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Institutional Investors and Corporate Governance

Finance Working Paper N° 700/2020
September 2020

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This article was prepared by invitation for Foundations and Trends in Finance. We are grateful to Zac Rolnik (Publisher), Sheridan Titman (Editor-in-Chief), and Chester Spatt (Associate Editor). We also thank Marc Gischer for excellent research assistance and Miguel Ferreira and Pedro Matos for sharing their data on institutional ownership around the world. Dasgupta acknowledges financial support from the ESRC via Research Grant ES/S016686/1.

Abstract

We provide a comprehensive overview of the role of institutional investors in corporate governance with three main components. First, we provide a detailed characterization of key aspects of the legal and regulatory setting within which institutional investors govern portfolio firms. Second, we establish new stylized facts documenting the evolution and importance of institutional ownership. Third, we synthesize the evolving "response" of the recent theoretical and empirical academic literature in finance to the emergence of institutional investors in corporate governance. We highlight how the defining aspect of institutional investors – the fact that they are financial intermediaries – differentiates them in their governance role from standard principal blockholders. Further, not all institutional investors are identical, and we pay close attention to heterogeneity amongst institutional investors as blockholders.

Keywords: Institutional investors, corporate governance, exit, voice, shareholder activism, proxy voting advisors

JEL Classifications: G11, G15, G22, G23

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Outline

1. Introduction

Whenever the ownership of public corporations is dispersed amongst many shareholders, blockholders – owners of non-trivial percentages of a company's shares – become central to good corporate governance. In contrast to small shareholders, who have neither the incentive nor the capacity to effectively monitor management, blockholders are able to govern firms to the benefit of all. The governance role of blockholders today must be viewed in the backdrop of the explosive growth of the asset management industry in recent decades, which has led to the large-scale *intermediation* of equity ownership.

Table 1 shows that 50 years ago households *directly* owned almost 80% of US corporate equity. Such direct ownership has declined steadily over the years such that today only just over a third (36.4%) of US corporate equity is directly owned by households (including bank personal trusts). The remainder is *indirectly* held via different asset managers – commonly referred to as *institutional investors*. The table shows that such institutional ownership is dominated by four major types of domestic investors: Mutual funds (22.6%), exchange traded funds (ETFs) (6.2%), and public (6.5%) as well as private (5.5%) pension funds. The remaining institutional investors include insurance companies (2%), which have become progressively smaller over time, and "other" unclassified domestic investors (5.4%), a catch-all category including hedge funds or the proprietary holdings of financial institutions. Finally, 15.1% is held by held by foreign institutional investors.[1] Thus, a majority of blockholders in public US corporations are institutional investors. This phenomenon is not limited to the US: below we provide evidence of a similarly significant growth of institutional ownership in other major economies around the world.

[Insert Table 1 here]

Institutional investors are different from the standard blockholders of the classical corporate governance literature in a number of ways. They are larger than most private investors, often subject to extensive regulations, and – perhaps most fundamentally – they differ from private

[1] The measure of foreign ownership does not allow the separation between direct investments by households and institutional investors. However, the vast majority of this category likely originates from foreign hedge funds, pension funds, mutual funds, and sovereign wealth funds.

investors because they invest other people's money. Given the preponderance of institutional investors in corporate equity ownership, it is important to understand the role they play in corporate governance.

In this review article, we provide a comprehensive overview of the role of institutional investors in corporate governance. Our contribution has three main components. First, we provide a detailed characterization of key aspects of the legal and regulatory setting within which institutional investors operate with respect to the governance of their portfolio firms. Second, we trace the emergence of institutional investors as the modal concentrated owners of public firms in modern economies, using a wide variety of data sources to establish new stylized facts. Third, we synthesize the evolving "response" of the academic literature in finance to the emergence of institutional investors in corporate governance, attempting to link theoretical predictions to empirical findings.

Because of our focus on institutional investors as the holders of equity blocks we highlight the role that characteristics specific to this type of equity blockholder play in corporate governance. For example, we document how the defining aspect of institutional investors – the fact that they are financial intermediaries – differentiates them in their governance role from standard principal blockholders (e.g., individuals, families, and firms). As a result we discuss how differences with respect to explicit and implicit incentives, organizational structures, and regulatory requirements shape their obligations, incentives and ability to govern. This focus leads us to highlight aspects of governance that are unique to institutional investors, for example, the institutions' voting processes, the role of proxy voting advisors, and conflicts of interests arising from business ties with portfolio firms. Further, not all institutional investors are identical, and we pay close attention to *heterogeneity* amongst institutional investors as blockholders, arising because of differences in their incentives, size, investment horizons, preferred governance mechanisms, or regulatory constraints. We shine a light on heterogeneity across institution types by establishing stylized facts on ownership heterogeneity, and by synthesizing the emerging lessons from the theoretical and empirical literatures on the impact of such heterogeneity.

Hence, our survey article differs in two important ways from recent surveys that look at the role of blockholders *per se* in corporate governance (e.g., Edmans 2014; Edmans and Holderness

2017). First, we highlight governance issues specific to institutional investors, which can lead to substantial differences between the objectives of canonical blockholders who maximize the value of their blocks and the objectives of institutional investors. For instance, a labor union pension fund that manages pension accounts of a firm's employees might consider negative effects of a value increasing action on the employees and thus resist the action. Second, the main objective of a rising class of passive institutional investors is to not maximize the value of their investment but to rather track an index. For instance, with trillions dollars in assets, Exchange Traded Funds' (ETFs) objective is to track performance of a basket of securities. Investment companies managing ETFs are, however, required to vote in the best interest of their investors. Thus, there is an important gap between the fiduciary duties of ETFs' managers' and their investment objectives. Despite our different focus, we pick up on key themes highlighted in Edmans and Holderness (2017), namely the role of blockholder heterogeneity and evidence from institutional settings beyond the US.

A few other recent surveys cover related issues. Yermack (2010) surveys the literature on shareholder voting in general. In contrast, we delve in further detail on institution-specific aspects of proxy voting. Brav et al. (2010) provides a detailed survey of activist hedge funds specifically. While activist hedge funds feature prominently in our review, they are only one part of the much wider landscape of the role of institutional investors in corporate governance that is of interest to us. Schmaltz (2018) surveys the emerging literature on common ownership, a specific topic tied to the existence of large institutional investors, which we only touch on briefly below. Institutional investors are sometimes under scrutiny for their role in environmental and social issues tied to corporate actions. In a recent review article, Matos (2020) focuses specifically at this aspect of the role of institutional investors. Finally, Franks (2020) provides a contemporaneous review of institutional ownership around the world and discusses topics within their governance role.

The remainder of this article is structured as follows. Section 2 provides a description of the legal and regulatory environment within which institutional investors operate, with a focus on the obligations, ability, and incentives of such investors to engage in the corporate governance of firms. Section 3 provides a series of new stylized facts on the evolution of institutional ownership and its heterogeneity in the US and outside of the US. Section 4 reviews the theoretical literature on

institutional investors and corporate governance, and Section 5 discusses the empirical literature. Section 6 concludes.

2. Legal and Regulatory Environment: Obligations, Ability, and Incentives of Institutional Investors to Govern

The governance role of institutional investors is affected by the *legal framework* under which they operate, which in turn determines their *obligation* and *ability* to govern portfolio firms. The legal framework also has implications for *incentive structures* permissible to institutional investors that, in turn, determine their willingness to govern. In this section, we discuss these aspects of the institutional investor landscape. Further, we discuss some of the "how" of corporate governance actions by institutional investors – in particular, the manner in which institutional voice is determined.

As discussed above, Table 1 demonstrates that at present four types of institutions – mutual funds (22.6%), exchange traded funds (ETFs) (6.2%), and public (6.5%) and private (5.5%) pension funds – represent the bulk of institutional ownership. Accordingly, in this section, we organize the discussion of the institutional setting for the role of institutional investors in corporate governance around these four main groups of investors. However, throughout we also devote special attention to hedge funds, because *activist* hedge funds – while representing a much smaller ownership stake in comparison to the four largest types of institutions – have wielded a disproportionate influence on corporate governance in the recent two decades. Thus, understanding the extent to which the legal framework applies to hedge funds is also of relevance. While we devote the greatest amount of space to the US, the largest market for institutional investors and the area in which the literature is farthest developed, we also provide a comparative perspective for other large economies. We focus our international discussion on the five largest economies other than the US, namely China, Japan, Germany, the United Kingdom, and India.[2]

[2] Our classification follows from the GDP data provided by the IMF World Economic Outlook Database, April 2019, available at https://www.imf.org/external/pubs/ft/weo/2019/01/weodata/index.aspx. We use the

Our focus will be both on what distinguishes across institutional investors and what is common amongst them. In both legal obligation and incentives, there is significant dispersion across different types of institutional investors. Notably, different types of institutional investors are often governed by different legal frameworks, imposing different legal obligations on them. For example, in the US, mutual funds, closed end funds, and the vast majority of ETFs are organized as so-called Registered Management Investment Companies and governed by *Investment Companies Act of 1940* (ICA). Such investment companies employ portfolio managers to make investment decisions, and the latter are governed in the US by the *Investment Advisers Act of 1940* (IAA). In contrast, private pension funds are governed by the *Employee Retirement Income Security Act of 1974* (ERISA). While pension funds invest significantly in mutual funds (see Figure 7), ERISA Section 3, paragraph 21(B) states that the investment by a pension plan into an investment company (mutual funds, ETFs etc.) governed by the ICA does not render any ERISA fiduciary obligation on the investment company or its investment adviser. Thus, private pension funds and mutual funds are subject to distinct laws. Public pension funds are subject to neither ERISA nor the ICA and IAA. Hedge funds are organized to be exempt from the ICA but, following the passage of the 2010 Dodd Frank Act, are subject to some of the requirements of the IAA. We discuss the governance obligations of institutional investors in Section 2.1.

Incentives vary significantly as well. While the vast majority of mutual funds charge flat assets under management fees (Elton et al., 2003), hedge funds charge often complex fees involving performance fees and watermarks (Fung and Hsieh, 1999). Public pension plans, on the other hand, are typically overseen by boards that may be politically motivated (Andonov et al., 2018; Woidtke; 2002) and may have different incentives as a result. We discuss the governance incentives of institutional investors in Section 2.3.

In contrast, commonality arises from their shared identity as equity blockholders, stemming from the unified legal framework – the *Securities Exchange Act of 1934* (SEA) – governing the ability of such parties to govern firms. We discuss the governance ability of institutional investors in Section 2.2.

rankings from 2017, as that is the most recent year from which confirmed data is available for the full set of top-ten economies at the time of writing.

2.1 Legal Obligations of Institutional Investors to Govern

The legal obligations of institutional investors with respect to the governance of their portfolio firms arise from a variety of sources. For US mutual funds and their investment advisers, the basic obligation to govern arises from state law that pertains to each fund's incorporation.[3] As is succinctly described by the SEC (SEC, 2019a**,** p. 3):

> *"Mutual funds are formed as corporations or business trusts under state law and, […], must be operated for the benefit of their shareholders. Because a mutual fund is the beneficial owner of its portfolio securities, the fund's board of directors, acting on the fund's behalf, has the right and the obligation to vote proxies relating to the fund's portfolio securities. As a practical matter, however, the board typically delegates this function to the fund's investment adviser as part of the adviser's general management of fund assets, subject to the board's continuing oversight. The investment adviser to a mutual fund is a fiduciary that owes the fund a duty of "utmost good faith, and full and fair disclosure." This fiduciary duty extends to all functions undertaken on the fund's behalf, including the voting of proxies relating to the fund's portfolio securities. An investment adviser voting proxies on behalf of a fund, therefore, must do so in a manner consistent with the best interests of the fund and its shareholders."*

Thus, mutual funds and their investment advisers are obliged to use shareholder voice, that is, to vote their proxies in a manner that is deemed beneficial to the value of the funds. In recent decades, there has been a significant expansion of the obligations of mutual funds and their advisors with respect to the *transparent* and *unconflicted* use of shareholder voice. In particular, the obligations of mutual funds and their advisors now extend, under the ICA and the IAA, to:

1. The public disclosure of proxy voting policies.
2. The reporting of votes actually cast either publicly (for mutual funds, under the ICA) or to clients (for investment advisors under the IAA).

[3] It has long been recognized that the relationship between the mutual funds and their investment advisors is highly intertwined, see, e.g., Schiffman (1976).

3. The establishment of policies to manage conflicts of interest.

The regulatory push for the transparent and unconflicted use of shareholder voice started not with investment companies, but rather with pension funds. In 1988, in a letter responding to queries raised by the Chairman of the Retirement Board of Avon Products, Inc. (the so-called "Avon letter", Department of Labor, 1988), the US Department of Labor (DoL) opined for the first time that proxy votes were to be treated as ERISA plan assets and thus were captured under ERISA fiduciary obligations. The DoL followed this up by further correspondence two years later in the so-called "Monks letter," sent to the then Chairman of ISS (DoL, 1990), and in a legal interpretative bulletin (29 CFR 2509.94-2) in 1994 (DoL, 1994) that fleshed out ERISA obligations to vote, maintain voting records, and to have a proxy voting policy. While it appears the DoL did not enforce these obligations (McRitchie, 2014), the DoL's visible stance on the importance of proxy voting led to a number of representations to the SEC to make such voting mandatory for investment companies governed by the ICA.

In 2003, in the wake of the regulatory reforms induced by the *Sarbanes Oxley Act of 2002*, the SEC took action on this, making modifications to both the ICA (SEC, 2003a) and the IAA (SEC, 2003b) in order to enhance the degree of transparency in the proxy voting of mutual funds and their advisors. The basis for such amendments was that mutual funds and their advisers often had business ties with underlying portfolio firms, which may have led them to vote their proxies in a manner that favored portfolio firms and their managers (who could otherwise withhold business) rather than their own fund shareholders. Under these amendments, mutual funds, ETFs, and their advisers are obliged to disclose their policies with regard to proxy voting. For funds and ETFs such policies may (and usually do) simply involve delegation of voting responsibility to their investment advisers. Advisers, in turn, are in principle able to have different policies for different client funds, though in practice, in the vast majority of cases mutual fund advisers apply a uniform policy across their client funds.[4] For mutual funds and ETFs, actual votes cast (either directly, or through an investment adviser) must also be publicly disclosed. Advisers do not have to publicly disclose their

[4] In their large sample study involving all mutual fund proxy votes cast between 2003 and 2011, Cvijanovic et al. (2016) find that some 94% of their data involve family-level uniformity, i.e., the adviser who voted the shares followed the same policy across all funds advised.

votes but must disclose them to their clients upon request. Further, both funds and advisers are required to develop and disclose policies that govern conflicts of interest.

While the initial regulatory push for transparent voting stemmed from the pension fund sector based on fiduciary obligations under ERISA, the 2003 ICA and IAA amendments have effectively rendered registered management investment companies – mutual funds, ETFs, and their advisers – *more* obliged to the transparent exercise of shareholder voice than private pension funds. Indeed, in a 2007 advisory letter in response to a query raised by Thomas J. Donohue, then President of the US Chambers of Commerce (DoL, 2007), the DoL clarified that – since fiduciary duties under ERISA pertained *only* to taking actions that enhanced the economic value of plan investments – private pension funds must undertake a cost-benefit analysis ahead of voting their proxies. If the costs of becoming informed in order to vote and any cost arising as a consequence of voting is higher than the portfolio value added by voting, then it is the pension funds' trustees' fiduciary obligation *not* to vote.

Further differences in legal obligations with respect to shareholder voice arise from the fact that *public* pension funds are not governed by ERISA, but instead only by state law (Black, 1992, Woidtke, 2002) and thus are not subject to ERISA fiduciary responsibilities.

Finally, hedge funds are typically organized as limited partnerships in which investors are the limited partners and the general partners manage the fund, i.e., act as its investment adviser. Hedge funds typically avoid registration as management investment companies (and thus regulation via the ICA) by utilizing either of two clauses that exempt pooled investment vehicles from registration under the ICA so long as they have either no more than 100 investors (clause 3(c)(1)) or only qualified purchasers – individuals with at least $5 million in investments or companies with at least $100 million in financial investments (clause 3(c)(7)) under the further condition – common to both clauses – that the fund only sells securities to such investors privately. While until relatively recently hedge funds were also able to avoid registration under the IAA under the so-called "private adviser exemption" the passage of the *Dodd-Frank Act of 2010* has significantly limited their ability to do so. Now, all hedge fund advisers with more than $150 million under management must register under the IAA, which then subjects them to all applicable provisions of the IAA, including imposing the IAA standard of fiduciary obligation on them (Champ,

2012). In general, however, fiduciary obligation for hedge funds is complex due to their organization as limited partnerships and the flexibility permitted under relevant state limited partnership statutes. As Shadab (2009) puts it, *"the fiduciary duties of general partners are to a large extent waivable in the limited partnership agreement."* (Shadab, 2009, p. 248).

Globally, the legal framework dictating the governance obligations of institutional investors can vary significantly. In some countries, such as in the United Kingdom, governance obligations are defined by the *Stewardship Code*, introduced in 2010 – one of the earliest examples of such stewardship codes – and revised in 2012 and 2019 (in process). All institutional investors and their "service providers" (e.g., proxy voting advisers) are required to abide by this code on a "comply or explain" basis – in effect this means that institutional investors must develop policies to either comply with each requirement of the code or explain on their webpages why they do not. Thus, in the UK – unlike in the US – there is less heterogeneity amongst mutual funds, hedge funds, and pension funds with regard to governance obligations. That said, since regulation is carried out under a comply or explain basis, there may be more *de facto* heterogeneity across institutional investors. Interestingly, the stewardship code imposes requirements not dissimilar to those of the ICA and IAA – institutional investors must vote proxies in the best interest of their investors, must disclose voting policies, record proxy votes, and develop policies to deal with conflicts of interest. However, importantly, the UK Stewardship Code imposes a requirement on institutional investors to constructively engage with investee companies, a requirement that has no legal equivalent in the US.[5]

The UK Stewardship Code, and that of several other European countries, incorporate (and have influenced – the evolving process has involved significant give and take) the *EU Shareholder Rights Directive of 2017* (which modified the first *EU Shareholder Rights Directive of 2007*) which was incorporated into national regulations during 2019 and 2020. As a result, some current aspects of cross-country heterogeneity in EU country governance obligations – e.g., Germany requires no disclosure of actual proxy votes cast – will reduce over time. However, not all European countries impose purely code-based governance obligations. In Germany for example, obligations are

[5] Despite the lack of a legal requirement in the US, McCahery et al. (2016) provide evidence that institutional investors do engage behind the scenes with their investee companies.

determined by a combination of corporate governance code and law. Globally, different types of institutional investors are sometimes governed by different laws imposing different requirements. In India, for example, mutual funds and pension funds are governed by (distinct) laws, while insurers are governed by code, leading to distinct obligations for different types of institutional investors.

Table 2 contains a summary of the corporate governance obligations of institutional investors in China, Japan, Germany, the UK, and India.

[Insert Table 2 here]

2.2 The Ability of Institutional Investors to Govern

Institutional investors can actively govern portfolio firms by exercising shareholder voice. As shareholders, institutional investors are able to approach managers through a number of informal, "behind the scenes," channels in order to make suggestions and express approval or disapproval (for a discussion, see Shleifer and Vishny, 1986). However, to account for instances where managers may not agree with such shareholder suggestions, the effective use of voice requires that institutional investors be able to make *formal* proposals to corporate managers and have the ability to let other shareholders vote on such proposals. Such proposals are commonly referred to as proxy proposals. The ability of equity blockholders to govern investee firms via proxy proposal and the associated constraints are delineated in the US by the SEA (see above). These rules apply to all equity blockholders regardless of identity, so individuals, mutual funds, pension funds, and hedge funds, all face identical constraints. Thus, unlike with regard to governance *obligations*, there is commonality in the governance *ability* of US institutional investors in this regard.

The SEA provides two main ways for blockholders to make proxy proposals. First, under SEA Section 14a-8, any blockholder owning 1% or $2,000 in market value of a company's shares for at least one year may include proposals on the company's proxy statement. These are usually referred to as *shareholder proposals*. While this bar for proxy access is rather low, shareholder proposals must satisfy several stringent conditions. The proposal may not relate to the company's

ordinary business operations, to director elections, and – crucially – they may not stand in conflict (or act as an alternative to) with any management proposal on the same proxy statement. Further, the blockholder is limited to a supporting statement of no more than 500 words. Finally, for normally scheduled annual general meetings, shareholder proposals must be filed 120 calendar days ahead of the issuance of the company's proxy statement. The net effect of all these restrictions, according to Black (1990) is that *"politically motivated shareholders can offer a wide variety of social responsibility proposals that most shareholders don't care about, while access is sharply limited for issues that affect the corporation as a profitmaking institution"* (Black, 1990, p. 541).

Given these limitations, as an alternative to shareholder proposals, institutional investors may sidestep the company's proxy statement and solicit their own proxies, leading to what is commonly referred to as a "proxy fight." Indeed, Fos (2017) shows that the majority of proxy fights are initiated by institutional investors. Avoiding the restrictions of section 14a-8 has the significant benefit of providing institutional investors with the ability to make a full case to shareholders and to be able to address a much wider range of issues, including nominating an alternative slate of directors. Yet, it suffers from three important potential drawbacks.

The first drawback is that it is costly due to research, access, compliance, and potential legal costs (all discussed below). Gantchev (2013) estimates that, between 2000 and 2007, activist hedge fund campaigns ending in a proxy fight costs upward of $10 million. Within limits, the reimbursement of a dissident blockholder's expenses is undertaken at the discretion of the target company board. This means, of course, that unless the blockholder is able to replace the majority of the board in the course of the activism campaign, the target company board is unlikely to reimburse expenses.

Second, soliciting proxies requires access to shareholder lists. SEA section 14a-7 obliges companies to disclose shareholder lists or mail dissident proxy material to shareholders directly at the dissident's expense. Black (1990) notes that *"Companies invariably mail the materials themselves to avoid disclosing shareholder names…. For shareholder lists, Rule 14a-7 can fairly be called a "nonaccess" rule."* (Black, 1990, p. 542). In 1992, as part of a major reform of proxy rules, Rule 14a-7 was amended somewhat to impose further requirements on the target company.

Following the reform, if the company chooses to mail the shareholder list, it has to disclose information on the number of shareholders management will solicit and provide an estimate of the costs incurred. Further, following the reform, shareholders launching a proxy fight may also choose to have target company managers send communication to certain subsets of shareholders (Calio and Zahralddin, 1994, p.504).

The third drawback arises from the degree of disclosure and official vetting, and associated legal and regulatory risk, that accompanies proxy solicitation in the US – arguably the most contentious aspect of proxy access regulation. The key issue relates to the requirement for pre-filing and approval by the SEC, with a lead time of 10 business days before the any communication with other shareholders, of any materials related to a proxy solicitation, combined with a very broad definition of the term "solicitation." On the latter point, SEA Section 14a-1(1) defines a solicitation as any *"communication to security holders under circumstances reasonably calculated to result in the procurement, withholding, or revocation of a proxy."* Black (1990) notes that the terms "communication" and "reasonably calculated" have been expansively interpreted by US courts so that under case law the effective test is *"whether the communication is "part of a continuous plan ending in solicitation and which prepares the way for its success"."* (Black, 1990, p. 537). This effectively meant that any form of communication, public or private, amongst shareholders with respect to how to vote would be considered a solicitation, and that even third parties who advised shareholders on how to vote – proxy advisory firms – would be exposed to the relevant disclosure and vetting processes. In addition, solicitation communications are subject to stringent anti-fraud provisions under SEA Section 14a-9:

> *No solicitation subject to this regulation shall be made by means of any proxy statement, form of proxy, notice of meeting or other communication, written or oral, containing any statement which, at the time and in the light of the circumstances under which it is made, is false or misleading with respect to any material fact, or which omits to state any material fact necessary in order to make the statements therein not false or misleading or necessary to correct any statement in any earlier communication with respect to the solicitation of a proxy for the same meeting or subject matter which has become false or misleading.*

There were significant concerns on the degree to which such provisions hindered the ability of institutional investors to exercise shareholder voice (see Black, 1990; Black, 1992; Roe, 1991). In particular, the pre-disclosure requirements made it difficult to challenge management proposals by soliciting proxies, since the delay induced by pre-filing and approval combined with the fact that management proposals were only announced on the company proxy statement a month before the annual general meeting combined to form a nearly insuperable obstacle. Further, the rules rendered difficult any form of pre-voting communication amongst shareholders (preventing coordination) and also fostered legal risk in obtaining professional advice (and thus pooling information gathering costs) from proxy advisory services.

In response to these concerns, the SEC undertook a revision to the proxy rules in 1992. One key element of the changes involved the narrowing of the definition of a solicitation – starting in 1992, public communications and declarations by shareholders of the manner in which they intended to vote are no longer considered solicitations under (revised) SEA Section 14a-1. While this clearly removed one important impediment to the coordination of shareholder opinion, legal scholars (e.g., Hornstein, 1993) have noted that the change is limited because, for example, private communication is excluded. A second key element of the reforms involved a provision, under SEA 14a-2(b) that excluded from the various pre-disclosure requirements any communication by or on behalf of any person who does not seek the power to act as proxy, though they remained constrained by the anti-fraud provisions of SEA Section 14a-9. While one consequence of this exclusion is that it allowed for a degree of communication between independent shareholders (who did not seek to act as proxy for each other) during proxy fights, the evidence in Choi (2000) suggests that the reforms only increased the proxy process participation of shareholders such as unions and religious groups with specific agendas.

Arguably a more consequential outcome of the 1992 exemptions to 14a-1 and 14a-2(b) is that it facilitated hedge fund activists. These activists usually do not seek the power to act as proxy for other investors, preferring instead simply to persuade other investors to vote in a manner consistent with their activist agenda, thus allowing them to benefit from the modifications to 14a-2(b). Further, much of their persuasion is achieved via public means, for example, by active (and sometimes aggressive) interventions during company investor calls or via aggressive media

campaigns involving public exchanges with company management. These interventions therefore benefit from the 1992 modifications to 14a-1. It is perhaps not a surprise the, as document by Brav et al. (2008) and others, hedge fund activism emerged as a major force in corporate governance around 1994.

A further effect of the 1992 reforms is that the modifications to 14a-2(b) effectively provided a broad exemption for all proxy advisory firms in their operations. While the legal clarity may well have been welcome in 1992 – Black (1990) suggests that prior to 1992 advisory firms such as the ISS were simply ignoring disclosure requirements and thus taking legal risk – in more recent times the exploitation of this exemption has become far more controversial. Following the 2003 modifications to the ICA and IAA that made voting, its disclosure, and the declaration and management of conflicts of interest mandatory for mutual funds and their advisers, the use of proxy advisory services has increased substantially. For example, Rock (2018) suggests that in underscoring the need to avoid conflicts of interest, the 2003 reforms to the ICA and IAA *"…created a compliance challenge. By then indicating reliance on guidelines or a predetermined policy of voting based on "the recommendations of an independent third party," the SEC gave a boost to… the proxy advisory industry."* (Rock 2018, p. 20-21). Over time, concern has grown on at least three fronts. First, the proxy advisory industry is highly concentrated, with only two major players, ISS and Glass Lewis, dominating the market. Second, while advising shareholders how to vote, some proxy advisers also advise target company management on how to influence shareholders. Finally, their recommendations are criticized for being opaque and (perhaps necessarily) subjective and sometimes "appear capricious, particularly on issues such as social responsibility" (Tett, 2019). These concerns have, for example, led the US Chamber of Commerce to lobby for additional regulation of proxy advisory services. We discuss empirical evidence that pertain to proxy voting advisors in Section 5.4.

While new regulation is not yet forthcoming, in August 2019, the SEC issued new guidance (SEC, 2019a) with regard to the degree to which the provisions of the SEA apply to proxy advisory services. In particular, the SEC reiterated that the opinions of proxy advisory services – notwithstanding the 1992 14a-2(b) exemption from pre-filing and disclosure – continued to fall within the definition of solicitation under the SEA, and thus was subject to the stringent anti-fraud

provisions of SEA 14a-9. The SEC went on to make several specific recommendations with regard to *how* a proxy advisory firm may provide reassurance that it was not in violation of SEA 14a-9. This could include, for example, "an explanation of the methodology used to formulate its voting advice on a particular matter (including any material deviations from the provider's publicly announced guidelines, policies, or standard methodologies for analyzing such matters)" (SEC, 2019a, p. 12). Thus, the SEC's efforts appear to be aligned with generating greater transparency in the operations and recommendations of proxy advisory firms. More ominously for such firms, the SEC also noted that: *"the staff is also considering recommending that the Commission propose rule amendments to address proxy advisory firms' reliance on the proxy solicitation exemptions in Exchange Act Rule 14a-2(b)"* (SEC, 2019a, p. 3). Simultaneously with this opinion, the SEC also issued a second guidance document (SEC, 2019b) that commented at length on the responsibilities of investment advisers with regard to fiduciary obligations in proxy voting. This includes a lengthy discussion (in question and answer form) of the considerations that investment advisers should undertake when employing the services of a proxy advisory firm to assist in fulfilling their fiduciary obligation to vote proxies in the best interest of their clients. Proxy reform remains an ongoing process.

There is significant variation in proxy rules globally. In the UK, proxy access is governed by the *Companies Act of 2006*. Shareholders have significantly more power in the UK conditional on a proxy vote, because shareholder votes are binding on corporate managers, whereas in the US shareholder proposals are only advisory.[6] However, proxy *access* itself is more challenging: in the UK a shareholder must own 5% of the voting shares (five times the threshold in the US) in order to sponsor a proposal.[7] Table 3 summarizes proxy access rules in the five largest economies following the US. The cross-country heterogeneity referred to above is evident from this table. The ownership threshold for proxy access varies between 1% and 10% while the lead time (ahead of the Annual General Meeting) for shareholders to make proposals known to management varies from 10 days

[6] Buchanan et al. (2012) also note two other sources of enhanced shareholder power in the UK relative to the US: in the UK, companies have limited power in comparison to the US to prevent shareholders from calling special ("extraordinary") general meetings; in addition director elections are determined by simple majority (often at such extraordinary general meetings, in contrast to the US where plurality voting occurs.

[7] Alternatively, a group of no less than 100 shareholder each owning no less than £100 each in market value can sponsor a proposal, imposing a significant coordination requirement.

to 56 days. There are also differences across major economies with regard to deadlines for firms to respond to or publish shareholder proposals.

[Insert Table 3 here]

In order to exercise meaningful influence via voice, it is key for institutional investors to have voting clout, i.e., a significant number of shares. In this regard, a different section of the SEA imposes significant restrictions on their ability to govern, arguably more so than proxy rules. The relevant requirements arise from SEA Section 13d, under which any person that owns 5% or more of a company's shares must file (within ten business days of crossing that ownership threshold) Schedule 13D providing information about themselves, their ownership, and intentions with regard to the firm. Perhaps more crucially the same requirement is jointly imposed on groups of investors who collectively own 5% or more of the firm's shares: the SEC's definition of a group is "two or more persons who agree to act together for the purpose of acquiring, holding, voting, or disposing of equity securities" (SEA, 13d-5). The disclosure required under section 13D, and the applicability of such requirements to groups of investors with common goals creates significant legal risk for institutional investors. Even without group disclosure requirements, the obligation for institutional investors to declare their intentions ex ante can (and does) lead to lawsuits by company managers on the grounds of concealment of true intent (Macey and Netter, 1987), with attendant costs and risks to the 13D filer. The group filing requirement increases legal risk immensely, because there may be scope for discontented corporate managers – unhappy with the exercise of shareholder voice – to question whether some investors who acted similarly ex post (perhaps for independent reasons) had agreed informally to act together ex ante. Black (1990) provides examples of several instances in which institutional investors have been subjected to lawsuits either alleging the existence of an undeclared 13D group or the delay in the revelation of a declared 13D group, and notes that US courts have allowed circumstantial evidence to demonstrate the existence of such groups. In fact, Black (1990) alleges that 13D regulations may sometimes be more restrictive than even the pre-1992 proxy solicitation rules – when shareholders could at most approach ten other shareholders to coordinate – when it comes to the exercise of voice by institutional investors:

> *If a proponent seeks indications of support from a few other shareholders before beginning a proxy campaign, has she unwittingly formed a group? The only sensible answer legal*

counsel would give is "maybe," which means "don't risk it." A proponent can safely contact 10 other shareholders under the Proxy Rules, but not under the 13(d) rules. (Black, 1990, p. 544)

Globally, there are a number of disclosure rules not dissimilar to the 13D regulation in the US. For China, Japan, Germany, the UK, and India, these rules are summarized in Table 4. Two points are noteworthy. First, inspection of the table makes it clear that there are significant similarities in the disclosure rules between the UK and Germany. This is because they both trace their origins to a single 2004 EU directive, the so-called Transparency Directive (EU Directive 2004/109/EC). As is often the case with EU directives, member states have a degree of leeway in implementing these in national law, so that regulation need not be identical across countries. Second, disclosure requirements stemming from the *EU Transparency Directive* are less onerous than those stemming from the US SEA. While the *EU Transparency Directive* simply requires disclosure of holdings and some information about the chain of ownership at 5% and at a number of thresholder thereafter, the US 5% disclosure threshold requires an explicit choice from blockholders – they have to decide whether to be passive (in which case they file Form 13G) or active (in which case they file Form 13D); in the latter case, they are also required to provide further disclosure of their intentions.

[Insert Table 4 here]

2.3 Incentives of Institutional Investors to Govern

The impact of the law on incentives is more subtle than its impact on obligations and ability to govern: while in the latter two the impact is primarily direct, the impact on the former is likely to be indirect, working through trade-offs imposed on institutional investors and potentially interacting with the reactions of their investors to any behavior that arises in response to such trade-offs. A full understanding of the impact of regulation on governance behavior thus requires careful modeling and empirical analysis and extends beyond the domain of the legal literature. The academic literature in finance has engaged – theoretically and empirically – with several aspects of the impact of the (law-induced) incentives of institutional investors on their governance behavior. As a result, we take a two-stage approach: in this section, we focus our discussion on how the legal environment *fosters* particular trade-offs for asset managers and how such trade-offs may vary

across different institutional investors, but leave a more detailed discussion of *how* such incentives affect governance behavior to Sections 4 and 5.

A key manner in which the legal framework ultimately affects incentives to govern is via constraints that the law places on fees that institutional investors can charge. The IAA forbids registered investment advisers from the charging of performance fees to clients based purely on fund profits unless these fees are symmetric in gains and losses (the so-called "fulcrum fee rule"), leading to the vast majority of mutual funds to charge flat assets under management fees (Elton et al., 2003). However, as Shadab (2009, p. 256) notes, there is a key exemption. The adviser may indeed charge performance fees when advising a fund which is exempted from registration under the ICA under clause 3(c)(7) or if all investors in the fund meet certain qualifying (net worth or investment) characteristics. Since hedge funds are almost universally organized to be exempt under clause 3(c)(7), this means that even following the tightening of regulation via the *Dodd-Frank Act*, hedge funds advisers are free to charge performance fees to their clients. Accordingly, the vast majority of management investment companies charge flat fees designated as a percentage of assets under management (AUM fees), while hedge funds charge a combination of such fees with (much higher percentage) performance fees designated on performance over some benchmark or watermark.

The preponderance of AUM fees fosters rather directly the temptation to increase assets under management and thus induces registered management investment companies to "compete for flow." The asset pricing literature persuasively documents that mutual funds respond in their trading and risk-taking behavior to such flow incentives (Brown et al., 1996, Chevalier and Ellison, 1997). Papers in the corporate governance literature, discussed in Section 4, show that such flow incentives may weaken the incentives of mutual funds to govern via exit and voice (Dasgupta and Piacentino, 2015; Song, 2017). Recent papers nevertheless also demonstrate how flow incentives can generate subtle positive governance effects by inducing mutual funds to support activist hedge funds in their engagement efforts (Brav et al., 2019; Cvijanovic et al., 2019).

The IAA's prohibition of asymmetric performance fees also makes it difficult if not impossible for registered investment companies to tie fees to returns from specific governance activities that may – in principle – generate high returns. For example, an activist engagement in a

firm may significantly enhance its value, and thus the portfolio value of a fund that holds a significant fraction of the firm's shares. Yet, if only the AUM fee fraction of the value enhancement (typically between 1% and 2% for mutual funds) can be earned by the fund, then there is little incentive to pay the significant costs associated with the activist engagement (Bebchuk et al., 2017).

Legal scholars suggest that a second manner in which the law affects governance incentives of management investment companies is via the requirements for the transparent and unconflicted use of voice discussed above in Section 2.1. Rock (2018) argues that these disclosure requirements have fostered "compliance type" incentives in governance. Referring to the 2003 SEC amendments to the ICA and IAA, Rock writes (p. 20-21):

> *"The SEC, in emphasizing money managers' fiduciary duties, and the extent to which conflicts of interest may breach those duties, created a compliance challenge. By then indicating reliance on guidelines or a predetermined policy of voting based on "the recommendations of an independent third party," the SEC gave a boost to "guideline based voting"… as well as to the proxy advisory industry."*

It is plausible that investment companies and advisers treat governance as a compliance issue. In indirect support of such a link, Bebchuk et al. (2017) and Rock (2018) note that the large asset management families have very small governance departments, and Rock (2018) also notes that the senior staff within these governance departments are not compensated in a manner that relies on the value of assets under management. However, the finance literature suggests that we should be cautious in attributing compliance incentives to asset managers when it comes to governance. For example, Iliev and Lowry (2014) show that there is substantial heterogeneity amongst mutual fund families in the degree to which they rely on third-party recommendations for their voting, with only 25% of such fund families following such recommendations uniformly. (Further related papers are discussed in Sections 5.) Similarly, a careful examination of the SEC 2003 amendments also suggests that the SEC considered, but did not implement, a proposed further change (SEC, 2003a, p. 12):

> *"The Commission has determined not to adopt the proposed requirement that a fund disclose in its annual and semi-annual reports to shareholders proxy votes (or failures to*

vote) that are inconsistent with the fund's proxy voting policies and procedures… Opponents of proxy voting record disclosure argued that the disclosure of inconsistent votes would be burdensome because it would require funds to analyze a large volume of proxy votes to determine whether any vote triggered the disclosure and then to provide a lengthy explanation to shareholders regarding each inconsistent vote…"

As a result, in practice, funds may have significant latitude with regard how they vote on a particular proposal at a particular firm: since large fund families (as is clear from the extract above) vote in a huge number of proxy proposals in any given reporting period, and it would not be difficult in principle to (quietly) vote in a manner that selectively violates its declared policy in a relevant case. This could, of course, have the benefit of rendering the exercise of voice less of a "compliance" issue as feared by Rock (2018), but it could also enable fund families to favor the management view in instances where they may have other connections (e.g., due to existing business ties) with portfolio firms. As we discuss in Section 4, the finance literature documents evidence of exactly such pro-management voting at the level of closely-contested individual proposals in individual firms with which large fund families have substantial 401(k) pensions management business ties (Cvijanovic et al. , 2016). In this context, it is worth pointing out that the legal framework fosters a further difference between registered investment management companies and hedge funds with respect to the exercise of voice: as Bebchuk et al. (2017) emphasize, since hedge funds cannot accept 401(k) investments, such funds may be less tempted to pro-management voting.

A final manner in which the legal framework affects governance incentives is through the nature of institutional investors' incorporation charters. As discussed in Section 2.2, state pension funds are often governed by elected boards with political objectives and may well have differing incentives from those of private funds (Black, 1992; Woidtke, 2002). Labor union pension funds, which are regulated under ERISA (like private pension funds), represent a particularly interesting case. As discussed in Section 2.1, the exercise of shareholder voice falls within the purview of ERISA fiduciary obligations: various communications from the DoL in the 1980s and 1990s established that proxy votes were to be treated as plan assets. However, the 2007 clarification issued by the DoL stated that ERISA treats the economic value of plan investments as primary – if there is a conflict between the obligation to vote and the obligation to maximize the economic value of plan assets,

then voting is not recommended. Thus, a plan that votes in a manner that reduces the economic value of plan assets would surely be in violation of ERISA fiduciary obligations, and thus at clear risk of lawsuits by plan beneficiaries. Yet, it turns out that ERISA fiduciary obligations have limited bite in the context of labor union pension funds, because the plan beneficiaries are workers whose interests may sometimes diverge from the economic value of the companies that employ them. For example, if a labor union pension funds takes proxy voting actions that seek to support workers' rights at a particular corporation inducing a potential loss in the value of that corporation, they would be *de jure* in violation of ERISA fiduciary obligations, but their *de facto* risk of a lawsuit would be minimal because the actions are benefiting exactly the people who have the right to sue them. Indeed, the literature has documented evidence of exactly such behavior: Agrawal (2012) shows that some labor union pension funds pursue worker's rights at firms in which they are significantly represented by aggressively voting against management recommendations in director elections.

3. Stylized Facts on the Importance of Institutional Investors

In this section, we present new stylized facts about the emergence and evolution of institutional investors as blockholders in firms, covering both firms in the US and internationally. We start with the US, using Schedule 13F data, to investigate how important institutional investors are as owners of publicly-listed firms. At the outset, we report data on the cross-sectional heterogeneity and time series trends of concentrated institutional stakes, measured at different block levels. We also document the distribution of concentrated stakes across types of institutions (e.g., pension funds, mutual funds, hedge funds, insurance companies, and banks). We then report the evolution of institutional ownership for five largest economies other than the US that we covered in our description of the institutional setting in Section 2 (namely China, Japan, Germany, the UK, and India).

3.1 Importance of Institutional Investors in the US

3.1.1 Data

We rely on two data source to produce stylized facts about the importance of block ownership by institutional investors in the US. First, we use quarterly stock ownership data from

Schedule 13F filings required by the SEC for all investment managers with over $100 million in holdings among a list of "13(f) securities." Rather than using the standard Thomson Reuters S34 database (TR), we rely on the Schedule 13F dataset compiled by Backus et al. (2019). This dataset covers the years from 1999 to 2017 and arguably has better coverage than the Thomson Reuters database during this sample period (Backus et al., 2019). We supplement the dataset with the list of Schedule 13F filers identified as hedge funds by Agarwal et al. (2013). This list includes about 1,200 hedge fund management companies. Second, we use the CRSP Survivor-Bias-Free US Mutual Fund Database, which includes a monthly history of each mutual fund's holdings. We use this database to construct blockholding data for mutual funds because Thomson Reuters's institution classifications are often unreliable. Data on security prices and shares outstanding are from the Center for Research in Security Prices (CRSP).

In our analysis, we focus on four block sizes: 1% blocks, 3% blocks, 5% blocks, and 10% blocks. An institution is set to hold an X% block if it holds *at least* X% of the shares outstanding. The literature has so far paid relatively little attention to blocks of 1% and 3%, compared to blocks of 5% or 10%. The reason is that crossing the 5% ownership threshold triggers a Schedule 13D or 13G disclosure. Similarly, an owner of a 10% block becomes a corporate insider and is therefore subject to the insider trading regulation defined in Sections 16(b) and 10(b) of the *Securities Exchange Act of 1934*. We also explore blocks of 1% and 3% as such relatively small percentage blocks can require large capital commitments at firms have large market capitalization. Further, such small blocks may be of key relevance for several governance mechanisms relevant to institutional investors. For example, such smaller blocks are arguably equally if not more relevant to governance via exit. Further, given the emerging evidence (discussed in Section 5.3.5) that multiple institutional investors engage in parallel in target firms, such small blocks may collectively play a key role in achieving governance outcomes. Stylized facts about such smaller blocks therefore fill an important gap in the literature.

3.1.2 Results

Table 5, Panel A, reports summary statistics on the number of institutional blockholders. The unit of observations in the panel is the security–reporting quarter. We find that the average (median) number of institutions with a 1% block *in a given security* is 11.19 (9.00). When we

consider 3% blocks, these statistics are 4.33 and 3.00, respectively. This finding shows that a typical firm has several blockholders that have the potential to play an active corporate governance role. When we consider large blocks, we find that the average number of 5% (10%) blocks is 2.40 (0.9), indicating that the average company has one to two large institutional blockholder, depending on the definition of "large".

[Insert Table 5 here]

In Table 5, Panel B, we repeat the analysis for blocks held by hedge funds. For such institutions, the average number of 1% and 3% blocks is 2.64 and 1.15, respectively, indicating that the average firm has a hedge fund blockholder in its shareholder base. The statistics also indicate that there is substantial variation in the number of hedge fund blocks across firms. For instance, whereas the 10th percentile of 5% blocks is zero, the 90th percentile of 3% and 5% blocks is 3.00 and 2.00, suggesting that a meaningful fraction of firms has several large hedge fund blockholders.

In Table 5, Panel C and Panel, we turn our attention to mutual funds. Panel C reports statistics at the mutual fund *company level*, implying that the results are directly comparable to the results in Panels A and B. Panel D instead consider blocks at the mutual fund level directly. The distinction between these two approaches to measure mutual fund ownership is important. While portfolio investment and selling decisions are typically made at the fund level, corporate governance decisions (e.g., how to vote) are usually made at the mutual fund company level.

In Panel C, we find that the average number of 1% and 3% blocks for mutual fund companies is 2.48 and 0.64. Hence, relative to hedge fund blockholders, firms have fewer mutual fund blockholders in their shareholder base. For instance, the average number of 5% hedge fund blocks is 0.68, while the average number of 5% mutual fund blocks is 0.29. The results also indicate that, on average, firm have both hedge funds and mutual funds in their shareholder base. For instance, the average number of 1% blocks for mutual fund companies is 2.48 and for hedge fund companies 2.64. Thus, it is likely that there is a considerable level of interaction between different types of institutional investors when important corporate governance decisions are at stake. In Panel D, the evidence indicates that, on average, a company has more than two 1% mutual fund blockholders. Further, a typical company has one 3% hedge fund blockholder but no 3% mutual

fund blockholder. This difference is consistent with investment restrictions that prevent individual mutual funds from investing a large fraction of capital in one security.

We next present a sequence of figures that document the time trend in concentrated institutional ownership. Figure 1 shows the fraction of firms with at least one block held by an institutional investor. The figure reveals a steady increase in the fraction of firms with at least one block held by an institutional investor. This evidence is independent of how we define block sizes. For instance, the fraction of firms with at least one 3% block increased from 65% in 1999 to more 90% in 2017. Similarly, the fraction of firms with at least one 5% block increased from 50% in 1999 to almost 80% in 2017.

[Insert Figure 1 here]

Figure 2 shows the fraction of firms with at least one block held by a hedge fund. Similar to the evidence on the population of institutional investors in the previous figure, hedge funds blocks became more frequent during last two decades. For example, the fraction of firms with at least one 3% hedge fund block increased from about 25% in 1999 to almost 70% in 2017.

[Insert Figure 2 here]

Finally, Figure 3 shows the fraction of firms with at least one block held by a mutual fund. Interestingly, whereas the frequency of mutual fund blocks has increased during the first half of the sample, the fraction of firms with mutual fund blocks has been stable during the second half of the sample. For instance, the fraction of firms with at least one 3% block increased from 25% in 1999 to about 50% in 2009 and has remained stable since then.

[Insert Figure 3 here]

3.2 Importance of Institutional Investors outside of the US

Having provided stylised facts on the importance of institutional investors in the US, we next turn to the evolution of institutional ownership for firms in China, Japan, Germany, the UK, and India. In Figure 4, we report the percentage of institutional ownership for each of these

countries over the period 2000 to 2017. The figures are constructed based on data in FactSet Ownership (previously FactSet/LionShares).

[Insert Figure 4 here]

A few important observations emerge from the figure. First, across all five countries, institutional ownership in firms has strongly increased over the sample period, consistent with the evidence from the US. In most countries, especially in the United Kingdom, Germany, the largest increase in institutional ownership occurred in the early half of the sample. China has experienced some decline in institutional ownership since about 2009. Second, the overall increase in institutional ownership was largest in the United Kingdom, followed by Germany, India and Japan, and China. Third, at the end of the sample period, institutional ownership is highest in the United Kingdom (42%), followed by Germany (29.4%), Japan and India (each about 20%), and China (about 10%).

In a next step, we focus on describing the evolution of an important dimension of institutional investor heterogeneity, namely foreign versus domestic institutional ownership. In Figure 5 we decompose total institutional ownership and report the evolution of foreign institutional ownership only. The figure shows that foreign ownership has also been strongly trending upwards over the sample period. At the end of the sample period, total foreign institutional ownership in firms in the UK is at 15%, followed by Germany, Japan, and India, where foreign institutional ownership is around 6-7%, and China, where it is only 2%. Interestingly, the evolution of foreign ownership differs substantially across countries. While it has steadily increased in the UK, foreign institutional ownership has decreased in Germany since the early 2000s, where it peaked at around 10% in 2004. China shows a stark increase in foreign institutional ownership since 2008 (it is zero until 2004 and then at less than 0.1% until 2008).[8]

[8] China enabled foreign institutional ownership from around 2003 with the introduction of the *Qualified Foreign Institutional Investors* (QFII) scheme, which allowed foreign investors to invest in the Chinese stock market within relatively strict limits. There are at least two reasons why we do not see a steep increase in foreign ownership before 2008. First, it might have taken some time for investors to be recognized by the Chinese authorities. Second, investors might have been cautious in the beginning. Further, additional reforms between 2005 and 2008 probably helped investors gain confidence in the stock market.

[Insert Figure 5 here]

Combining information from Figures 4 and 5, Figure 6 shows the time-series development of the *fraction* of foreign to total institutional ownership. An interesting observation from the figure is that the fraction of foreign ownership has practically remained constant since the mid-2000s for the UK, Japan, and India. Germany has experienced a decline in the fraction of foreign institutional investors since 2002, where about half of all institutional investors were foreign, while China has increased, as expected from Figure 5, a sharp increase in the fraction of foreign ownership in 2008 and then a secular decline again. Out of total institutional ownership, foreign ownership at the end of the sample in 2017 amounts to 35% in the United Kingdom and India, 30% in Japan, 24% in China and 20% in Germany.

[Insert Figure 6 here]

4. Theoretical Literature on Institutional Investors and Corporate Governance

4.1 Classical Theoretical Literature on Blockholder Governance

The theoretical literature on the role of institutional investors in corporate governance stems from the blockholder monitoring and engagement literature. The underlying need for blockholder monitoring arises from the separation of ownership and control in publicly traded firms coupled with the failure of compensation contracts and/or board monitoring to overcome the negative effects of such separation.[9] The classical blockholder monitoring literature has proposed three distinct (but interrelated) channels by which blockholders may govern firms.

At the *passive* end of the monitoring spectrum, blockholders may monitor firms via (the threat of) trade, also often referred to as "governance via exit" (Admati and Pfleiderer, 2009; Edmans, 2009). At the broadest level, in these models corporate managers take actions of varying desirability from the perspective of firm value, and blockholders trade on the basis of the

[9] For insightful recent surveys of the benefits and limitations of boards and executive compensation see Adams et al. (2010) and Edmans et al. (2020), respectively.

observation of such choices, impounding the impact of managerial actions into prices and delivering market discipline. By way of comparatively *active* monitoring, blockholders may take actions – e.g., behind-the-scenes engagement, public interventions, the presentation of shareholder proposals, voting on proposals, or the launching of proxy fights – in order to directly enhance firm value. Such activities are collectively referred to as blockholder "voice." The extensive theoretical literature (beginning with Shleifer and Vishny, 1986) on "governance via voice" has focussed on issues such as the role of block size, the number and size distribution of blocks (Winton, 1993; Edmans and Manso; 2011), and the costs of external monitoring (Burkart et al., 1997). Finally, at the most active end of the intervention spectrum, blockholders may govern firms via takeovers (Grossman and Hart, 1980). A few papers allow for blockholder trade while focussing on active monitoring via either takeover (Kyle and Vila, 1991) or voice (Kahn and Winton, 1998; Maug, 1998; Faure-Grimaud and Gromb, 2004), though in none of these papers is trade inherently a governance mechanism.[10]

The canonical models of blockholder monitoring are non-specific with respect to the *identity* of the blockholder: they apply equally well to (wealthy) private individuals and institutional investors. This is a consequence of the fact that such models feature governance actions that are readily accessible to any blockholder regardless of their identity. For example, for a given (qualifying) level of ownership, an individual blockholder is as well able as an institutional blockholder to place shareholder proposals on a company's proxy statement, to vote on such proposals, to gain information about management's actions, and to trade on such information. Indeed, the early history of shareholder engagement, which formed the backdrop for the original theoretical literature on blockholder monitoring, involves both individuals and institutions. In their depiction of the history of shareholder activism in the US, Gillan and Starks (2007) highlight the early role both of prominent individuals (e.g., Evelyn Davis, Lewis and John Gilbert, and T. Boone Pickens in the 1970s and 1980s) and of institutions (e.g., the public pension funds CalPERS and CalSTRS in the 1980s).

The non-specificity of the classical theoretical literature on blockholder monitoring with respect to the identity of blockholders stands in contrast to our specific interest in the role of

[10] Recent papers have generalized models that incorporate trading and voice (Back et al., 2018), modeled the choice between voice and takeovers (Burkart and Lee, 2018; Corum and Levit, 2019) and also considered the complementarity of governance via exit and voice (Dasgupta and Piacentino, 2015; Levit, 2019).

institutional investors per se. As a result, we do not dwell in any detail on this broader set of papers. For an excellent and comprehensive recent survey of this broader literature, we refer readers to Edmans and Holderness (2017). For our purposes, we focus on (broadly, more recent) papers that focus on institutional investors specifically. In other words, we trace the *response* of the theoretical blockholder monitoring literature to the significant growth of the asset management industry documented above.

There are two conceptual ways in which this newer literature has focussed specifically on institutions. First, this literature has identified institutions by focussing on "what they can do," i.e., by conditioning on abilities specific to institutional investors. Second, this literature has identified institutions by focussing on "who they are," i.e., by conditioning on the identity of institutional investors as *delegated* blockholders acting as agents of end-investors who provide them capital, which in turn defines their incentives to govern. We discuss these two strands of the literature in turn in Sections 4.2 and 4.3. Finally, the theoretical literature has recently focussed in on the effect of proxy voting advisors, who have gained prominence in the voting process given the obligations of institutional investors to vote. We discuss this in Section 4.4. Overall, though they are presented in an order reflecting the chronological development of the literature, by focussing on the ability to govern, the incentives to govern, and the obligations to govern, Sections 4.2, 4.3, and 4.4 form conceptual parallels to Sections 2.2, 2.3, and 2.1, respectively.

4.2 Theories centered on Institution-Specific Ability

Chronologically, the first set of theoretical papers that modelled factors specific to institutional investors in corporate governance focused on their ability as sophisticated traders. This strand of the literature was motivated by the growth of hedge funds, who are nimble and sophisticated traders. Early in the century, regulators, and practitioners expressed concerns that hedge funds were exploiting their trading ability, including access to sophisticated derivatives markets, to acquire voting power in excess of their economic interest thus nullifying the "one-share, one-vote" structure usually embodied in public firm charters (Grossman and Hart, 1988). Legal scholars (e.g., Hu and Black, 2007) argued that this phenomenon, often referred to as "empty

voting," could lead to perverse outcomes.[11] For example, if hedge funds could first acquire an excess of votes by borrowing shares on the record date of an important vote, but then skilfully trade to a short position in the period by the time the voting date arrived, then they could vote against a proposal that would otherwise enhance firm value in order to profit from their short position.

Brav and Mathews (2011) consider the economics of empty voting. They recognize the underlying trade-off that while hedge funds may have the incentive and ability to manipulate outcomes, they may also be better informed about the value inherent in individual proposals. Thus, especially when other shareholders are less likely to be informed and vote in the correct manner, empty voting may be value enhancing. However, Brav and Mathews (2011) also show that if it is relatively inexpensive to separate voting power from economic ownership at the record date (as a result of being able to borrow shares easily and cheaply), or if the existing shareholder base is sufficiently likely to vote in the correct manner, then the negative aspect of hedge funds' manipulation incentive may dominate, making empty voting a net negative.

Other researchers study a phenomenon closely related to empty voting, namely a situation in which a hedge fund can acquire a short position in a firm's equity while holding a long position in its debt close to a restructuring. In this case a hedge fund could again obtain trading profits by voting – as debt holder – against a restructuring proposal that would preserve or enhance firm value. This issue is particularly relevant since hedge funds are known to be involved in the vast majority of large debt-restructurings in the US (Jiang et al., 2012). Of course, restructuring proposals are endogenous, and corporate managers may potentially adjust their proposals to nullify such strategic manipulation. Zachariadis and Olaru (2017) consider when such manipulation may be possible despite the endogeneity of restructuring proposals. They show that such manipulation is feasible when non-hedge fund traders are net buyers in the equity market (providing cover to hedge fund short-selling) and debt and equity markets are informationally segregated (so that hedge funds purchases in debt markets do not affect their ability to short sell in equity markets) and that it is precisely under such circumstances that corporate managers will be most tempted to risk extracting higher value for shareholders by making aggressive restructuring proposals.

[11] The term "empty voting" is not meant to be taken literally, as in the situations under consideration hedge funds do not literally have zero economic interest in the firm.

Brav and Mathews (2011) and Zachariadis and Olaru (2016) apply to institutional investors specifically as the mechanisms rely on the ability of hedge funds to trade in a sophisticated manner across markets, borrowing and short-selling shares, trading simultaneously in debt and equity markets, and hedging economic exposure in derivatives markets. In a similar vein, the recent contribution of Edmans et al. (2019) focus on another distinctive aspect of institutional investors – that, by virtue of their size, they are *common* owners across large numbers of firms as a result of their size.[12] Their insight is to recognize that such common ownership has the potential to enhance governance via both exit and voice. This is because, when investors choose *which* of many potential firms to sell, their sale is more informative than if they held only a single firm. This increases the price impact of their sale which improves information aggregation (enhancing the exit governance mechanism) and simultaneously increases the cost to "walk away" from the firm (enhancing incentives to engage via voice). Interestingly, the positive characterization of the governance impact of common ownership in Edmans et al. (2019) stands in contrast to the negative focus of the empirical literature (surveyed in Section 5) which focuses on the negative, anti-competitive, effects of common ownership.

4.3 Theories on Blockholders as Agents

Institutional investors are – by definition – asset managers, i.e., they manage other people's money. This endows their role in corporate governance with a unique set of characteristics. When institutional investors hold equity blocks in firms they participate in a dual-layered agency relationship. On the one hand, as equity holders in the firms in which they hold blocks, institutional investors act as principals who must monitor the actions of their agents (corporate executives). On the other, institutional investors are themselves agents, acting on behalf of their own clients (fund investors) and are monitored by them. Thus, institutional blockholders are simultaneously principals and agents. The second strand of the theoretical literature takes this dual-layered agency relationship as a starting point to examine the role of institutional investors in corporate governance.

[12] Another contributory factor, particularly for mutual funds, are limits on holding concentrated positions in individual firms, which leads to a spreading of holdings over many firms.

The essence of how dual-layered agency structures may affect the governance role of institutional investors stems from incentives arising from the agency relationship between asset managers and their investors. Any aspect of incentives arising from such a relationship that leads institutional investors to behave differently from the stylized profit maximizing agents of the traditional blockholder monitoring literature (see Section 4.1) can affect the nature of corporate governance.

One key aspect of differences in incentives is canonical: almost by definition, an asset manager holding a block of shares will have a lowered level of direct interest, i.e., lowered "skin in the game" than a proprietary blockholder (who owns 100% of the block). The degree to which such skin in the game is reduced (relative to proprietary blockholding) may vary across types of institutions. At one extreme, retail-facing, large, long-only asset managers such as mutual funds tend to have very little skin in the game. According to Khorana et al. (2007) over half of mutual funds have zero managerial ownership. In contrast, smaller, less regulated vehicles such as hedge funds that cater to more sophisticated clients can have significantly higher skin in the game. The literature suggests that hedge funds' skin in the game can vary between around 7% (Agarwal et al., 2009) to 20% (He and Krishnamurthy, 2013).

A second key aspect the agency relationship between asset managers and their investors is shaped by regulation. As already discussed in Section 2.3, in the US the IAA forbids registered investment advisers from the charging of performance fees to clients based purely on fund profits unless these fees are symmetric in gains and losses (the so-called "fulcrum fee rule"). This leads the vast majority of mutual funds to charge flat assets under management fees (Elton et al., 2003). As discussed above this, in turn, fosters a temptation to increase assets under management and thus induces registered management investment companies to "compete for flow." Such competition for flow is central to the incentives of mutual fund managers (e.g., Brown et al., 1996; Chevalier and Ellison 1997). However, even hedge funds – which are exempt from registering as management investment companies under clause 3(c)(7) of the ICA and thus can and do have complex contingent

compensation contracts (see Section 2.3 above) – gain a majority of their overall compensation from future flows rather than from their explicit compensation (Lim et al., 2016).[13]

The theoretical literature focussing on the dual-layered agency problem has considered both the effects of skin in the game and the role of competition for flow in affecting the governance role of institutional investors. Dasgupta and Piacentino (2015) study the role of competition for flow and skin in the game in a dual-layered agency model of the exit mechanism. In their model, funds (institutional investors) are differentially skilled stock pickers who must choose amongst firms on the basis of firms' future cash flows. These cash flows, in turn, are determined by the quality of firms' governance, about which funds have private information. In poorly governed firms, executives may take value destroying actions. Funds observe such choices and then decide whether to sell or not. The noisy market reacts imperfectly to such trades.

Exit governance works best if blockholders sell whenever executives make value destroying choices, thus lowering prices and punishing the executives. A credible threat of exit makes corporate executives take value destroying choices less often. In the canonical exit model of Admati and Pfleiderer (2009), which features proprietary blockholders, the threat of exit is always credible, because a blockholder who observes executives making value destroying choices would rather sell now in a noisy market than hold and feel the full negative value impact. Dasgupta and Piacentino (2015) show that competition for flow reduces the credibility of the exit threat, weakening exit as a governance mechanism. Funds who execute on a threat of exit convey information about their own ex ante choices to their investors. By exiting, the fund highlights that it chose a poorly governed firm to hold a block in. This, in turn, reduces investors' beliefs about the fund's stock picking ability. This leads to outflows which is costly for the fund, making the fund reluctant to exit and reducing the credibility of the exit threat.

Such competition for flow is complemented by the skin in the game effect. Exit governance works better the more keenly blockholders feel the value reducing impact of executives' choices. The lower the skin the game, the less the fund will suffer directly from value reduction. Dasgupta and Piacentino (2015) also show that when blockholder voice is non-binding on corporate

[13] As Lim et al. (2016) find, flow considerations are more relevant for younger, growing hedge funds as older, successful hedge funds are often closed to new capital.

executives (as is the case for shareholder proposals in the US), then blockholders who compete for flow will also be less likely to intervene. This is because the blockholder's threat to exit if his intervention is ignored is less credible, making it likely that corporate executives will ignore that blockholder's voice, disincentivizing him from expending effort on interventions.

At the broadest level, competition for flow is a particularly salient manifestation of short-termism. For example, in the discussion above, when corporate executives make poor choices, institutional blockholders who compete for flow are hesitant to take the action (exit) that maximizes long-term payoffs, instead endogenously giving priority to the short-term gains and losses arising from retaining or losing assets under management. In an early contribution, Goldman and Strobl (2013) examine the implications of exogenously specified blockholder short-termism on the complexity of firm investments. In their paper, it is assumed that the horizon of a blockholder – interpreted as an institutional investor – is shorter than the amount of time required for the market to correctly value corporate investments. This tempts the blockholder to manipulate share prices, which executives try to counter by increasing the complexity of their investments. The overall effect is to reduce the informativeness of share prices, thus weakening monitoring via trade.

While Goldman and Strobl (2013) and Dasgupta and Piacentino (2015) both consider *passive* monitoring via trade, Burkart and Dasgupta (2020) consider whether competition for flow can induce short-termism in *active* monitoring as well. In particular, they show that activist funds who compete for investor flows may be sub-optimally myopic in their engagement strategy, taking actions that shift returns to their investors forward in time at the expense of long-term cash flows. In particular, activist funds excessively leverage their target firms, risking subsequent debt overhang if economic conditions deteriorate, significantly reducing the overall cash-flow generating potential of activists.

In a related but distinct context, Piacentino (2019) examines the governance impact of competition for investor capital by institutional investors who provide financing in *primary* markets. Such investors – venture capitalists – are differentially informed in Piacentino's model. Uninformed venture capitalists are reluctant to back start-up firms because they fear being revealed as being uninformed down the road, curtailing their ability to obtain additional or follow-on investor capital.

This improves the average quality of venture capital backed firms in primary markets, providing a "certification effect" and improving the allocation of financing to projects.

More recently, a number of papers have considered the role of competition for flow in *multiple* blockholder contexts. These papers demonstrate the nuanced impact of institutional investor incentives in a multiple blockholder setting. In the earliest of these, Song (2017) considers the interaction of a flow-motivated blockholder (a fund) with a second blockholder who is not flow-motivated (a proprietary blockholder). This interaction between dissimilar blockholders gives rise to two effects. First, as a result of the disincentive of the flow-motivated blockholder to intervene (as shown in Dasgupta and Piacentino, 2015) the proprietary blockholder recognizes that his effort is essential and may intervene more, i.e., free-riding is reduced. In turn, Song (2017) argues that the fear that the flow-insensitive blockholder may exit and make an inactive flow-motivated blockholder look bad in the eyes of his clients may actually induce him to intervene directly.

In contrast to Song's focus on interactions between dissimilar blockholders, Brav, et al. (2019) study the possibility of parallel engagements by *similar* blockholders in the form of "wolf packs" by several activist hedge funds who hold relatively small blocks. When engagement is costly, small blockholders under-engage relative to the social optimum. This is because of the public goods problem inherent in blockholder engagement: successful engagement efforts benefit even those blockholders who do *not* engage. While a social planner would account for gains to the full set of shareholders, individual blockholders only take into account private returns. A potential solution to such public goods problems takes the form of transfers across agents: rewarding those that provide the public good at the expense of those who do not. In this context, Brav et al. (2019) consider the impact of a dual-layered agency relationship in fostering parallel engagement. They argue that while reduced skin in the game worsens the public goods problem, competition for flow can ameliorate it. The mechanism works as follows. In Brav et al. (2019) only skilled funds can gauge the difficulty of an activist engagement, which means that participation in a successful campaign signals ability to fund investors. Such fund investors then gain reallocatable investor capital from those funds who do not participate, because fund investors wish to invest with skilled funds. Thus, effectively, investor flows forms an endogenous set of transfers that reward those blockholders who engage at the expense of those who do not, ameliorating the public goods problem.

Finally, like Song (2017), Cvijanovic et al. (2019) also focus on the interaction between different types of blockholders. They show that flow-sensitive blockholders may rush to sell out of a firm following the exit of an informed blockholder – potentially even ignoring their own information – fearing that they will otherwise be left invested in a firm that is likely to underperform, leading to outflow. This, in turn, enhances the price impact from the informed blockholder's exit, increasing his influence over management, enhancing governance via exit.

A key theme that emerges from the literature on dual-layered agency models is institutional investor heterogeneity. In Dasgupta and Piacentino (2015), Song (2017), and Cvijanovic et al. (2020) blockholders with differing incentives behave differently. Such differences in behaviour can lead to relevant interactions in governance as discussed above. This literature strongly suggests that empiricists should not expect institutional investors of different kinds to act identically as company stewards: the heterogeneity across blockholders provides a new focus for empirical analysis. We discuss empirical approaches to blockholder heterogeneity in Section 5.3, where we also outline specific ways in which the empirical literature has engaged with the theoretical predictions outlined here.

It is also worth noting in passing that while the theoretical literature has, to date, only considered dual-layered agency relationships, in reality the investment choices of institutional investors may create ownership chains characterized by *multi*-layered agency relationships. For example, as Figure 7 shows, US pension funds invest significantly in mutual funds. When they do so, they create (at least) a triple-layered agency relationship. Similar multi-layered agency relationships are created by investment in funds-of-funds. The study of multi-layered agency relationships in the context of corporate governance represents a potential growth area for the theoretical literature.

At a theoretical level, the recent contribution of Corum et al. (2020) considers a different source of heterogeneity across institutional investors, namely, whether they are active or passive investors. Their paper sheds light on the empirical debate about the governance impact of the rise of passive investment vehicles (see Section 5). In contrast to the theoretical literature discussed above, which focuses on the incentives of active funds to compete for flow, they look at reallocation of capital across three investment modes: private (non-intermediated) investment, investment in

passive funds, and investment in active funds. The size of each sector and the fees paid to funds in endogenously determined. Corum et al. (2020) note that both the fund size – which determines exposure to the firm – and fund fees – which determines the fund's skin in the game affect incentives to engage in costly monitoring of portfolio firms. In this context, the expansion of low fee passive managers does not necessarily worsen governance. If, for example, the growth of low-fee passive funds occurs at the expense of private (non-intermediated) investment without affecting the size of the actively traded sector, then governance can improve because despite their lower fees the increasing size of passive funds may induce monitoring. If, on the other hand, the growth of low-fee passive funds occurs at the expense of active funds, then governance can decline, particularly so for undervalued firms in which actively managed funds try to invest.

4.4 Theories on Institutional Investors and Proxy-Voting Advisors

As noted in Section 2, proxy advisory services play a key role in the governance efforts of institutional investors. This role is unique to institutional investors as a result of at least two factors. The first factor stems from scale. Large institutional investors such as mutual fund companies hold shares in many companies, and must – by law – vote in a manner consistent with the best interest of their investors. This is a challenging task and has engendered a market for voting advice, leading to the rise of proxy voting advisors such as ISS and Glass Lewis. The second factor is stems from regulation. As discussed in Section 2, the mandated public reporting of both voting policy and votes actually cast by registered investment companies since 2003 has increased scrutiny of institutional voting. This has fostered what legal scholars sometimes refer to as a "compliance challenge" for such institutional investors: it may simply be "safer" to outsource voting choices to external parties such as proxy voting advisors. In Section 5, we provide a careful discussion of the empirical evidence on the degree to which institutional investors rely on and are influenced by proxy voting advice.

The theoretical literature has lagged behind its empirical counterpart with regard to analysing the role of proxy advisors. However, the recent contribution of Malenko and Malenko (2019) provides a key analysis of several aspects of the economics of such information intermediaries. In their model, shareholders vote on a proxy proposal that may raise or lower firm value and can acquire information on the worth of such a proposal either by conducting (at some cost) private research or by paying a fee to a monopolistic proxy advisor. Shareholders then vote

on the basis of this information and their votes determine the outcome and thus firm value. Therefore, in Malenko and Malekno's model, the availability of good information across shareholders translates into higher firm value. In this context, the presence of the proxy advisor fosters a key trade-off: on the upside, it provides the option to purchase an informative signal; on the downside, it reduces incentives to produce (independent) private signals about proposal value by conducting (independent) research, a "crowding out" effect. This matters because when shareholders undertake their own research, errors in their assessment of proposal value are uncorrelated with each other, and will wash out over a large number of shareholders. In contrast, if all or many shareholders purchase the same signal from a proxy voting advisor, any errors in the proxy advisor's assessment will be correlated across (all or many) shareholders, leading to a higher probability of incorrect voting outcomes. In other words, as Malenko and Malenko (2019) insightfully observe, for any given fee charged by the proxy advisor, there is a minimal level of precision of the information produced by the proxy voting advisor below which its presence is actually detrimental to firm value because the crowding out effect dominates. Further, if the proxy voting advisor strategically sets its fee to maximize profits, a second inefficiency arises. A proxy voting advisor with low quality information is likely to charge a low fee, enhancing the crowding out effect precisely when the quality of advice is poor. In contrast, a proxy voting advisor with high quality information may set a fee high enough to even ration access to its information, precisely when it is most valuable.

Malenko and Malenko (2019) also sheds light on two issues that arise prominently in our discussion in Sections 2 and 5. First, the "compliance challenge" created by the post-2003 regulatory framework – as discussed in Section 2 – may make things worse: when institutional investors are motivated by a fear of litigation of regulatory censure, they are all the more likely to underinvest in private information production, exacerbating the crowding out problem. Second, the empirical literature discussed in Section 5 has focussed on the potential benefits of competition in the market for voting advice. However, holding the quality of advice constant, if competition lowers fees, it is again possible that the crowding out effect is enhanced.

5. Empirical Literature on Institutional Investors and Corporate Governance

In this section, we provide a thematic overview of the empirical literature on institutional investors and corporate governance. We focus on two key ways in which institutional investors feature in the empirical literature. First, institutional investor data have been used to examine a number of classical theories of corporate governance. While such underlying theories – as noted in Section 4.1 – are not specific to institutional investors (and predate the institution-specific theoretical literature discussed in Sections 4.1, 4.2, and 4.3) the ready availability of data on institutional investors have meant that such theories have often been tested using institutional data. As such, they also reveal relevant aspects of the role of institutional investors in corporate governance. This literature is reviewed in Section 5.2. Following this, we turn to our main interest, focusing on the strands of the literature that deal with institution-specific aspects of corporate governance. We discuss in detail the role of institutional heterogeneity in Section 5.3, and subsequently discuss the role of institutional voting and proxy voting advisors in Section 5.4. As a key preliminary to all of this, we begin our review of the empirical literature by discussing in Section 5.1 the data sources and methodologies that have been employed to examine governance effects of institutional investors.

5.1 Institutional Investor Data Types and Empirical Methodology

We review different sources of data that have been used to study the corporate governance role of institutional investors, including archival, case study, and survey data. We also discuss different settings that have been exploited to provide causal inference of the governance effects of institutional investors.

5.1.1 Institutional Investor Data Types

5.1.1.1 Archival Data on Institutional Investors

Most papers that study the effects of institutional investors on firm-level governance outcomes use data from Schedule 13F filings, which institutional investors in the US with at least $100 million of assets must disclose to the SEC (see Section 2). These data are filed and made publicly available in the SEC's EDGAR database and the data are also compiled by Thomson Reuters.

While having been a great source of data for many empirical papers in the literature, a disadvantage is that Schedule 13F reports are filed only on a quarterly basis. The data can be filed up to 45 days after the end of a quarter, which in turn implies that the filings reflect investment decisions made more than four months ago. Further, investors can request confidential treatment for certain holdings (Agarwal et al., 2013). The limited frequency 13F filings can be overcome, for example, with Australian data, where the Portfolio Analytics Database contains information on Australian institutional investors' portfolio holdings on a monthly instead of quarterly basis (it also contains data on institutional trading on a daily basis). These data are used in Gallagher et al. (2013) to examine whether trading can act as a governance mechanism.

Studies that focus countries other than the US typically use ownership data from national registries to identify institutional investor holdings (e.g., Achleitner et al., 2010 for Germany). However, a limitation of these datasets is that they often only contain ownership by investors that exceed a certain threshold (often 3% or 5%), that is, only owners with equity stakes above the threshold need to report their holdings. In Germany, for example, owners holding more than 3% in a listed company need to notify the German financial markets regulator BaFin and the company. As a result, many institutional investors that hold equity stake below this threshold do not need to file the information.

The first systematic analysis of institutional ownership data from several countries around the world is provided by Ferreira and Matos (2008), covering a total 27 countries. Ferreira and Matos (2008) obtain their data from FactSet Ownership (previously FactSet/LionShares), which in their sample contains institutional ownership on firms representing 40% of the world's market capitalization. Data coverage in FactSet Ownership on firm-level holdings has substantially increased since FactSet started to compile data in 1999, from about 35,000 stocks to 85,000 stocks internationally. FactSet Ownership collects these data from national regulatory agencies or stock exchange announcements, local and offshore mutual funds, mutual fund industry directories, institutions' webpages, company proxies, and annual reports. The availability of these data has triggered a series of papers that study the governance role of institutional investors, including Ferreira et al., (2010), Aggarwal et al. (2011), Erkens et al., (2012), or Bena et al. (2017). Ownership data from around the world, including ownership information on institutional investors, is also

available in Bureau van Dijk's Orbis database, though this data has been used little in governance research (an exception is Ginglinger et al., 2017).

A small number of studies examine daily trading information to capture changes in institutional investors' ownership in order to test how such changes affect voting outcomes (Bethel, et al., 2009; Li et al., 2019) or shareholder activism by hedge funds (Gantchev and Jotikasthira, 2018). The trading data are obtained from the ANcerno database, which has been used widely in asset pricing research (see Hu et al., 2018). An alternative data set which may be used in some future governance research is provided by Campbell et al., (2009), who infer daily institutional trading behavior from the Transactions and Quotes database of the New York Stock Exchange.

US studies that focus on specific institutional investor types, notably hedge funds, typically use data from Schedule 13D filings, obtained also from the EDGAR database. Investors acquiring more than 5% of a publicly traded company have to file with the SEC a 13D filing (within 10 days) if they have the intention of influencing the company's operations or management. Holderness and Sheehan (1985) use Schedule 13D filings to study the effects of large blockholders on targets. Brav et al. (2008) use these data to examine shareholder activism by hedge funds. Other papers using data on Schedule 13D filings to study hedge fund activism include Klein and Zur (2009) and Clifford (2008).

In addition to having to report their actual position at the time of filing, Item 5I of Schedule 13D requires the filer to report the date, price, and quantity of all trades in the target company executed during the 60 days that precede the filing date. Collin-Dufresne and Fos (2015) and Gantchev and Jotikasthira (2018) use this information to study trading behavior of Schedule 13D filers. These data are particularly useful as it provides high-frequency information about the block-formation process and can be used to provide evidence on the relationship between trading and corporate governance.

Schedule 13D filings also disclose the information on derivatives. Item 6 of Schedule 13D requires filers to disclose any derivative contracts that have been entered. Collin-Dufresne et al. (2020) collect the information on the usage of derivatives by Schedule 13D filers and show that Schedule 13D filers rarely use derivatives. Specifically, in about 98% of cases, Schedule 13D filers

decide to trade exclusively in the stock market. This finding suggests that derivatives may not be that attractive for this class of informed traders and that they play a minor role in activists' trading strategies.

Passive investors acquiring more than 5% of a publicly traded company are required to file with the SEC a 13G filing. Edmans et al. (2013) use Schedule 13D and Schedule 13G filings to study how stock liquidity affects the choice to file Schedule 13D versus Schedule 13G. Recently, Albuquerque et al. (2020b) model an investor's choice between filing Schedules 13D and 13G and use the model to estimate expected returns to activist and passive investing.

Another source of information on institutional blockholders are proxy statements, where companies disclose "principle" shareholders, i.e., entities that are the beneficial owner of more than 5% of shares outstanding. Since information about principle shareholders is typically obtained from Schedule 13G and 13D filings (and amendments to these filings), proxy statements are most of the time a less relevant source of information on blockholders. However, proxy statements become relevant when a group of shareholders ("dissidents") initiates a proxy contest and solicits votes in support of their director nominees and/or shareholder proposals excluded from proxy statement filed by management. Since proxy contests are often initiated by shareholders who do not file Schedule 13F and do not own more than 5% of shares outstanding, proxy statements can provide important information on the background and stock ownership of active shareholders. In their proxy statement, dissident shareholders disclosure their identities and intentions as well as the number of shares they beneficially own. For instance, Fos (2017) describes which types of shareholders stand behind proxy contests and shows that a particular class of institutional investors—activist hedge funds—sponsor more than 50% of proxy contests. In contrast, pension funds and mutual funds rarely sponsor a proxy contest, suggesting heterogeneous incentives to engage in hostile corporate governance.

Another important and frequently used source of data for studying the governance role of institutional investors is ISS Voting Analytics, which is based on Form N-PX filings of US investment companies (mutual funds) (see Section 2.1). The data contains voting records for firms around the

world and also includes the voting recommendation of the firm's management and of the proxy voting advisor ISS.[14]

A benefit of all these sources of archival data on institutional ownership, trading, and voting is that they allow researchers to establish whether institutional ownership, trading, and voting decisions are associated with beneficial governance outcomes. The data also allow for the analysis of how heterogeneity in institutional investor characteristics (e.g., investor origin, horizon, or type) affects these associations. However, by pure virtue of the data, a limitation of archival data is that they do not capture well specific engagement mechanisms as well as the channels through which institutional investors achieve beneficial governance outcomes. Researchers have therefore turned to case study and survey data to fill this gap.

5.1.1.2 Case Study Data for Specific Institutional Investors

Case-study based research, usually based on proprietary data, started in the mid 1990s. The first analysis that zeroed in on the governance effects of institutional investors was performed in Smith (1996), using a sample of 51 firms targeted by CalPERS over the years 1987 to 1993. The key benefit of the analysis in Smith (1996) is that it includes details on private engagements (internal memos and reports) not observed in archival data. Though only data from one institution is used, the analysis is insightful as CalPERS, the largest public pension fund in the US by the time of writing of the study, is considered a leader in shareholder activism.[15] A similar approach is employed in Carleton et al. (1998) using data access from TIAA-CREF, another major US pension fund, to study private negotiations between the investor and 45 portfolio firms between during the 1992-1996 period.

The literature saw a revival of case-study based papers with Becht et al. (2009), who use data on 30 engagement from the Hermes UK Focus Fund (HUKFF). They also document that most engagements takes places through private interventions, which would otherwise be unobservable.

[14] A comprehensive database on voting by non-US institutional investors for firms around the world does not yet seem to exist.
[15] Another beneficial feature of the data in Smith (1996) is that he can use internal estimates by CalPERS of the costs of engagement to calculate a measure of the net benefit of activism.

Their analysis is enriched by three cases studies that illustrate precisely how the investors engages portfolio firms. Becht et al. (2009) have access not just to HUKFF's correspondence with the target firms, but also to data on internal organization processes of the investor. This enables them to precisely identify the connections between the activist's actions and stock returns.

The first analysis using proprietary data that looks at ESG engagement more broadly is offered by Dimson et al., (2015), who exploit access to the electronic file of an anonymous institution to examine engagement in 613 US firms from 1999 to 2009. Similar data is used in Barko et al., (2018), who study 847 ESG engagement at 660 firms over the 2005-2014 period from another anonymous institutional investor. While prior studies focus mostly on activism in large firms, Pezier (2020) uses proprietary data from a UK investor to examine the investor's engagement among *small* cap UK firms. In a recent study, Hoepner et al. (2020) use data from Hermes Equity Ownership Services (HEOS) on 1,712 engagements across 573 firms to examine private engagement processes. HEOS is considered the most influential activist when it comes to promoting and developing ESG standards at firms. The authors use proprietary information from HEOS's engagement database, including shareholdings, engagement activities, action reports, and the investor's measures of engagement success.

A new approach in this strand of literature is provided by Doidge et al. (2019), who combine public and proprietary information on collective activism conducted by institutional investors that form part of the Canadian Coalition for Good Governance (CCGG). The CCGG engages firms via letter writing and private meetings with independent board members. A benefit of their data is that it allows them to measure how investors coordinate engagement.

Case-study based data have benefits but also costs. Next to being able to identify the exact channels through which engagement affects firm value, the main benefit of these data is that they include information on the investor's measures of engagement success, usually some milestones that are tracked internally. A natural limitation of studies using data from only one investor is that general conclusions about the success rates of activism are hard to make. It is also possible that the investors that made their data available belong to the more successful activists, as poorly performing institutions may be less willing to share their data.

5.1.1.3 Survey Data on Institutional Investors

A small number of papers have used surveys among institutional investors to understand governance-related questions that are hard to answer with archival or case study data. This follows a trend in other areas of finance where surveys have provided new insights into topics such as corporate financing (Graham and Harvey, 2001), capital allocation Graham et al., 2015) (Graham et al., 2015), investor relations (Karolyi et al., 2020), or ESG investing (Amel-Zadeh and Serafeim, 2018).

The first survey-based analysis is provided in McCahery et al., (2016), who use a questionnaire among 143, mostly very large, institutional investors to understand how they engage with portfolio firms. A benefit of their survey is that it allows for a better understanding of governance activities that take place behind the scenes as opposed to publicly. Further, they are able to provide evidence on specific predictions related to the (threat of) exit that have not been tested using other forms of data. A related approach is used in Krueger et al. (2020), who survey 439 institutional investors about the importance of climate risks in the investment process. Both papers highlight that, in terms of generalizability, their respondent group is likely biased toward investors with a relatively high awareness of corporate governance (or climate risks) issues, and possibly with higher credentials in addressing both sets of issues. The reason is that such investors are more disposed to participate in their surveys. Moreover, some of their survey responses were obtained at ESG conferences.

A survey-based database that recently became available is offered by the Principles for Responsible Investment (PRI), an institution founded in 2006 by a group of the world's largest institutional investors with support from the United Nations. Institutional investors that are signatories of the PRI are required to provide answers to a set of survey questions on governance and governance-related questions that are filed in an annual report. Questions included in the survey relate to proxy voting policies, shareholder engagement, or ESG integration. As the responses are non-anonymous, it is possible to link the responses to investor characteristics. The first analysis of these data is conducted in Gibson et al. (2020), using responses from the PRI surveys of the years 2014 to 2018.

As already mentioned, a challenge in survey-based studies is that the respondent group is unlikely to be representative, which requires some thinking how response bias may affect the interpretation of the results. As explained, it is likely that the responding investors are biased toward the more active (or activist) investors, i.e., towards investors that care relatively more about governance topics among the population of institutional investors. However, understanding the preferences of these investors might be particularly important because they are more likely to shape the governance of firms. To evaluate any potential bias, it is insightful to examining characteristics of responding versus non-responding institutional investors. Another is the risk that the respondents may answer in a strategic or untruthful fashion. To mitigate this concern, studies usually guarantee that respondents' individual answers are treated as confidential.

5.1.2 Empirical Methodologies to Identify Governance Effects of Institutional Investors

A challenge in studying the effects of institutional ownership on corporate governance is that both variables may be affected by other variables that cannot be controlled for. This endogeneity makes it difficult to establish the causal effects of institutional ownership. Several approaches have been used to obtain some level of exogenous variation in institutional ownership (or their monitoring incentives), in particular event studies based on activism campaign announcements, shocks resulting from index inclusions, unexpected voting outcomes, extreme fund flows, and investor distraction.

5.1.2.1 Event Studies

A popular approach to study the effect of institutional investors on firm value is the event study analysis of activism campaign announcements, with the goal of measuring the information effect of these event on the market price of firms. Holderness and Sheehan (1985) adopt such event study methodology to evaluate stock market reaction to Schedule 13D filings by six prominent activist investors. Brav et al. (2008) and Klein and Zur (2009) study stock price reactions to Schedule 13D filings by activist hedge funds, and Fos (2017) evaluates valuation consequences of proxy

contest announcements. All of these papers document a positive and significant stock price reactions to activism campaign announcements.

The literature has considered two primary explanations for why activism campaign announcements are associated with positive announcement returns. On one side, market participants could anticipate activist investors to increase future cash flows by influencing the firm's corporate policies ("value creation"). On the other side, activist investors could be better at picking undervalued stocks ("stock picking"), that is, part of the returns to activism announcements would have been observed anyway.

In order to separate value creation from stock picking, Brav et al. (2015a) explore stock market reactions when activists switch from a passive Schedule 13G filing to an active Schedule 13D filing on the *same* target firm The key idea behind this approach is that the value from stock picking should be obtained when a Schedule 13G is filed, while the value of a "governance treatment" is identified with the announcement return when the investor switches from a Schedule 13G to a Schedule 13D.

In a recent paper, Albuquerque et al. (2020b) rely on structural estimation to separate value creation and stock picking components. The authors model an investor's choice between filing Schedules 13D and 13G, and use the model to estimate expected returns to activist and passive investing. They find that more than 75% of Schedule 13D announcement returns can be attribution to value creation. When they consider a subsample of filings by activist hedge funds, they find that more than 92% of Schedule 13D announcement returns can be attributed to value creation.

5.1.2.2 Index Decompositions

The use of index inclusions as a positive shock to institutional ownership is first used in Clay (2002), who uses additions of firms to the S&P 500 index. Subsequent papers that also use this approach include Ferreira and Matos (2008), who exploit additions to the MSCI All-country world index, and Aghion et al. (2013) using also the S&P 500. The idea behind the approach these papers is that institutions that track an index are forced to invest in a company that gets added to an index, which in turn causes an increase in institutional ownership. An important underlying assumption is

that index inclusion affects governance outcomes only through its effect on institutional ownership (the exclusion restriction).

A series of more recent papers build on this early work by exploiting more explicitly variation in institutional ownership around the *cutoff* used to calculate membership in the Russell 1000/2000. This revised approach tries to address the concern that the exclusion restriction may have been violated in the earlier studies because index inclusion is based on stock market performance, which may either reflect or affect governance outcomes. The more recent papers therefore exploit that portfolio weights within the two indexes are value-weighted, so that the smallest stocks in the Russell 1000 have small index weights, while the largest stocks in the Russell 2000 have large weights (they are larger by a factor of about ten). As a result, for every dollar invested in the two indexes, very little is invested in stocks at the bottom of the Russell 1000, but a lot is invested in stocks at the top of the Russell 2000. This approach makes it more credible that the exclusion restriction is fulfilled, as performance differences above versus below the Russell 100/200 threshold are relatively close to random.

The benefit of these differences in index weights is that they lead to higher (lower) institutional ownership at firms at the top of the Russell 2000 (bottom of the Russell 1000), which is empirically used in a regression-discontinuity design (RDD) or in instrumental variables (IV) regressions. Studies using the RDD framework exploit differences in institutional ownership of firms just above (i.e., at the bottom of the Russell 1000) and below the threshold (i.e., at the top of the Russell 2000), assuming that firms around the threshold are identical in all other dimensions (Boone and White 2015). Studies that implement an IV design instrument institutional ownership either with an indicator that captures whether firms switch between the two indexes (Fich et al., 2015; Schmidt and Fahlenbrach, 2017), or with an indicator of whether firms are assigned to the Russell 2000 (Appel et al., 2016; Crane et al.; 2016).

Wei and Young (2019) criticize the use of Russell index reconstitution arguing that a problem with prior studies is that they exhibit selection bias. Notably, they show that firms close to, but on opposite sides of, the Russell 1000/2000 cutoffs already have different levels of institutional holdings *before* the index reconstitution takes place.

5.1.2.3 Discontinuity in Voting Outcomes

Institutional investors often sponsor shareholder proposals that aim to influence corporate governance practices. If these proposals improve the quality of corporate governance and enhance firm value, one would expect to observe a positive stock price reactions to the passage of such proposal. An obvious endogeneity concern related to such analysis is that the passage of a proposal is anticipated and therefore does not move prices.

To overcome this concern, Cuñat et al. (2012) use a regression discontinuity design on the outcomes of shareholder proposals in annual meetings. The key idea of the approach is to compare the stock market's reaction to governance proposals that pass by a small margin to those that fail by a small margin. The identification assumption is that for "close" proposals, passing is uncorrelated with firm characteristics. Using this methodology, Cuñat et al. (2012) show that shareholder governance proposal that passes yields an abnormal return of 1.3% relative to one that fails.

In a recent paper, Bach and Metzger (2019) cast some doubts on the internal validity of this approach. Specifically, they show that close votes on shareholder proposals are disproportionately more likely to be won by management than by shareholder activists. They find that there have been approximately 75% more shareholder proposals rejected by a margin of one percent of shares outstanding than proposals that were approved by a similarly narrow margin.

5.1.2.4 Unexpected Mutual Fund Outflows

Index inclusions are less suitable in studies that use high frequency data on ownership changes by institutional investors, as inclusions take place very infrequently. Gantchev and Jotikasthira (2018) therefore take a different approach to address the concern that firm-level changes in institutional ownership are endogenous – they use the trading in other stocks, outside of the firm's industry, as an instrument for institutional ownership. This approach builds on the idea that institutions experiencing large in- or outflows often scales their stock positions proportionally up or down (see Coval and Stafford, 2007; Edmans et al., 2011). Relatedly, Michaely and Vincent

(2013) use changes in institutional ownership that originate from mutual fund outflows to obtain exogenous variation.

Two recent studies by Berger (2019) and Wardlaw (2020) raise methodological concerns about this approach. Berger (2019) argues that selection bias drives changes in corporate policies for firms affected by mutual fund outflows. Specifically, she shows that firms affected by outflows alter financial policies compared to control firms even when no mispricing event occurs. Wardlaw (2020) shows that the standard approach to computing outflow-induced price pressure produces a measure that is a direct function of a stock's actual realized return during the outflow period, raising concerns about the exogeneity of the outflow measure to firm valuation and performance.

5.1.2.5 Investor Distractions

Instead of exploiting variation in institutional ownership, Kempf et al., (2017) take a different approach and use a shock to the monitoring abilities of institutional investors. They thereby exploit distraction of institutional investors owning a specific firm that arises from unrelated industry performance shocks in other portfolio firms. The same setting is recently used in Liu et al. (2020) to show that institutional investor distraction weakens board oversight.

5.2 Evidence on Governance Effects

Our discussion will start with findings of the effects of institutional ownership on firm outcomes. Hereby, we discuss findings on the relation between ownership by institutions and firm value, corporate investment, or CEO turnover. We also summarize evidence on the specific governance channels used by institutional investors to achieve these firm outcomes. We start by presenting evidence on voice before turning to (the threat of) exit. An extensive survey on the literature of shareholder activism is also provided by Denes et al. (2017). While the papers discussed in this Section 5.2 mostly provide evidence supporting the classical theories of blockholder governance, Section 5.3 focuses specifically at evidence on institutional investor heterogeneity.

5.2.1 Evidence on Governance through Voice

Within the area of voice, we start with studies that document evidence on engagement channels used by institutional investors (e.g., shareholder proposals and voting by institutions). We then cover findings on effects of shareholder engagement. Results that speak directly to heterogeneity in institutional investor ownership are discussed in Section 5.3.

5.2.1.1 Evidence on Effects of Engagement Channels and Firm Value

The body of evidence on how engagement by institutional investors affects firms is based on studies that either examine shareholder proposals and voting by institutions or their direct engagement (intervention) of firms.

a.) Shareholder Proposals and Voting

The first empirical study on activism by institutional investors using shareholder proposals is provided by Karpoff et al. (1996), who examine 522 shareholder-initiated proxy proposals on corporate governance issues between 1986 and 1990 at 269 firms. They find no evidence that such proposals are triggered by poor firm performance but also that they do not lead to improved performance or valuation in the future (even if proposals get a lot of support). The first analysis of proxy voting records was performed by Gillan and Starks (2000), who study 2042 shareholder proposals on governance topics submitted at 452 firms between 1987 and 1994. They find that proposals sponsored by institutions gain substantially more support than proposals sponsored by individuals. However, the proposals by institutional investors appear to have no effects on firm value. Research on proxy voting increased substantially after 2003, as the SEC now required mutual fund to disclose proxy votes on Form N-PXs (see above). While shareholder proposals in these (and other) early studies provide little evidence for value increases, Denes et al. (2017) show that more recent evidence find small positive valuation effect. A good example is the influential study by Cuñat et al., (2012), who examine close votes shareholder proposals, document that proposals that pass with a small margin earn an abnormal return compared to those that fail with a small margin. In a recent study, He et al. (2020) examine proposals on E&S topics. They show that, even though such

proposals nearly always fail, investors' support for these proposals contains information regarding future risks that firms face.

b.) Evidence on Direct Engagement

Most evidence on the effects of direct engagement by institutional investors comes from three sources: (i) studies of hedge fund activists; (ii) case studies of individual investors; (ii) survey-based studies. Within the first category, the first empirical evidence is provided by Brav et al. (2008). They document an abnormal return around the announcement of activism, captured using the filing of a Schedule 13D, is approximately 7%, with no reversal during the subsequent year. If the objective of the activists is to achieve a sale of the target company or to change its business strategy (refocusing, spinning off non-core assets), then this is associated with the largest positive abnormal announcement returns. Klein and Zur (2009) also study activism by hedge funds. They find that confrontational activist campaigns lead to an increase in share price not only around the 13D filing date itself but also in the following year and hedge funds' proposals have success rates of around 60%. Moreover they find that hedge funds target profitable and healthy firms. Greenwood and Schor (2009) explore the reasons for high abnormal returns upon 13D filings of hedge funds. They show that announcement returns and long-term abnormal returns are high for companies that are acquired but not different from zero for those that are not. A comprehensive survey on the literature on hedge fund activism is provided in Brav et al. (2010). In a recent study, Bebchuk et al. (2020) study settlement achieved by hedge fund activists with target firms and document that such arrangement are accompanied by positive stock price reactions. Further, they are subsequently followed by CEO turnover, higher shareholder payouts, and improved operating performance.

Within the second category, Smith (1996) using, as explained above, data from CalPERS to explore the firm characteristics of the targeted firms, shows how they react to the engagement, and whether firm value is eventually affected. A similar approach is employed in Carleton et al. (1998), using data access from TIAA-CREF to show the dialogue between TIAA-CREF and the targeted firms during the period between proxy filing and proxy voting, with the objective being the improvement of firm governance. The study shows that in more than 95% of cases TIAA-CREF was able to reach an agreement and in more than 70% of these cases no vote was needed. Becht et al. (2009) document for the investor HUKFF that most engagements takes places through private

interventions and that such engagement leads to increases in firm value. Dimson et al. (2015) analyze engagement on ESG issues, which is associated with positive abnormal returns over the subsequent year. While successful engagement is related to an even higher return, unsuccessful engagements have neither positive nor negative implications. They find that firms with poor performance, inferior governance structure, greater reputational concern and higher institutional ownership are more likely targets of campaigns. Evidence in support the conclusion that ESG engagement increases value comes from Barko et al. (2018). Hoepner et al. (2020) use proprietary information from HEOS's engagement to show that engagement reduces firm risk. Becht et al. (2017) show that if engagement of activists yield positive outcomes they will increase the stock price otherwise the engagement has no effect. The most profitable outcomes is related to corporate takeovers.

Within the third category, McCahery et al. (2016) document widespread use of behind-the-scenes engagement among their survey respondents, which highlights the importance of a survey or case study approach to better understand governance effect of institutions as such activities are hard to measure from observational data only. Their findings also indicate that institutions first try to engage privately with portfolio firms, which by definition is not observed, and only take a public route when private engagements were unsuccessful.

5.2.1.2 Effects on Corporate Policies

a.) Information Efficiency and Reporting

A series of papers has documented that institutional ownership has beneficial effects of information efficiency and financial reporting quality. Boone and White (2015) show that higher institutional ownership leads to greater management disclosure, higher analyst following, and subsequently to higher stock liquidity. Similar evidence comes from Bird and Karolyi (2016), who find that an increase in institutional ownership is associated with longer Form 8K filings with more graphical information. They further show that not just the quantity but also the informativeness of disclosure improved, which is measured based on the absolute cumulative abnormal returns following 8K Filings. Both papers exploit the Russell reconstitutions to obtain causal estimates of their results (see Section 5.1). Burns et al. (2010) find that institutional ownership is positively

related to the probability of financial misreporting. Interestingly, though, this effect becomes negative if institutional ownership is highly concentrated, constituting a situation where monitoring incentives are strong.

b.) Payout and Capital Structure Policy

Grinstein and Michaely (2005) examine the preferences of institutional investors with respect to payout policies. They find that institutional investors select to invest in dividend payers rather than in non-dividend payers. Within dividend payers, institutional investors prefer firms that pay lower dividends and they prefer repurchases over dividends. Further, they find no evidence that higher institutional ownership leads to an increase in dividends, repurchases or total payout in the future. Crane et al. (2016) revisit the latter finding and use Russell index reconstitutions to obtain exogenous variation in institutional ownership. Using this setting, they show that firms pay more dividends and repurchase more shares when they have higher institutional ownership. For hedge funds, Brav et al. (2008) find that activism leads to an increase in target firms' payouts.

Michaely and Vincent (2013) examine the relation between capital structure choices and institutional ownership. They document that higher institutional ownership leads to lower leverage. The lower leverage originates from more equity issues and from fewer debt issues. Michaely and Vincent (2013) obtain identification from S&P 500 index changes and mutual fund outflows.

c.) Productivity, Innovation, Allocation Efficiency

Baysinger et al. (1991) document a positive relation between institutional ownership concentration and R&D expenditures. To achieve causal evidence, Aghion et al. (2013) exploit S&P 500 additions to show that greater institutional ownership improves innovation. Fich et al. (2015) document that higher institutional ownership leads to more efficient M&A decisions. Focusing on hedge funds, Brav et al. (2015) study how activism affects firms' productivity and asset allocation. They show that following interventions those plants that were not sold experienced an increase in productivity, which is partly attributed to an increase in investment in information technology. Further, the authors also show that low productivity plants were sold and capital was reallocated.

d.) Executive Compensation and Turnover

Hartzell and Starks (2003) find that institutional ownership s positively related to the pay-for-performance sensitivity of executive compensation and negatively related to the level of compensation. They argue that these results show that institutional investors serve a monitoring role in mitigating the agency problem between shareholders and executives. Consistent with this argument, Mullins (2014) finds that higher institutional ownership is also associated with increased CEO incentive pay. Ertimur et al. (2011) find that institutional shareholder activists target firms with high CEO pay. Further, voting support for the activists' proposals is higher if CEO pay was excessive and lower if it was related to performance. Fernandes et al. (2013) explore CEO compensation around the world and find that an increase in institutional ownership, specifically of foreign-based institutions, is associated with higher pay and higher equity compensation for CEOs. It also leads to a convergence of pay to US level.

Looking at executive turnover, Parrino et al. (2003) find that selling (exit) by institutional ownership leads to subsequent increases in forced CEO turnover. Del Guercio et al. (2008) analyze the effect of institutional investors to withhold votes towards directors' elections to voice discontent with management performance and governance. They show that target firms experienced a significant increase in forced CEO turnover.

Helwege et al. (2012) find that activism by institutional investors positively affects executive turnover, while the role of exit as a driver of turnover seems to have decreased over time. Further, Kang et al. (2018) find that number of blocks that a firm's large institutions hold is positively associated with forced CEO turnover-performance sensitivity and higher firm value.

Fos (2017) and Gantchev et al. (2019) show that firms change corporate policies not only after institutional investors engage in governance through voice, but also when firms realize that the likelihood of intervention increases. Fos (2017) shows that when the likelihood of a proxy contest increases, firms reduce cash holdings and invest less, increase leverage, and increase payouts to shareholders. Gantchev et al. (2019) show that the effects of hedge activism reach beyond targeted firms, as non-targeted peers make similar improvements under the threat of activism. When threat perception (as measured by connections to past targets) increases, firms are more likely to increase leverage and payout, decrease capital expenditures and cash, and improve

return on assets and asset turnover. These results are consistent with the threat of a proxy contest and threat of hedge fund activism reducing agency costs of free cash flow (Jensen, 1986).

5.2.3 Evidence on Governance through Exit

Next, we focus on the evidence supporting (the threat of) exit as an important governance mechanism by institutional investors. A key challenge in this literature is that it is difficult to empirically capture the exit threat which, by itself, is unobservable. Most research in this area has therefore tried to identify circumstances in which the threat is likely to be stronger. The first empirical analysis of the importance of the exit mechanism is provided by Parrino et al. (2003). Focusing on observed trading by institutional investors, they show that exit can have beneficial effects because selling is associated with higher subsequent CEO turnover.

While this literature has seen little new work since Parrino et al. (2003), theoretical progress that was made in the exit literature around the year 2010 (Edmans, 2009; Admati and Pfleiderer, 2009; Edmans and Manso, 2011) has sparked a series of new papers. These papers have in common that they take specific predictions of these exit models to the data. Edmans et al. (2013), for example, document for hedge funds that governance through the exit threat increases when the liquidity of a stock is higher. This effect seems to be stronger, as predicted by theory, when executive pay is more sensitive to the stock price. Edmans et al. (2013) measure the threat of governance through exit based on whether an institution has filed a Schedule 13G, which is a filing that explicitly signals that an investor will *not* use direct activism (it would otherwise have to file a Schedule 13D), leaving the exit threat as the only remaining governance tool. Similar evidence is provided by Bharath et al. (2013) who document that firms with larger blockholdings experience increases in firm value when stock liquidity increases. Again, this effect is strongest if executive pay is more sensitive to the stock price, a situation in which the exit threat becomes more credible.

Dimmock et al. (2018) use a different setting to shed light on how credible the exit mechanism is. Specifically, they exploit the role of a potential tax liability on capital gains that may have accrued on a stock. Such a liability makes it more costly for an institutional investor to sell a stake in a firm, which plausibly reduces the credibility of an exit threat. Indeed, Dimmock et al.

(2018) document that greater capital gain lock-ins reduce the likelihood of exit being used as a governance tool (intervention becomes more likely).

Two recent papers examine more closely the interaction of voice and exit as well as interplay between different investors when it comes to the effectiveness of exit. Becht et al. (2019) use proprietary data from a large UK-based asset manager to assess the impact of voice on exit. Among other things, they document that "Against" votes at the shareholder meeting by the asset manager (voice) leads to stock selling (exit), and even more so when the asset managers internal analysts downgraded the stock. Building on their own model (see above), Cvijanovic et al. (2019) examine how institutional investors react to each other's exit. They document first evidence for correlated exit, that is, the result that following an exit in discontent by an activist hedge fund, (flow-motivated) mutual funds sell out of the target firms significantly more than (value-motived) non-mutual funds.

Instead of using archival data as most other papers, McCahery et al. (2016) exploit a survey instrument to study additional dimensions of the exit threat. A benefit of their analysis is that they are able to directly ask institutional investors how plausible they consider the exit mechanism to be. They provide four key findings. First, the investors in their survey view exit as a viable strategy, with 49% (39%) stating that they had exited a portfolio firm over the past five years because of dissatisfaction with performance (governance). Second, 42% of respondents believe that the *threat* of exit is effective in disciplining management. Third, their respondents state that the effectiveness of an exit threat depends on whether other investors also exit for the same reason, the size of the investor's equity stake, managerial equity ownership, and whether other large shareholders are also present. (The importance of the decision by others to exit is consistent with Cvijanovic et al., 2019). Fourth, the investors in their survey further believe that exit is a complement to voice rather than a substitute, with intervention typically occurring prior to a potential exit.

5.3 Institutional Investor Heterogeneity

Having summarized and evaluated the broad evidence on the role of exit and voice, we next highlight findings indicating important differences across institutional investor types in the governance of firms. We therefore focus on the extent to which existing work indicates that

differences in institutional investor governance incentives, locations, investor horizon, passive holdings, as well as business ties (conflicts of interests) matter for governance.

5.3.1 Institutional Investor Governance Incentives

The review of the theoretical literature in Section 4.2 has shown how dual-layered agency structures may affect the governance role of institutional investors. This literature has documented how heterogeneity across institutional investors in terms of variations in skin in the game and in incentives to compete for investor flow can affect the governance role of institutional investors.

Some early evidence in support of specific model predictions of this literature is provided by McCahery et al. (2016), who use survey data to document that institutional investors are concerned that clients make negative inferences about the stock selection ability if an institutions uses exit as a governance tool; such negative inferences may in turn reduce fund flows. This evidence provides support for the predictions of Dasgupta and Piacentino (2015), who argue theoretically that the fear of outflow can weaken the credibility of the threat of exit for sufficiently flow motivated institutional investors such as mutual funds.

Another recent empirical contribution to this literature is provided by Israelsen et al. (2019). Using large-sample archival data, they examine heterogeneity in incentives and skills across different block ownership forms. To this end, they compare "committed blockholders" who are likely to have significant skin in the game (such as individuals or private equity firms), with what they call "financial blockholders" (typically institutions that file Schedule 13Fs) who likely care more about fund flows. They show that committed blockholders are significantly more likely to self-identify as activists by filing form 13D in comparison to financial blockholders. Thus, consistent with the predictions of Dasgupta and Piacentino (2015), reduced skin in the game and enhanced incentive to compete for flow may weaken incentives to govern. Interestingly, they also find that firms with committed blocks appear to have *worse* governance structures. However, this result may arise due to an equilibrium effect: firms with committed shareholders have lower monitoring needs to begin with; external governance mechanisms beyond committed ownership are therefore not needed to the same extent as in firms with financial blockholders.

A recent paper by Lewellen and Lewellen (2018) provides an important new building block to study the role of flow motivations in corporate governance by quantifying institutional investors' financial incentives to be engaged shareholders. To this end, they measure an institution's incentive to engage as the increase in the investor's cash flow (management fees) when a firm's stock increases 1% in value. Importantly, they consider both the *direct* effect on assets under management and the *indirect* effect on subsequent fund flows. The latter, in turn, depends on relative performance across funds and thus depends on the degree to which a given stock is overweight vs underweight in the institution's portfolio relative to peers. This measure should be helpful for more papers to shed light on the importance of differences in incentive structures across institutional investors. While the quantification of flow-based governance incentives is an important step, it is noteworthy that the theoretical literature suggests that flow motivations have a nuanced effect on governance incentives, which can be either negative by inducing short-termism (Dasgupta and Piacentino, 2015; Burkart and Dasgupta, 2020) or positive by inducing intervention, particularly in multiple blockholder contexts (Song, 2017; Brav et al., 2019). Thus, the quantification of flow-based incentives represents only an important first step towards evaluating the role of institutional incentives to govern portfolio firms.

5.3.2 Conflicted versus Non-Conflicted Institutional Investors

While the theoretical literature has focused on heterogeneity in incentives arising from skin in the game and competition for flow, a key additional source of heterogeneity (discussed in Section 2.3) arises from the degree to which institutional investors have direct conflicts of interest arising from business ties to portfolio firms. To identify the role of such conflicts of interests, existing studies either classify institutional investor very broadly or use data on their actual business ties with portfolio firms.

Using the first approach, Ferreira and Matos (2008) define mutual funds and investment advisers as "independent institutions" and compare them with bank trusts, insurance companies, and other institutions, which they classify as "grey institutions". The idea underlying their distinction is that independent institutions are more likely to collect information and have fewer potential business relationships with the firms they invest in. As a result, they are anticipated to be more involved in monitoring management. Using this classification, Ferreira and Matos (2008) as

well as Aggarwal et al. (2011) show that independent institutional investors are more active in shaping firms' governance.

Using the second approach, Davis and Kim (2007) use data on mutual fund proxy votes for June 2003 to July 2004 to show that fund voting is not influenced by business ties for any given shareholder proposal, though they do find that fund families that have higher business ties overall tend to vote in a more pro-management manner across all portfolio firms irrespective of individual business ties . However, they use only six types of shareholder proposals. Ashraf et al. (2012) use data on executive compensation proposals between January 2004 and June 2006 to confirm these findings. Using a much larger data set of proposals and a much longer time period (2003 to 2011), Cvijanovic et al. (2016) challenge these results as they show that business ties with portfolio firms is associated with pro-management proxy voting by mutual fund families. The richness of their dataset makes it possible to robustly control for unobserved heterogeneity, enabling them to link pro-management voting with business ties at the level of given pairs of firms and fund families and for individual proposals. They also find that the effect is driven by shareholder-sponsored – as opposed to management-sponsored – proposals, thus suggesting that conflicts of interest prevalent among a particularly important class of institutional investors may actually impede, rather than facilitate, good corporate governance. Finally, the effect is strongest for proposals that pass or fail by modest margins, where the voting of individual fund families may potentially have decisive impact.

As discussed above, a useful analysis is also offered by Agrawal (2012), who studies proxy votes of AFL-CIO union funds to show that some investors pursue other interests (here workers), rather than shareholder value alone. Specifically, he finds that AFL-CIO-affiliated shareholders become less opposed to directors once the AFL-CIO labor organization no longer represents a firm's workers. Mutual funds and public pension funds, do not exhibit similar voting behavior.

5.3.3 Long-term versus Short-term Institutional Investors

Institutional investors also differ significantly with respect to the horizon of their investment. Graham et al. (2005) provide survey evidence that documents that many executives are willing to take short-term actions that are detrimental to long-term firm value. Importantly, one

reason why executives may be willing to take such actions is pressure by short-term investors. Such investors may have a focus on increasing short-term earnings and market valuations, and one action that increases short-term earnings are cuts to R&D expenditures. Indeed, Almeida et al. (2016) show that managers are willing to tradeoff investments and employment for stock repurchases that allow them to meet analyst EPS forecasts.[16]

The empirical literature uses two basic approaches to make use of Schedule 13F data in order to examine the effects of firm-level variation in investor horizon. Bushee (1998) measures short-term ownership using ownership by transient investors, which are institutions with high portfolio turnover and diversified portfolios. Bushee (1998) differentiates these investors from "quasi-indexer" institutions with low turnover and diversified portfolios, and from "dedicated" institutions with low turnover and more concentrated portfolios. Different from this approach, Gaspar et al. (2005) measure investor horizon using the churn rate or portfolio turnover of an investor (i.e., a higher churn rate indicates that the investor turns its holdings over more frequently). Firms with higher ownership by institutional investors with high churn rates (high fund turnover) are therefore defined as having more short-term institutional owners.

Some first empirical evidence on the effects of short-term investors is provided by Bushee (1998). He shows that firms with more short-term institutional investors spend less on R&D, in cases where R&D cuts can reverse an earnings decline. Recent evidence supporting Bushee (1998) comes from Cremers et al. (2020), who document that an increase in short-horizon investors due to a firm's addition to the Russell 2000 is associated with cuts to long-term investment and increased short-term earnings. This leads to temporary boosts in equity valuations that reverse over time. Short-term investors benefit from temporary inflated valuations as they exit the firm before the valuation reversals take place. Related evidence is provided by Derrien et al. (2013), who find that greater long-term ownership (using the Gaspar et al., 2005 measure) is associated with increased investments when firms have lower value than predicted by their fundamentals.

[16] R&D expenditures reflect long-term investments that can take years to complete and where the benefits may occur only years into the future. R&D is particularly susceptible to short-term pressures because firms have broad leeway to reduce or postpone R&D in order to increase current earnings. Cutting R&D can boost a firm's stock price in the short term if investors misinterpret the higher earnings that result from R&D cuts

Other papers indicate that the effects of short-term investors can extend beyond R&D investments. For example, there is evidence that firms with more short-term investors do worse in takeovers as targets or acquirers (Gaspar et al., 2005; Chen et al., 2007). Harford et al. (2018) find that firms with fewer short-term shareholders exhibit less fraud and empire building. Using also the classification of Bushee (1998) but looking at another governance outcome variable, Borochin and Yang (2017) find that higher ownership by dedicated investors is associated lower executive compensation (which they interpreted as being better from a governance perspective), while the opposite seems to holds for ownership by transient investors. Gaspar et al. (2013) find that firms with more short-term investors use share buybacks more frequently and also pay out more through this channel. A more positive assessment of short-term institutional ownership emerges from Giannetti and Yu (2020), who find that firms with more short-term investors are better able to adapt to changes in their business environments via innovation or management changes.

The evidence in Starks et al. (2017) shows that institutional investors with longer horizons tend to prefer higher-ESG firms, while short-term investors prefer the opposite. This evidence is important as it indicates that it is crucial to account for selection effect when studying the relation between investor horizon and governance outcomes.

The early empirical papers on institutional investor horizons significantly predate the theoretical literature on blockholder incentives surveyed in Section 4. More recent papers have to some extent inherited the definitions of short-termism used in early papers in the literature. However, investor horizons are not fundamental characteristics of institutional investors, but rather endogenous consequences of their incentives. For example, the incentive to compete for flow may endogenously induce short-termism, as discussed in Section 4.2. The degree to which institutions have locked up capital (e.g., hedge funds may have more locked-up capital than mutual funds) or patient investors (e.g., institutional funds may differ in their responsive to short-term performance than retail funds), and also the extent to which institutions have skin in the game may lead to different degrees of short-termism. The growth of the theoretical literature in this area offers potential new theoretically grounded ways to formalize institutional short-termism and represents a potential area of growth for this literature. It may also offer opportunities to reinterpret existing empirical results.

5.3.4 Passive Investing and Common Ownership

The role of passive investors has significantly increased over the last ten years due to a sharp increase in index investing and ETFs. While this shift in institutional ownership has potentially major effects on the governance of firms, little empirical research exists to this date. In fact, even the few studies that exists provide conflicting evidence on the effects of governance effects of passive institutional ownership.

On the dark side, Schmidt and Fahlenbrach (2017) find that higher ownership by index funds or ETFs leads to more CEO power, fewer independent directors, and worse M&A decisions. Heath et al. (2019) show that index funds rarely vote against firm management on contentious corporate governance issues, and do not use exit to express dissatisfaction with firm management. They also find no evidence that index funds engage with firm management. Boone et al. (2020) document that the here big passive fund families, Blackrock, State Street, and Vanguard, are increasingly likely to vote with management, especially in case of controversial proposals. Gutiérrez and Philippon (2018) show that firms owned by many passive investors (measured using ownership by quasi-indexers) tend to underinvest relative to their investment opportunities.

In contrast and on the bright side, Appel et al. (2016) find that an increase in ownership by passive mutual funds leads to more independent directors, the removal of antitakeover defenses, and more equal voting rights. Schmidt and Fahlenbrach (2017) reconcile these findings with theirs by arguing that passive ownership affects governance positively when it comes to low-cost governance activities such as voting, and negatively for high-cost governance such as monitoring of M&A decisions.

Filali Adib (2020) builds on this debate to zero in on the voting channel in order to better understand how index funds affect corporate governance. She finds that the market reaction to a proposal's passage (failure) is stronger if a more index funds vote to support (oppose) it and that higher ownership by index funds makes the passage of value-enhancing proposals more likely. This finding lends support to a positive role of index funds in low-cost governance activities (in this case voting).

One consequence of the increase in passive ownership is that holdings by a small number of investors, mostly providers of index funds, has increased significantly across most firms. This has caused a new phenomenon labelled "common ownership," whereby the same set of investors may have significant stakes in firms that compete on the product market. This has sparked an extensive debate about whether common ownership has anticompetitive effects. For example, using data on the airline industry, Azar et al., (2018) show that prices are higher and output is lower when firms have reduced incentives to compete due to common ownership. In contrast, Dennis et al. (2019) challenge the results in Azar et al. (2018) and argue that they are generated by the endogenous market share component of the common ownership measure. We do not delve in detail into this literature, as Schmaltz (2018) provides a recent review of these papers.

In both the areas of active vs passive ownership and the effects of common ownership discussed in this subsection, there is a significant gap between the theoretical and empirical literatures. In the case of the former, the only paper that considers passive *and* active institutional investors simultaneously within the same model is the recent work of Corum et al. (2020), which underscores the relatively subtle interaction between the governance roles of these classes of investors. In the case of the latter, the only paper that considers common ownership by institutional investors – Edmans et al. (2019) – demonstrates the positive role of common ownership on voice and exit in general, but does not consider the product market interactions that have been the focus of the majority of empirical papers in this area. Thus, there is significant scope for the interface of theory and empirics in this area.

5.3.5 Interplay between Institutional Investors

The stylized facts documented in Section 3 suggest the presence of multiple institutional blocks per firm, both within and across types of institutional investors. This suggests that the interplay between institutions, both within and across types, may be key to corporate governance. A series of recent papers have looked how the interplay between different institutional investors affects governance outcomes. Focusing within the class of mutual funds, Matvos and Ostrovsky (2010) examine voting in director elections. Apart from finding some funds are consistently more management friendly than others, they also provide evidence for peer effects, that is, funds tend to oppose management when other funds also do so. Bebchuk et al. (2020) hand collect data on

voting outcomes in proxy contests and look at the interplay between activist hedge funds and other institutional investors. They use this data to examine voting support by institutional investors when there is a proxy fight triggered by a dissident activist. Modelling both the decision to engage and voting outcomes, they find that a positive correlation between the propensity for targeting by activists and pro-activist voting by mutual funds. Similar evidence on the importance of the presence of activism-friendly institutions more broadly is provided by Kedia et al. (2020). Crane et al. (2019) show that cliques of institutional investors (those connected through the network of institutional holdings) vote together on proxy items, increasing the likelihood of votes against management. This finding documents that coordination among institutional investors can have beneficial governance effects. Fos (2017) finds that the presence of institutional and activist investors makes it more likely that a company might be target of proxy contests that as Fos (2017) shows are delivering positive abnormal returns around announcement.

A particularly prominent type of interplay between institutional investors arises in the form of so-called "wolf packs," a phenomenon by which several activist hedge funds engage in parallel at the same target firm, complementing each other's efforts while remaining sufficiently independent to avoid a joint 13D filing. A small number of recent empirical papers has examined the wolf pack phenomenon. Becht at al. (2017) document that as many as 20% of hedge fund activism events involve multiple activists intervening in parallel. Notably, wolf packs increase the probability of a successful engagement and they are associated with higher announcement returns when stakes are disclosed. More recently, Artiga Gonzalez and Caluzzo (2019) also show that wolf packs are more common in larger firms, where individual activists are unlikely to have sufficient influence.

There is an emerging dialogue between the theoretical and empirical literatures in the area of the interplay between institutional investors. The relevant theoretical papers are discussed in Section 4.2. For example, the findings of both Becht et al. (2017) and Artiga Gonzalez and Caluzzo (2019) are broadly consistent with the model of Brav et al. (2019). Some recent theoretical papers have also started to consider the interaction between different types of institutional investors (e.g., Song, 2017 and Cvijanovic et al., 2019). Given the subtlety of potential interactions between

institutional investors, this is an area in which the dialogue between theoretical and empirical work is particularly salient.

5.3.6 Institutional Investor Ideology

Two recent papers started examine voting data in order to classify institutional investors along the political or governance spectrum. Bolton et al. (2020) map mutual funds and pension funds into the political left-right spectrum based on their proxy voting, using an innovative approach from political science. While the far-left investors are characterized as "socially responsible" investors (they vote most consistently in favor of pro-social and pro-environment shareholder proposals), the far-right investors is described as "money-conscious" investors (they oppose proposals that could financially cost shareholders). They additionally also separate institutions along a governance dimension, based on how tight a discipline should be imposed on management.

In the spirit of this second dimension, Bubb and Catan (2018) use voting by mutual funds to classify them into three "parties" with different governance "philosophies"—the Traditional Governance Party (they support the view that the firm should be run by the board and management, not shareholders), the Shareholder Intervention Party (the view that shareholders should intervene through shareholder-initiated proposals and proxy fights), and the Shareholder Veto Party (they support the view that shareholders should monitor management and veto management's proposed courses of actions when they have concerns).

5.3.7 Institutional Investor Locations

Another important dimension of heterogeneity is related to the origin of institutions, which may affect the culture or social values promoted by an institution and thereby affect governance. Governance work on the effects of institutional investor origin has been pioneered by Miguel Ferreira and Pedro Matos in a series of articles (some of them with coauthors). The broad evidence from their and other's work is that the origin of investors matters for corporate governance outcomes. Ferreira and Matos (2008) and Aggarwal et al. (2011) show that foreign investors are more active in improving firms' governance. For example, in Ferreira and Matos (2008), higher

foreign ownership, particularly if from the US, comes with higher valuations and performance, which they conclude originates from better monitoring of managers. Similar evidence on the beneficial role of international institutional ownership is provided by Chan et al. (2009). The evidence in Aggarwal et al. (2011) is noteworthy as it suggests that the increase in foreign ownership, resulting from a globalization in capital markets, leads to the adoption of better governance practices (e.g., more independent directors on the board) across the world. Bena et al. (2017) find that foreign institutional ownership also leads to significant increases in long-term investments, proxied using capital expenditures as well as R&D and innovation output. This evidence speaks against the view that foreign investors act as "locust", trying to reap short-term benefits from their investments. Similar evidence is provided by Luong et al. (2017) who also find that which foreign institutional investors positively affect firm innovation because they act as active monitors.

Related evidence on the role of foreign institutional investors is provided by Leuz, Linz, and Warnock (2008), who find that foreign investors leave firms that do not improve governance. Dyck et al. (2019) find that institutional investors increase firms' E&S performance when they originate from countries with norms that emphasize the importance of E&S issues. To measure such norms, they use data from the Environmental Performance Index and the World Values Survey. Gibson et al. (2020) document that institutional investors from Europe are more likely to be signatories of the PRI, which promotes high governance (and E&S) standards around the world. In countries other than the US, such PRI signatories have better portfolio-level ESG footprints than non-PRI investors (in the US, PRI investors' ESG footprints does not differ from that of non-PRI investors).

Kim et al. (2016) show that domestic institutional investors may have a governance benefit in some settings, as they show that higher domestic ownership is associated with less earnings management. Yet, they also show that foreign institutions become more effective as monitors if they firm environment reflects greater agency conflicts or weaker governance controls. Ng et al. (2016) study the role of international investor origin for stock market liquidity, which can affect how well the threat of exist disciplines management. They separate foreign ownership into foreign direct ownership (strategic foreign holdings larger than 5%) and foreign portfolio ownership (other institutional holdings). While the strategic foreign ownership is negatively associated with stock

liquidity, foreign portfolio ownership seems to benefit liquidity. Also in there study, foreign portfolio institutional ownership is positively associated with firm valuations.

Instead of using heterogeneity along the international origin of investors, Chhaochharia et al. (2012) look at the distance between a firm's headquarters and the location of the firm's institutional investors. They document that firms with more local institutional ownership have better internal governance, are more profitable, and are less likely to manage their earnings aggressively.

5.4 Proxy Voting Advisors and Institutional Investors

5.4.1 Importance of Proxy Voting Advisors

As we showed in Section 2, proxy voting is important for regulatory and fiduciary duty, and many institutions are required (or voluntarily choose) to disclose their proxy votes, as well as their voting policies. Proxy voting entails costs, particularly since many investors have to cast votes on thousands of securities. As a result, institutional investors increasingly make use of proxy voting advisors, next to information from sell-side and in-house analysts, when deciding on how they want their shares voted. The proxy advisory industry has therefore grown substantially over the past decade and proxy voting advisors provide a service to address many institutional investor's regulatory requirement to vote shares in portfolio companies in the best interest of their final beneficiaries. McCahery et al. (2016) provide survey evidence to examine the extent to which institutional investors use proxy voting advisors. They show that 60% of their respondents use at least one proxy voting advisor, and almost half of these respondents employ the services of more than one advisor.

Two companies dominate the market for proxy voting advice. ISS, the market leader, was founded in 1985 and is owned since 2017 by private equity firm Genstar Capital. It was previously owned by another private equity firm, Vestar Capital Partners, and before that by MSCI as well as RiskMetrics (which was bought by MSCI). ISS employs 2,000 employees and covers about 44,000 annual meetings (in 2020) worldwide. Its main competitor, Glass Lewis, is a portfolio company of the Ontario Teachers' Pension Plan Board and the Alberta Investment Management Corp. and was founded in 2003. It employs more than 360 employees. Both firms make voting recommendations

which are based on general voting guidelines (usually for specific countries), on whose drafts the two proxy voting advisors receive feedback from companies and investors.[17] Some first evidence on how firms try to game the specific rule that are described in these guidelines is provided in Ishida and Kochiyama (2020). Other firms offering proxy voting advise include US firms Egan-Jones Proxy Services, Segal Marco Advisors, or ProxyVote Plus, the Swiss firms SWIPA and Ethos, UK-based firm Minerva, or the French firm Proxinvest. All of these "boutique" proxy advisory firms are substantially smaller than the "Big Two".

Shu (2020) is the first study that estimates the markets hares of proxy advisory firms. He estimates that in 2017, ISS controls 63% of the market for mutual funds in the US and Glass Lewis controls 28% of the market. Interestingly, Shu (2020) estimates indicate that the proxy advice market has become less concentrated over the last decade, with ISS gradually losing market share to Glass Lewis and the smaller proxy advisors.

5.4.2 Influence of Voting Recommendations

A key question relevant to investors, firms, and regulators is whether and when recommendations of proxy voting advisors have an effect on voting outcomes. Some of the first evidence on the role of proxy voting advisors is provided by Cho et al. (2008, 2010) who study the effects of voting recommendations for uncontested director election at S&P 1500 firms. Choi et al. (2010) document that ISS is more influential than Glass Lewis in terms of effects on voting outcomes (their analysis also includes other proxy voting advisors, namely Proxy Governance and Egan Jones). Further, they estimate that an ISS recommendation shifts 6 to 10% of shareholder votes. The estimates originate from the years 2005 and 2006, so the likely provide a lower bound since the services of proxy voting advisors have been used by more institutional investors since then. Further early empirical evidence is provided by Cotter et al., (2010), who study voting during the 2003 to 2008 proxy season. A benefit of their analysis is that they study a broad range of management and shareholder proposal. They find that mutual funds appear to vote consistently with recommendations by ISS, and more so than other shareholders.

[17] See https://www.issgovernance.com/policy-gateway/voting-policies/ and https://www.glasslewis.com/guidelines/

Ertimur et al. (2013) use hand-collected data to study the role of proxy voting advisors for "say on pay" votes in the year 2011. Say-on-pay votes are nonbinding votes on executive pay that started to be required as a result of the *Dodd–Frank Act* in 2011. In their sample, ISS issued "Against" recommendations for 11% of the firms and Glass Lewis for 22%. Though say-on-pay plans are rarely voted down (only at 2% of firms), a negative ISS recommendations is associated with 24.7% (12.9%) more against votes (12.9% in case of Glass Lewis). They further find that the sensitivity of shareholder votes to "against" recommendations is higher if block ownership by institutional investors (ownership by institutions that hold more than 5%) is larger. Larcker et al. (2015) also study the role of proxy voting advisors for say-on-pay votes. Consistent with Ertimur, et al. (2013), they find that the recommendations of proxy voting advisors are positively associated with voting outcomes. Their evidence also indicates that several firms change their compensation plans *before* the annual meeting in a way that is consistent with the preferences of the proxy voting advisors. Shu (2020) also confirms the influence using very recent data.

Though plausible, a challenge in interpreting these results is that regressions of voting of institutions on voting recommendation by proxy voting advisors may overstate the effect of proxy voting advisors, as both may independently come to the same conclusion on how to vote. In other words, the same unobservable firm characteristics that lead proxy voting advisors to give a certain voting recommendation can affect institutions' actual voting, leading to an upward bias in a regression estimate. Thus, while the studies reviewed above show a positive correlation between proxy voting advisors recommendations and voting outcomes, it remains unclear whether this means that institutions follow ISS recommendations or, instead, whether proxy voting advisors tailors their recommendations to institutions' voting preferences.

Two studies have made progress towards better understanding whether recommendations cause voting outcomes or coincide with investors preferences. Iliev and Lowry (2015) exploit in their analysis that different funds have different incentives to "actively" vote, i.e., to independently assess the issues up for vote. Incentives are higher if, for example, an investor has invested a higher percentage of fund assets in a portfolio firm. Consistent with incentives to actively vote varying across investors, they find also high variation in investors' reliance on proxy voting advisors. While more than 25% of mutual funds rely almost entirely on ISS recommendations, others seem to put

little weight on them. ISS recommendations have little predictive power in explaining the voting by investors that have strong incentives to actively vote, and high predictive power when these incentives are low.

Malenko and Shen (2016) use a regression discontinuity design to estimate the causal effect of ISS recommendations on say-on-pay voting outcomes. Specifically, they exploit exogenous variation in ISS recommendations due to a rule employed in the 2010-2011 voting guidelines by ISS on say-on-pay proposals. ISS used to conduct an initial screen of companies focusing on their one- and three-year total shareholder returns relative to certain cutoffs and only performed a deeper analysis of the company's pay practices for firms below the cutoff. Hence, firms below the cutoff undergo more scrutiny to achieve a positive recommendation than firms above the cutoff, and the probability of a negative ISS recommendation increases discontinuously just below the cutoff. (Malenko and Shen, 2016) show a strong effect of ISS recommendations: relative to positive recommendations, negative recommendations lead to a 25 percentage point decrease in voting support for say-on-pay proposals. Hence, ISS moves about 25% of the votes. There is also evidence that voting recommendations vary significantly across the big two proxy voting advisors, as shows, for example, in Ertimur et al. (2013) for say-on-pay votes. While most papers focus on the effect of proxy voting advisors on US firms, Hitz and Lehmann (2018) study European firms. Their findings suggest that proxy voting advisors findings suggest also play an important role at European firms.

Two papers provide new evidence on how the role of proxy voting advisors has evolved over time. Aggarwal et al. (2014) find that investor voting on shareholder proposals has become more independent of ISS recommendations over time (2004-2010), but only in proposals where ISS recommends a vote against the proposal. Boone et al. (2020) examine the time period from 2005 to 2018 and also find that ISS has become less influential as mutual funds are less likely to vote in line with ISS recommendations.

Overall, these results suggest that proxy voting advisors do not just aggregate shareholder preferences or coincide with them, but actually influence voting decisions in a positive way.

5.4.3 Determinants and Quality of Voting Recommendations

The evidence suggests that proxy voting advisors do have some influence on voting outcomes. This raises the question of how their recommendations are determined and how good they are. On this topic, views are divided. One view holds that proxy advisors are a reliable source of informed voting advice. According to this view, the services of proxy advisors reduce investors' voting costs, leading to better and more informed voting decisions. The alternative view holds that the recommendations of proxy advisors are too standardized and ignore firm-specific circumstances, and their recommendation criteria entail a lack of transparency, making the assessment of voting recommendation quality difficult. This raises the question of what actually drives the recommendations made by PVAs.

Iliev and Lowry (2015) provide some evidence that indicates that ISS uses a one-size-fits-all approach (blanket recommendations) during their sample period from 2006 to 2010. The reason is that on many corporate governance and compensation proposals, ISS nearly always recommends voting against management without accounting for firm-specifics. To the contrary, actively voting funds seem to be more likely to vote in a firm-specific manner. A more positive picture emerges from Ertimur et al. (2013), who find that proxy voting advisors are more likely to issue an against recommendation on say-on-pay proposals at firms with poor performance and higher levels of CEO pay, indicating that firm-specific circumstances are taken into account. The mixed view is also reflected in the survey evidence of McCahery et al. (2016). While they document that 55% of the respondents agree or strongly agree that proxy advisors help them make more informed voting decisions, the also find that 30% of the respondents agree or strongly agree that proxy voting advisors' advice is too standardized.

Albuquerque et al. (2020a) examine compensation proposals to show that the quality of the voting advice by ISS depends on whether ISS faces a heavy workload or not; they find that high quality recommendations, defined as those where ISS "Against" recommendations and negative assessments are associated with worse future performance, occur only during the off season (i.e. for firms with non-December fiscal year ends).

Apart from firm-specific determinants of vote recommendations, there also seems to be a role of public opinion. For example, Aggarwal, Erel, and Starks (2014) show that ISS voting recommendations are associated public confidence in banks and (negative) newspaper articles on executive compensation. They argue that this finding reflects that ISS uses a proxy policy formulation process that incorporates feedback from an annual survey of market participants.

Heinen et al. (2018) examine the extent to which US-based proxy voting advisors "export" US corporate governance by not sufficiently considering local settings when making recommendations for non-US firms. They document that the voting recommendations diverge more between foreign and local proxy voting advisors than among foreign proxy advisors. Further, "Against" recommendations by local proxy voting advisors have an incremental effect on voting outcomes beyond the recommendations by foreign proxy voting advisors.

5.4.4 Firm and Market Reactions to Voting Recommendations

Several studies also examine how firms and stock prices react to recommendations by proxy voting advisors. As most proxy votes are non-binding, it is ex ante not obvious that any effect of proxy voting advisors on voting outcomes eventually leads to real changes at firms.

Alexander et al. (2010) study market reactions around recommendations by ISS issued during proxy contests involving board seats between 1992 and 2005. They find that the announcement of ISS recommendations creates abnormal stock returns at firms, which indicates that their views bring new information to the market. Ertimur et al. (2013) find that firms that receive a negative say-on-pay vote that was trigger by a negative recommendations from proxy voting advisors engage with investors and make changes to their compensation plans. They also find negative abnormal returns (–0.5% to 0.7%) in the case of "Against" recommendations by ISS for firms where such a recommendation was unexpected by the market.

Larcker et al. (2015) find that the changes to compensation plans before a shareholder vote to reflect the preferences of proxy voting advisors are associated with negative announcement returns. This indicates that proxy voting advisors may also trigger firms to make choices that are beneficial to shareholders. Calluzzo and Dudley (2019) provide evidence that proxy voting advisors

influence real outcomes through their recommendations, notably, director behavior, executive retention and compensation practices. Guest and Nerino (2019) find that ISS has an important effect beyond its influence via proxy recommendations and subsequent voting outcomes. Specifically, they show that downgrades in the governance ratings provided by ISS are associated with negative returns of –1.14% over a 3-day announcement window.

5.4.5 Conflicts of Interest

Another major issue surrounding the use of proxy advisors is whether these advisors have conflicts of interests in arriving at their recommendations. ISS, for example, advises firms on how they can improve their corporate governance and at the same time makes recommendations about how investors in these firms should vote. Some researchers maintain that this dual role may give rise to recommendations that are affected by conflicts of interest (e.g., Yermack, 2010). Glass Lewis does not provide such consulting services to firms.

The empirical analysis of these potential conflicts of interest is still at the beginning. The results in McCahery et al. (2016) indicate that institutional investors are concerned about conflicts of interests, as 52% of their respondents agree or strongly agreeing that proxy voting advisors are exposed to conflicts of interest. Li (2018) shows that the entrance of Glass Lewis into the market for proxy voting advice in early 2003 has reduced the scope for conflicts of interests (i.e., favoritism by ISS). Specifically, he shows that ISS started to issue more pro-shareholder recommendations after the market entry by Glass Lewis, especially when Glass Lewis did not support the shareholder proponents.

6. Conclusions

In this review article, we provided a comprehensive overview of the role of institutional investors in corporate governance. First, we provided a detailed characterization of key aspects of the current legal and regulatory setting within which institutional investors operate with respect to the governance of their portfolio firms. Second, we traced the emergence of institutional investors as concentrated owners of public firms in modern economies, using a wide variety of data sources to establish new stylized facts. Third, we synthesized the recent academic literature in finance on

the role of institutional investors in corporate governance, attempting to link theoretical predictions to empirical findings.

In this concluding section, we reflect on the state of the literature on the governance role of institutional investors and outline some thoughts on areas for potential research. There is now a significant literature, both theoretical and empirical, focusing directly on the role of institutional investors in corporate governance. The empirical literature is larger, and much of it predates the relatively new theoretical literature. But the theoretical literature is now growing and beginning to gain significant ground. In the process, it is providing foundations for economically relevant metrics and tests in empirical analysis via predictions of the role of institutional incentives. This, in turn, presents rich opportunities for further research in this area. As our discussion throughout Section 5 suggests, there is significant heterogeneity across specific areas with respect to the integration of the two literatures.

In certain areas, there is a significant and growing dialogue between the theoretical and empirical literatures. For example, on the fundamental issue of how institutional incentives arising from competition for flow and skin in the game affect governance actions (as discussed in Section 5.3.1) there is both established and emerging empirical evidence in support of theoretical predictions. There are also emerging empirical techniques that provide the prospect of deeper investigations in this area, and also call for richer theoretical models. Similarly, in the area of the interplay between multiple institutional blockholders in determining governance outcomes in a given firm (as discussed in Section 5.3.4) there are significant points of contact between the theoretical and empirical literatures. This is true both in the context of engagements by multiple blockholders of the same type, for example, wolf packs of activist hedge funds and in the context of interactions across different types of institutional investors. Further, the emerging empirical evidence on how institutional investors interact may guide further theoretical development in this area.

In other areas, there is less dialogue between the theoretical and empirical literatures, representing significant potential for further work. For example, the significant empirical literature on the horizons of institutional investors treats such horizons as a primitive characteristic of institutions. The beginnings of this literature significantly predate the existence of theory in this

area. Partly as a result, the empirical literature has arrived at several parallel ways of classifying institutions according to their horizons. Ultimately, the degree to which institutional investors are short-term or long-term, however, must depend on the nature of their incentives – for example, the degree to (and the frequency at) which they must compete for investor flows as well as the extent to which their skin in the game induces long-term stakes. The growing theoretical literature on such incentives, discussed in Section 4.2, provides opportunities for better founded measures of investor horizons and thus provides an opportunity to significantly enrich this area of the literature.

In other areas, the theoretical literature is sparse and there is significant guidance in the empirical literature to expand and extend theoretical analyses. This is particularly evident in the area of active vs passive management, where the theoretical literature is only just beginning, while the empirical literature is engaged in a lively debate. A similarly lively debate exists in the empirical literature on common ownership, and there is currently little by way of a systematic approach within the theoretical literature to speak to this debate. Finally, while there is some theoretical analysis of the incentives of proxy voting advisors, the empirical literature that addresses these issues is very significant and provides opportunities for further theoretical work.

The phenomenal growth of the asset management industry has transformed the nature of equity ownership across developed economies. A majority of blockholders in publicly traded corporations are today institutional investors, who are themselves agents acting on behalf of their capital providers. This places a multi-layered agency problem at the heart of modern corporate governance and calls for an enriched academic approach to its analysis. Academic researchers have responded to this significant change, leading to the development of both a theoretical and empirical literatures in this area. The academic literature on the role of institutional investors in corporate governance is poised at a critical stage of development. In our view, the key to further progress, is an active two-way dialogue between these the theoretical and empirical literatures. The emergence and enrichment of such dialogue holds the promise to transform the way in which economists view corporate governance in the modern economy.

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Table 1: Ownership Shares of the US Stock Market in Percent

Sector	1950	1970	1990	2000	2010	2018
Private Pension Funds	0.0	8.1	16.2	11.2	7.8	5.5
Federal, State and Government Pension Funds	0.0	1.2	8.1	7.7	8.5	6.5
Insurance Companies	2.6	3.3	4.1	6.2	6.7	2.2
Mutual Funds	1.6	4.8	7.1	18.3	20.2	22.6
Closed-End Funds	0.9	0.5	0.5	0.2	0.4	0.2
Exchange-Traded Funds	0.0	0.0	0.0	0.4	3.6	6.2
Foreign Sector	1.6	3.3	6.9	9.3	13.7	15.1
Household Sector	92.8	78.2	56.5	45.6	37.2	36.4
Other	0.4	0.6	0.7	1.1	1.8	5.4

Source: Federal Reserve Statistical Release Data: Flow of Funds Data United States. Exchange-Traded Funds are first listed in December 7, 2001.

Table 2: Governance Obligations of Institutional Investors Globally

		Setting of Voting Policy	Disclosure of Voting Policy	Disclosure of Voting record	Setting Policy for Conflict of Interest	Disclosure for Conflict of Interest	Monitoring	Dialogue with Investee	Maintain supervision even if outsourced
US	Investment Companies	Law	Law	Law	Law	Law	Law		Law
	Private Pension Fund								Law
	Investment Advisers	Law	Law	Law	Law	Law	Law		Law
China	National Social Security Funds	Industry Assoc.	Code	Code					
	Pension Funds	Industry Assoc.	Code	Code					
	Insurance Funds	Industry Assoc.	Code	Code					
	Public Offering Funds	Industry Assoc.	Code	Code					
Japan	Institutional Investors	Code	Code	Code	Code	Code	Code	Code	Code
	Proxy Advisor	Code	Code	Code	Code	Code	Code	Code	Code
Germany	Investment Funds/Asset Managers	Code	Law and Code		Law and Code		Code	Code	Law, Code
United Kingdom	Institutional Investors	Code	Code	Code	Code	Code	Code	Code	Code
	Service Provider	Code	Code	Code	Code	Code	Code	Code	Code
India	Mutual Funds and Asset Managers	Law	Law	Law	Law				
	Insurers	Code	Code	Code	Code	Code	Code	Code	Code
	Pension Funds	Law	Law	Law	Law	Law	Law	Law	Law

Source: OECD Corporate Governance Factbook 2019

Table 3: Proxy Access Rules Globally

	China	Japan	Germany	UK	India
Minimum Holding Required	3%	1% or 300 voting rights with 6 months holdings	5% or €500,000	5% or 100 shareholders holding together > GBP10,000	10% of voting share
Deadline for Request	10 days before the meeting	8 weeks before meeting	10 days before the meeting	7 weeks before meeting	21-45 days before the meeting
Deadline for Company to Respond	Two days to accept and publish		14 days for accepting and publishing	Company has to publish at same time as it gives notice of the meeting (Source: UK Companies Act 2006, 314 (2), 315 (1) b)	21 days

Source: OECD Corporate Governance Factbook 2019, unless otherwise stated

Table 4: Disclosure Rules Globally

	Rules to Disclose Majority Shareholdings
China	- Only for issuer listed on Shanghai or Shenzhen stock exchange - Disclosure triggered when a shareholding reaches or exceeds 5% of total issued shares of an issuer, then: o 5%-20%: basic disclosure o 20%-30%: detailed disclosure o >30%: tender offer disclosure report - Lock-in periods for shareholders: o 5% or more shareholders restricted from selling shares for period of 6 months from purchase and from purchasing shares in issuer for period of 6 months from its last sale of such shares - Additional restriction selling shares: o Aggregate divestment on open market within 3 months cannot exceed 1% of total shares of issuer o Aggregate divestment through block trading within 90 days cannot exceed 2% of total shares of the issuer
Japan	- Only for companies that are listed on stock exchange in Japan - Disclosure concerned with "ownership" of "Target Securities" and disclosure triggered when: o "Ratio of Shareholdings" (calculated by specific formula) of a person exceeds 5% or, o Ratio of Shareholdings of large shareholder changes by 1% or more, or o There is material change to matters described in previously filed report - Special Reporting with lower frequency for certain institutional investors trading securities without control intent o Need to report within 5 business days from every base date (occurs at least bimonthly)
Germany	- Only for issuer trading on EEA regulated market and whose home member state is Germany (separate disclosure obligation of holdings of ≥25% in shares of German stock corporation which is not listed) - Disclosure thresholds met from holding either voting shares or financial instruments referenced to voting shares or a combination - Disclosure triggered for: o 3% (only for shares not financial instruments), 5%, 10%, 15%, 20%, 25%, 30%, 50% and 75%

	o If holder of previously reported financial instruments exercises and acquires underlying shares and shares threshold is met but overall % held is unchanged → new nature of holdings needs to be disclosed
UK	- Only for UK incorporated or non-UK incorporated issuer whose shares admitted to trading on EEA regulated market and whose member state is the UK or UK incorporated issuer whose shares admitted to trading on UK prescribed market - Disclosure thresholds met either voting shares or financial instruments referenced to voting shares or a combination - Disclosure triggered for: o UK-incorporated company: 3% of total voting rights and each whole percentage point after that o Non-UK incorporated issuer: 5%, 10%, 15%, 20%, 25%, 30%, 50% and 75% of total voting rights o If holder of previously reported financial instruments exercises and acquires underlying shares and shares threshold is met but overall % held is unchanged → new nature of holdings needs to be disclosed
India	- Only for issuer listed on recognized stock exchange in India - Disclosure triggered for: o Person (or group) acquiring ≥5% of total shares or voting rights of company o Disclosure required if change in holding of ≥5% holder and change exceeds 2% of total shares or voting rights

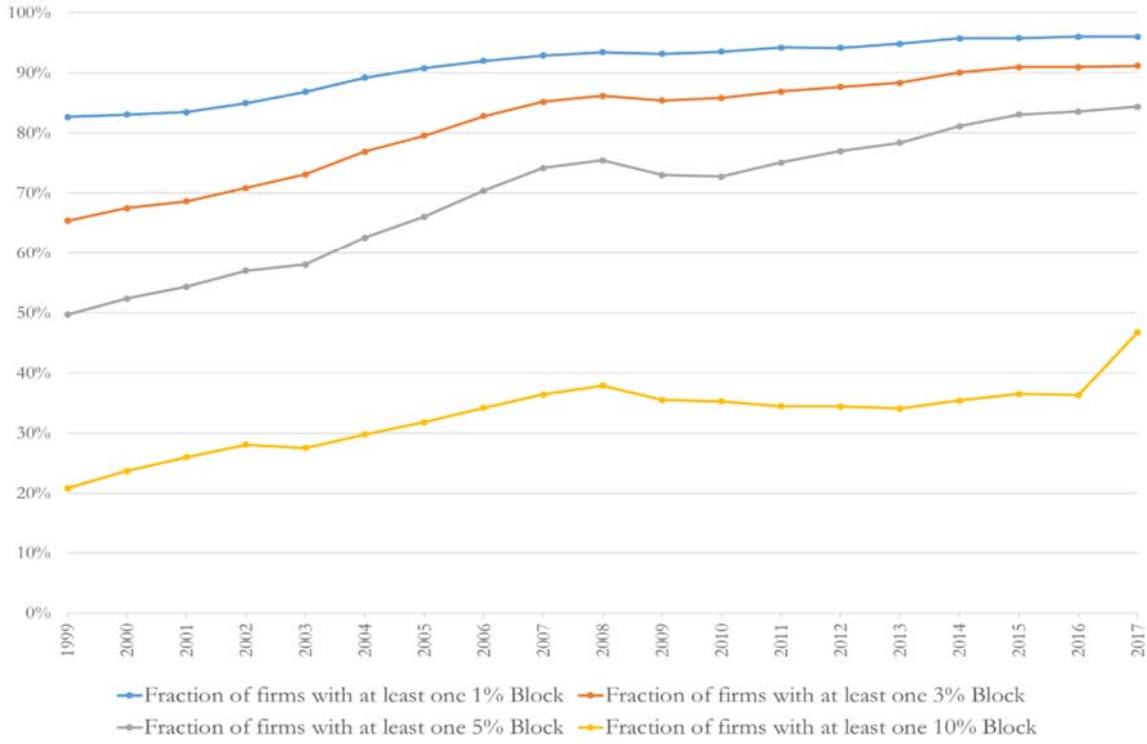
Source: AOSphere (Allen & Overy)

Table 5: Institutional blockholders in the US

	N	Mean	STD	10th percentile	Median	90th percentile
Panel A: Full Sample						
Number of 1% blocks	353,729	11.19	11.11	1.00	9.00	23.00
Number of 3% blocks	353,729	4.33	6.26	0.00	3.00	9.00
Number of 5% blocks	353,729	2.40	4.77	0.00	1.00	5.00
Number of 10% blocks	353,729	0.90	3.21	0.00	0.00	2.00
Panel B: Hedge Fund Blocks						
Number of 1% blocks	353,729	2.64	2.71	0.00	2.00	6.00
Number of 3% blocks	353,729	1.15	1.67	0.00	1.00	3.00
Number of 5% blocks	353,729	0.68	1.31	0.00	0.00	2.00
Number of 10% blocks	353,729	0.23	0.86	0.00	0.00	1.00
Panel C: Mutual Fund Blocks (company-level)						
Number of 1% blocks	865,963	2.48	3.25	0.00	1.00	7.00
Number of 3% blocks	865,963	0.64	1.13	0.00	0.00	2.00
Number of 5% blocks	865,963	0.29	0.70	0.00	0.00	1.00
Number of 10% blocks	865,963	0.03	0.19	0.00	0.00	0.00
Panel D: Mutual Fund Blocks (fund-level)						
Number of 1% blocks	865,963	2.32	3.16	0.00	1.00	7.00
Number of 3% blocks	865,963	0.31	0.67	0.00	0.00	1.00
Number of 5% blocks	865,963	0.11	0.36	0.00	0.00	0.00
Number of 10% blocks	865,963	0.01	0.09	0.00	0.00	0.00

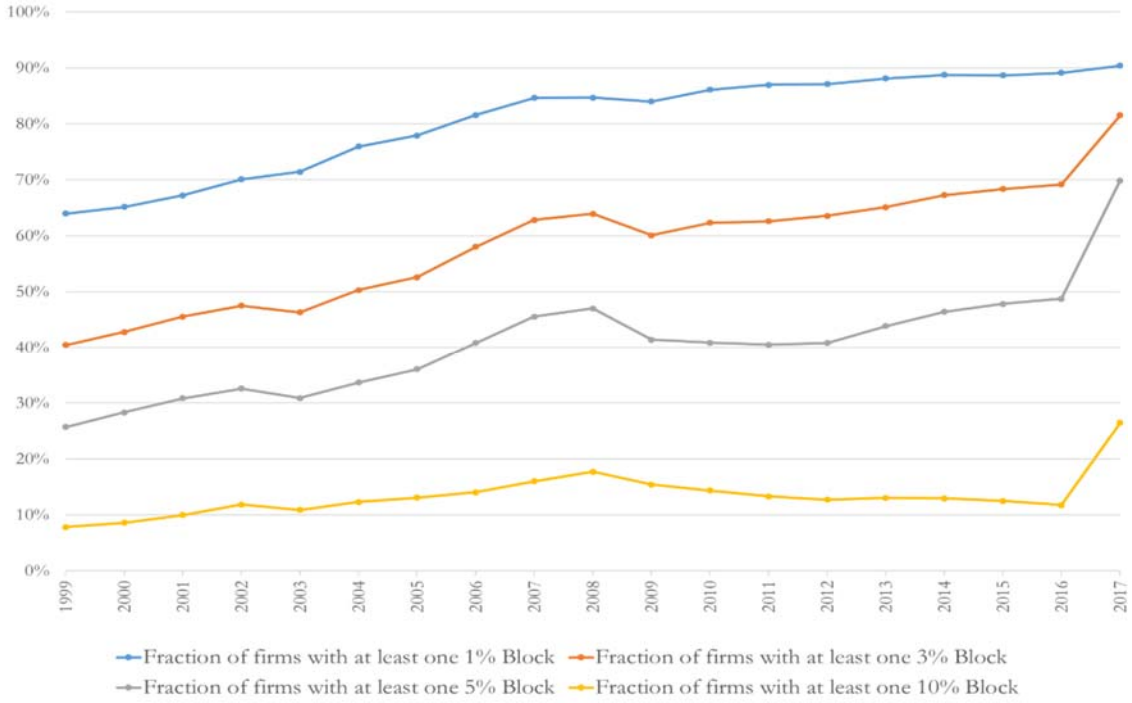
Source: Panels A and B, Schedule 13F ownership data covers the 1999-2017 period and is obtained from Michael Sinkinson's website (see Backus et al., 2019). In Panel B, the analysis is limited to hedge funds (Agarwal et al., 2013). In Panels C and D, mutual fund ownership data covers the 1999-2017 period and is obtained from the CRSP Survivor-Bias-Free US Mutual Fund Database. Panel C reports the results at mutual fund company level and Panel D at the mutual fund level.

Figure 1: Time-series Evolution of Institutional Block Ownership in the US



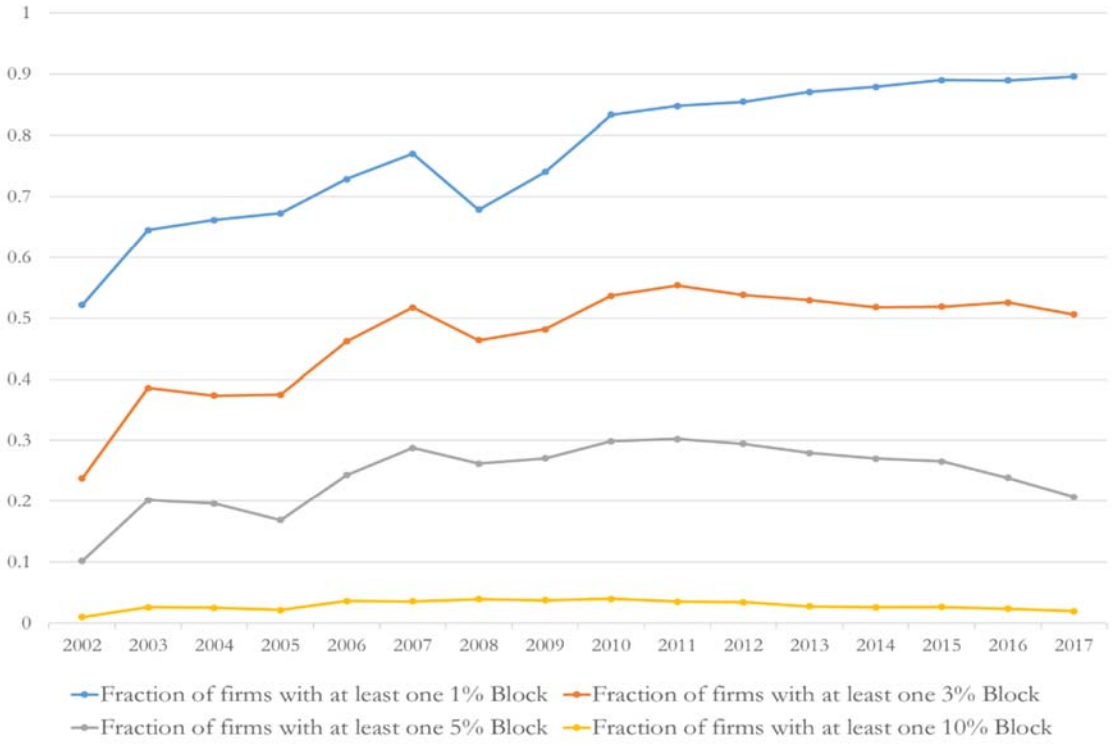
Source: Schedule 13F ownership data covers the 1999-2017 period and is obtained from Michael Sinkinson's website (Backus et al., 2019). The blue line represents 1% blocks (i.e. cases when an institution owns at least 1% of shares outstanding), the orange line represents 3% blocks, the gray line represents 5% blocks, and the yellow line represents 10% blocks.

Figure 2: Time-series Evolution of Hedge Fund block Ownership in the US



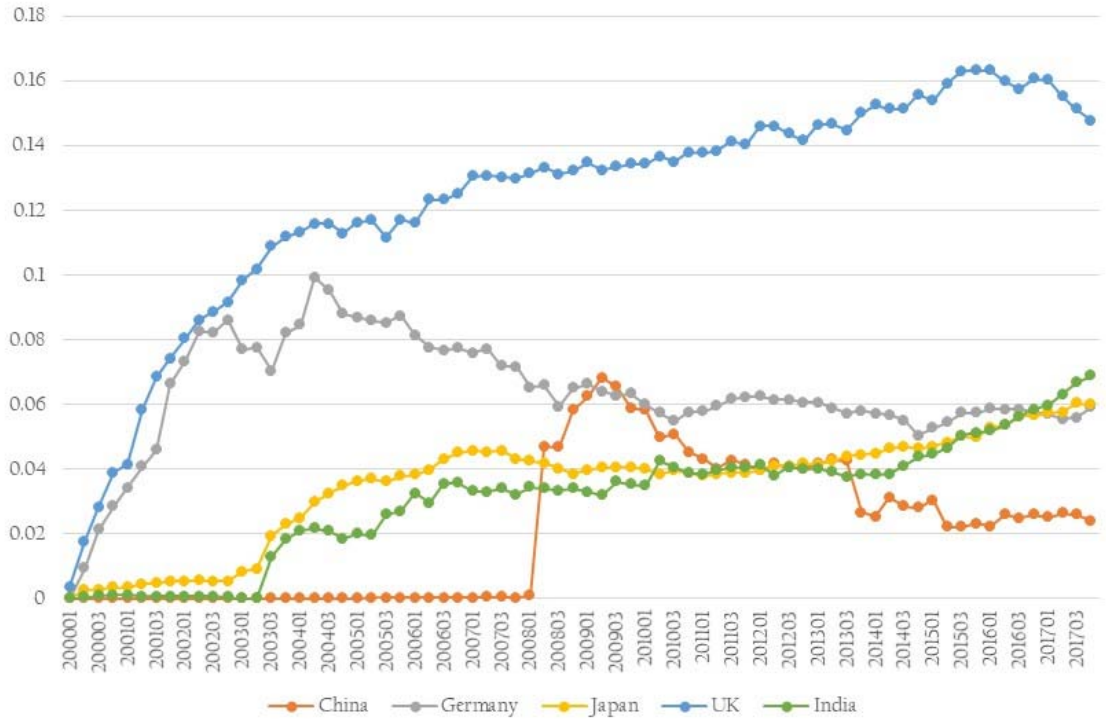
Source: The list of Schedule 13F filers who are identified as hedge funds is from Agarwal et al. (2013). The blue line represents 1% blocks (i.e. cases when a hedge fund owns at least 1% of shares outstanding), the orange line represents 3% blocks, the gray line represents 5% blocks, and the yellow line represents 10% blocks.

Figure 3: Time-series Evolution of Mutual Fund Block Ownership in the US



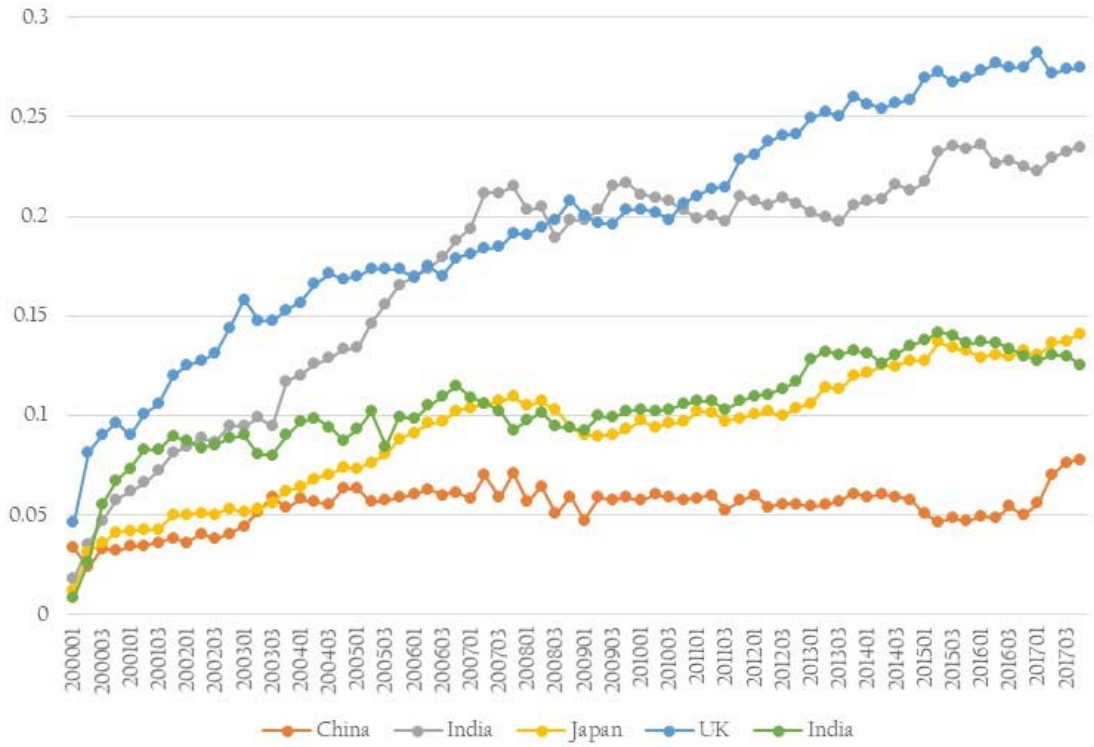
Source: Mutual fund holdings data are from the CRSP Survivor-Bias-Free US Mutual Fund Database. The blue line represents 1% blocks by mutual funds (i.e. cases when a mutual fund owns at least 1% of shares outstanding), the orange line represents 3% blocks, the gray line represents 5% blocks, and the yellow line represents 10% blocks.

Figure 4: Time-series Evolution of Institutional Ownership across the World



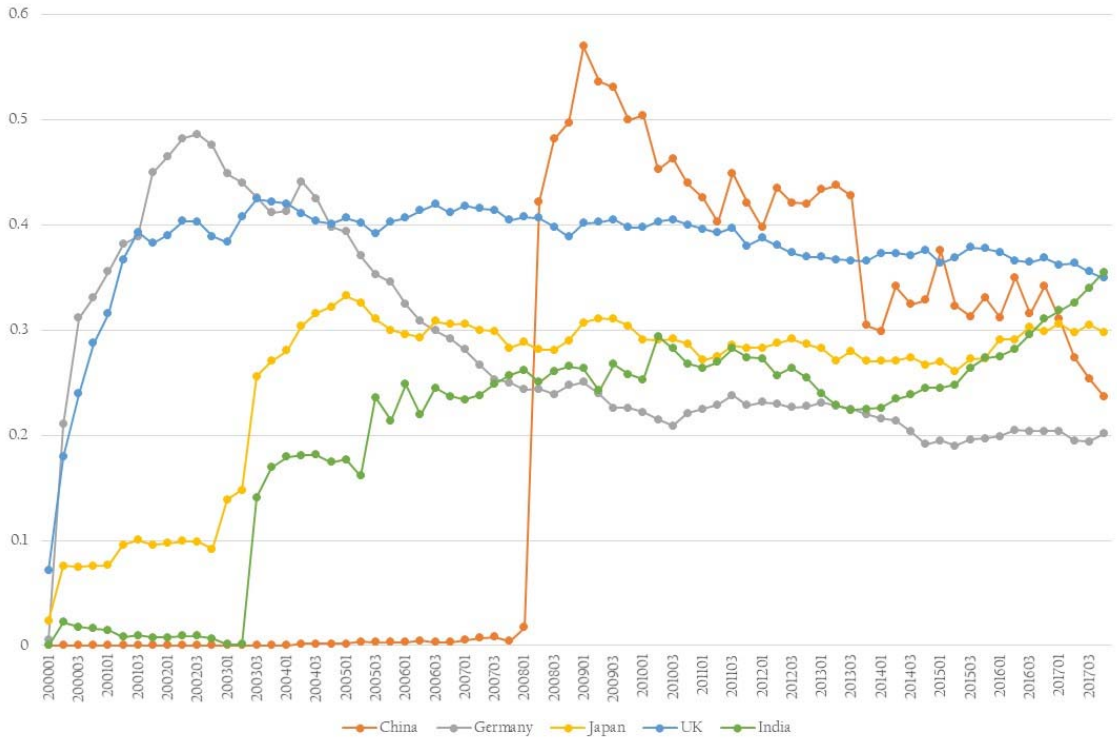
Source: The data underlying this figure was generously provided by Miguel Ferreira and Pedro Matos.

Figure 5: Time-series Evolution of Foreign Institutional Ownership across the World



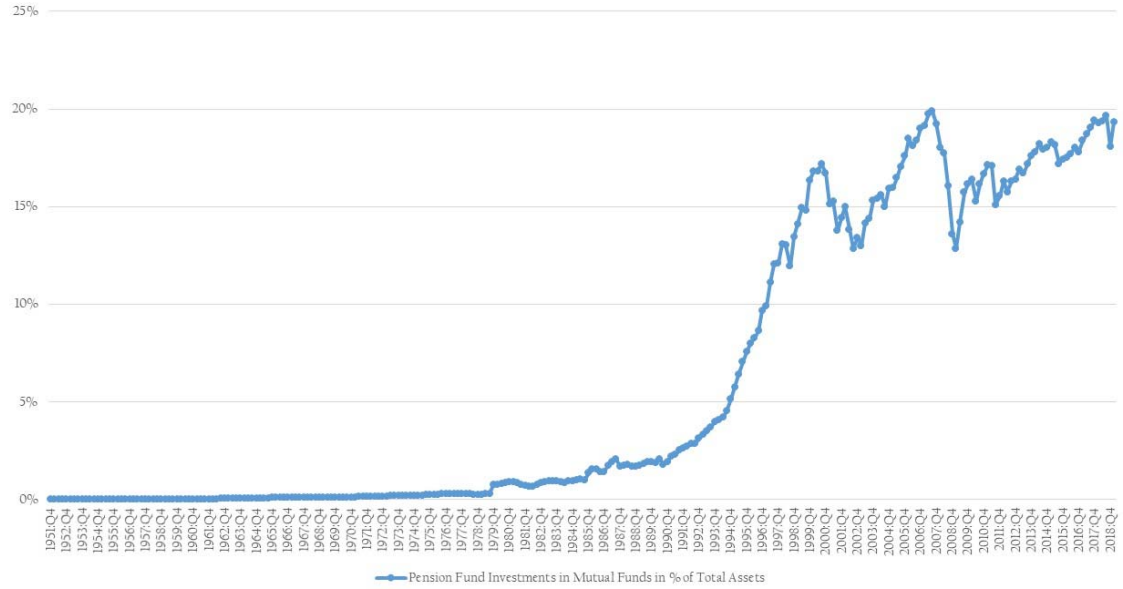
Source: The data underlying this figure was generously provided by Miguel Ferreira and Pedro Matos.

Figure 6: International Data: Foreign to Total Institutional Ownership over Time



Source: The data underlying this figure was generously provided by Miguel Ferreira and Pedro Matos.

Figure 7: Investments of Pension Funds into Mutual Funds in the US



Source: Federal Reserve Statistical Release Data: Flow of Funds Data United States. Investments of pension funds unto mutual funds are calculated by dividing the market value of mutual fund shares held by pension funds (FRED Source ID: LM593064205.Q) by the total amount of pension funds' (financial) assets (FRED Source ID: FL594090005.Q)

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