTSE ₁₁ *Post				1.562 (2.545)
Excluded-ethics ₁₁ *Post				-2.386 (3.918)
Firm & Year fixed effects	Yes	Yes	Yes	Yes
Post*Country dummies	Yes	Yes	Yes	Yes
Observations	17,388	17,388	17,388	17,388
R-squared	0.731	0.731	0.731	0.731

Notes. This table reports estimates of the effect of the announcement on the governance of NBIM portfolio firms. The dependent variable is the Governance Index. NBIM₁₁ is a dummy variable equal to one for firms in the portfolio of NBIM in 2011 and zero otherwise. FTSE₁₁ is a dummy variable equal to one for firms in the FTSE in 2011 and zero otherwise. OnlyNBIM₁₁ is a dummy variable equal to one for firms in the portfolio of NBIM in 2011 that do not belong to FTSE in 2011. OnlyFTSE₁₁ is a dummy variable equal to one for firms in the FTSE in 2011 that do not belong to NBIM in 2011 or have not been excluded by the ethics committee of NBIM in 2011. NBIMFTSE₁₁ is a dummy variable equal to one for firms both in the portfolio of NBIM in 2011 and in the FTSE in 2011. Excluded-ethics₁₁ is a dummy variable equal to one for firms that have been excluded from NBIM holdings by the ethics committee of NBIM by 2011. Post is a dummy variable equal to one for the period 2012–2015 and equal to zero for the period 2009–2011. Firm fixed effects, year dummies and dummies on the interaction of the dummy Post and country dummies are included. Standard errors clustered at the firm level are shown in parentheses.

***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Table V. The effect of NBIM on firm governance – Extensive vs. Intensive margin

	Firm (1)	Fund (2)	Firm+Fund (3)	Firm (4)	Fund (5)
Post*NBIM_Weight ₁₁ (firm)	1.11*** (0.41)		1.15*** (0.42)		
Post* NBIM_Weight ₁₁ (fund)		-0.66 (2.84)	-2.03 (2.78)		
Post* I(% quartile1) ₁₁				2.01 (1.75)	4.22*** (1.33)
Post* I(% quartile2) ₁₁				3.40** (1.45)	3.78*** (1.30)
Post* I(% quartile3) ₁₁				4.92*** (1.51)	4.79*** (1.31)
Post* I(% quartile4) ₁₁				7.65*** (1.57)	5.81*** (1.30)
Firm & Year fixed effects	Yes	Yes	Yes	Yes	Yes
Post*Country dummies	Yes	Yes	Yes	Yes	Yes
Observations	17,318	17,388	17,318	17,318	17,388
R-squared	0.731	0.730	0.731	0.732	0.731

Notes. This table reports OLS estimates from panel regressions with firm fixed effects. The dependent variable is the Governance Index. NBIM_Weight₁₁(firm) is the fraction of the firm's market value held by NBIM in 2011. NBIM_Weight₁₁(fund) is the fraction of the NBIM's portfolio represented by the firm's market value in 2011. Post is a dummy variable equal to one for the period 2012–2015 and equal to zero for the period 2009–2011. In column 4, I(% quartile_i)₁₁ is a dummy variable equal to one for firms in the *i*th quartile of NBIM_Weight₁₁(firm). In column 5, I(% quartile_i)₁₁ is a dummy variable equal to one for firms in the *i*th quartile of NBIM_Weight₁₁(fund). In columns 4 and 5, the reference group is formed by all the firms that are not in the portfolio of NBIM in 2011. Firm fixed effects, year dummies and dummies on the interaction of the dummy Post and country dummies are included. Standard errors clustered at the firm level are shown in parentheses.

***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Table VI. The effect of NBIM on firm governance – Heterogeneous effects

	Assets (1)	MV (2)	Perform. (3)	Liquidity (4)	Govern. (5)	IP (6)
Post*NBIM ₁₁ *Q(% quartile1) ₁₁	7.37*** (2.72)	6.51** (2.56)	8.12*** (2.69)	6.34*** (2.08)	2.78 (1.99)	2.56 (1.91)
Post*NBIM ₁₁ *Q(% quartile2) ₁₁	6.74*** (2.15)	7.45*** (2.22)	6.67*** (2.27)	7.05*** (2.43)	6.79*** (2.16)	1.70 (1.77)
Post*NBIM ₁₁ *Q(% quartile3) ₁₁	4.47** (2.00)	4.07* (2.13)	4.19* (2.44)	4.22* (2.33)	6.22** (2.46)	5.23** (2.57)
Post*NBIM ₁₁ *Q(% quartile4) ₁₁	0.58 (2.12)	0.23 (2.01)	3.12 (2.03)	0.09 (2.04)	4.13** (2.00)	5.37* (2.77)
Firm & Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Post*Country dummies	Yes	Yes	Yes	No	Yes	No
Post*Q(% quartile`i`) ₁₁	Yes	Yes	Yes	Yes	Yes	Yes
Observations	17,367	17,318	15,890	17,073	17,388	17,381
R-squared	0.73	0.73	0.73	0.73	0.73	0.73

Notes. This table reports OLS estimates from panel regressions with firm fixed effects. The dependent variable is the Governance Index. Post is a dummy variable equal to one for the period 2012–2015 and equal to zero for the period 2009–2011. NBIM₁₁ is a dummy variable equal to one for firms in the portfolio of NBIM in 2011 and zero otherwise. For each feature analyzed, we create quartiles, so that Q(% quartile`i`)₁₁ is a dummy variable equal to one for firms in the i-th quartile of each feature in 2011. In column 1 we classify NBIM portfolio firms according to total assets. In column 2 we classify NBIM portfolio firms according to total market value. In column 3 we classify NBIM portfolio firms according to performance (EBITDA over revenues). In column 4 we classify NBIM portfolio firms according to their governance index. In column 5 we classify NBIM portfolio firms according to their country's score in protection of minority investors (World Bank). In column 6 we classify NBIM portfolio firms according to their liquidity (daily volume traded / daily absolute return). The coefficients reported are those of the interaction of Post*NBIM*Q(% quartile`i`)₁₁. Firm fixed effects, year dummies and dummies on the interaction of the dummy Post and country dummies are included. Standard errors clustered at the firm level are shown in parentheses.

***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Table VII. Governance differences for firms that enter the portfolio of NBIM

ENTRY	FULL SAMPLE		Non-FTSE		FTSE	
	(1) Vs-NonNBIM	(2) Vs-NBIM	(3) Vs-NonNBIM	(4) Vs-NBIM	(5) Vs-NonNBIM	(6) Vs-NBIM
Post * Governance ₂₀₁₁	1.007** (0.003)	1.006** (0.003)	1.010** (0.005)	1.008** (0.004)	1.003 (0.005)	1.001 (0.005)
Governance ₂₀₁₁	0.995** (0.002)	0.988*** (0.002)	0.994* (0.003)	0.987*** (0.003)	0.996 (0.003)	0.989*** (0.002)
Time & Post*Country dum.	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,687	14,307	2,366	13,471	2,110	13,185
Pseudo R-squared	0.0734	0.108	0.154	0.182	0.0309	0.0479

Notes. This table reports odds ratios from logistic regressions. The dependent variable is NBIM_entry, a dummy equal to one for firms that enter the NBIM portfolio in year t and do not belong to the NBIM portfolio in year $t-1$. This dummy is equal to zero according to the control group selected. In column 1, 3 and 5, NBIM_entry is equal to zero for firms that do not belong to the NBIM portfolio the previous and subsequent 2 years. In column 2, 4 and 6, NBIM_entry is equal to zero for firms that belong to the NBIM portfolio the previous and subsequent 2 years. The variable Governance₂₀₁₁ is the Governance Index fixed in the year 2011. Post is a dummy variable equal to one for the period 2012–2015 and equal to zero for the period 2009–2011. Year dummies, and interactions of the dummy Post and country dummies are included but not reported. In columns 1 and 2 we use the full sample of firms. In columns 3 and 4 we exclude the entries that are driven by entries in the FTSE Global Cap. In columns 5 and 6 we only include the entries that are driven by entries in the FTSE Global Cap. Standard errors clustered at the firm level are shown in parentheses.

***, ** and * indicate statistical significance relative to a coefficient of 1 at the 1%, 5% and 10% level, respectively.

Table VIII. Governance differences for firms that exit the portfolio of NBIM

EXIT	FULL SAMPLE		Non-FTSE		FTSE	
	(1)	(2)	(3)	(4)	(5)	(6)
	Vs-NonNBIM	Vs-NBIM	Vs-NonNBIM	Vs-NBIM	Vs-NonNBIM	Vs-NBIM
Post * Governance ₂₀₁₁	0.993 (0.004)	0.993* (0.004)	0.991** (0.005)	0.991** (0.004)	1.014 (0.012)	1.012 (0.010)
Governance ₂₀₁₁	1.002 (0.003)	0.996* (0.002)	1.003 (0.003)	0.996 (0.002)	1.000 (0.006)	0.992 (0.006)
Time & Post*Country dum.	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,347	13,491	2,308	13,449	1,697	10,793
Pseudo R-squared	0.149	0.131	0.164	0.142	0.0941	0.0799

Notes. This table reports odds ratios from logistic regressions. The dependent variable is NBIM_exit, a dummy equal to one for firms that belong to the NBIM portfolio in year t-1 and exit the NBIM portfolio in year t. This dummy is equal to zero according to the control group selected. The control group varies in each column. In column 1, 3 and 5, NBIM_exit is equal to zero for firms that do not belong to the NBIM portfolio the previous and subsequent 2 years. In columns 2, 4 and 6, NBIM_exit is equal to zero for firms that belong to the NBIM portfolio the previous and subsequent 2 years. The variable Governance₂₀₁₁ is the Governance Index fixed in the year 2011. Post is a dummy variable equal to one for the period 2012–2015 and equal to zero for the period 2009–2011. Year dummies, and interactions of the dummy Post and country dummies are included but not reported. In columns 1 and 2 we use the full sample of firms. In columns 3 and 4 we exclude the exits that are driven by exits in the FTSE Global Cap. In columns 5 and 6 we only include the exits that are driven by exits in the FTSE Global Cap. Standard errors clustered at the firm level are shown in parentheses.

***, ** and * indicate statistical significance relative to a coefficient of 1 at the 1%, 5% and 10% level, respectively.

Table IX. Governance-returns trade-off in NBIM's portfolio

Panel A: Equally-weighted

Governance portfolios	Non-Discretionary		Discretionary	
	Pre-Event (1)	Post-Event (2)	Pre-Event (3)	Post-Event (4)
1 (Low)	0.299 (0.08)	-0.024 (0.05)	0.198 (0.25)	0.574 (0.20)
2	0.125 (0.09)	0.022 (0.05)	0.221 (0.23)	0.387 (0.23)
3	0.376 (0.08)	0.061 (0.05)	0.460 (0.21)	0.173 (0.18)
4	0.41 (0.07)	0.00 (0.05)	0.26 (0.23)	-0.24 (0.19)
5 (High)	0.230 (0.07)	-0.060 (0.05)	0.166 (0.24)	-0.219 (0.15)
Difference High-Low	-0.069	-0.036	-0.031	-0.793***

Panel B: Value-weighted

Governance portfolios	Non-Discretionary		Discretionary	
	Pre-Event (1)	Post-Event (2)	Pre-Event (3)	Post-Event (4)
1 (Low)	0.421 (0.07)	0.117 (0.04)	0.328 (0.23)	0.590 (0.16)
2	0.289 (0.07)	0.029 (0.04)	0.171 (0.18)	-0.507 (0.14)
3	0.285 (0.06)	0.001 (0.04)	0.678 (0.15)	0.113 (0.11)
4	0.342 (0.06)	0.095 (0.04)	0.672 (0.17)	-0.518 (0.11)
5 (High)	0.190 (0.06)	-0.133 (0.04)	0.651 (0.16)	-0.594 (0.09)
Difference High-Low	-0.231	-0.250	0.323	-1.184***

Notes. This table reports mean alphas (calculated through Carhart's (1997) four factor model) and standard errors in parentheses. The portfolio of NBIM is decomposed into non-discretionary (firms that belong to the FTSE Global Cap Index) and discretionary (firms that do not belong to the FTSE Global Cap Index). Pre-event is for the period 2009–2011. Post-Event is for the period 2012–2015. Panel A shows equally-weighted results. Panel B shows market value-weighted results. The last row reports differences between alphas in the high and low governance portfolios. ***, ** and * indicate statistical significance of these differences at the 1%, 5% and 10% level, respectively.

The Systemic Governance Influence of Universal Owners:

Evidence from an Expectation Document

ONLINE APPENDIX (Not for publication)

Table A. I. Definitions of the 34 indicators included in the governance index and construction of the score

Board Cultural Diversity	Percentage of board members that have a cultural background different from the location of the corporate headquarters.
Executive Members Gender Diversity	Percentage of female executive members.
Board Functions Policy	Does the company have a policy for maintaining effective board functions?
Board Meeting Attendance Average	The average overall attendance percentage of board meetings as reported by the company.
Succession Plan	Does the company have a succession plan for executive management (key board members) in the event of unforeseen circumstances?
External Consultants	Do the board or board committees have the authority to hire external advisers or consultants without management's approval?
Audit Committee Independence	Percentage of independent board members on the audit committee as stipulated by the company.
Audit Committee Mgt Independence	Does the company report that all audit committee members are non-executives?
Compensation Committee Independence	Percentage of independent board members on the compensation committee as stipulated by the company.
Compensation Committee Mgt Independence	Does the company report that all compensation committee members are non-executives?
Nomination Committee Independence	Percentage of non-executive board members on the nomination committee.
Nomination Committee Involvement	Percentage of nomination committee members who are significant shareholders (more than 5%).
Board Attendance	Does the company publish information about the attendance of the individual board members at board meetings?
Board Structure Policy	Does the company have a policy for maintaining a well-balanced membership of the board?
Board Size More Ten Less Eight	Total number of board members which are in excess of ten or below eight.
Board Background and Skills	Does the company describe the professional experience or skills or the age of every board member?

Female on Board	Percentage of female on the board.
Board Specific Skills	Percentage of board members who have either an industry specific background or a strong financial background.
Experienced Board	Average number of years each board member has been on the board.
Non-Executive Board Members	Percentage of non-executive board members.
Independent Board Members	Percentage of independent board members as reported by the company.
CEO-Chairman Separation	Does the CEO simultaneously chair the board or has the chairman of the board been the CEO of the company?
Board Member Affiliations	Average number of other corporate affiliations for the board member.
Board Individual Reelection	Are all board members individually subject to re-election (no classified or staggered board structure)?
Executive Compensation Policy	Does the company have a policy for performance-oriented compensation that attracts and retains the senior executives and board members?
Compensation Improvement Tools	Does the company have the necessary internal improvement and information tools for the board members to develop appropriate compensation/remuneration to attract and retain key executives?
CEO Compensation Link to TSR	Is the CEO's compensation linked to total shareholder return (TSR)?
Total Senior Executives Compensation	The total compensation paid to all senior executives as reported by the company.
Shareholders Approval Stock Compensation Plan	Does the company require that shareholder approval is obtained prior to the adoption of any stock based compensation plans?
Executive Individual Compensation	Does the company provide information about the total individual compensation of all executives and board members?
Highest Remuneration Package	Highest remuneration package within the company in US dollars.
Executive Compensation LT Objectives	Is the management and board members remuneration partly linked to objectives or targets which are more than two years forward looking?
Sustainability Compensation Incentives	Is the senior executive's compensation linked to CSR/H&S/Sustainability targets?
Internal Audit Department Reporting	Does the internal audit department report to the audit committee of the board?

Source: Management Score of Eikon ESG.

How Eikon ESG builds the score for the Governance Index

Source: Eikon ESG

We have collected information on the corporate governance practices of firms from Eikon's ESG dataset. The governance index measures a company's relative performance on 34 governance indicators listed in Table A.I, based on company-reported information. The index takes values from 0 to 100. We obtain one governance score per company and year.

Each indicator within the index is calculated as a "percentile score", which ranks companies according to each indicator. It is based on three factors: How many companies are worse than the current one? How many companies have the same value? And how many companies have a value at all? For each indicator, we obtain a score. The formula to calculate the score of each indicator is described in this equation:

$$\frac{\text{n.of companies with a worst value} + \frac{\text{n.of companies with the same value included in the current one}}{2}}{\text{n.of companies with a value}} \quad (\text{A1})$$

Thus, after calculating the score of the 34 indicators per company, we derive the average scores for individual companies as the equally-weighted sum of the 34 indicators, as described in this equation:

$$\text{average score} = \sum_{s=1}^S \text{score} / 34 \quad (\text{A2})$$

The last step to obtain the governance index, takes the average scores for each company obtained in equation (A2) and repeats the formula in equation (A1), to rank again companies according to their average scores.

Governance score =

$$\frac{\text{n.of companies with a worst average score} + \frac{\text{n.of companies with the same average score included in the current one}}{2}}{\text{n.of companies with an average score}} \quad (\text{A3})$$

Table A.II. NBIM holdings and Eikon (Thomson Reuters) coverage

	NBIM total holdings (\$ billions)	NBIM holdings matched with Eikon (\$ billions)	Percentage covered
2008	160.53	115.44	71.9%
2009	284.73	210.49	73.9%
2010	325.76	240.04	73.7%
2011	325.19	243.45	74.9%
2012	417.83	318.58	76.2%
2013	515.69	388.91	75.4%
2014	526.81	397.79	75.5%
2015	519.50	399.86	77.0%

Notes. This table presents NBIM total holdings by year (column 2) and the amounts covered by the Eikon (Thomson Reuters) database (column 3). Column 4 shows the percentage of the NBIM total holdings that are covered by the Eikon (Thomson Reuters) database. For each year it divides the value of column 3 by the value of column 2.

Table A.III. Summary statistics for Non NBIM and NBIM firms

	Non NBIM	NBIM	Difference
Governance Index	51.00 (28.50)	52.08 (28.82)	-1.077 (-0.68)
Total Revenues (billions)	652.29 (4545.57)	600.26 (5329.86)	52.03 (0.18)
Total Assets (billions)	3741.01 (28420.18)	1743.48 (16026.61)	1997.5 (1.26)
Capital Structure (Liabilities over Equity)	3.91 (18.43)	2.51 (8.65)	1.400 (1.38)
Performance (EBITDA over Revenue)	0.16 (1.23)	-7.30 (470.54)	7.462 (1.00)
Return on Assets	0.07 (0.11)	0.07 (0.10)	-0.002 (-0.43)
Institutional Investors Ownership	66.72 (24.67)	66.64 (23.87)	0.082 (0.06)

Notes. This table reports mean and standard deviation of several variables for firms that do not belong to NBIM in 2011 (676 observations) and firms that belong to NBIM in 2011 (4,292 observations). The last column shows the difference and the t-value for the difference in means between the non NBIM group and the NBIM group. The sample covers the period 2010 and 2011.

***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Table A.IV. Summary statistics by sector of economic activity

Sector of Economic Activity	Non-NBIM	NBIM	Total
Accommodation and Food Services	30 2.4%	45 1.5%	75 1.8%
Administrative, Support, Waste Management, Remediation Services	15 1.2%	44 1.5%	59 1.4%
Agriculture, Forestry, Fishing and Hunting	7 0.5%	9 0.3%	16 0.4%
Arts, Entertainment, and Recreation	6 0.5%	19 0.6%	25 0.6%
Construction	50 3.9%	115 3.9%	165 3.9%
Educational Services	5 0.4%	9 0.3%	14 0.3%
Finance and Insurance	247 19.4%	438 14.8%	685 16.2%
Health Care and Social Assistance	21 1.6%	21 0.7%	42 1.0%
Information	109 8.6%	193 6.5%	302 7.1%
Manufacturing	309 24.3%	1,021.0 34.6%	1,330.0 31.5%
Mining, Quarrying, and Oil and Gas Extraction	137 10.8%	256 8.7%	393 9.3%
Other Services (except Public Administration)	3 0.2%	8 0.3%	11 0.3%
Professional, Scientific, and Technical Services	58 4.6%	117 4.0%	175 4.1%
Real Estate and Rental and Leasing	95 7.5%	163 5.5%	258 6.1%
Retail Trade	56 4.4%	165 5.6%	221 5.2%
Transportation and Warehousing	45 3.5%	127 4.3%	172 4.1%
Utilities	52 4.1%	134 4.5%	186 4.4%
Wholesale Trade	28 2.2%	68 2.3%	96 2.3%
Total	1273 100.0%	2952 100.0%	4225 100.0%

Notes. This table reports the number of companies in each group by sector of economic activity. In column 2, Non-NBIM are companies which do not belong to the portfolio of NBIM in 2011, they form our “control group”. In column 3, NBIM are companies that belong to the portfolio of NBIM in 2011, they form our “treated group”. Column 4 adds the number of firms in columns 2 and 3 for each sector of economic activity. Column percentages are shown below the number of companies.

Table A.V. Summary statistics by country

Country	Non-NBIM	NBIM	Total
Australia	161	167	328
Austria	2	11	13
Bahrain	8	0	8
Belgium	4	20	24
Brazil	39	42	81
Canada	86	179	265
Chile	6	16	22
China	71	66	137
Colombia	4	7	11
Cyprus	2	0	2
Czech Republic	0	3	3
Denmark	3	19	22
Egypt	2	9	11
Finland	0	21	21
France	12	80	92
Germany	9	71	80
Greece	4	14	18
Hong Kong	20	109	129
Hungary	0	4	4
India	47	42	89
Indonesia	26	6	32
Ireland	10	13	23
Israel	3	14	17
Italy	5	35	40
Japan	22	348	370
Jordan	1	0	1
Kazakhstan	1	0	1
Kuwait	11	0	11
Luxembourg	3	1	4
Malaysia	17	30	47
Malta	1	0	1
Mexico	14	19	33
Morocco	2	1	3
Netherlands	14	21	35
New Zealand	25	12	37
Nigeria	1	0	1
Norway	16	0	16
Oman	9	0	9
Papua New Guinea	1	0	1
Peru	0	2	2
Philippines	8	17	25
Poland	7	23	30
Portugal	0	10	10
Qatar	12	0	12
Russia	15	16	31
Saudi Arabia	14	0	14
Singapore	7	30	37
South Africa	76	36	112
South Korea	56	56	112
Spain	11	35	46
Sri Lanka	1	0	1
Sweden	11	43	54
Switzerland	9	56	65
Taiwan	9	106	115
Thailand	25	8	33
Turkey	0	18	18
United Arab Emirates	9	4	13
United Kingdom	126	245	371
United States	214	871	1,085
Zimbabwe	1	0	1
Total	1,273	2,956	4,229

Notes. This table reports the number of companies in each group by country. In column 2, Non-NBIM are companies which do not belong to the portfolio of NBIM in 2011. In column 3, NBIM are companies that belong to the portfolio of NBIM in 2011. Column 4 adds the number of firms in columns 2 and 3 for each country.

Table A.VI. Governance differences among NBIM and non-NBIM firms (weighted by size)

	2007 (1)	2008 (2)	2009 (3)	2010 (4)	2011 (5)	2012 (6)	2013 (7)	2014 (8)	2015 (9)
NBIM	1.543 (2.133)	2.799 (1.808)	1.910 (1.689)	1.199 (1.760)	1.533 (1.685)	4.540*** (1.749)	6.688*** (1.874)	6.258*** (1.913)	7.084*** (1.798)
Observations	1,418	2,117	2,481	2,481	2,481	2,483	2,480	2,478	2,484
R-squared	0.000	0.001	0.001	0.000	0.000	0.003	0.005	0.004	0.006

Notes. This table presents estimates of yearly cross-sectional OLS regressions (weighted by the logarithm of assets) of governance index differences among NBIM and non-NBIM firms. The dependent variable is the Governance Index. For each year t , one explanatory variable is used (NBIM), a dummy variable that takes the value of one if the firm belongs to the NBIM portfolio in that year and zero otherwise. Standard errors are shown in parentheses.

***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Table A.VII. Governance differences among fund and firm weights

	Fund Weight (1)	Firm Weight (2)
NBIM_Weight	37.652*** (2.280)	1.360*** (0.278)
Post*NBIM_Weight	9.483** (3.725)	-0.449 (0.355)
Observations	21,034	20,948
R-squared	0.030	0.007

Notes. This table shows estimates from OLS regressions of the effect of fund and firm weights on the governance index. The dependent variable is the Governance Index. In column 1, the independent variables are NBIM weight fund (fraction of the NBIM's portfolio represented by the firm), an interaction of NBIM weight fund and Post (a dummy variable that takes the value of one for the period 2012–2015 and zero for the period 2009–2011), and year dummies. Column 2 is analogous to column 1, but instead of NBIM weight fund, we now use NBIM weight firm, which is the percentage of the firm's market value held by NBIM. Standard errors are shown in parentheses.

***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Table A.VIII. First stage: relevance of NBIM-2011

	Relevance	Relevance with year dummies
	(1)	(2)
NBIM ₁₁ *Post	0.642*** (0.022)	
NBIM ₁₁ *year2012		0.805*** (0.021)
NBIM ₁₁ *year2013		0.666*** (0.026)
NBIM ₁₁ *year2014		0.587*** (0.027)
NBIM ₁₁ *year2015		0.515*** (0.028)
Year dummies	Yes	Yes
Post*Country dummies	Yes	Yes
Observations	17,388	17,388
R-squared	0.951	0.952

Notes. This table reports the results from OLS regressions. The dependent variable is the dummy NBIM. For each year t , this dummy is equal to one for firms that belong to the portfolio of NBIM, and zero otherwise. NBIM₁₁ is a dummy equal to one for firms that belong to the portfolio of NBIM in 2011, and zero otherwise. Post is a dummy equal to one for the period 2012–2015, and zero otherwise. In column 2, we add interactions of NBIM with year dummies for 2012, 2013, 2014 and 2015. Standard errors clustered at the firm level are shown in parentheses.

***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Table A.IX. The effect of NBIM on governance (weighted by size)

	(1)	(2)	(3)	(4)
NBIM ₁₁ *Post	4.400*** (1.231)		3.673*** (1.391)	
FTSE ₁₁ *Post		2.865*** (1.070)	1.407 (1.204)	
OnlyNBIM ₁₁ *Post				3.815** (1.892)
NBIMFTSE ₁₁ *Post				4.913*** (1.494)
OnlyFTSE ₁₁ *Post				1.980 (2.807)
Excluded-ethics ₁₁ *Post				-1.917 (4.113)
Firm & Year fixed effects	Yes	Yes	Yes	Yes
Post*Country dummies	Yes	Yes	Yes	Yes
Observations	17,368	17,368	17,368	17,368
R-squared	0.734	0.734	0.734	0.734

Notes. This table reports estimates of panel regressions (weighted by the logarithm of assets) of the effect of the announcement on the governance of NBIM portfolio firms. The dependent variable is the Governance Index. NBIM₁₁ is a dummy variable equal to one for firms in the portfolio of NBIM in 2011 and zero otherwise. FTSE₁₁ is a dummy variable equal to one for firms in the FTSE in 2011 and zero otherwise. OnlyNBIM₁₁ is a dummy variable equal to one for firms in the portfolio of NBIM in 2011 that do not belong to FTSE in 2011. OnlyFTSE₁₁ is a dummy variable equal to one for firms in the FTSE in 2011 that do not belong to NBIM in 2011 or have not been excluded by the ethics committee of NBIM in 2011. NBIMFTSE₁₁ is a dummy variable equal to one for firms both in the portfolio of NBIM in 2011 and in the FTSE in 2011. Excluded-ethics₁₁ is a dummy variable equal to one for firms that have been excluded from NBIM holdings by the ethics committee of NBIM by 2011. Post is a dummy variable equal to one for the period 2012–2015 and equal to zero for the period 2009–2011. Firm fixed effects, year dummies and dummies on the interaction of the dummy Post and country dummies are included. Standard errors clustered at the firm level are shown in parentheses.

***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Table A.X. The effect of NBIM on governance (Investment categories fixed in 2010)

	(1)	(2)	(3)	(4)
NBIM ₁₀ *Post	4.341*** (1.209)		3.741*** (1.416)	
FTSE ₁₀ *Post		2.549*** (0.962)	0.968 (1.125)	
OnlyNBIM ₁₀ *Post				3.000* (1.703)
NBIMFTSE ₁₀ *Post				4.192*** (1.349)
OnlyFTSE ₁₀ *Post				-1.057 (3.359)
Excluded-ethics ₁₀ *Post				-2.404 (4.185)
Firm & Year fixed effects	Yes	Yes	Yes	Yes
Post*Country dummies	Yes	Yes	Yes	Yes
Observations	17,388	17,388	17,388	17,388
R-squared	0.731	0.731	0.731	0.731

Notes. This table reports estimates of panel regressions of the effect of the announcement on the governance of NBIM portfolio firms. The dependent variable is the Governance Index. NBIM₁₀ is a dummy variable equal to one for firms in the portfolio of NBIM in 2010 and zero otherwise. FTSE₁₀ is a dummy variable equal to one for firms in the FTSE in 2010 and zero otherwise. OnlyNBIM₁₀ is a dummy variable equal to one for firms in the portfolio of NBIM in 2010 that do not belong to FTSE in 2010. OnlyFTSE₁₀ is a dummy variable equal to one for firms in the FTSE in 2010 that do not belong to NBIM in 2010 or have not been excluded by the ethics committee of NBIM in 2010. NBIMFTSE₁₀ is a dummy variable equal to one for firms both in the portfolio of NBIM in 2010 and in the FTSE in 2010. Excluded-ethics₁₀ is a dummy variable equal to one for firms that have been excluded from NBIM holdings by the ethics committee of NBIM by 2010. Post is a dummy variable equal to one for the period 2012–2015 and equal to zero for the period 2009–2011. Firm fixed effects, year dummies and dummies on the interaction of the dummy Post and country dummies are included. Standard errors clustered at the firm level are shown in parentheses.

***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Table A.XI. The effect of NBIM on governance – reweighting the control group

	(1)	(2)	(3)	(4)
NBIM ₁₁ *Post	5.885*** (1.376)		6.132*** (1.700)	
FTSE ₁₁ *Post		3.198** (1.456)	-0.420 (1.766)	
OnlyNBIM ₁₁ *Post				5.621*** (2.039)
NBIMFTSE ₁₁ *Post				5.226*** (1.581)
OnlyFTSE ₁₁ *Post				-1.294 (2.865)
Excluded-ethics ₁₁ *Post				-3.415 (4.759)
Firm & Year fixed effects	Yes	Yes	Yes	Yes
Post*Country dummies	Yes	Yes	Yes	Yes
Observations	26,712	26,712	26,712	26,712
R-squared	0.728	0.726	0.728	0.728

Notes. This table reports estimates of the effect of the announcement on the governance of NBIM portfolio firms. The dependent variable is the Governance Index. NBIM₁₁ is a dummy variable equal to one for firms in the portfolio of NBIM in 2011 (treatment) and zero otherwise (control). We use propensity score matching so that each treated observation has one nearest neighbor in the control group (with replacement). FTSE₁₁ is a dummy variable equal to one for firms in the FTSE in 2011 and zero otherwise. OnlyNBIM₁₁ is a dummy variable equal to one for firms in the portfolio of NBIM in 2011 that do not belong to FTSE in 2011. OnlyFTSE₁₁ is a dummy variable equal to one for firms in the FTSE in 2011 that do not belong to NBIM in 2011 or have not been excluded by the ethics committee of NBIM in 2011. NBIMFTSE₁₁ is a dummy variable equal to one for firms both in the portfolio of NBIM in 2011 and in the FTSE in 2011. Excluded-ethics₁₁ is a dummy variable equal to one for firms that have been excluded from NBIM holdings by the ethics committee of NBIM by 2011. Post is a dummy variable equal to one for the period 2012–2015 and equal to zero for the period 2009–2011. Firm fixed effects, year dummies and dummies on the interaction of the dummy Post and country dummies are included. Standard errors clustered at the firm level are shown in parentheses.

***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Table A.XII. The effect of NBIM on governance in levels – non yearly ranked

	(1)	(2)	(3)	(4)
NBIM ₁₁ *Post	0.843*** (0.291)		1.113*** (0.314)	
FTSE ₁₁ *Post		-0.053 (0.230)	-0.481* (0.247)	
OnlyNBIM ₁₁ *Post				0.954** (0.431)
NBIMFTSE ₁₁ *Post				0.503 (0.358)
OnlyFTSE ₁₁ *Post				-0.443 (0.578)
Excluded-ethics ₁₁ *Post				-1.606* (0.877)
Firm & Year fixed effects	Yes	Yes	Yes	Yes
Post*Country dummies	Yes	Yes	Yes	Yes
Observations	10,589	10,589	10,589	10,589
R-squared	0.869	0.869	0.869	0.869

Notes. This table reports estimates of the effect of the announcement on the governance of NBIM portfolio firms. The dependent variable is the Governance score in levels (instead of using the yearly ranked scores provided by Eikon, we construct the index as the equally-weighted sum of the 34 indicators contained in the index as provided by Eikon. Each indicator takes a value between 0 and 1). NBIM₁₁ is a dummy variable equal to one for firms in the portfolio of NBIM in 2011 and zero otherwise. FTSE₁₁ is a dummy variable equal to one for firms in the FTSE in 2011 and zero otherwise. OnlyNBIM₁₁ is a dummy variable equal to one for firms in the portfolio of NBIM in 2011 that do not belong to FTSE in 2011. OnlyFTSE₁₁ is a dummy variable equal to one for firms in the FTSE in 2011 that do not belong to NBIM in 2011 or have not been excluded by the ethics committee of NBIM in 2011. NBIMFTSE₁₁ is a dummy variable equal to one for firms both in the portfolio of NBIM in 2011 and in the FTSE in 2011. Excluded-ethics₁₁ is a dummy variable equal to one for firms that have been excluded from NBIM holdings by the ethics committee of NBIM by 2011. Post is a dummy variable equal to one for the period 2012–2015 and equal to zero for the period 2009–2011. Firm fixed effects, year dummies and dummies on the interaction of the dummy Post and country dummies are included. Standard errors clustered at the firm level are shown in parentheses.

***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Table A.XIII. The effect of NBIM on firm governance decomposed according to NBIM's Note

	(Yes)	(Partial)	(No)	(Yes)	(Partial)	(No)
NBIM ₁₁ *Post	1.531*** (0.477)	0.672 (0.434)	0.204 (0.381)			
OnlyNBIM ₁₁ *Post				1.595** (0.722)	0.681 (0.665)	0.530 (0.551)
NBIMFTSE ₁₁ *Post				1.209** (0.570)	0.003 (0.546)	0.069 (0.447)
OnlyFTSE ₁₁ *Post				-0.606 (1.072)	-0.987 (0.990)	-0.009 (0.856)
Excluded-ethics ₁₁ *Post				-1.237 (1.454)	-3.242*** (0.992)	-0.550 (1.216)
Firm & Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Post*Country dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	10,589	10,589	10,589	10,589	10,589	10,589
R-squared	0.828	0.733	0.810	0.828	0.733	0.810

Notes. This table reports estimates of the effect of the announcement on the governance of NBIM portfolio firms. The dependent variable is a governance score in levels (instead of using the yearly ranked scores provided by Eikon, we construct an index as the equally-weighted sum of the indicators contained in the index. Each indicator takes a value between 0 and 1). We use 3 indexes: Yes, Partial and No. Their construction details are explained below. NBIM₁₁ is a dummy variable equal to one for firms in the portfolio of NBIM in 2011 and zero otherwise. OnlyNBIM₁₁ is a dummy variable equal to one for firms in the portfolio of NBIM in 2011 that do not belong to FTSE in 2011. NBIMFTSE₁₁ is a dummy variable equal to one for firms both in the portfolio of NBIM in 2011 and in the FTSE in 2011. OnlyFTSE₁₁ is a dummy variable equal to one for firms in the FTSE in 2011 that do not belong to NBIM in 2011 or have not been excluded by the ethics committee of NBIM in 2011. Excluded-ethics₁₁ is a dummy variable equal to one for firms that have been excluded from NBIM holdings by the ethics committee of NBIM by 2011. Post is a dummy variable equal to one for the period 2012–2015 and equal to zero for the period 2009–2011. Firm fixed effects, year dummies and dummies on the interaction of the dummy Post and country dummies are included. Standard errors clustered at the firm level are shown in parentheses.

***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Decomposition of Eikon's Management Score according to NBIM's Note

We have analyzed the Note published by NBIM and the 34 variables included in the Management Score provided by Eikon. The Note refers to an overall interest in improving corporate governance, and it focuses on two big areas of action: board accountability and minority shareholder protection. The Note includes both general statements and very specific expectations. For example, the Note explains that NBIM expects the board to act as “representatives of the owners of the equity capital, without discrimination” or that “board should provide comprehensive information in a timely manner so that shareholders can make an informed voting decision in board elections.” Also, NBIM makes very specific requests and it expects “credible representation of independent directors on the board” or expresses that the “roles of chairman and CEO are fundamentally different and should not be held by the same person.” Thus, in some cases, specific variables included in the Management Score (See Table A.I.) have a clear correspondence with expectations detailed in the Note. Yet, in other cases, certain indicators included in the Score are not that clearly reflected in the Note. Thus, the authors independently analyzed the correspondence of the Score indicators with the text and the spirit of the Note and classified the indicators into three groups. We classified the 34 indicators in Table A.I into 3 groups according to whether the indicator is mentioned in the Note or not: “Yes”, “Partial” and “No”.

“Yes” for variables that are clearly reflected in the Note. This include Board Attendance; Board Background and Skills; Board Cultural Diversity; Board Functions Policy; Board Individual Reelection; Board Member Affiliations; Board Specific Skills; CEO Compensation Link to TSR; CEO-Chairman Separation; Executive Compensation LT objectives; Experienced Board; Independent Board Members and Succession Plan.

“Partial” for indicators that were only partially mentioned or related to the Note. This include Audit Committee Independence; Audit Committee Mgt Independence; Board Meeting Attendance Average; Board Structure Policy; Compensation Improvement Tools; Executive Compensation Policy; Female on Board; Nomination Committee Involvement; Sustainability Compensation Incentives.

“No” for indicators in the Score that are not even mentioned in the NBIM Note. This include Compensation Committee Independence; Compensation Committee Mgt Independence; Nomination Committee Independence; Board Size More Ten Less Eight; Executive Individual Compensation; External Consultants; Highest Remuneration Package; Internal Audit Department Reporting; Non-Executive Board Members; Shareholders Approval Stock Compensation Plan; Total Senior Executives Compensation; Executive Members Gender Diversity. See Table A.I for definitions.

Table A.XIV The effect of NBIM on firm governance: instrumental variables (2006–2015)

	Reduced form		2SLS		
	(1)	(2)	(3)	(4)	(5)
NBIM ₁₁ *Post	4.915*** (1.321)	4.941*** (1.196)	7.710*** (1.782)	7.643*** (1.855)	
NBIM ₁₁ *year2007					0.110 (2.051)
NBIM ₁₁ *year2008					1.746 (1.846)
NBIM ₁₁ *year2009					1.213 (1.731)
NBIM ₁₁ *year2010					2.098 (1.864)
NBIM ₁₁ *year2011					2.862 (1.760)
NBIM ₁₁ *year2012					7.045*** (2.368)
NBIM ₁₁ *year2013					8.261*** (2.977)
NBIM ₁₁ *year2014					11.015*** (3.673)
NBIM ₁₁ *year2015					15.540*** (4.155)
Year dummies	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	No	Yes	No	Yes	Yes
Post*Country dummies	Yes	Yes	Yes	Yes	Yes
Observations	21,034	21,034	21,034	21,034	21,034
R-squared	0.019	0.671			

Notes. This table reports instrumental variables estimates of the effect of the announcement on the governance of NBIM portfolio firms. The dependent variable is the Governance Index measured at the firm level. Column 1 reports estimates of a pooled OLS regression. Columns 2 and 3 include firm fixed effects. NBIM (NBIM₁₁) is a dummy variable equal to one for firms in the portfolio of NBIM (in 2011) and zero otherwise. Post is a dummy variable equal to one for the period 2012–2015 and equal to zero for the period 2006–2011. In columns 3 and 4, Post*NBIM is instrumented with Post*NBIM₁₁. In column 5, year* is a dummy variable for the years 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014 and 2015, the reference year is 2006. NBIM*year2012, NBIM*year2013, NBIM*year2014 and NBIM*year2015 are instrumented with NBIM₁₁*year2012, NBIM₁₁*year2013, NBIM₁₁*year2014 and NBIM₁₁*year2015. Year dummies and dummies on the interaction of the dummy Post and country dummies are included. Standard errors clustered at the firm level are shown in parentheses.

***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Table A.XV. The effect of NBIM on firm governance: placebo tests

	Reduced form		2SLS	
	(1)	(2)	(3)	(4)
Post ₀₉₋₁₁ *NBIM ₀₈	-1.063 (1.527)		-1.449 (2.083)	
Post ₁₀₋₁₁ *NBIM ₀₉		0.707 (1.407)		0.905 (1.803)
Firm & Year fixed effects	Yes	Yes	Yes	Yes
Post*Country dummies	Yes	Yes	Yes	Yes
Observations	11,098	11,098	11,098	11,098
R-squared	0.724	0.723	0.031	0.030

Notes. This table reports placebo tests for the pre-shock period 2006-2011. The dependent variable is the Governance Index measured at the firm level. Columns 1 and 2 report estimates of a pooled OLS regressions with firm and year fixed effects. NBIM₀₈ (NBIM₀₉) is a dummy variable equal to one for firms in the portfolio of NBIM in 2008 (in 2009) and zero otherwise. Post₀₉₋₁₁ (Post₁₀₋₁₁) is a dummy variable equal to one for the period 2009–2011 (2010–2011) and equal to zero for the period 2006–2008 (2006–2009). In column 3 Post₀₉₋₁₁*NBIM is instrumented with Post₀₉₋₁₁*NBIM₀₈ and in column 4 Post₁₀₋₁₁*NBIM is instrumented with Post₁₀₋₁₁*NBIM₀₉. Dummies on the interaction of the dummy Post and country dummies are included. Robust standard errors clustered at the firm level are shown in parentheses.

***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Table A.XVI. Governance differences for firms that enter the portfolio of NBIM

Panel A: Estimates from logistic regressions

ENTRY	FULL SAMPLE		Non-FTSE		FTSE	
	(1) Vs-NonNBIM	(2) Vs-NBIM	(3) Vs-NonNBIM	(4) Vs-NBIM	(5) Vs-NonNBIM	(6) Vs-NBIM
Post * Governance ₂₀₁₁	0.0074** (0.0035)	0.0058** (0.0029)	0.0096** (0.0045)	0.0084** (0.0043)	0.0034 (0.0052)	0.0011 (0.0046)
Governance ₂₀₁₁	-0.0050** (0.0024)	-0.0122*** (0.0020)	-0.0060* (0.0033)	-0.0134*** (0.0032)	-0.0043 (0.0027)	-0.0113*** (0.0024)
Time & Post*Country dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,687	14,307	2,366	13,471	2,110	13,185
Pseudo R-squared	0.0734	0.108	0.154	0.182	0.0309	0.0479
Baseline Predicted Probability	0.234	0.056	0.132	0.032	0.136	0.027

Panel B: Average marginal effects (Mfx)

ENTRY	FULL SAMPLE		Non-FTSE		FTSE	
	(1) Vs-NonNBIM	(2) Vs-NBIM	(3) Vs-NonNBIM	(4) Vs-NBIM	(5) Vs-NonNBIM	(6) Vs-NBIM
Post * Governance ₂₀₁₁	0.00140** (0.00065)	0.00019** (0.00010)	0.00116** (0.00055)	0.00013** (0.00007)	0.00040 (0.00061)	0.00002 (0.00008)
Governance ₂₀₁₁	-0.00094** (0.00045)	-0.00040*** (0.00007)	-0.00073* (0.00040)	-0.00021*** (0.00005)	-0.00051 (0.00032)	-0.00020*** (0.00004)

Notes. This table reports estimates and average marginal effects (Mfx) from logistic regressions. The dependent variable is NBIM_entry, a dummy equal to one for firms that enter the NBIM portfolio in year t and do not belong to the NBIM portfolio in year $t-1$. This dummy is equal to zero according to the control group selected. In columns 1, 3 and 5, NBIM_entry is equal to zero for firms that do not belong to the NBIM portfolio the previous and subsequent 2 years. In columns 2, 4 and 6, NBIM_entry is equal to zero for firms that belong to the NBIM portfolio the previous and subsequent 2 years. The variable Governance₂₀₁₁ is the Governance Index fixed in the year 2011. Post is a dummy variable equal to one for the period 2012–2015 and equal to zero for the period 2009–2011. Year dummies, and interactions of the dummy Post and country dummies are included but not reported. In columns 1 and 2 we use the full sample of firms. In columns 3 and 4 we exclude the entries that are driven by entries in the FTSE Global Cap. In columns 5 and 6 we only include the entries that are driven by entries in the FTSE Global Cap. The unconditional probability is described as the baseline predicted probability. Standard errors clustered at the firm level are shown in parentheses.

***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Table A.XVII. Average governance for firms that enter and exit the NBIM portfolio

Panel A: Governance Index not fixed in 2011

	Non-NBIM	NBIM	Entries	Exits
Period 2009–2011	47.79	50.69	42.72	48.63
Period 2012–2014	44.61	51.71	46.52	43.61

Panel B: Governance Index fixed in 2011

	Non-NBIM	NBIM	Entries	Exits
Period 2009–2011	46.23	51.26	42.34	48.73
Period 2012–2014	46.55	50.95	47.51	43.01

Notes. These tables report means of the Governance Index for different sample groups and periods. The Governance Index is an index ranked from 0 to 100 that measures a company's commitment and effectiveness toward following best practice corporate governance principles. Non-NBIM are firms that do not belong to the NBIM portfolio. NBIM are firms that belong to NBIM. Entry are firms that enter the NBIM portfolio in year t and do not belong to the NBIM portfolio in year $t-1$. Exit are firms that belong to the NBIM portfolio in year $t-1$ and exit the NBIM portfolio in year t .

Table A.XVIII. Number of firms that enter and exit the NBIM portfolio every year

	Exits	Entries	Exits (non FTSE)	Entries (non FTSE)
2009	70	150	50	77
2010	31	169	25	73
2011	228	157	219	52
2012	70	205	64	149
2013	60	279	50	177
2014	81	235	76	105

Notes. This table reports the number of firms that NBIM yearly exits and entries. Columns 3 and 4 report NBIM exits and entries that are not driven by FTSE exits and entries.

Table A.XIX. Governance differences for firms that exit the portfolio of NBIM

Panel A: Estimates from logistic regressions

EXIT	FULL SAMPLE		Non-FTSE		FTSE	
	(1) Vs-NonNBIM	(2) Vs-NBIM	(3) Vs-NonNBIM	(4) Vs-NBIM	(5) Vs-NonNBIM	(6) Vs-NBIM
Post * Governance ₂₀₁₁	-0.0069 (0.0044)	-0.0067* (0.0038)	-0.0093** (0.0046)	-0.0091** (0.0040)	0.0137 (0.0114)	0.0119 (0.0099)
Governance ₂₀₁₁	0.0024 (0.0027)	-0.0041* (0.0023)	0.0028 (0.0029)	-0.0037 (0.0025)	-0.0003 (0.0063)	-0.0077 (0.0061)
Time & Post*Country dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,347	13,491	2,308	13,449	1,697	10,793
Pseudo R-squared	0.149	0.131	0.164	0.142	0.0941	0.0799
Baseline Predicted Probability	0.129	0.027	0.115	0.024	0.023	0.004

Panel B: Average marginal effects (Mfx)

EXIT	FULL SAMPLE		Non-FTSE		FTSE	
	(1) Vs-NonNBIM	(2) Vs-NBIM	(3) Vs-NonNBIM	(4) Vs-NBIM	(5) Vs-NonNBIM	(6) Vs-NBIM
Post * Governance ₂₀₁₁	-0.00081 (0.00051)	-0.00011* (0.00006)	-0.00095** (0.00048)	-0.00012** (0.00006)	0.00024 (0.00020)	0.00003 (0.00003)
Governance ₂₀₁₁	0.00029 (0.00032)	-0.00007* (0.00004)	0.00028 (0.00029)	-0.00005 (0.00003)	-0.00001 (0.00011)	-0.00002 (0.00002)

Notes. This table reports estimates and average marginal effects (Mfx) from logistic regressions. The dependent variable is NBIM_exit, a dummy equal to one for firms that exit the NBIM portfolio in year t and belong to the NBIM portfolio in year $t-1$. This dummy is equal to zero according to the control group selected. In columns 1, 3 and 5, NBIM_exit is equal to zero for firms that do not belong to the NBIM portfolio the previous and subsequent 2 years. In columns 2, 4 and 6, NBIM_exit is equal to zero for firms that belong to the NBIM portfolio the previous and subsequent 2 years. The variable Governance₂₀₁₁ is the Governance Index fixed in the year 2011. Post is a dummy variable equal to one for the period 2012–2015 and equal to zero for the period 2009–2011. Year dummies, and interactions of the dummy Post and country dummies are included but not reported. In columns 1 and 2 we use the full sample of firms. In columns 3 and 4 we exclude the exits that are driven by exits in the FTSE Global Cap. In columns 5 and 6 we only include the exits that are driven by exits in the FTSE Global Cap. The unconditional probability is described as the baseline predicted probability. Standard errors clustered at the firm level are shown in parentheses.

***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Table A.XX. Governance differences for firms that exit the portfolio of NBIM (exclude 2011)

Panel A: Odds ratios from logistic regressions

EXIT	FULL SAMPLE		Non-FTSE		FTSE	
	(1) Vs-NonNBIM	(2) Vs-NBIM	(3) Vs-NonNBIM	(4) Vs-NBIM	(5) Vs-NonNBIM	(6) Vs-NBIM
Post * Governance ₂₀₁₁	0.991 (0.006)	0.993 (0.005)	0.987** (0.006)	0.989* (0.006)	1.015 (0.013)	1.014 (0.011)
Governance ₂₀₁₁	1.005 (0.005)	0.997 (0.004)	1.007 (0.005)	0.999 (0.005)	0.998 (0.008)	0.990 (0.008)
Time & Post*Country dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,804	10,981	1,773	10,947	1,331	8,460
Pseudo R-squared	0.147	0.146	0.163	0.158	0.119	0.100

Panel B: Average marginal effects (Mfx)

EXIT	FULL SAMPLE		Non-FTSE		FTSE	
	(1) Vs-NonNBIM	(2) Vs-NBIM	(3) Vs-NonNBIM	(4) Vs-NBIM	(5) Vs-NonNBIM	(6) Vs-NBIM
Post * Governance ₂₀₁₁	-0.00083 (0.00052)	-0.00009 (0.00006)	-0.00098** (0.00048)	-0.00011* (0.00006)	0.00026 (0.00021)	0.00003 (0.00003)
Governance ₂₀₁₁	0.00043 (0.00040)	-0.00004 (0.00005)	0.00049 (0.00038)	-0.00001 (0.00005)	-0.00003 (0.00014)	-0.00002 (0.00002)

Notes. This table reports odds ratios and average marginal effects (Mfx) from logistic regressions. The dependent variable is NBIM_exit, a dummy equal to one for firms that exit the NBIM portfolio in year t and belong to the NBIM portfolio in year $t-1$. This dummy is equal to zero according to the control group selected. In columns 1, 3 and 5, NBIM_exit is equal to zero for firms that do not belong to the NBIM portfolio the previous and subsequent 2 years. In columns 2, 4 and 6, NBIM_exit is equal to zero for firms that belong to the NBIM portfolio the previous and subsequent 2 years. The variable Governance₂₀₁₁ is the Governance Index fixed in the year 2011. Post is a dummy variable equal to one for the period 2012–2015 and equal to zero for the period 2009–2010. Year 2011 is excluded from the sample. Year dummies, and interactions of the dummy Post and country dummies are included but not reported. In columns 1 and 2 we use the full sample of firms. In columns 3 and 4 we exclude the exits that are driven by exits in the FTSE Global Cap. In columns 5 and 6 we only include the exits that are driven by exits in the FTSE Global Cap. Standard errors clustered at the firm level are shown in parentheses.

***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Table A.XXI. Changes on investment and changes on governance

	Fund (1)	Firm (2)
Post* Δ NBIM_Weight _(t+2,t)	23.320** (10.379)	0.380 (0.548)
Δ NBIM_Weight _(t+2,t)	1.795 (6.270)	-0.017 (0.345)
Year dummies	Yes	Yes
Post*Country dummies	Yes	Yes
Observations	12,420	12,366
R-squared	0.010	0.010

Notes. This table reports the results from OLS regressions. The dependent variable is the difference between the Governance Index in t+2 and the Governance Index in t. In column 1, Δ NBIM_Weight_(t+2,t) measures the difference between the fraction of the NBIM's portfolio represented by the firm in t+2 and in t. In column 2, Δ NBIM_Weight_(t+2,t) measures the difference between the percentage market value that NBIM holds of the firm in t+2 and in t. Post is a dummy variable equal to one for the period 2012–2015 and equal to zero for the period 2009–2011. Year dummies and dummies on the interaction of the dummy Post and country dummies are included. Standard errors are shown in parentheses.

***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Table A.XXII. Granger causality

Panel A: GMM estimation

	$\Delta\text{Gov}_{(t+1,t)}$ 2012–15 (1)	$\Delta\text{NBIM_W}_{(t+1,t)}$ 2012–15 (2)	$\Delta\text{Gov}_{(t+1,t)}$ 2009–11 (3)	$\Delta\text{NBIM_W}_{(t+1,t)}$ 2009–11 (4)
Lagged $\Delta\text{Governance}_{(t+1,t)}$	-.197*** (0.019)	0.004** (0.002)	-0.203*** (0.013)	0.002 (0.002)
Lagged $\Delta\text{NBIM_Weight}_{(t+1,t)}$	0.123 (0.139)	0.063 (0.075)	-0.008 (0.060)	-0.085** (0.035)
Observations	4,968	4,968	7,091	7,091

Panel B: Changes in governance

$\Delta\text{Governance}_{(t+1,t)}$	P- value
- Predicted by lagged $\Delta\text{NBIM_Weight}_{(t+1,t)}$	0.375
- Controls for lagged $\Delta\text{Governance}_{(t+1,t)}$	

Panel C: Changes in fund weights

$\Delta\text{NBIM_Weight}_{(t+1,t)}$	P- value
- Predicted by lagged $\Delta\text{Governance}_{(t+1,t)}$	0.044
- Controls for lagged $\Delta\text{NBIM_Weight}_{(t+1,t)}$	

Notes. These tables report results from Granger causality Wald tests by implementing a GMM panel vector autoregression model. In column 1 and 3, the dependent variable is $\Delta\text{Governance}_{(t+1,t)}$, a variable equal to the difference of the governance index between year $t+1$ and year t . In columns 2 and 4, the dependent variable is $\Delta\text{NBIM_Weight}_{(t+1,t)}$ which measures the difference between the fraction of the NBIM's portfolio represented by the firm in year $t+1$ and year t . The regressors are one period lagged measures of $\Delta\text{Governance}_{(t+1,t)}$, and $\Delta\text{NBIM_Weight}_{(t+1,t)}$. Columns 1 and 2 report results for the period 2012–2015, and columns 3 and 4 report results for the period 2009–2011. Panel B and Panel C report P-values for the estimates of the regressions in column 1 and column 2. Standard errors are shown in parentheses.

***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Analytical decomposition of the overall governance effect

Using the measures of the fund weights (percentage that the firm represents in the NBIM fund per year) and the firm-level governance index, we can explicitly calculate the scores for each of the terms of the analytical decomposition in equation (2). We analyze the change in governance between the years 2010–2015. We choose 2010 and 2015 to have a long period before and after the release of the Note, but the results are consistent across different period choices. We show the results in the next table.³⁷

Overall, we find a positive increase of the governance score of the whole NBIM portfolio in the first two specifications. Analyzing the individual terms, the first term is constant and positive across the three specifications. This means that the firms owned by NBIM are, in fact, changing their governance significantly and clearly contributing to the increase in the aggregate governance score of the fund. The third term (the cross-product) is also always positive, which means that, on average, NBIM increases (decreases) its weights on firms that increase (decrease) their governance scores.

The second term focuses on the changes of the NBIM weights and it depends heavily on how we define the weights. Therefore, these results must be taken carefully. If we keep the weights and firms constant (specification 1), this term is strongly positive. However, if the market value of the 2010 weights is not kept constant (specification 2) or if we change the composition of firms (specification 3), the term is negative. The reason for this discrepancy is linked to the significant growth of the fund during this period (see Table A.II of the Online Appendix), almost doubling its size. From Table VII and Table A.XVI in the Online Appendix we know that the firms that join NBIM have, on average, a lower governance score than those that were already inside NBIM and that this effect is only partially offset by the change in the preferences of the fund. Thus, this reversal in the terms is intuitive. We have seen that the effect of the announcement is an increase in the governance score of the firms that enter the portfolio of NBIM, however, the firms that enter have, in general, a lower baseline governance score. That is, marginal new firms have a lower governance score than pre-existing ones. We can conclude that the change in the governance preferences of the fund partially offsets the mechanical decrease in the governance levels induced

³⁷ We use three different specifications to define the denominator of the investment weights of NBIM in 2010 and in 2015. In the first specification (row 1), the denominator of the weights is fixed for 2010 and 2015 to the total value of the portfolio of NBIM in 2010. In the second specification (row 2), the set of firms is fixed for 2010 and 2015 to the set of firms that were already present in the portfolio of NBIM in 2010, but the value of the whole portfolio changes according to the market value of the 2010 firms in 2010 and in 2015. In the third specification (row 3), the denominator is the value of the total holdings of the NBIM portfolio in 2010, and the total holdings of the NBIM portfolio in 2015.

by the fund's expansion. From an analytical perspective, the last row of Table A.XXIII is the least informative, as it includes important composition effects that are not related to the effects that we are measuring. However, it is still important to report it, as these are the actual numbers that a stakeholder in the fund should focus on.

Overall, regardless of the approach chosen, it is clear from this section that the main effect on the governance index comes from the improved governance of existing firms, the first term in equation (2).

Table A.XXIII Analytical decomposition of the overall governance effect

<u>Period: 2010-15</u>	Total	Term 1	Term 2	Term 3
	ΔG	$w_{2010} * \Delta g$	$\Delta w * g_{2010}$	$\Delta w * \Delta g$
$w_{it} = \text{holding}_{it} / \text{total holding}_{i2010}$	39.31	2.95	31.35	5.04
$w_{it} = \text{holding}_{it} / \text{total holding}_{it} \text{ (2010 firms)}$	2.33	2.95	-2.51	1.87
$w_{it} = \text{holding}_{it} / \text{total holding}_{it}$	-0.73	2.95	-5.55	1.86

Notes. This table presents the results from the analytical decomposition of the overall governance effect for the period 2010–2015. ΔG is the overall change in the governance level of the NBIM portfolio from 2010 to 2015, g is the governance index of firm i , w is the value of the holding that firm i represents in the total value of the portfolio of NBIM, Δg are changes in the governance index from 2010 to 2015 and Δw are changes in the value of the holdings from 2010 to 2015. The value of the holdings w_{it} is measured using 3 different denominators. In row 1 the denominator is constant, it is the total value of the portfolio of NBIM in 2010. In row 2, the set of firms is constant, it is the firms in the portfolio of NBIM in 2010. In row 3, the denominator is the total holdings of the NBIM portfolio. Subindex i is for each firm in the portfolio of NBIM, subindex t is for year 2010 and for year 2015.

about ECGI

The European Corporate Governance Institute has been established to improve *corporate governance through fostering independent scientific research and related activities*.

The ECGI will produce and disseminate high quality research while remaining close to the concerns and interests of corporate, financial and public policy makers. It will draw on the expertise of scholars from numerous countries and bring together a critical mass of expertise and interest to bear on this important subject.

The views expressed in this working paper are those of the authors, not those of the ECGI or its members.

ECGI Working Paper Series in Finance

Editorial Board

Editor	Mike Burkart, Professor of Finance, London School of Economics and Political Science
Consulting Editors	Franklin Allen, Nippon Life Professor of Finance, Professor of Economics, The Wharton School of the University of Pennsylvania Julian Franks, Professor of Finance, London Business School Marco Pagano, Professor of Economics, Facoltà di Economia Università di Napoli Federico II Xavier Vives, Professor of Economics and Financial Management, IESE Business School, University of Navarra Luigi Zingales, Robert C. McCormack Professor of Entrepreneurship and Finance, University of Chicago, Booth School of Business
Editorial Assistant	Úna Daly, Working Paper Series Manager

Electronic Access to the Working Paper Series

The full set of ECGI working papers can be accessed through the Institute's Web-site (www.ecgi.global/content/working-papers) or SSRN:

Finance Paper Series	http://www.ssrn.com/link/ECGI-Fin.html
Law Paper Series	http://www.ssrn.com/link/ECGI-Law.html