

Corporate Governance Implications of the Growth in Indexing

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Passively managed funds have grown to become some of the largest shareholders in publicly traded companies, but there is considerable debate about the effects of this growth on corporate governance. The goal of this paper is to review the literature on the governance implications of passive fund growth and discuss directions for future research. In particular, we present a framework to understand the incentives of passive and actively managed funds to engage in governance, review the empirical evidence in the context of this framework, and highlight the questions that remain unanswered.

Keywords: passive funds, index funds, corporate governance, institutional investors, shareholder activism, engagement, stewardship, Big Three, voting

JEL Classifications: G23, G34, K22

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Abstract

Passively managed funds have grown to become some of the largest shareholders in publicly traded companies, but there is considerable debate about the effects of this growth on corporate governance. The goal of this paper is to review the literature on the governance implications of passive fund growth and discuss directions for future research. In particular, we present a framework to understand the incentives of passive and actively managed funds to engage in governance, review the empirical evidence in the context of this framework, and highlight the questions that remain unanswered.

1. Introduction

The last two decades featured a remarkable growth of assets under management of passive (index) funds. Passive funds and ETFs now manage more than half of all assets under management of equity mutual funds and ETFs (Investment Company Institute, 2022; Fig. 2.9), and the Big Three index fund managers (BlackRock, State Street, and Vanguard) alone control over a quarter of shareholder votes on S&P 500 companies (Bebchuk and Hirst, 2019a). The growth in voting power of passive funds has attracted the attention of market participants, academics, and regulators. For example, concerns about their outsized influence have led a group of senators to propose the INDEX Act, which would require passive funds to vote proxies in accordance with the instructions of fund investors.¹

The question of how the rise in passive ownership affects the corporate governance landscape is very much unsettled. While some studies find evidence that passive funds give managers less power (e.g., Appel, Gormley, and Keim, 2016, 2019), others show evidence of opposite effects (e.g., Schmidt and Fahlenbrach, 2017; Heath et al., 2022). There is also a significant debate among legal scholars about whether passive funds have a financial incentive to engage in the first place (e.g., Bebchuk and Hirst, 2019b; Lund, 2018; Fisch, Hamdani, and Solomon, 2019; Kahan and Rock, 2020; Sharfman, 2022).

The goal of this survey is to present an economic framework to think about the incentives of institutional investors (and passive funds in particular) to engage in governance, and to review the existing empirical evidence in the context of this framework. We also highlight the questions that are underexplored and

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¹ See <https://www.sullivan.senate.gov/newsroom/press-releases/sullivan-introduces-index-act-to-empower-investors-and-neutralize-wall-streets-biggest-investment-firms>.

discuss directions for future research. Given our focus on passive funds, we do not provide a comprehensive survey of shareholder activism in general. We refer the reader to Edmans and Holderness (2017) and Dasgupta, Fos, and Sautner (2021) for excellent surveys of the broader literature on governance by blockholders and institutional investors; to Brav, Jiang, and Li (2022) on the survey on hedge fund activism; and to Brav, Malenko, and Malenko (2022) for a survey on shareholder voting. We also abstract from the literature on common ownership, which often ties the growth in indexing to the rise in common ownership (e.g., Vives, 2020; Azar and Vives, 2021).

2. The determinants of institutional investors' engagement

In this section, we present a framework, which is based on Lewellen and Lewellen (2022a) and Corum, Malenko, and Malenko (2022), for understanding what factors affect the incentives of an institutional investor to engage with portfolio companies, and we discuss passive funds' incentives to engage in the context of this framework.

We start by outlining different technologies that shareholders can use to increase value. In their survey of institutional investors, McCahery, Sautner, and Starks (2016) show that institutional investors take a variety of different monitoring measures, which can be grouped into three broad categories:

1. *Communication (pure engagement/communication without any intervention tactics)*. This is the most popular form of shareholder engagement. Discussions with top management are used by 63% of institutional investors (McCahery, Sautner, and Starks, 2016). Also important are discussions with boards of directors outside of management (45% of institutional investors), proposing specific actions to management (35%), and aggressively questioning management on conference calls (30%).
2. *Intervention: voting, submitting shareholder proposals, activist campaigns, and proxy fights*. Institutional investors vote on a variety of issues at shareholder meetings, and voting against management is used as a shareholder engagement measure by 53% of institutional investors. Sometimes institutional investors publicize dissenting votes (18% of institutional investors) and submit shareholder proposals to be voted on (16%). Finally, a subset of investors (hedge fund activists in particular) uses more confrontational tactics, such as running public activist campaigns and organizing proxy fights.
3. *Exit (trading out of the firm, the threat of which imposes discipline on the manager)*. Shareholders can and often do sell shares if they are dissatisfied with performance of the company's management (used by 49% of institutional investors) or with corporate governance (39% of institutional investors). This engagement tactic can provide incentives for management because of the associated decline in the stock price (Admati and Pfleiderer, 2009; Edmans, 2009).

The literature often groups the first two categories together and refers to their combination as "governance through voice" (i.e., taking active actions to improve value), as opposed to "governance through exit" (third category), which is a more indirect form of influence. Some shareholders use only one

technology, but most use two or more. For example, hedge fund activists often start with private communication but if unsuccessful, use more interventionist tactics (e.g., Gantchev, 2013).

Given that this survey discusses the governance role of passive funds, who cannot actively exit, we focus on governance through voice (which we will broadly refer to as engagement) and do not extensively cover governance through exit, which is covered in the surveys by Edmans and Holderness (2017) and Dasgupta, Fos, and Sautner (2021). Note, however, that even index funds can share the surplus from active investors selling on negative information through the share lending market, a theme explored in Mitts (2020). We abstract from the question of share lending in this survey.

Consider a shareholder who owns shares in a company and is deciding how much effort to put into engagement. This decision depends on two key factors:

1. **Benefits from engagement.** By engaging with the company, a shareholder can increase its value. If the shareholder can capture some of this value increase, it will have private incentives to engage.
2. **Costs of engagement.** Achieving a certain increase in value, even if feasible, is costly for the shareholder. These costs can vary across shareholders and, for a given shareholder, across different engagement technologies.

We start by discussing the benefits from engagement in Section 2.1. In Section 2.2, we follow with a discussion of the costs of engagement. In both sections, we highlight how the costs and benefits of engagement differ between passive funds and other types of shareholders.

2.1 Benefits of engagement

Consider an institutional investor, for example, a passive or active mutual fund, that owns fraction α of a certain company. Suppose that the fund manager finds a way to increase the value of the company by 1% (e.g., by voting informatively and engaging with management). Typically, the fund manager will capture less than the full value of this value increase. What will be the fund manager's next year's payoff from this engagement? Building on Lewellen and Lewellen (2022a), we can write down this payoff as

$$\underbrace{f \times AUM \times w \times 1\%}_{\text{direct incentives}} + \underbrace{f \times \lambda \times AUM \times (w - v) \times 1\%}_{\text{flow incentives}}, \quad (1)$$

where f is the fee of the fund manager, AUM is the assets under management of the fund, w is the weight of the stock in the fund's portfolio, λ is the flow-performance sensitivity (defined as the percentage increase in the fund's AUM per 1% of its return relative to a benchmark portfolio), and v is the weight of the stock in the benchmark portfolio.

This payoff consists of two terms. First, an increase in the value of a portfolio company increases the value of total AUM of the fund (by $AUM \times w \times 1\%$ in the above example) and thus the fees that the fund manager earns for asset management (fraction f of this increase). This effect, captured in the first part of the equations above, is what Lewellen and Lewellen (2022a) call *direct incentives*.

Second, an increase in the value of the portfolio can result in additional flows into the fund. This effect, captured in the second part of the equation above, is called *flow incentives* by Lewellen and Lewellen (2022a). By increasing the company's value by 1%, the fund generates an additional return of $(w - v) \times 1\%$ relative to the benchmark. This additional return results in an inflow of capital of $\lambda \times AUM \times (w - v) \times 1\%$, which allows the fund to collect additional management fees on this amount (fraction f of this inflow).

If we denote α the fraction of the firm owned by the fund and MV the market value of the company, then $AUM \times w = MV \times \alpha$, so we can rewrite the fund manager's next year's payoff from engagement as:

$$\underbrace{f \times MV \times \alpha \times 1\%}_{\text{direct incentives}} + \underbrace{f \times \lambda \times (MV \times \alpha - AUM \times v) \times 1\%}_{\text{flow incentives}}, \quad (2)$$

The total payoff from engagement then depends on the present value of the fund manager's annual payoffs (see Section 2.1.2 for details).

We should think of eq. (1) and (2) as capturing the fund's benefits from engagement in partial equilibrium, keeping the efforts of other fund managers the same. Shareholders' engagement decisions can be either substitutes (if one fund's engagement reduces the need for the other fund's engagement) or complements (as in the case of voting, when accepting a controversial proposal requires the combined approval of multiple shareholders). Hence, the equilibrium incentives to engage depend on the interactions between multiple shareholders, which we discuss in Section 3.

Eq. (1) and (2) imply that the benefits from engagement are affected by the following factors: (i) ownership stake in the firm α ; (ii) compensation structure of the fund manager f ; and (iii) flow incentives. We discuss these individual factors, as well as their interactions, next.

2.1.1 Ownership stake in the firm

Regardless of the nature of the shareholder (e.g., whether it is a passive or active fund, or an individual investor who directly holds shares), the shareholder's incentives to engage increase in its ownership stake of the firm: We can see that (2) is increasing in stake α . This is the well-known free-rider problem of dispersed ownership: the shareholder underinvests in engagement if $\alpha < 1$. This underinvestment relates to the common argument that index funds have little incentive to monitor because "any investment in improving the performance of a company will benefit all funds that track the index equally" (Lund, 2018). While this argument is often made regarding competition among multiple passive funds targeting the same index, it also holds more generally for all shareholders, both active and passive, both direct and indirect.

For direct shareholders, i.e., shareholders that own shares directly rather than through intermediaries, their ownership stake is the sole determinant of their benefits from engagement. Indeed, a direct shareholder fully captures all the value increase in her ownership stake: $f = 1$ in eq. (1) and (2). In addition, the flow incentives component is zero in this case because there are no flows.

However, for indirect shareholders, i.e., intermediaries such as mutual and hedge funds, which manage money on behalf of other investors, the compensation structure of the fund manager and flow considerations also affect their incentives to engage. We discuss the role of the compensation structure in Sections 2.1.2 - 2.1.3 and flow considerations in Section 2.1.4.

2.1.2 Compensation structure of the fund manager

Consider a fund manager deciding on engagement and, for a moment, leave the flow considerations aside. Eq. (1) and (2) show that there is a second layer of the free-rider problem in engagement: Even if the fund owns 100% shares of the company, the fund manager captures only fraction f of the value increase from engagement (e.g., Bebchuk and Hirst, 2019b). In other words, fund investors “free-ride” on the engagement effort of the fund manager: the fund manager pays the cost, but fund investors get part of the benefits (the fund manager pays the costs of engagement out of the fee revenue it collects). The lower the fee that the fund manager charges for asset management, the more important is this second layer of the free-rider problem. Thus, the compensation structure of the fund manager is another determinant of engagement incentives.

Note that parameter f in eq. (1) and (2) measures the fraction from the 1% increase in firm value that accrues to the fund manager. For mutual funds, where the management fee is typically a constant fraction of the fund’s AUM, f is determined by this fee. For hedge funds, where the compensation contract includes both an annual management fee and an incentive compensation for beating the benchmark, f will capture both. To understand exactly how the total (present value) payoff from engagement is affected by the fund manager’s compensation contract, we present a simple quantitative example. For simplicity, we focus on the direct incentives component in this example.

Consider an all-equity financed company with the current book value of assets of \$10 billion,² a constant return on book equity (ROE) of 10%, a payout ratio of 0.5, and a cost of equity capital of 10%. Given the payout ratio of 0.5 and the ROE of 10%, this firm will grow its assets, earnings, and dividends at a constant rate of $0.5 \times 10\% = 5\%$. Using the dividend discount model, its market value is $\frac{0.5 \times 10\% \times \$10B}{10\% - 5\%} = \$10$ billion, and this market value will appreciate at a 5% annual rate.

Suppose that through better governance the fund manager finds a way to increase the ROE of this firm by 0.5 percentage points, from 10% to 10.05%, while holding the investment policy (i.e., the growth rate of assets of 5%) unchanged. Given that the new ROE is 10.05% and the firm grows its assets at 5%, the firm can increase its next period’s dividends to $(10.05\% - 5\%) \times \$10B = \505 million and the payout ratio on all future dividends to 5.05%/10.05%. The resulting market value of the firm will increase to $\frac{\$505M}{10\% - 5\%} = \10.1 billion, i.e., by 1%. Since the ROE and the new payout ratio will then stay constant over time and the firm grows its assets at a 5% annual rate, the market value of the firm will also appreciate at a 5% annual rate.

² This is close to the market capitalization of a firm that is at the cutoff between the Russell 1000 and Russell 2000 indices: according to the 2021 Russell US Indexes Reconstitution report, companies at this cutoff had a \$5.2 billion market value. See https://content.ftserussell.com/sites/default/files/2021_russell_us_indexes_reconstitution_recap.pdf.

What will be the effect of this governance improvement on the present value of the fee income captured by the fund?

Mutual funds. First, suppose that the fund is a mutual fund, with an annual management fee of 0.5%, and that the fund plans to hold a 4% stake in this company in perpetuity.³ Then, the governance improvement will increase the fund's fee income this year by $0.5\% \times 0.04 \times (\$10.1 - \$10)$ billion. In addition, since the market value of the company grows at 5%, the \$0.1 billion increase in its value today will also grow at 5% (as shown above), so the fee income will also grow at 5%. Since the fee income is proportional to the market value of the company's equity, the appropriate discount rate for the fee income equals the discount rate for valuing the equity cash flows, i.e., the cost of equity 10%. Thus, the present value of the additional fee income from this governance change is:

$$\frac{0.5\% \times 0.04 \times \$0.1B}{10\% - 5\%} = \$400,000. \quad (3)$$

Hedge funds. Second, consider a hedge fund, which owns the same 4% stake in the firm, but collects a 1.5% management fee and a 20% performance fee on the return exceeding the market benchmark. Then, the present value of additional fee income from a \$0.1 billion increase in firm value (and hence a \$4 million increase in the ownership stake) today is

$$\$4M \times 20\% + \frac{\$4M \times (1 - 20\%) \times 1.5\%}{10\% - 5\%} = \$1.76 \text{ million}. \quad (4)$$

The first term represents the performance fee: the hedge fund will capture 20% from the \$4 million increase in the value of the stake via the performance fee. Essentially, the governance intervention will lead to an increase of firm value from \$10 billion to \$10.1 billion at the time of the intervention, representing a 1% excess return over the market benchmark. Given that the improvement in the ROE becomes priced in as soon as the intervention occurs, the firm is not expected to generate any excess return above the market benchmark (10% market cost of equity in this example) after the intervention. Hence, the intervention only leads to a one-time performance fee of \$0.8 million. In addition, the intervention will increase the value of the hedge fund's AUM by $\$4M \times (1 - 20\%)$, which will result in higher management fees every year. Given that the market value of the firm is expected to grow at 5%, the present value of this higher management fee income is given by the second term in the equation above and equals \$0.96 million.

Note that because the performance fee occurs only once, while the increase in management fees occurs in perpetuity, the management fee (second) term is larger than the first, even though the management fee of 1.5% is smaller than the performance fee of 20%.

³ According to Lewellen and Lewellen (2022a), 0.5% is close to the average advisory fee of U.S. equity mutual funds during 1980-2017 and the number they pick for their baseline measures, and according to Lewellen and Lewellen (2022b), 4% is the average and median stake of a firm's top 10 institutional blockholders across U.S. firms in 2015-2017 (see their table 2).

While the details of this calculation depend on the form of the contract and the assumptions over how to discount fee income over time, the general point is that the fund manager's incentives to engage are determined by the contract and are lower if it charges lower fees.

The example also has several additional implications. First, the calculations above assume that the fund manager intends to hold its stake in the company indefinitely. While this is a reasonable assumption in the context of index funds, an active fund is likely to sell its stake at a certain point relatively soon. Since the fund's engagement efforts allow it to sell the firm for a higher price, today's engagement will still increase the fund's AUM, and hence its management fees, even after the sale, so the perpetuity part in eq. (3) and (4) will remain. Moreover, the fund can reinvest these higher AUM into other companies and increase their value as well, which would amplify the return on its original engagement. Effectively, this means that the perpetuity growth rate in eq. (3) and (4) will be higher than 5%. Thus, for active funds, especially those that buy and engage with new companies frequently, the present value of additional fee income from a \$1 increase in the value of the current firm is even higher than eq. (3) and (4).

Second, eq. (3) and (4) imply that all other things equal, a lower cost of equity for the company increases the fund manager's incentives to engage because it leads to a higher present value of the payoff from engagement. This has potential time-series and cross-sectional implications. First, it suggests that if the market risk premium has declined over the past two decades (which is consistent with the observed high valuation multiples; see, e.g., Lettau, Ludvigson, and Wachter, 2008), then fund managers' incentives to engage should have increased. Second, in the cross-section, funds investing in different types of firms (e.g., small cap vs. large cap) may have different incentives to engage not only because they collect different fees or because their portfolio firms differ in their potential for improvement, but also because of their portfolio firms' different costs of equity.

2.1.3 The combined effect of ownership stakes and fund managers' compensation

Since management fees are particularly low for index funds, the second layer of the free-rider problem – between the fund management and fund investors – is especially severe for them, leading to the argument that index funds have strong incentives to underinvest in stewardship (e.g., Bebchuk and Hirst, 2019b). However, the discussion of fees cannot be separated from the discussion of ownership stakes because the fund's combined incentives to engage are the product of f and α (see eq. (2)). While index funds have low fees, they are often the largest shareholders of companies in their portfolio, and the product of f and α could be larger for major index fund managers than for actively managed funds with small stakes. This can also be seen in eq. (1), which shows that the fund's benefits from engagement depend on $f \times AUM$. A major index fund manager has very large AUM, which can compensate for its low management fees.

In particular, Kahan and Rock (2020) and Lewellen and Lewellen (2022a) estimate financial incentives of index funds to be engaged with their portfolio companies and compare them to other institutional investors. Kahan and Rock (2020) conclude that the Big Three index fund managers (BlackRock, Vanguard, and State Street) "have among the strongest direct financial incentives" to be engaged. Lewellen and Lewellen (2022a) find that the dollar incentives to engage of the five major index fund managers (The Big

Three, Dimensional, and Schwab) are above the incentives of an average institution: a 1% increase in the value of a typical stockholding increases their annual management fees by \$133,000 (compared to \$84,400 in direct incentives and \$129,000 in total incentives for the average institution in their sample). Moreover, as Lewellen and Lewellen (2022a) show, these large index funds' incentives to increase value are comparable in magnitude to those of activists, i.e., 13D filers.

The substantial direct incentives of large index funds estimated in the data are due to the tension between fees and scale described above: although they charge substantially smaller management fees than actively managed funds, their large AUM and ownership stakes often offset the weaker incentives due to smaller fees. This suggests that empirical research should not treat all index funds in the same way. For small index funds, the benefits from engagement are likely to be very low (and lower than those for active funds) given the combination of their very low fees and low ownership stakes. In contrast, this may not be true for the Big Three, whose ownership stakes are substantial and exceed those of active funds. We review the evidence consistent with this distinction in Section 4.2.

Corum, Malenko, and Malenko (2022) theoretically examine whether the growth of passive funds is beneficial for governance, focusing on funds' direct incentives to engage. In their model, investors allocate their wealth between three options: investing with an active fund, investing with a passive fund, and saving privately. To access a fund manager, investors need to pay a search cost, which is interpreted as the cost of searching for relevant information about funds and spending time to understand it. When trading in the market, the active fund exploits undervaluation of the shares due to the presence of liquidity ("noise") traders. Thus, the active fund generates higher returns than the passive fund, but it also charges higher fees, so that in equilibrium, investors are indifferent between investing with an active and a passive fund.

Corum, Malenko, and Malenko (2022) study the effects of easier access to passive funds (stemming, for example, from their increased inclusion in 401(k) plans, increased investor awareness about index funds, or improved disclosure about fund fees), which they capture by a reduction in the corresponding search costs. Easier access to passive funds reallocates investor capital from the active fund and private savings to the passive fund, and also lowers the fees of both types of funds. The authors conclude that the effect of passive fund growth on governance is non-monotonic: initial growth in passive funds improves governance, but further growth eventually harms it. Intuitively, this is because initially most of the capital that flows to the passive fund comes out of investors' private savings, and the reduction in fund fees is not very large. Hence, funds replace retail shareholders in firms' ownership structures and their combined ownership stakes increase, whereas fund fees do not decline too much, so their overall benefits from engagement (the product of fees and ownership stakes) increase. However, as access to passive funds improves even further, flows into the passive fund start coming at the expense of investors' allocations to the active fund. Then, the passive fund primarily replaces the active fund, rather than retail investors, in firms' ownership structures. Moreover, both active and passive fund fees start declining significantly since funds start strongly competing for investor capital. As a result, funds' aggregate benefits from engagement decrease, both because of this reduction in fees, and because active funds (with higher fees

and hence higher benefits from engagement) are replaced by passive funds with lower fees. As long as the costs of engagement stay the same, the overall degree of shareholder engagement declines.

The above-mentioned tension between fees and scale also arises in Corum, Malenko, and Malenko (2022). They show that a decrease in fees is not necessarily accompanied by lower engagement of fund managers. This is because fees do not change in isolation: as access to passive funds becomes easier, fees decline, but this reduction in fees occurs simultaneously with an increase in passive funds' AUM and ownership stakes. As a result, as the authors show, passive fund engagement and the overall quality of corporate governance can improve even as fund fees decline.

To conclude this discussion, we make three points.

1. First, the above discussion of engagement incentives focuses on the benefits from engagement and does not account for the associated costs, which we cover in Section 2.2. Lewellen and Lewellen (2022a) point this out and note that the dollar benefits from engagement (i.e., the present value in eq. (3) and (4)) can be interpreted as the upper bound on the costs that the fund manager would be willing to pay to increase firm value by 1%. Of course, the costs of increasing value by 1% are heterogeneous across firms. For example, such costs could be very large for well-governed and efficiently run firms; these costs are also likely to be larger for bigger firms. Since a fund manager's equilibrium effort depends on both costs and benefits of engagement, aggregating the incentives to engage across multiple firms in a fund's portfolio may be difficult as it needs to account for the heterogeneity in the corresponding costs. In addition, the costs of increasing firm value by 1% may be much higher for a small shareholder compared to a large institutional blockholder (or, equivalently, the effectiveness of effort is higher for large blockholders), which may affect the comparison of incentives across shareholders.
2. Second, a popular critique of index funds is that they lack financial incentives to engage because they only care about tracking the index rather than beating it. The framework and estimates presented above suggest that this argument is not precise: engagement can increase the fees collected by the index fund manager by increasing the value of its AUM, and these "direct incentives" can be quantitatively significant for large index fund managers. Moreover, index funds may have incentives to engage even though multiple index funds track the same index and free ride on each other's efforts.⁴ The fact that index funds track the index becomes substantially more important when thinking about index funds' flow incentives, which we discuss in the next section.
3. Third, it is informative to benchmark the incentives of index funds against those of direct shareholders. On the one hand, direct shareholders fully internalize the value increase in their stake (i.e., $f = 1$ in the first term of eq. (2)), while index funds only internalize a small part of this value

⁴ To see this, suppose there are two index fund managers with identical portfolios. There can exist an asymmetric equilibrium in which one of the fund managers is "engaged" and the other does nothing. Indeed, anticipating that the second fund manager does not engage, the first fund manager's benefits from engagement are given by the first term in eq. (1) and (2). This benefit can be substantial and, if the costs of increasing value are not too large, will lead the fund to engage (this is because the fund manager's costs of engagement are subtracted from its fee revenues and do not decrease either the fund investors' returns or the fund's ability to track the index). It is then optimal for the second fund to do nothing.

increase given their small fees. On the other hand, index funds collect higher management fees from the resulting increase in their AUM *in all subsequent years* (and these fees are even likely to grow over time; see eq. (3) and the related discussion), whereas direct shareholders' benefits are restricted to a one-time increase in firm value today. Combined with index funds' substantially larger ownership stakes, this second consideration implies that the incentives of index fund managers may be larger than those of many direct shareholders.⁵ Kahan and Rock (2020, p. 1786) make such a comparison, but also factor in the greater ability of index funds to affect outcomes given their larger ownership stakes (the consideration we mention in point 1 above). Assuming that a shareholder's ability to affect the voting outcome is proportional to its stake in the firm, they conclude that Vanguard's incentives to vote informatively are equivalent to those of a direct shareholder who owns about one-twelfth of the number of shares held by Vanguard.

2.1.4 Flow Incentives

The second component of a fund manager's incentives to engage in eq. (1) and (2) captures flow considerations. Intuitively, by engaging with a portfolio company and increasing its value, the fund manager can generate additional return, which can result in an inflow of additional capital into the fund, increasing the fee income of the fund manager in the future.

In general, it is difficult to estimate this component, because it is harder to observe compared to the first two. Lewellen and Lewellen (2022a) measure it in the following way. They estimate the flow-to-performance relationship of fund flows to the benchmark-adjusted return, and the excess weight of a stock in the fund's portfolio compared to the benchmark. Assuming that this estimated flow-to-performance relationship is also valid for returns generated by engagement, they estimate the flow incentives for an average institution in their sample to have quantitatively about the same magnitude as the direct incentives from management fees.

Note that the flow incentives measured this way should be close to zero for index funds because the index funds' stockholdings are approximately equal to the benchmark (the index). This is exactly what Lewellen and Lewellen (2022a) conclude: in their data, only a small part of total incentives for index funds comes from flow incentives. Thus, while index funds need not have lower direct incentives than actively managed funds, their flow incentives will typically be lower. As Bebchuk and Hirst (2019b) put it, "competition with other index funds gives index fund managers precisely zero additional incentives to invest in stewardship for any of their portfolio companies."

We would like to make several further comments related to flow incentives.

1. First, the magnitude of flow incentives may depend on the underlying reason for flow-to-performance sensitivity. Such sensitivity arises because investors use the fund's current performance to update their beliefs about the fund's ability to generate returns in the future, which can arise for two broad

⁵ For example, given a 10% discount rate and 5% growth rate (as in the example above), stake α , and a 0.15% management fee (which is approximately in the middle of the 0.11% to 0.24% fee range for indexers estimated by Lewellen and Lewellen, 2022a), the index fund manager's present value of the additional fee income from a 1% increase in firm value is $MV \times 1\% \times \alpha \times \frac{0.15\%}{0.10 - 0.05} = MV \times 1\% \times (0.03 \times \alpha)$. That is, the index fund manager's benefit from a 1% increase in firm value is similar to that of a direct shareholder with a stake of $0.03 \times \alpha$.

reasons: (i) the fund's skill in stock selection and/or market timing (Berk and Green, 2004); and (ii) the fund's skill in monitoring and engagement. In general, the flow-to-performance sensitivity can differ depending on the source of performance (stock selection vs. engagement), and it is an important avenue for future research to study whether this is the case.⁶ For example, with rational capital markets, the fund's ability to generate superior future returns due to a skill in monitoring may be limited: any improvement in the fund's reputation for being a responsible steward will trigger immediate appreciation of the market value of the current and expected future stock holdings of the fund (e.g., Admati, Pfleiderer, and Zechner, 1994; Corum, Malenko, and Malenko, 2022). As a result, the fund can only create returns via governance through its future unanticipated trades. Hence, if the fund trades relatively rarely or its future trades are anticipated (like for index funds), its ability to generate superior returns in the future may be more limited.

2. The estimation of flow incentives is further complicated by the fact that it depends on investors' information set, which may be unknown to the researcher. Specifically, when investors see overperformance relative to the benchmark, they can attribute it to (i) fund's stock selection skill or (ii) engagement. The flow-performance sensitivity that we observe in the data (and is estimated in Lewellen and Lewellen, 2022a) reflects both these effects. To quantify the fund manager's incentive to engage to attract flows with higher precision, it is important to know: 1) whether investors observe if overperformance is due to stock selection or engagement; 2) whether investors observe the fund's portfolio weights; and 3) assuming investors know that overperformance is due to engagement, whether they can easily attribute it to the engagement of specific fund managers. To expand on the last point, shareholders' engagements with management are often private, and each company has multiple shareholders, making it harder for investors to infer which shareholder was responsible for the value increase.⁷ It can also explain why certain asset managers, such as BlackRock, regularly advertise their engagements with companies.⁸ As Fisch, Hamdani, and Solomon (2019) put it, "active governance may serve a branding or marketing function."

A few theory papers go into more depth in exploring how fund managers' concerns about flows affect their incentives to engage. Brav, Dasgupta, and Mathews (2021) study parallel engagement by multiple funds that compete for investor capital. Funds can be of two types: skilled funds have relatively low costs of engagement, while unskilled funds' costs of engagement are very large. Assuming that all capital from fund investors is reallocated to the set of funds with the highest reputation for being skilled, the authors show that fund managers' concerns about attracting flows will increase their incentives to engage, overcoming the free-rider problem. On the other hand, Song (2017) points out that concerns about flows can, on the contrary, decrease fund managers' incentives to engage. In his model, a fund with poor stock selection skill is more likely to invest in a bad firm.

⁶ As Lewellen and Lewellen (2022a) put it on p. 218, "An implicit assumption here is that Flow reacts the same to all sources of relative performance, whether from luck, stock-picking skill, engagement activities, etc."

⁷ This inference problem is somewhat similar to the inference problem about fund managers' stock selection skill: superior portfolio performance could be due to stock selection skill but could also be due to pure luck.

⁸ For example, BlackRock reveals detailed information about its engagements with portfolio companies and voting practices in its annual stewardship reports, and BlackRock's CEO Larry Fink's annual letters to CEOs receive substantial public attention.

Later, once the fund learns that the firm is bad, it can intervene to increase its value. However, the fund is reluctant to do so because its intervention reveals that the fund had invested in a bad firm, which leads investors to negatively update about its stock selection skill. In future research, it will be interesting to empirically examine whether each of these competing effects plays a role and when. Finally, Burkart and Dasgupta (2021) highlight that competition for flow can trigger short-termism by activist investors.

3. Third, empirical evidence suggests that mutual fund flows respond to unadjusted raw return performance, not only to excess performance over a market benchmark (Del Guercio and Tkac, 2002). Relatedly, while there are many index funds tracking the same index, empirical evidence suggests that the market is far from the case of perfect competition because of substantial search and switching costs (Hortacsu and Syverson, 2004; Choi, Laibson, and Madrian, 2010), especially regarding retirement savings in 401(k) plans. Thus, it is possible that the most relevant outside option to investing a dollar in a Fidelity S&P 500 fund is not investing a dollar in a Vanguard S&P 500 fund, but rather saving a dollar less for retirement. In this case, improving the performance of an index can result in flow incentives because investors would save more, even though the improved performance is shared by all funds tracking the same index. This suggests that flow incentives may be present for index funds as well.
4. Finally, our framework focuses on how concerns about flows affect investors' incentives to engage in voice. In addition, flow concerns can also affect the effectiveness of governance through exit, as has been pointed out by Dasgupta and Piacentino (2015) and Cvijanovic, Dasgupta, and Zachariadis (2022).

2.1.5 Benefits from access to private information

There is one other component of benefits from engagement, which is absent from eq. (1) and (2). Monitoring and intervention can generate private information to the shareholder, which she could later exploit through trading activities. For example, Becht, Franks, Wagner (2021) use proprietary data from a large active asset manager and show that its trading and engagement activities are tightly linked, concluding that engagements generate information advantages that are used for trading. While this component is absent for passive funds since they have no trading discretion, it is relevant for active funds, as well as for fund families that have at least some active funds. The magnitude of this component is limited if the law restricts selective disclosure of important information, such as, for example, Regulation FD (Fair Disclosure) in the U.S.

How much of this benefit from trading is captured by the fund manager depends on the structure of the compensation contract and on the fund's flow-to-performance sensitivity. It will be interesting to understand how the incentives coming from this last component compare in magnitude to the incentives coming from direct and flow incentives.

2.2 Costs of engagement

While engagement with portfolio companies comes with benefits, it does not come without costs. These costs depend on the specific technology a shareholder uses to engage. In this subsection, we discuss how these costs vary across different types of shareholders.

It is useful to first list the costs involved in engagement. We can broadly classify these costs into the following categories:

1. **Costs of acquiring information.** To make suggestions on how the company should be run or vote in a value-maximizing way, a shareholder needs to have information on what the right course of action should be.
2. **Direct costs of engagement.** These costs include a variety of explicit costs involved in engaging with management or running an activist campaign: time and effort spent in communication and negotiations; legal costs; costs of disclosure; filing costs; hiring proxy solicitors, governance experts, and public relations firms. The magnitude and types of these costs depend on the specific activism tactics used and how confrontational they are (e.g., private engagement vs. a proxy fight).
3. **Indirect costs of engagement.** Examples include the costs of alienating the management and jeopardizing potential business ties with the company or getting access to valuable information, or reputational costs of being known for a confrontational approach.

How do these costs differ between index funds and other types of shareholders?

1. Costs of information. Kahan and Rock (2020) and Fisch, Hamdani, and Solomon (2019) point out that index funds differ from the actively managed funds in the types of information they have expertise in collecting and analyzing, which, in turn, affects their engagement strategies. In particular, hedge funds and actively managed mutual funds are likely to have an advantage over index funds in *identifying firm-specific* operational or financial issues since they either specialize in collecting such type of information and/or generate such information as a byproduct of their investment activities (Lund, 2018; Kahan and Rock, 2020). In contrast, index funds are in a good position to be informed about *broad, market-wide* issues, such as corporate governance standards, because of their diversified portfolios: they can enjoy the economies of scale in collecting such information and can also use information from past votes in one company to be more informed about future votes at other companies.

2. Direct costs of engagement. Index funds are also likely to differ from actively managed funds in their direct costs across different types of engagements. On the one hand, hedge fund activists have the expertise, infrastructure, and connections to be efficient at running activist campaigns and proxy contests. Moreover, engagement on issues that can be classified as having “a purpose or effect of changing or influencing control of the issuer” (such as proposing to sell the firm or appoint new directors) could require a fund to file Schedule 13D as opposed to Schedule 13G (see SEC Regulation 13D). As Bebchuk and Hirst (2019b) and Morley (2018) highlight, 13D filings are more extensive than 13G filings and need to be filed much more frequently, and given the frequency of trading by index funds, making these additional extensive disclosures would be particularly costly for them. Together, these arguments suggest that index

funds are likely to have large costs of engaging on issues that are the common focus of hedge fund activists' campaigns.

On the other hand, given their large, diversified holdings, large passive asset managers are likely to enjoy the economies of scale in setting market-wide standards (e.g., Kahan and Rock, 2020; Fisch, Hamdani, and Solomon, 2019). Such economies of scale can be realized through passive fund managers' own proxy voting guidelines (e.g., Couvert, 2021); through broad influence campaigns (e.g., Gormley et al., 2021); through funds' communication with proxy advisors and influencing proxy advisors' voting guidelines; or through spillover effects, whereby companies in their portfolios preemptively adopt certain practices after seeing their stance on these practices at other companies.⁹

Another advantage of the major passive fund managers relative to actively managed funds is their large stakes in portfolio firms. This stake not only increases their benefits from engagement (see Section 2.1), but also decreases their costs. For example, large passive asset managers are likely to be pivotal voters in proxy contests (Brav et al., 2022) or votes on contentious shareholder proposals, allowing them to have a strong impact through voting without incurring the costs of soliciting other shareholders' votes. Furthermore, the substantial voting power of large passive asset managers that they can use if management is unresponsive to their demands gives them stronger leverage in their communication and negotiations with management, decreasing the costs of such engagements as well. This argument further emphasizes the important difference between large and small index fund families: not only their benefits from engagement, but also their costs of engagement, can be very different.

3. Indirect costs of engagement. Whether the indirect costs of engagement are higher or lower for passive funds compared to other shareholders is not clear. On the one hand, Bebchuk and Hirst (2019b) and Lund (2018) argue that the Big Three index fund managers have incentives to be especially deferential to management because of business ties, notably, their benefits from managing companies' 401(k) plans or by having their funds being included in the menu of investment options available to the company's employees (e.g., Davis and Kim, 2007; Ashraf, Jayaraman, and Ryan, 2012; Cvijanovic, Dasgupta, and Zachariadis, 2016). In addition, Bebchuk and Hirst (2019b) highlight the potential indirect costs coming from public and political backlash, as a reaction to the Big Three's growing power, and argue that they can reduce such costs by being deferential toward management. On the other hand, Kahan and Rock (2020) hypothesize an opposite effect: the Big Three are likely to "have strong reputational interests in being perceived—by investors, regulators, and politicians—as responsible actors and forces for good."

2.2.1 Empirical evidence on the costs of engagement

The discussion above suggests that passive funds and actively managed institutional investors have different types of costs and hence are likely to specialize in different types of engagement: passive funds are less likely to run activist campaigns in individual firms but are more likely to have impact by setting

⁹ Fos (2017), Gantchev, Gredil, Jotikasthira (2019), and Zhu (2013) explore such preemptive adoption in the context of hedge fund activism, and Del Guercio and Hawkins (1999) discuss it in the context of activism by indexed pension funds. He, Huang, and Zhao (2019) explore a related effect, highlighting that if there are positive governance spillovers across firms, then a fund manager who holds shares in multiple firms has a particularly high return on effort in any given firm. See also Gordon (2022), who discusses the role of portfolio risk and suggests that engagements by highly diversified (e.g., broad-based index) fund managers should focus on addressing systematic risk in their portfolios, rather than firm-specific issues.

broad, market-wide governance standards. The evidence on passive fund engagement is consistent with this idea. For example, three recent papers analyze market-wide engagement by index funds on broad ESG issues. Gormley et al. (2021) study the influence campaigns of the Big Three to increase board gender diversity. By exploring the timing of the campaigns and the Big Three's ownership stakes, they conclude that these campaigns are successful in promoting diversity and the appointment of female directors to key board positions. Pawliczek, Skinner, and Wellman (2021) examine Larry Fink's annual letters to the CEOs and conclude that BlackRock's portfolio firms are responsive to its public engagement efforts. Azar et al. (2021) analyze data on the Big Three's engagements from their investment stewardship reports and show that the Big Three focus their engagement on companies with high subsequent carbon emissions and that there is a negative association between their ownership stakes and subsequent reductions in carbon emissions. At the same time, passive funds do not use the more activist and confrontational tactics that are usually adopted by hedge fund activists: Bebchuk and Hirst (2019b) find that the Big Three refrain from Schedule 13D filings and director nominations, and Heath et al. (2022) show that families with more AUM in index funds are significantly less likely to file Schedule 13D. Given this specialization, the interactions and collaboration among active and passive fund managers become especially important, and we discuss such interactions in Section 3.

The evidence on the magnitude of engagement costs is scarce: estimating these costs is difficult because they are not typically observed, especially the costs of time, effort, or costs related to reputation. We are aware of two studies that try to measure these costs. Gantchev (2013) estimates the cost of hedge fund activist campaigns by modeling the campaign process as a sequential process, which starts with the stage of demand negotiations, followed (if unsuccessful) by a request for board representation, and (if again unsuccessful) by a proxy contest. At any stage, the activist can give up the campaign and exit. Using a discrete-choice framework, the paper estimates that an average campaign that ends in a proxy contest costs \$10.7 million (including both observable and unobservable costs), and that the proxy contest stage is most expensive of all (almost \$6 million for an average campaign).

Bebchuk and Hirst (2019b) use the data from Morningstar and the Big Three fund families' stewardship reports to measure the number of stewardship personnel. Assuming that the cost of each personnel member is \$300,000 a year, they conclude that each family's investment in stewardship forms less than 0.2% of the fees that it collects. They also estimate that to oversee their U.S. portfolio investments (assuming proportional stewardship allocation per \$1 billion position in U.S. firms), BlackRock spends less than 4 person-days and less than \$5,000 per year, and these investments are at least twice smaller for State Street and Vanguard. The authors conclude that that there are "significant concerns that the Big Three substantially underinvest in stewardship."

It is important to note (as Bebchuk and Hirst (2019b) note as well) that the allocation of resources may not be proportionate: for example, funds' governance teams may focus on firms with poor financial performance or those targeted by activist investors. If that is the case, the Big Three's stewardship investments in important situations could be substantial.

Overall, more research is needed to quantify the costs of engagement and understand how they compare to the benefits of engagement across different types of investors.

3. Interactions between shareholders

So far, we have discussed a single shareholder's decision to engage. In reality, there are multiple shareholders of different types, and what ultimately matters for governance are the interactions between shareholders beyond the general free-rider problem emphasized in Section 2.1. Hence, to understand the governance effects of the growth in indexing, it is important to understand how index funds interact with other shareholders.

We can divide interactions between shareholders into *direct* and *indirect* interactions. By the former we mean explicit interactions, such as providing support through voting, coordination, and sharing information. By indirect interactions, we refer to implicit effects due to, for example, changes in firms' ownership structures (such as index funds replacing other shareholders in firms' ownership structures or indirectly affecting other shareholders' incentives to engage).

3.1 Direct interactions

Several papers have modeled direct interactions between shareholders, in the form of collaboration between shareholders in their engagement efforts. Brav, Dasgupta, and Mathews (2021), discussed earlier, focus on wolf pack activism and the beneficial incentive role of activist fund managers' concerns about flows. Doidge, Dyck, and Yang (2022) study explicit coordination by a collective action organization of investors (ICAO) through cost sharing and information sharing. In their model, the formation of the ICAO resolves the free-rider problem among its members, but solo activists continue to exist, free-riding on the activism by the ICAO. Pi (2021) also studies cost-sharing between activists within a coalition but focuses on how the size of the coalition affects other, more passive shareholders' support for the campaign by conveying a signal about the activists' private information.

Theoretical work has not yet explicitly studied direct interactions between index funds and other shareholders.¹⁰ The empirical evidence, however, suggests that such interactions are important. Appel, Gormley, and Keim (2019) examine corporate activist campaigns and find that higher passive fund ownership is associated with greater success of hedge fund activists in achieving board representation, facilitating the sale of the target, and reaching a settlement, as well as with increased use of proxy fights. The authors conclude that the growth of passive investors facilitates activism. Brav et al. (2022) focus on proxy contests and find that while passive funds are more likely to vote against dissidents compared to active funds, they are active monitors: passive funds support dissidents in underperforming firms and they express their dissent using more subtle channels rather than directly confronting the management. Dissidents also need to be confident that they can win over a significant mass of passive investors when they consider launching a contest. Indeed, the paper shows that dissidents are more likely to achieve their

¹⁰ The passive shareholders in Pi (2021) are passive in the sense of not joining the campaign and sharing its costs, rather than being passive in their investment strategies.

goals via a settlement with management if passive funds provide them with support (see Section 4.2 below for more details).¹¹

The growth in passive funds, and the Big Three in particular, may also affect activist campaigns by leading to a more concentrated shareholder base: it may be easier for an activist to obtain the support of one large investor than the support of multiple small investors. Consistent with this idea, Brav et al. (2022) show that compared to firms that were not targeted by activists, targeted firms where the proxy contest proceeds to the voting stage have a smaller number of mutual funds required to reach a given percentage voting support (see their Internet Appendix Table IA7). If a more concentrated investor base indeed facilitates communication between activists and the firm's shareholders, then the growth in ownership by large index asset managers could allow activists to target increasingly larger firms without increasing their own ownership stakes.

It is also interesting to understand the interactions between passive funds and other types of shareholders beyond hedge fund activists. Bena and Wang (2022) hypothesize that conflicts between passive funds and actively managed funds can negatively affect firm value and explore the voting of these two groups of investors to study the extent of their disagreements. One important and underexplored question is the interaction between passive and active funds within the same family. Funds within a family typically vote in a coordinated way (e.g., Morgan et al., 2011; Lakkis, 2021), for example, because families often coordinate their voting and engagement activities at the level of their stewardship teams, rather than individual fund managers. How does such coordination affect shareholder engagement? One effect is through the benefits of engagement: a fund family that is deciding how much (coordinated) effort to exert maximizes the combined fees collected by all its funds. This alleviates the free-rider problem highlighted in Section 2.1 and increases the family's incentives to engage compared to the case of individual fund managers who are separately deciding on their engagement efforts. As for the costs of engagement, the effect is ex ante unclear. On the one hand, coordinated effort increases the family's voting power and probability of being pivotal, which in turn can increase its effectiveness of engagement via a higher threat of voting against management. On the other hand, large fund families may require substantial costs of coordination. Lakkis (2021) explores these questions and finds that when the family's passive AUM increase, its active funds vote against management more frequently, concluding that greater passive ownership facilitates the fund family's engagement.

3.2 Indirect interactions

While theoretical research has not yet examined direct interactions between index funds and other shareholders, it has emphasized the importance of indirect interactions.

One channel, examined in Corum, Malenko, and Malenko (2022) and Baker, Chapman, and Gallmeyer (2022), is the crowding out effect: as passive funds grow, they crowd out other investors in firms'

¹¹ Kedia, Starks, and Wang (2021), Foroughi (2018), He and Li (2022), Wong (2020), and Flugum, Lee, and Souther (2022) present related evidence on the collaboration between hedge fund activists and institutional investors in general, without focusing on passive funds per se; and Crane, Koch, and Michenaud (2019) study coordination between institutional shareholders in general.

ownership structures, which affects shareholders' combined incentives to engage.¹² As discussed in Section 2.1, in Corum, Malenko, and Malenko (2022), the crowding out of retail investors improves governance, whereas the crowding out of active funds is generally harmful since these funds have stronger incentives to engage given higher fees. Moreover, passive fund growth lowers active and passive fund fees, which decreases funds' incentives to engage. As a result, in their paper, the growth in indexing is beneficial initially, but becomes harmful once their competition with active funds becomes acute.

In Baker, Chapman, and Gallmeyer (2022), skilled fund managers decide whether to become stock selectors or activists: stock selectors identify better investment opportunities, whereas activists improve firm performance. Households decide how to allocate their capital between stock selectors, activists, and index funds, where the merit of index funds is in providing diversification for their investors. The paper shows that an exogenous reduction in index fund fees changes the endogenous composition of the managed money sector and could be either beneficial or harmful for governance (as captured by the endogenous number of activists and their AUM). The negative effect is that lower index fund fees lead to an outflow of households' investments from actively managed funds to index funds, which do not engage in governance in their model. The positive effect is that lower index fund fees change the composition of the actively managed fund industry in the direction of more activists and fewer stock selectors.

Levit, Malenko, and Maug (2022) and Kakhbod et al. (2022) highlight another characteristic of index funds that affects their interactions with other shareholders: index funds are unique in that unlike other types of investors, their ownership stake in the firm does not depend on their preferences or beliefs about how the firm should be run. As a result, their ownership can lead to less extreme voting outcomes (Levit, Malenko, and Maug, 2022) and ensure a wide shareholder base, which is important for effective engagement in the presence of differences in beliefs (Kakhbod et al., 2022).

Finally, another, broader form of indirect impact of passive fund growth is through trading in financial markets. There is growing evidence that passive fund growth may change information production and the information content of asset prices (e.g., Israeli, Lee, and Sridharan, 2017; Glosten, Nallareddy, and Zou, 2021; Coles, Heath, and Ringgenberg, 2022). This, in turn, may have first-order effects on other shareholders' ability and willingness to engage and influence corporate policies. For example, when asset prices are more efficient, firms are less undervalued. This may reduce the profits that shareholders, such as hedge fund activists, make by buying undervalued firms and increasing their value through intervention. Market efficiency also affects the speed at which the price incorporates information about the activist's future intervention once his position in the firm is revealed, as well as the activist's ability to profitably exit his investments. All these forces are likely to affect the extent of shareholder activism. A related channel is that informational efficiency of prices has a first-order effect on shareholders' ability to

¹² Friedman and Mahieux (2021) study a different type of indirect interactions. In their paper, funds sequentially commit to their future monitoring efforts, and fund investors then decide how to allocate their money. They show that considerations about fund flows can lead the active and passive fund to either concentrate their monitoring efforts on the same firm or on different firms.

govern via the threat of exit.¹³ Discussing such effects in depth is beyond the scope of this survey, but they are important when thinking about the governance implications of passive fund growth.

4. Empirical evidence on passive fund engagement

Taken together, the discussion in the previous sections suggests that to understand the governance effects of index fund growth, one needs to understand the following. First, which investors are replaced from firms' ownership structures when index funds grow, and how do these investors' costs and benefits of engagement compare to those of index funds? And second, how does the increasing presence of index funds affect the ability and incentives of other firms' shareholders to engage?

In this section, we summarize the evidence in the empirical literature on the governance role of index funds and try to explain it in the context of the earlier described frameworks.

4.1 Evidence on the effects of higher passive ownership

Empirical studies that examine the effects of greater passive ownership on governance have produced conflicting findings, and the literature is yet to settle this debate. Several papers conclude that greater passive fund ownership reduces managerial power. In particular, Appel, Gormley, and Keim (2016) show that greater passive ownership is associated with more independent directors, a reduction in antitakeover defenses, greater support for shareholder proposals, and lower support for management proposals. Appel, Gormley, and Keim (2019), described above, conclude that greater passive ownership facilitates hedge fund activism campaigns, and Filali-Adib (2019) finds that it is associated with the adoption of value-increasing proposals. On the other hand, Schmidt and Fahlenbrach (2017) and Heath et al. (2022) conclude that passive fund ownership increases the power of the CEO: it is associated with a greater likelihood of CEO-chairman positions being combined, less independent director turnover (Schmidt and Fahlenbrach, 2017), lower performance sensitivity of CEO pay, and lower board independence (Heath et al., 2022).

The empirical literature has tried to reconcile these contradictory findings by arguing that the methodologies used in some of the papers do not provide unbiased estimates of the causal effect of passive ownership. Specifically, all the above studies exploit the assignments of stocks to the Russell 1000 vs. 2000 indices as a source of exogenous variation in passive ownership. The idea is that the index weights of stocks at the top of the Russell 2000 are substantially lower than those at the bottom of the Russell 1000, leading to large differences in index fund ownership across these two groups of stocks. However, the exact methods that are used to exploit the Russell setting are slightly different across papers, which has led to a substantial debate about the right methodology, which we abstract from in this survey (see Appel, Gormley, and Keim, 2020; Wei and Young, 2020; and Heath et al., 2022 for in-depth discussions).

Corum, Malenko, and Malenko (2022) use their framework to propose a different way to reconcile the findings. It relies on the idea that whether an increase in passive ownership (e.g., due to an index reassignment) improves governance depends on which shareholders are being replaced by passive funds:

¹³ Overall, a large literature studies how shareholders use their private information to both trade and engage in governance (e.g., Maug (1998); Kahn and Winton (1998); see the survey by Edmans and Holderness (2017)). Relatedly, Cocomo and Zhang (2021) and Meiwowitz and Pi (2022) study how shareholders' private information affects their trading and voting decisions.

active funds or retail investors. As they point out, since the papers in the literature use different methodologies and consider slightly different samples and time periods, they differ in the type of shareholders that are being replaced in a way that can explain the opposite conclusions. In Appel, Gormley, and Keim (2016, 2019) and Filali-Adib (2019), higher passive fund ownership is not accompanied by lower active fund ownership. Hence, passive funds are likely replacing retail shareholders (who are too small and dispersed to engage), which is consistent with their overall positive effect on governance found by these papers. In contrast, Heath et al. (2022) show that higher passive fund ownership upon index reconstitutions is accompanied by substantial decreases in active fund ownership, and Schmidt and Fahlenbrach (2017) do not find any changes in overall institutional ownership suggesting that active funds are being replaced in their sample as well. These patterns are consistent with the documented negative effects of passive funds in these papers, as long as active funds' incentives to engage are stronger. Relatedly, Bennett, Stulz, and Wang (2020), who analyze increases in passive ownership due to S&P 500 index additions, find strong contemporaneous reductions in active fund ownership and conclude that index "inclusion worsens ... some aspects of governance."

In future empirical work, it may be interesting to more directly tie the type of shareholders who are being replaced by passive funds to the resulting changes in firms' governance. In addition, it will be interesting to quantify the magnitudes of the changes in ownership, and the magnitudes of the corresponding changes in shareholders' benefits from engagement (e.g., based on the framework in Section 2.1). Quantifying these magnitudes and relating them to the observed governance changes could help better understand the extent of the free-rider problem, the role of fund managers' compensation structures, and the costs of engagement. For example, a quick way to calculate the magnitude of increased incentives upon index reconstitution is to use eq. (3). Suppose that switching the index increases the fund's ownership stake by 1.7% (according to Heath et al. (2022), this is by how much the switch to Russell 2000 increases the combined index ownership). If we assume that the index fund charges a 0.15% management fee and that the firm's market capitalization is \$5 billion, then eq. (3) implies that index switching increases the present value of the fund manager's additional fee income from engaging (and increasing value by 1%) by \$25,500.¹⁴

We would like to make two further comments about Russell reconstitution studies.

1. The first point, which is highlighted in Corum, Malenko, and Malenko (2022), is that the governance effects of passive ownership that are inferred from index reconstitution studies can be quite different from the effects of the growth in passive ownership over time. This is for two reasons. First, the type of investors that are crowded out by passive funds (active funds vs. retail investors) can be different in the time-series and upon index reconstitutions, and who is crowded out is crucial for shareholders' combined incentives to engage. Second, the analysis in index reconstitution papers aims to increase passive ownership holding everything else (including fund fees) constant. In contrast, in the time-series, fees change together with changes in ownership, and fees have important effects on funds'

¹⁴ This number follows from (3) if we keep the 10% cost of equity and 5% growth rate assumptions, but replace 0.5% by 0.15% (management fee for index funds; see footnote 5), 0.04 by 0.017 (increase in the ownership stake), and \$0.1B by \$0.05B (firm size). The assumed \$5 billion is the approximate market value of firms at the cutoff between Russell 1000 and Russell 2000, according to the 2021 Russell US Indexes Reconstitution report.

incentives to engage. Thus, one needs to be careful about applying results from index reconstitution studies to draw conclusions about broad time-series questions such as whether index fund growth over time is likely to make governance better or worse.

2. The second point concerns the interpretation of the results. Suppose that selection and omitted variable bias concerns (which are the focus of the methodological debate in the literature) are addressed by the right methodology, and this methodology generates exogenous variation in the firm's ownership structure and not in any other firm characteristic. Even then, it may not be as easy to interpret the results. This is because in addition to passive funds, active funds, and retail investors, there are many other shareholder types, such as pension funds, insurance companies, hedge funds, endowments, corporations, and insiders.¹⁵ The exact distribution of ownership between these other shareholders is only partially observed by researchers. Even if index reconstitution only affects the firm's ownership structure and not any other firm characteristic, there is no guarantee that it only affects ownership by mutual funds and retail investors. Indeed, the evidence in Chinco and Sammon (2022) suggests that a large percentage of ownership tied to an index is missed in standard calculations based on mutual fund holdings, i.e., investors other than index mutual funds substantially rebalance their portfolios around index reconstitutions.

While this observation does not invalidate the research design per se, it can complicate the exact interpretation of the observed findings. For example, it might be that it is not the increase in passive fund ownership that drives the observed corporate policy changes upon index reconstitutions, but rather some simultaneous, unobserved changes in ownership by other types of shareholders.¹⁶ More generally, any changes in ownership that take place upon index reconstitutions (e.g., a change in the number and/or relative concentration of shareholders of a given type) could be partly responsible for the observed effects.¹⁷

Overall, in future research, it will be interesting to explore the index reconstitution-induced ownership changes in more depth and use them to improve our understanding of the economic forces driving the results.

¹⁵ For example, according to Investment Company Institute (2022), at the end of 2021, passive mutual funds and ETFs held 16% of the value of U.S. stocks, active mutual funds and ETFs held 14%, and the remaining 70% were held by other investors, including hedge funds, pension funds, life insurance companies, and individuals.

¹⁶ As Appel et al. (2016) discuss in Section 7.2, if other institutional investors "also adopt passive investment strategies," then "attempting to back out the implied change in governance structure for a given percentage change in passive ownership might lead to an overestimation of the actual economic magnitude of interest." Similarly, Heath et al. (2022) note that their "interpretation requires the assumption that index switching affects governance only through its effects on fund ownership."

¹⁷ For example, in the sample of Pavlova and Sikorskaya (2022), there is no discontinuity in total ownership by active funds around the Russell 1000/2000 cutoff, but there is a discontinuity in the type of active funds, namely, the index they are benchmarked to (see Table A.29 in their paper). If active fund managers' compensation contracts and ownership stakes differ depending on the benchmark they are compared to, such heterogeneity may have important effects on funds' combined incentives to engage. See also Israelsen, Schwartz-Ziv, and Weston (2022), who highlight that ownership by non-financial blockholders that do not file form 13F is discontinuous around the Russell cutoff.

4.2. Evidence on voting by active and passive funds

Several other papers study the governance role of passive funds by focusing on their voting practices. Heath et al. (2022), and Brav et al. (2022) find that passive funds tend to vote for management more frequently than actively managed funds in proxy contests and on both management and shareholder proposals, and Boone, Gillan, and Towner (2020) and Bubb and Catan (2022) report a similar comparison between the votes of the Big Three fund families and active funds. Iliev, Kalodimos, and Lowry (2021) study the extent to which investors perform governance research by analyzing how frequently they view firms' proxy statements on the SEC's Electronic Data Gathering, Analysis, and Retrieval ("EDGAR") system prior to voting and conclude that index funds do significantly less research than active funds.

At first glance, this may suggest that passive funds do not acquire much information and passively vote for the status quo, i.e., the incumbent management's policies. However, the evidence in many of these and other papers suggests a more nuanced view.

First, Bubb and Catan (2022) highlight that even though the Big Three are indeed deferential to management on issues that have traditionally been viewed as matters for the board and not for shareholders to decide on (e.g., executive compensation), they frequently vote against management on issues related to fundamental shareholder rights (e.g., antitakeover defenses) and proxy contests. Second, Brav et al. (2022) find that while passive funds are more likely to vote on the managerial ballot on average, the sensitivity of their support for management to firm performance is similar to that of active funds. In addition, passive funds are more likely to withhold their votes from certain managerial candidates (rather than the entire slate), which is a less confrontational way of expressing dissatisfaction, and such withholding reduces the probability that the weakest managerial candidates are elected.

In addition, Brav et al. (2022) exploit a unique feature of how votes are disclosed to shed further light on the difference between active and passive funds. Specifically, their sample includes funds' votes in a subset of proxy contests that were settled or withdrawn before the contested election took place. Such settlements or withdrawals typically occur shortly prior to the scheduled vote, so many funds have already cast their votes in preceding weeks with the expectation that the vote will proceed as planned. The observed votes thus show how funds would have voted had the contested election taken place. The paper finds that the inclusion of such votes results in a considerably smaller active-passive gap. While passive funds' support for dissidents is 9.5 percent lower than active funds' support based on voted contests, this differential falls to 2.4 percent (1.6 percent) for settled (withdrawn) contests. The evidence is consistent with the idea that when dissidents manage to convince passive investors to support their agenda, management is forced into a settlement to avert a likely loss. Brav et al. (2022) thus conclude that the voting gap observed in management proposals may overstate the differences between active and passive funds if extrapolated to more contentious, high-stake settings.

The Big Three vs. smaller index fund families. The difference between active and passive funds is also much less pronounced, and often reversed, if passive funds are restricted to the Big Three fund families. For example, Heath et al. (2022) find that the Big Three support management on contentious agenda items more so than fund families with a lower share of indexed assets (see their Figure 6 and related

discussion on page 115). Brav et al. (2022) similarly show that the differential active-passive support for management in proxy contests is driven by the Big Three, and their exclusion shrinks the gap from 9.5 percentage points to 4.4 percentage points.

Furthermore, the Big Three do not passively follow proxy advisors' recommendations. Consistent with this, Iliev and Lowry (2015) find that passive funds with large ownership stakes in the firm are significantly more likely to deviate from ISS recommendations compared to passive funds with smaller stakes, and Bubb and Catan (2022) come to similar conclusions. Likewise, Bolton et al. (2020) use the approach from political science to classify investors' voting preferences and find their "ideal points" along two dimensions (money-conscious vs. pro-social and management-disciplinary vs. management-friendly) and show that the ideal points of the Big Three are different from those of both proxy advisors (see, e.g., Figure 2D in their paper).

Given that the Big Three do not appear to outsource their voting to proxy advisors, it is important to understand whether they perform more independent governance research compared to other funds. Brav et al. (2022) study the extent of governance research by different shareholders for firms involved in proxy contests. Given that proxy contests often result in close voting outcomes and a large potential change in firm value, they provide a setting in which funds are best incentivized to gather information about the plans proposed by the dissident and the management. The authors follow the methodology proposed by Iliev, Kalodimos, and Lowry (2021) and analyze the extent to which fund families search the SEC's EDGAR system for information on management and dissident proxy filings in the years before and after the proxy contest. Brav et al. (2022) find that during the proxy event period (beginning two years before and ending two years after the contest year), passive institutions' probability of viewing management (dissident) proxy materials is 19.6 percent (17.1 percent), which is higher than that of active fund families (7.5 percent and 6.8 percent, respectively).¹⁸ These differences remain in specifications with meeting fixed effects. The higher propensity for search activity is manifested even for proxy materials in regular annual meetings within this event period; it also increases in the period leading to the event period.

Finally, Brav et al. (2022) find that the Big Three and other index fund families differ in their search activity. In particular, the passive-active differential viewership of proxy materials is driven primarily by the higher search activity of the Big Three. The smaller passive fund families, however, search less than the active fund families prior to the five-year event period, and it is only during the five-year event period that they increase their search activity surpassing that of active fund families.

Summary. Overall, the evidence in the literature suggests that there is an important difference between the Big Three and other passive fund families: the Big Three appear to perform more governance research and vote more actively and independently from proxy advisors. These findings are consistent with their substantially higher ownership stakes and, therefore, greater benefits from engagement (Section 2.1), as well as potentially smaller costs of achieving their goals (Section 2.2).

Moreover, these differences may complicate the conclusions from the analysis performed at the family level. Suppose, for example, that a researcher compares the voting of passive and active asset managers

¹⁸ A fund family is classified as passive if no less than fifty percent of its funds are passive funds.

at the fund family level. If the Big Three's voting practices are very different from those of small passive families (like in the papers described above), then the researcher needs to be careful in using the estimated coefficient to make conclusions about how passive ownership affects *aggregate* voting outcomes. This is because the Big Three constitute only a small percentage of the sample of families that is used to estimate the coefficient. However, the actual voting power of the Big Three substantially exceeds the voting power of smaller passive fund families, and they are often pivotal voters in important votes. In other words, while the behavior of the Big Three has a strong effect on aggregate outcomes, the estimated coefficient will be more indicative of smaller fund families. More generally, this discussion suggests that the unit of observation should be guided by the question a researcher is asking.

5. Conclusion and directions for future research

The research covered in this survey suggests the following key conclusions. First, passive funds' incentives to engage can be substantial even though they track the index and collect low fees. Specifically, for major passive asset managers, their large ownership stakes in multiple firms imply both strong benefits from engagement (via the direct incentives) and potentially lower costs (from being pivotal voters, as well as the ability to have a market-wide impact). These incentives can be stronger than those of many actively managed asset managers. Empirical evidence on fund voting and engagement appears to be consistent with this conclusion: while small passive funds seem less active in governance compared to active funds, this difference is often reduced and is sometimes even reversed when we compare active funds and the Big Three passive fund families. In addition, passive funds may have influence that is complementary to that of traditional activist investors: rather than focusing on firm-specific operational improvements, they may be in a good position to address market-wide issues, such as setting broad governance standards. Such specialization is consistent with the observed governance activities of passive funds as compared to more actively managed investors.

Second, to understand the governance effects of passive fund growth, it is important to consider the following forces: (1) which investors are replaced by passive funds in firms' ownership structures, and how their incentives to engage compare to those of passive funds; (2) how passive fund growth affects active and passive fund fees and fund managers' compensation contracts more generally; (3) how passive funds interact with other shareholders, e.g., by supporting activist campaigns or by indirectly affecting how other shareholders trade, vote, and engage with management.

The forces highlighted in this survey are also relevant for the consideration of potential policy proposals concerning the governance role of asset managers.¹⁹ The two layers of the free-rider problem (with other shareholders and with fund investors) imply that fund managers have incentives to underinvest in stewardship compared to the social planner's optimum (e.g., Bebchuk and Hirst, 2019b). One possible benchmark to consider is the scenario where the second layer of the free-rider problem is removed, i.e., the fund manager exerts effort as if the fund is entirely hers, $f = 100\%$. While this would bring the equilibrium level of engagement closer to the social planner's optimum, it may not be a realistic

¹⁹ See, e.g., Bebchuk and Hirst (2019b) and Sharfman (2022), who put forward several policy proposals.

benchmark because the fund manages its beneficiaries' capital: removing the second layer of the free-rider problem requires moving to the situation where the large number of fund beneficiaries, each with her own small stake, make individual decisions on costly information gathering and then try to reach an agreement with the rest of the fund beneficiaries. It is therefore important to carefully think about the most efficient ways to encourage more engagement by fund managers.

Our discussions also suggest several directions for future research.

First, while Lewellen and Lewellen (2022a) have made important progress in estimating shareholders' incentives to engage, more research is needed. As highlighted in Section 2.2, the costs of engagement, which are a crucial determinant of the incentives to engage, are not yet well understood and measured. In addition, refining the estimates of flow incentives (see Section 2.1.3), as well as quantifying the benefits from trading on information related to engagement (Section 2.1.4), could help measure active funds' total benefits from engagement more precisely. Deriving more precise estimates of funds' incentives would allow to understand how shareholders' incentives to engage have been changing over time, for example, because of changes in fund fees or aggregate discount rates. Furthermore, by connecting the estimates of shareholders' incentives to the observed changes in firms' ownership structures (e.g., passive funds replacing other types of investors), researchers could study how the growth in passive ownership might have affected shareholders' combined incentives to engage.

Second, the literature is yet to explore the governance implications of passive fund growth through its effects on ownership structures beyond the simple passive share. That is, passive fund growth is likely to affect ownership characteristics such as the number and relative size of shareholders of different types, and these ownership characteristics may change differently across firms. One particular aspect is related to concentration. The passive fund industry is more concentrated than the active fund industry, likely due to the homogeneous products passive funds offer to investors, as well as the economies of scale they can exploit (active funds, in contrast, are likely to have decreasing returns to scale (Berk and Green, 2004)). The differential concentration of the passive and active fund industries implies that as the share of passive ownership in the economy increases, firms' ownership structures – the number of shareholders of each type, their stakes, and overall ownership concentration – will likely change as well. Such changes may have important effects on shareholder engagement and governance (see related discussions in Sections 3.1 and 4.1).

Third, to study the governance implications of passive fund growth, it is important to have good measures of the quality of their governance activities. These measures are often challenging to come up with. For example, there is little data on passive funds' private engagements with portfolio companies (beyond the summaries in their stewardship reports) and the effectiveness of these engagements. Yet, such engagements are an important part of passive funds' governance activities. It may also be difficult to precisely measure the quality of funds' voting decisions. For example, as revealed by our discussion in Section 4.2, the propensity to vote against management might not always be a very precise measure of

whether a fund's votes are informed and unbiased.²⁰ Some recent approaches in the literature include estimating fund votes' sensitivity to proxy advisors' recommendations (Iliev and Lowry, 2015); measuring funds' governance research (Iliev, Kalodimos, and Lowry, 2021); and relating funds' voting decisions to the stock price reaction to voting outcomes (Gao and Huang, 2022) or to subsequent operating performance of the firm (Brav et al., 2022). Coming up with additional measures and refining the existing measures would be a worthwhile direction for future work.

Fourth, as we discuss in more detail in Sections 2.1.4 and 3.2, passive fund growth is likely to affect shareholder engagement and monitoring by changing the informativeness of asset prices, the horizon of an average shareholder, and different shareholders' trading activity and trading profits. This aspect of passive fund influence on governance has been underexplored.

Fifth, the focus of this survey has been on funds' incentives to engage in order to increase firm value. Another aspect of shareholder engagement concerns environmental and social (E&S) issues. To the extent that certain E&S activities are not aligned with shareholder value maximization, the framework outlined in Section 2.1 needs to be enriched to account for E&S engagements.²¹ Moreover, heterogeneity in shareholders' preferences becomes a first-order issue with respect to E&S policies. Thus, the interactions among shareholders in the context of E&S engagements are likely to be different compared to their interactions on governance engagements, in which shareholders' interests are relatively more aligned. Understanding active and passive funds' benefits from E&S engagement, exploring the heterogeneity in their preferences, and studying the implications of passive fund growth for E&S policies and shareholder and stakeholder welfare is an important direction for future research.

Finally, another underexplored area is the political economy aspect of index fund growth. The fact that major index fund managers have grown to become the largest shareholders of most large U.S. public firms and are pivotal in many important votes has led to regulatory concerns about their outsized power. The INDEX Act mentioned in the Introduction is one example of proposals that are made to curb this power.²² Understanding how political economy considerations may affect asset managers' stewardship behavior and studying the implications of proposed regulatory changes for governance and investor welfare are important directions for future research.

²⁰ See Brav et al. (2022) and Malenko, Malenko, and Spatt (2022) for specific reasons why such a measure may be imprecise. See also the survey by Brav, Malenko, and Malenko (2022) for a more in-depth discussion.

²¹ In this context, Sharfman (2022) cautions that index managers' incentives to vote in a way that increases their market share by appealing to millennials may prevent value-maximizing voting behavior.

²² Coates (2019), for example, cautions that "a small number of unelected agents, operating largely behind closed doors, are increasingly important to the lives of millions who barely know of the existence much less the identity or inclinations of those agents." Senator Sullivan, who introduced the INDEX Act, points that "Currently, the three largest investment advisers vote nearly one-quarter of all shares cast at annual meetings, and are the largest shareholders in over 90 percent of S&P 500 companies. The INDEX Act would correct this extreme market distortion by simply requiring that the power to vote shares resides with the fund investors, not the advisers. This would democratize corporate governance and largely eliminate the influence that these firms wield at shareholder meetings, often to push political agendas" (<https://www.sullivan.senate.gov/newsroom/press-releases/sullivan-introduces-index-act-to-empower-investors-and-neutralize-wall-streets-biggest-investment-firms>).

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