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Who are the activists? Investor characteristics and corporate improvements

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Master's Thesis
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Abstract
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WHO ARE THE ACTIVISTS?

INVESTOR CHARACTERISTICS AND CORPORATE IMPROVEMENTS

PURPOSE OF THE STUDY

The conflicts of interest between owners and managers have spurred a great deal of research on shareholders' potential ability to reduce agency costs in public corporations. Scholars, however, still disagree on which investors defy the free-rider problem and engage in value-adding activism. We develop a novel approach to identify activist investors based on their past investment behaviour and study where such owners improve their target companies. We depart from the existing literature and produce two alternative investor groupings based on portfolio concentration and investment horizon to predict propensity to activism. We examine how the investor groups relate to improvements in corporate governance, organisation and payout.

DATA

We study the effect of different investor types on large U.S. and European publicly traded firms, as included in the S&P 1500 Composite and the STOXX Europe TMI indices, during the years 2003 to 2009. The foundation of our study lays on an extensive panel database comprising three unique hand-collected data sets, one for our investor universe (FactSet LionShares Global Ownership), one for corporate governance (RiskMetrics Corporate Governance Quotient) and one for organisational improvements (SDC Platinum). Further, we deploy standard financial databases to source dividend payout and control variables.

RESULTS

Investors with high portfolio concentration and long investment horizon are consistently associated with corporate governance and organisational improvements but not with increases in dividend payout. Specifically, concentrated long-term investors relate to improvements in overall governance and board arrangements as well as corporate diversification reductions. Equally importantly, we find that investors with very high portfolio concentration and very long investment horizon exhibit no association with the same improvements, and propose a private benefit explanation.

Our findings contribute to the present-day perception of who activist investors are and how they improve the companies they invest in. In contrast with current research on activism, we show that no externally labelled investor group captures the investors that are actively improving governance or organisation in their target companies. Further, we provide support for the perception that investor activism relies primarily on individual investors with the right characteristics rather than the firms' overall ownership structures.

KEYWORDS

Investor activism, agency costs, incentives to monitor, corporate improvements

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KEITÄ OVAT AKTIIVISET SIJOITTAJAT?

AIHE

Omistajien ja yritysjohdon väliset eturistiriidat ovat synnyttäneet runsaasti tutkimuksia osakkeenomistajien kyvystä ja halukkuudesta vähentää agenttikustannuksia julkisesti noteeratuissa osakeyhtiöissä. On esitetty, että tietynlaisilla sijoittajilla olisi riittävät kannustimet uhmata vapaamatkustajaongelmaa ja pyrkiä aktiivisesti parantamaan omistusyritystensä toimintaa. Tutkimustuloksissa ei kuitenkaan tarjota yksiselitteistä kuvaa aktiivisten sijoittajien identiteetistä tai ominaisuuksista. Luomme uuden tavan aktiivisten sijoittajien tunnistamiseen ryhmittelemällä sijoittajat heidän sijoitushorisonttinsa ja sijoitussalkkunsa keskittyneisyyden perusteella. Lopulta tutkimme eri ryhmien assosioitumista parannuksiin kohdeyritysten hallintotavassa, organisaatiossa sekä voitonjaossa.

LÄHDEAINEISTO

Tutkimme sijoittajaryhmien vaikutusta suuriin yhdysvaltalaisiin ja eurooppalaisiin julkisesti noteerattuihin yhtiöihin, jotka sisältyvät S&P 1500 Composite ja STOXX Europe TMI -osakeindekseihin. Tutkimuksemme kattaa vuodet 2003 - 2009. Työmme perustana on kolme ainutlaatuista, itse rakennettua tietokantaa, jotka koostuvat laajasta omistajatietokannasta (lähteenä FactSet LionShares Global Ownership), hyvän hallintotavan tietokannasta (RiskMetrics Corporate Governance Quotient) sekä organisatoristen parannusten tietokannasta (SDC Platinum). Voitonjaon ja kontrollimuuttujien aineiston haemme yleisistä taloustietokannoista, kuten FactSetistä.

TULOKSET

Tuloksemme osoittavat, että pitkän aikavälin keskittyneet sijoittajat assosioituvat hallintotavan sekä organisaation parannuksiin, mutta eivät voitonjaon lisäämiseen. Parannukset näkyvät yleisen hallintotavan ja hallitustyöskentelyn kohennuksina sekä yritysten diversifikaation vähennyksinä. Tuloksemme viittaavat myös siihen, että erittäin keskittyneen portfolion ja erittäin pitkän sijoitushorisontin omaavat sijoittajat eivät ole liitoksissa yhtiöissä tapahtuviin parannuksiin, ja tarjoamme löydöksellemme sijoittajien yksityisetuihin perustuvaa selitystä.

Tuloksemme täydentävät vallitsevaa käsitystä aktiivisten omistajien identiteetistä ja heidän ajamiensa parannusten luonteesta. Vastoin olemassa olevaa kirjallisuutta näytämme, että aktiivisia sijoittajia ei voida tunnistaa oikeudelliseen muotoon perustuvilla ryhmittelyillä. Tuloksemme tukevat myös käsitystä, että yhtiöissä tapahtuvat parannukset riippuvat yksittäisistä, tietyt ominaispiirteet omaavista sijoittajista, eivät yleisestä omistusrakenteesta.

AVAINSANAT

Aktiiviset sijoittajat, agenttikustannukset,vapaamatkustajaongelma

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1 Introduction

1.1 Background

We deploy a novel approach to identify activist shareholders and study where such owners improve their target companies. Active owners are investors who vigorously monitor the companies they hold an economic interest in, and push for changes they believe increase the value of their holdings. Active owners are typically simultaneously present in multiple firms with a minority stake. Theory suggests that such actively monitoring shareholders can undermine the free-rider problem and reduce agency costs arising from the conflicts of interest between owners and managers.

The conflicts of interest between owners and managers have spurred a great deal of research since Berle and Means (1932) formulated the separation of ownership and control in the governance of companies. According to agency theory, management is inclined to engage in non-shareholder value maximising behaviour in pursuit of private objectives. Jensen (1986), for instance, shows that managers may pursue excessive growth or unrelated diversification even when such activity serves to destroy shareholder value. Such actions, although value-destroying for the residual claim holders, may be associated with increased management compensation or enhanced private benefits.

A number of papers have studied individual shareholder groups as a potential solution to reduce agency costs by increasing management monitoring. Studies have examined institutional investors (Among others: Coffee 1991; Black 1992b; Del Guercio and Hawkins 1999; Connelly *et al.* 2009), large blockholders (Bethel, Liebeskind and Opler 1998; Cronqvist and Fahlenbrach 2008), corporate raiders (Walsh and Kosnik 1993), venture capitalists (Bottazzi, Da Rin and Hellmann 2008), private equity companies and lately activist hedge funds (Becht *et al.* 2008; Brav *et al.* 2008; Clifford 2008; Klein and Zur 2009) as potential mitigators of the free-rider problem and prevailing agency costs. While the papers obtain contradictory results on the agency-cost-mitigating effect of most shareholder types, the research seems to agree on the positive market response to hedge fund activism.

We suggest that the contradictory results may, in part, rise from the common research design that labels investors based on the type of legal entity they represent. We argue that investors should not be studied as a group based on external, or legal, labelling since such a division does not capture the investor characteristics that determine the propensity to activism. To produce a more meaningful division, we identify investors based on their past investment behaviour and group investors based on their portfolio concentration and investment horizon. Further, we study the effect of entries of investors within the different investor groups on ensuing corporate improvements in large U.S. and European public companies.

1.2 Research question and contribution

We aim to shed new light on investor activism by studying who the activists are and examining the firm characteristics they improve. Specifically, we set out to examine whether investors with differing characteristics facilitate concrete corporate improvements that reduce agency costs and improve the shareholder position. Hence, our research question is two-fold. We seek to determine

(1) Who are the activists: which observed investor characteristics define activist investors?

(2) In which corporate characteristics do activists facilitate concrete improvements?

Partly contradicting extant literature, we anticipate that specific investor characteristics, rather than plain legal types, determine investors' propensity to engage in and succeed in improvement-seeking activism. Further, we anticipate that activism is dependent on the presence of individual investors with right characteristics, rather than on the general ownership structure of publicly held corporations.

We contribute to the current understanding of investor activism with three main insights. First, drawing on literature and practitioner interviews, we study the sources of investor activism and identify two main investor characteristics that explain differences in investors' propensity to activism, namely portfolio concentration and investment horizon. Second, we use these characteristics to formulate a novel classification of investors into groups. Third, we examine which concrete corporate improvements the different investor groups facilitate. Contemporary research on activism focuses abundantly on (short-term) value creation but pays far less attention

to activists' role in facilitating concrete changes in the companies they target. Furthermore, while most papers studying investor effects on corporate changes focus on improvements facilitated by externally labelled groups, such as hedge funds or institutional investors, we include all investors and allow for relating different types of investors to different corporate improvements.

1.3 Research scope, methods and limitations

We study the effect of different investor types on large U.S. and European publicly traded firms, as included in the S&P 1500 Composite and the STOXX Europe TMI indices. Our observation period runs from 2003 through 2009 covering the period for which reliable ownership data is available.

To define our research question and construct related hypotheses, we draw extensively on existing literature. First, we explore the basic literature of the theory of the firm and cover the predictions for the behaviour of shareholders as the principals of publicly held corporations. We then focus on extant literature regarding investor effects on target firms. We cover the growing body of activist literature and explore adjacent topics of investor effects on public corporations, including studies on blockholders, institutional investors as well as individual and family investors. To consolidate our understanding on which types of investors are apt to engage in activism, we interview eight European professionals working with investor activism. Our in-depth interviews provide an important complement to the literature since our interviewees include activist investors from different types of organizations, institutional investors as well as advisors working with shareholder activists.

Next, we compile a unique panel dataset to test our hypotheses on investor activism. First, we produce an ownership database featuring 17.9 million quarterly owner-firm pairs to identify our owners of interest and analyse their investment behaviour over our observation period. Our ownership database allows us to produce two alternative investor groupings based on past investment behaviour. Examining the relationship between different investor groups and observed corporate improvements allows for studying the effect that influential individual investors may have on target firms. The approach is in line with our anticipation that activism relies primarily on individual investors with right characteristics, rather than public corporations' overall ownership structures.

Next, we construct datasets for the corporate characteristics that we anticipate activist investors improve. First, we produce a unique corporate governance database comprising annual data on 14 key governance characteristics for our sample firms. Second, we build a customized divestments database covering annually all divestments undertaken by our sample firms. The database features 2,407 related and 956 unrelated divestments. Finally, we produce a dividend payout database. We then deploy a range of panel data regression models to examine the relationship between investors with different characteristics and observed corporate improvements. We also seek to counter the selection problem and show that the direction of the causality runs from investors to corporate improvements, rather than the other way around.

We recognize two specific limitations related to the focus and data-availability of our study. First, we note that our ownership data is limited to holdings exceeding the national mandatory disclosure limit[2], available in public company filings, presented in the business press or otherwise included in the FactSet ownership data[3]. Therefore, holdings falling below the mandatory disclosure limit and not publicised elsewhere may not be present in our ownership data. The limitation may cause a downward bias in observations for certain investor groups. Specifically, our practitioner interviews and literature (see e.g. Becht *et al.* 2008) give rise to the assumption that unregulated investment companies are left partly below radar: hedge fund holdings are often recorded only in nominee registers and are not available publicly unless the investor deems publicity beneficial for the activist campaign.

Second, the FactSet ownership data, while widely considered the best international data available, does not include comprehensive ownership data for companies that have ceased to exist. Specifically, we are unable to extract consistent ownership data for firms that are acquired, merged or for other reason cease to exist prior to year-end 2009. Consequently, all such firms and their corresponding ownership data are not present in our analyses. We recognize that issues related to survivorship bias may arise and discuss potential consequences further in Section 0.

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[2] Disclosure limits vary across markets between 2% and 5%.
[3] FactSet sources the ownership data from regulatory and press sources.

1.4 Structure of the study

In Chapter 2, we present and discuss key theories and lay out preceding activism-related literature. In Chapter 3, we present the research question and specify related hypotheses. Chapter 4 describes the data, specifies variables and presents key methodologies applied. In Chapter 5, we show our results for each hypothesis. In Chapter 6, we test the persistence of our results and explore alternative approaches to capture the investor characteristics that drive activism. Chapter 7 discusses the results and concludes.

2 Literature review

This section provides an introduction to the theoretical framework of shareholder activism. First, we lay out the concept of shareholder activism and define activist investors. Second, we discuss the theory of the firm and investor passivity, presenting the agency costs, the failure of control mechanisms and the free-rider problem. Third, we discuss the investor characteristics that make some investors more likely to be active than others. We then present these reasons in terms of two key dimensions: (1) portfolio concentration and (2) investment horizon. Finally, we discuss how literature views the corporate characteristics that activist investors are likely to improve.

2.1 Shareholder activism

In this section, we define shareholder activism and discuss its roots.

2.1.1 Basis for shareholder activism

The basis for shareholder activism is in the dissatisfaction of stakeholders towards the state of the company they hold an economic interest in. In this study, we only consider activist shareholders and exclude debt holders from our analysis. As Hirschman (1970) describes, dissatisfied shareholders have three different ways of acting: (1) exit, (2) loyalty and (3) voice. Exiting stands for the selling of shares, often referred to as the “Wall Street Walk” or “voting with one’s feet”. If loyal, the shareholders keep the shares and do nothing. The third alternative is to hold on to the shares and “voice” the dissatisfaction by engaging in activism.

2.1.2 Definition of an activist investor

Although a number of definitions for activism exist in related literature, the fundamental pursuit of influencing firm policies to unlock shareholder value is common to all definitions. Jensen (1993) views activist investors as individuals or institutions "holding large debt or equity positions in a company and actively participating in its strategic direction." In line with this, Gillan (2007) notes that shareholder activists are traditionally defined as investors who, being "dissatisfied with some aspect of a company's management or operations, try to bring about change within the company without a change in control."

Tirole (2006), however, complements this view by noting that activism can also stem from outside the company's existing shareholders. In such a case an investor gains favourable information on the company and buys into its equity with the intention of actively pursuing value-creating changes. In an important addition to the activist definitions above, Clifford (2008) notes that an essential aspect of activist behaviour is the possibility to threaten a target with a takeover. In contrast with Gillan (2007), this includes the threat of a change in control.

Most recent U.S. studies classify activist engagements based on the mandatory Schedule 13D filings[4] submitted to the U.S. Securities and Exchange Commission (SEC) and consider them to be a signal of investor's intentions to actively participate in the target firm's governance. This definition is, however, mostly applied in studies examining the returns and operational improvements resulting from engagements by "outside" activists as described by Tirole (2006). Klein and Zur (2009), for example, define hedge fund activism as "a strategy in which a hedge fund purchases a 5 percent or greater stake in a publicly-traded firm with the stated intent of influencing the firm's policies" (see also Brav *et al.* 2008).

In this study we include both existing (old) and new shareholders in our definition of an activist shareholder. More precisely, we define activist investors as minority shareholders actively seeking to change company policies in order to unlock embedded shareholder value. Further, we use "active shareholders" and "activist shareholders" interchangeably.

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[4] Schedule 13D, a beneficial ownership report, must be filed with the SEC by any investor exceeding the ownership threshold of 5% of common stock with intentions to influence target firm policies. The 13D disclosure document must be filed within ten days from exceeding the 5% threshold.

We also stress that shareholder activism should not only be studied on the basis of public filings or announcements since activist campaigns are often kept private. Carleton *et al.* (1998) show how a major financial institution, the Teachers Insurance Annuity Association-College Retirement Equities Fund (TIAA-CREF) tends to approach the companies they attempt to influence through private negotiations. A similar observation is made by Becht *et al.* (2008) who find that in the case of Hermes UK Focus Funds, activism is predominantly executed through private negotiations. Further, the wide utilisation of non-public negotiations in conveying requests for change to target company board and management is corroborated by our practitioner interviews.

2.2 Theory framework

In this section, we discuss the theory of the firm and relate its basic concepts to shareholder passivity and the role of activist shareholders.

2.2.1 Market for corporate control

Financial theory approaches shareholder activism as one of the mechanisms of the market for corporate control. Manne's (1965) early description of the market for corporate control presents that rewards to both managers and shareholders from enhanced utilisation of badly managed firm resources motivate the existence of a system where managers and investors compete over the control of corporate resources. Manne (1965) also notes that in a world of separated ownership and control (Berle and Means 1932), the existence of such a market protects especially small minority shareholders who lack means to exercise direct control over the management.

In line with Manne (1965), Fama and Jensen (1983) define the market for corporate control as a system where investors buy control of companies and fire and hire managements in pursuit of highest possible utilisation of firm resources and resultant value gains. Jensen and Ruback (1983) add to this by offering a slightly redefined perspective on the market for corporate control. They propose that management teams competing for rights to manage firm resources are, in fact, the primary subjects of the market. Jensen and Ruback (1983) view investors who execute transactions (including corporate raiders) as mere facilitators of changes in resource control - their role is to simply choose the competing management team that offers the highest-value alternative.

2.2.2 Agency theory

The fundamental need for the market for corporate control arises from the costs of non-aligned interests of management and shareholders, as laid out by Jensen and Meckling (1976). Drawing from early financial theorists, including Adam Smith (1937) and Berle and Means (1932), Jensen and Meckling attest that in a principal-agent relationship, the actions taken by a utility-maximising agent (manager) are never fully aligned with the value-maximisation of a principal (shareholder). Such misalignment of interests generates costs to both parties. Costs from non-alignment, or agency costs, can be broken down into three components: 1) residual loss, 2) monitoring costs and 3) bonding costs (Jensen and Meckling 1976).

Monitoring costs are incurred when the shareholder attempts to discipline the management and reduce unfavourable actions. Owner resources spent on contracting and auditing are typical monitoring costs. Managers, on the other hand, incur bonding costs in an attempt to enhance alignment with shareholder interests, when such enhanced alignment increases their utility. Finally, residual loss arises from the inevitable non-alignment of interests despite efforts to reduce it (Jensen and Meckling 1976).

The setting and implications of the agency theory are, of course, general in nature and do not apply to corporate governance-related subjects exclusively (see e.g. Alchian and Demsetz 1972). In the governance of corporations, however, the separation of ownership and control between shareholders (or to debt holders, for that matter) and management, leads to a pure-play agency relationship and the role of agency costs becomes highly relevant.

In studying investor activism, the agency costs incurred to shareholders are pivotal. These costs are derived from the non-shareholder value maximising behaviour of management and may be caused by a range of manager misbehaviour. For example, Morck, Shleifer and Vishny (1990) find that managers' personal benefits drive bad acquisitions, while Jensen and Meckling (1976) show that managers often waste shareholder wealth in excessive perks. Further, Jensen (1986) shows that managers tend to embark their companies on paths of excessive growth and value-destructive diversification (see also Black 1992b). Also, Black (1992b) notes that CEOs tend to weaken shareholder position and monitoring opportunities by choosing or presenting inside or affiliated board members.

2.2.3 Internal control mechanisms

The non-aligned interests between owners and management, resulting agency costs and value losses naturally give rise to dissatisfaction amongst shareholders. To mitigate the agency costs, shareholders have a range or remedies at their disposal. These tools are broken down into internal and external control mechanisms (Jensen 1993).

Internal control mechanisms include a range of tools with which existing shareholders can discipline the management and ensure better alignment of the management interests to those of their own. The key internal control mechanisms include 1) increased monitoring of management by the board of directors and 2) enhanced management incentives.

Management monitoring

Fama and Jensen (1983) present monitoring of management by shareholders as a significant control mechanism in mitigating agency costs. In particular, they argue that clear, contract-based ratification and monitoring of decision-makers (management) by the risk-bearers (shareholders) subdues part of agency costs and in general, facilitates the survival of large corporate organisations. Evidence suggesting that management monitoring, especially by large shareholders, is an important control mechanism and does add shareholder value, is also presented by Demsetz (1983), Shleifer and Vishny (1986), Agrawal and Mandelker (1990) and Black (1992b). In practice, increased management monitoring may include disciplinary actions such as voting against management-proposed antitakeover charter amendments ("shark repellents") (Agrawal and Gershon 1990) or placing more independent directors to the board of directors (Black 1992b).

Management incentives: stock ownership, pay and dismissal

Management incentives as an internal control mechanism refer to management compensation or management turnover being tied to the owner interest. Owner interest is generally equalled to shareholder wealth for which share price (Jensen and Murphy 1990) or earnings (Kaplan 1994) are generally used as proxies.

Management compensation is perhaps most prominently discussed by Jensen and Murphy (1990), who study the incentive effects of management compensation policies with a U.S. data in three samples over the 20th century. Jensen and Murphy (1990) find that stock ownership creates

substantial incentives for managers to act in line with shareholder interests, whereas performance bonuses and dismissal-related wealth consequences are only weakly associated with fluctuations in shareholder wealth. Moreover, Morck, Shleifer and Vishny (1988) find that management stock ownership creates significant incentives to align interests. More precisely, they show that management stock ownership is positively related to the Tobin's *q* of U.S. firms on relatively small stock holdings. This implies that incentivising management with stock holdings serves to increase shareholder value. Partly contradicting his predecessors, Kaplan (1994) finds that in addition to stock holdings, also management cash compensation is positively correlated with share price development and earnings in both the U.S. and Japan. Kaplan's results are well in line with Coughlan and Schmidt (1985) findings on U.S. data, showing that boards do succeed in establishing manager-incentivizing compensation arrangements. Shleifer and Vishny (1997) sum up the evidence from key literature on management compensation as an incentive tool. They highlight that while compensation is widely used as an internal control mechanism to mitigate agency costs, it does not entirely fulfil the task. In accordance with Jensen and Murphy (1990), Shleifer and Vishny (1997) hypothesise that legal and political factors restrict the pay-performance sensitivity and thus strain the efficiency with which management compensation can be utilized in mitigating agency costs.

Regarding disciplinary management turnover, Morck, Shleifer and Vishny (1989) find that based on U.S. data in 1981-1985, boards of directors tend to change managements when companies underperform compared to the surrounding industry, implying that management dismissal is actively applied as an internal control. They also find, however, that when an entire industry suffers, boards fail to engage in disciplinary management turnover. Kaplan (1994)[5] shows that in the U.S. and Japan, management turnover is negatively related to share price performance and earnings. Also Coughlan and Schmidt (1985), Warner, Watts and Wruck (1988) and Weisbach (1988) find evidence that CEO dismissals are indeed used as an internal control mechanism. Jointly, they find a significant relationship between poor stock price performance and ensuing CEO dismissal. Further, the findings of Murphy and Zimmermann (1993) seem to corroborate that, based on U.S. data, CEO departure is preceded by poor earnings and weak stock price performance. Denis and Denis (1995) further corroborate the significance of management

[5] Kaplan (1994) finds similar results also in the German market.

dismissal as an internal control by showing that forced CEO resignations are preceded by poor operating performance and ensued by significant operating performance improvements. The authors also clarify the picture by attesting that amongst normal CEO retirements, similar effects are not observed. Interestingly, however, Denis and Denis (1995) do not give credit to the boards for successful CEO dismissals, but rather claim that direct blockholder influence or threat of a takeover is often behind the dismissal of inefficient managers. This implies significant interplay between internal and external control mechanisms in large corporations.

More recently, the application of management incentives in controlling the management has been discussed by Huson, Parrino and Starks (2001), who study CEO removals and firm performance with U.S. data for 1971-1994. They find that CEO dismissal was applied as an internal control mechanism throughout the observation period, but the relationship did not change significantly over time. This implies that, despite changes in external control mechanisms, such as takeover market intensity or regulation, the sensitivity of CEO turnover to firm performance did not change. In slight contrast, however, Dahya *et al.* (2002), find that when a regulatory code in favour of more independent directors was introduced in the U.K. market, the negative relationship between CEO turnover and performance became stronger. In line with these findings, Huson, Malatesta and Parrino (2004) find that relative accounting measures of performance deteriorated prior to CEO turnover and improved thereafter. In their study, based on the U.S. market in 1971-2004, they also found that the level of ex-post performance improvements was positively related to the level of institutional shareholdings and to the presence of an outsider-dominated board. Finally, partly contradicting the findings of Huson, Parrino and Starks (2001), Cremers and Nair (2005) find evidence of the interplay between internal and external control mechanisms. They show, based on U.S. data in 1990 – 2001, that a portfolio of companies with strong internal controls[6] enjoyed abnormal returns of 8% over a portfolio with low internal controls but only in the presence of high takeover vulnerability[7]. This implies that internal and external control mechanisms are interrelated and their effect in mitigating agency costs is dependent on one another.

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[6] Public pension fund ownership is used as a proxy for internal control mechanisms.

[7] High takeover vulnerability is equated with high level of external controls and proxied with an index of antitakeover measures, in line with Gompers, Ishii and Metrick (2003).

2.2.4 External control mechanisms

According to Jensen (1993), the external control mechanisms to mitigate agency costs can be divided in into

1) Capital markets, or market for corporate control,

2) Product market competition and

3) Regulatory/legal forces.

Although we do not expect shareholders to exercise power over regulatory issues, we recognise the importance of such issues in determining the costs from non-alignment of managerial and shareholder interests. The three external control mechanisms are discussed in more detail below.

Capital markets and the market for corporate control

When managerial action diverges from shareholder interest, the surrounding capital markets have incentives to intervene. The intervention is incentivized through decreased shareholder value, or value of the firm, deriving from inefficient use of corporate resources (Jensen 1991). The decreases in value then motivate outside investors to attempt taking over such under-utilized assets and employ them more efficiently. The surrounding capital markets are able to exercise such control over inefficient managers through firms' need to obtain capital from the markets (Jensen 1986). Traditionally, market for corporate control transactions are materialized in takeover bids, as laid out by (Jensen and Ruback 1983). They further show empirically, based on U.S. data, that corporate governance-motivated takeovers are indeed value-adding: target shareholders benefit from them and bidder shareholders do not lose. Thus, large shareholders, by facilitating takeovers, may work in tandem with the market for corporate control.

Product market competition

In addition to the capital markets, the products markets on which firms operate also serve to discipline inefficient managements and mitigate agency costs. As formulated by Jensen (1986), the product (and factor) markets tend to drive prices towards minimum average cost, thus forcing managements to increase efficiency in order to ensure survival. Jensen highlights that the disciplinary effect of product markets is significant especially in mature industries or industries where excess returns (rents or quasi-rents) are small. Also Hart (1983) previously showed in an

analytical paper that product market competition reduces managerial inefficiency, or slack, in a state of correlated firm environments.

Regulatory and legislative changes

The regulation and legal environment carries a significant potential impact on the agency costs and the extent of diverging interests between management and shareholders. Regulation, as Jensen (1983) suggests, is especially significant when it changes the rules of the takeover market. Further, Jarrell *et al.* (1988) notify that, based on U.S. data in the 1980s, less potent antitakeover regulations serve to increase takeover activity and strengthen the market for corporate control as a means to mitigate agency costs.

2.2.5 Failure of control mechanisms and the free-rider problem

Despite the availability of internal and external control mechanisms, the success and significance of different control mechanisms is often questioned in the contemporary literature. Perhaps most prominently, Jensen (1993) discusses evidence of the partial failure of internal and external control mechanisms. The potential failure of different control mechanisms is pivotal to our research, since shareholder activism is often considered an option to the traditional means for controlling the non-alignment between management and shareholder interests.

Failure of internal control mechanisms

Shareholders' choice not to utilise internal control mechanisms, especially increased management monitoring, is largely dependent on the ownership structure of the firm, as shown by Grossman and Hart (1980). In an analytic paper, they show how minority investors refrain from undertaking increased monitoring due to related costs. Any costs incurred would be carried solely by the owner seeking improvements, whereas potential value increases would be allocated to all shareholders in proportion to their holdings. In case of a single shareholder incurring monitoring-related costs, all other shareholders simply free-ride and reap the benefits of enhanced management discipline. Such a setting often leads to a situation where none of the shareholders monitor the management (Greenwood and Schor 2009). Further, the smaller the stake, the smaller the incentive to carry incremental monitoring-related costs alone. Noe (2002) additionally argues that an investor with a small stake and the skills required to monitor cannot gain from monitoring by increasing her holding because the expected gains are priced into the stock price by passive

owners. The phenomenon, commonly referred to as the free-rider problem, is therefore accentuated for companies with atomistic ownership structures.

In reality, the costs incurred to a shareholder seeking to increase management discipline by pro-active measures include costs from monitoring the management, fighting potential legal challenges against other firm stakeholders and mounting proxy contests, as well as cost from potential loss of diversification through the purchase of a significant stake in the company (Bethel, Liebeskind and Opler 1998). These costs are in some form incurred to both existing shareholders pursuing change to status-quo and to new shareholders buying into a company in pursuit of value-creating changes.

In addition to the free-rider problem, the literature also suggests other reasons for the failure of internal control mechanisms. Jensen (1993) discusses these reasons widely, attesting that given the board of director's key role in all internal controls, malfunctioning boards bears much of the blame. He states that while boards do seem to dismiss CEOs after poor financial performance; they do so too late and too seldom. Based on exemplary U.S. corporate cases, Jensen (1993) points out that although pre-emptive management control is the board's most vital task, they seem to fail in acting before companies end up in a crisis. As potential reasons for board failures, Jensen (1993) highlights, among others, low levels of management and board equity holdings (see e.g. Morck, Shleifer and Vishny 1988 for discussion; Jensen and Murphy 1990), oversized boards and the convention of CEOs heading the boards.

Moreover, the findings of Jensen and Murphy (1990) on low pay-performance sensitivity imply that apart from stock ownership, boards may not succeed in building strong performance pay incentives enhancing management alignment to shareholder interests. Also the conclusion of Morck, Shleifer and Vishny (1989) that boards of firms in suffering industries largely fail to control managements when solutions would require painful restructuring or sell-off of assets, adds to the view that internal control mechanisms function only partially to discipline inefficient managements and mitigate agency costs.

Failure of external control mechanisms

The external control mechanisms, too, are partly bound by the free-rider problem (Grossman and Hart 1980). Namely, they suggest that a takeover bidder is not exempt from the same externality

as atomistic shareholders; should she devote resources to improving the target, small shareholders can simply hold on to their shares instead of selling and reap the benefits of the takeover improvements. This balance serves to hinder takeovers and weaken the functionality of the market for corporate governance in correcting for inefficiencies. Grossman and Hart (1980), however, suggest that the negative externality can be mitigated through ex-ante provisions to allow for an outside bidder, for example, to sell the assets of the firm to a holding company at a reduced price. All in all, the free-rider problem combined with legislation limiting the ex-ante implementation of bidder-friendly clauses in company charters[8] may have a significant effect in decreasing the efficiency of market for corporate control.

Literature suggests that external control mechanisms are also often prone to failure outside the implications of the free-rider problem. Jensen (1993) suggests that despite the flourishing takeover market in the 1980s, the subsequent rise in regulation, state antitakeover amendments and prohibitive court rulings largely subdued the activity of the market for corporate control beginning early 1990s. U.S.-based analysis by Comment and Schwert (1995), however, partly contradicts this, implying that the post-1980s demise of the market for corporate control and its lowered ability to contribute to mitigating agency costs is predominantly caused by secular trends, rather than legal reform. Allowing both arguements, it is evident that the market for corporate control is sensitive to economic or legal trends and partly fails to act as an external mechanism mitigating managerial inefficiency.

Product market competition, also, is often found partly flawed in controlling management discretion and aligning principal-agent interests. Jensen (1993) states that, while the control force of the product market must be eventually considered inevitable[9], it is often too slow to wield sufficient power over misaligned management incentives. He equals product markets with the manager dismissal problem: when the discipline effect kicks in, the company is often already in a crisis, rendering the control largely useless. In addition, Hart (1983), despite finding the product

[8] See Grossman and Hart (1980) for discussion on the Williams Act.
[9] Jensen (1993) states that no firm can supply inferior products with inferior prices over extended periods of time.

market to discipline management to some extent, implies that it does not fully remove managerial slack and might not work in all market conditions[10].

Regulatory and legal issues, generally in place to protect shareholders from expropriation by managers (Shleifer and Vishny 1997), also often fail to meet their purpose of controlling for management discretion. Most importantly, cross-country studies reveal that in many of the seemingly developed market economies the legal setting fails to protect shareholders from management expropriation or even direct management theft (Shleifer and Vishny 1997).

2.2.6 Shareholder activism as an additional control mechanism

Despite the free-rider problem and the failure of internal and external control mechanisms implied by the literature, some shareholders are observed to systematically undertake measures to mitigate agency costs in their portfolio companies (Jensen 1993; Ackermann, McEnally and Ravenscraft 1999). Such active (minority) shareholders provide for an exception to the prediction of the free-rider problem. Consistent with our definition in Section 2.1, we refer to them as activist shareholders.

In terms of the three alternatives available for dissatisfied shareholders (Hirschman 1970), existing shareholders face the choice of "exit", "loyalty" or "voice", while for new shareholders "voice" and "exit" are complementary strategies (Noe 2002). Specifically, their investment strategy is to find mismanaged companies with an opportunity to unlock value and make an exit when the changes or the expectations of future changes are reflected in the company's value.

2.3 Reasons for shareholder activism

The reason for the occurrence of active minority shareholders, who willingly engage in activism and defy the free-rider problem, has been subject to much discussion in the literature. In this section, we condense the potential literature-implied reasons for activism into three classes: 1) evolutionary reasons, 2) organisational reasons and 3) regulatory reasons. For each class, we discuss the underlying reasons in detail.

[10] Namely, Hart (1983) does not draw conclusions on product market discipline in oligopolistic or monopolistic markets

2.3.1 Evolutionary reasons – Development of investor organizations

Evolutionary reasons for activism relate particularly to the substantial growth of institutional investors over the past 60 years and the consequent preference for activism instead of exiting investments. In the U.S., the proportion of institutionally owned equity has grown from 7 percent in 1950 to 50 percent in 2008[11]. As institutional investors' aggregate investments have grown, many have ended up with very sizeable stakes in their portfolio companies (Wahal 1996; Gillan and Starks 2000; Li *et al.* 2006). Such large owners often find themselves in a market position where reacting to dissatisfaction by exiting the investment becomes unattractive as liquidating large positions can have significant negative price impacts (Holthausen, Leftwich and Mayers 1990; Brown and Brooke 1993; Chan and Lakonishok 1993; Wahal 1996). Such situations for institutional investors are discussed by e.g., Coffee (1991), who shows that in the 1980s the increased size of institutions' shareholdings made their positions more illiquid and adverse price reactions from share sales made activism preferred over exit.

2.3.2 Organisational reasons

Organisational reasons account for some investors having higher incentives or larger flexibility to engage in activism than others. When institutional investors are studied as potential mitigators of agency problems, it is implicitly assumed that institutional investors have the same objectives as other shareholders (Woidtke 2002). Institutional investors, however, are often agents themselves (Black 1992a), managing funds that are not their own. If incentives are not aligned with the owners of the fund, fund managers may strive to pursue their own private agendas, thus reducing the probability that they undertake additional target improvement efforts to increase the value of the funds they manage.

Nevertheless, strong financial incentives can motivate fund managers to counter the free-rider problem, enhance the value of their portfolio companies and avoid the setting where agents are watching agents as depicted by Black (1992a). Woidtke (2002) studies the effect of ownership levels of private and public pension funds on target valuation and finds a positive effect associated with private pension funds. She argues her findings to be consistent with the view that

[11] Institutional holdings as reported in the US Federal Reserve Board's Flow of Funds historical reports. Institutional investors include the following categories: Commercial banking, savings institutions, property-casualty insurance companies, life insurance companies, private pension funds, state and local government retirement funds, federal government retirement funds, mutual funds, closed-end funds, exchange-traded funds, and brokers and dealers.

larger and more performance-based compensation of private pension funds managers align their incentives with those of other shareholders. A number of contemporary studies on hedge fund activism (Kahan and Rock 2007; Brav *et al.* 2008; Clifford 2008; Klein and Zur 2009) further suggest that activist hedge funds are more prone to engage in activism than pension funds or mutual funds since the hedge fund managers' compensation is typically tied more directly to the funds' performance. In other words, managers in hedge funds have greater incentives to actively enhance target company performance, since they receive higher compensation for any increment in portfolio company value.

Also, different functions inside an investor organization may give rise to internal conflicts of interest that may encourage institutional investors to vote with the management (Pound 1988). For instance, when an investor is part of a bank or an insurance company, the firm as a whole might have significant benefits vested in other business with the target. Since the allocation of business to service providers, such as insurance companies or financial advisors, is typically under managerial discretion, voting with the management may outweigh the possible gains from increased management monitoring. Business relationships can therefore compromise institutional investors as monitors of target firms (Brickley, Lease and Smith Jr 1988; Chen, Harford and Li 2007; Cornett *et al.* 2007). Literature seems to agree that insurance companies and banks with business ties to their portfolio companies lack the monitoring effects of other institutional investors when it comes to pay-for-performance sensitivity of managerial compensation in the target companies (Almazan, Hartzell and Starks 2005). Further, banks with director interlock and business relationships with portfolio companies tend to vote in favour of management antitakeover proposals (Payne, Millar and William Glezen 1996).

Finally, our practitioner interviews suggest that the organisational capacity to extend sufficient firm-specific attention to targets is important for investor's ability to increase management monitoring and facilitate improvements. While many studies (see e.g. Smith 1996; Wahal 1996) suggest that also strongly diversified investors attempt to be active through a centralised approach such as letter-sending, findings by Black (1998) are consistent with the view that without significant efforts activism does not yield improvements. The perception is further corroborated by e.g. Becht *et al.* (2008) who show that firm-specific monitoring efforts, including private negotiations, are vital in improving target firms.

2.3.3 Regulatory reasons

Regulatory reasons for the occurrence of shareholder activism relate to some investors being less bound by diversification, maximum stake or redemption rules than others. Bethel *et al.* (1998) find that firms targeted by corporate raiders, who are not bound by maximum stake requirements and who regularly threaten to buy the entire target, experience significant ex-post operating performance improvements. This, together with descriptive findings of Clifford (2008), suggests that investors not tied by diversification or maximum stake requirements have an especially favourable position to engage and succeed in activism. These findings are also in line with Brav *et al.* (2008), who bring forth hedge funds' freedom to hold concentrated positions as a key contributor to their ability to engage in activism.

Regarding the effects of redemption rules on activism, Clifford (2008) finds that amongst hedge funds, a one standard deviation increase in the lock-up period increases the probability of engaging in activism by 30%. This implies that investors that are by regulation required to return investor money within very short notices find it more difficult to pursue activism, which often requires locking up funds for extended periods in individual target firms.

Regulation may also affect the occurrence of activism through the allowed use of derivatives and leverage (Kahan and Rock 2007). Some investors, especially mutual funds, are often by charter not allowed to use leverage or derivatives in investing activity (Ackermann, McEnally and Ravenscraft 1999). On the contrary, Hu *et al.* (2007) find that hedge funds frequently use equity derivatives to decouple votes and ownership. Brav *et al.* (2008) complement this finding by asserting that hedge funds' use of derivatives provides them with more trading flexibility than is attainable for pension funds and mutual funds.

Passively indexed funds are a target of debate in relation to activism. Kahan and Rock (2007) suggest a view based on the competitive environment of indexed mutual funds. Indexed funds replicate the performance of a given index and therefore compete with identical peers largely on the basis of fund expenses. If engaged in monitoring, the fund will carry all the costs but competitors will extract the benefits for free. Indexed funds would therefore be strongly discouraged to monitor, consistent with the free-rider problem, especially since they are unable to alter their allocation to increase the size of their holding. Alternatively, it is argued that funds devoted to indexing do not have the option to exit, and would therefore be constrained to "voice"

by engaging in value-enhancing campaigns (Del Guercio and Hawkins 1999). A survey study by Useem *et al.* (1993), however, shows that some managers of passively indexed funds are highly active while others are not, thus exhibiting no general trend.

2.4 Investor characteristics and classification

In this section we explore the different ways investors are classified in the literature when studying investor effects on corporate changes. We then draw on the activism-relevant investor characteristics presented in the previous section and identify two key dimensions that capture most of them: (1) portfolio concentration and (2) investment horizon.

The bulk of research on investor activism differentiates investors based on their legal types. Researchers have studied the monitoring abilities of and stock price reactions to ownership of institutional investors in general (see e.g., Coffee 1991; Black 1992b; Kahn and Winton 1998), and separately for pension funds (see e.g., Romano 1993; Wahal 1996; Del Guercio and Hawkins 1999; Woidtke 2002) and activist hedge funds (see e.g., Brav *et al.* 2008; Clifford 2008; Klein and Zur 2009). We argue, however, that a comparison of externally labelled investor types does not necessarily produce meaningful results as an investor's label as such may not explain investor behaviour. For instance, in their study on pension fund activism, Del Guercio and Hawkins (1999) find significant heterogeneity across funds in activism objectives, tactics and impact on target firms. We argue that investors should be classified on the basis of investor characteristics that are shown to relate to the propensity to be active.

Our approach on investor classification is inspired by Porter's (1992) comparison of the U.S., German and Japanese public ownership systems and the division of investors into dedicated and transient. Dedicated owners are described as investors who remain invested in companies over long periods of time and hold significant ownership stakes, whereas transient owners frequently trade small stakes in a large number of firms. The division is further applied by Bushee (1998, 2004) who groups investors based on investment behaviour measures describing ownership stability and the size of the ownership stake. We develop the classification further by dividing investors based on their portfolio concentration and investment horizon.

2.4.1 Portfolio concentration

Portfolio concentration refers to investors' ability and choice to hold large ownership stakes in few companies. We note that portfolio concentration captures many of the reasons for activism presented above in Section 2.3. First, high portfolio concentration implies that an investor is not bound by diversification or maximum stake requirements (Clifford 2008), since she is able to hold large stakes in a small number of targets. The investor is thus able to focus its efforts and resources on a limited number of firms and possesses the ability to accumulate a large stake in a given target. While this is contrary to the diversification principle, it is often necessary to allow for extending significant firm-specific monitoring efforts in individual target firms. Also, the apparent lack of regulation implies that focused investors are not regulated money managers often lacking performance-based fees (Golec 1992; Chordia 1996; Deli 2002; Khorana, Servaes and Tufano 2008) but rather entities with higher performance incentives (Kahan and Rock 2007; Brav *et al.* 2008) and freedom from internal agency problems (Black 1998).

Further, while large holdings may render exiting unattractive, they also improve the outlooks of monitoring. Perhaps most importantly, large ownership stakes boost the incentives to monitor by partially mitigating the free-rider problem as a larger proportion of the benefits is channelled to the monitor (Grossman and Hart 1980; Shleifer and Vishny 1986; Barclay and Holderness 1991a). Also, large stakes support investors' monitoring efforts by providing more voting power, often needed to pressure the target management (Shleifer and Vishny 1986). Further, large holdings may reduce the total costs of monitoring through easier access to information as well as to the target management and board (Carleton, Nelson and Weisbach 1998; Chen, Harford and Li 2007).

The literature regarding the power and incentives of large owners to monitor comprises numerous studies on blockholders, typically defined as shareholders with ownership stakes exceeding 5% of common stock. The studies document a relation between blockholder stock purchases and value increases (Holderness and Sheehan 1985; Mikkelson and Ruback 1985; Barclay and Holderness 1991a; Choi 1991; Bethel, Liebeskind and Opler 1998). Importantly, the studies also show that blockholders affect corporate decisions (Denis, Denis and Sarin 1997a, b; Moeller 2005) and voting outcomes (Gordon and Pound 1993).

We recognise, however, that the level of ownership stake only incorporates large percentage holdings but does not take into account the number of holdings. Large institutional investors, for instance, may have broadly diversified portfolios but still hold large stakes in their portfolio firms. We thus note that while level of ownership is important, also a low number of holdings is required for a concentrated portfolio supporting shareholder activism[12].

The literature also suggests that the relationship between block sizes and value-increasing monitoring is not linear. While we explain above that the net benefits of monitoring increase with the level of ownership, so does control and the incentives and opportunities to extract private benefits (Rock 1994). Private benefits can be extracted as pecuniary benefits in the form of excess salary by large inside owners or as small amenities that exploit company resources (Holderness 2003). Barclay and Holderness (1989) as well as Dyck and Zingales (2004) provide evidence of private benefits by studying the pricing of trades of large blocks of common stock. They find that the blocks are typically priced at substantial premiums to the post-announcement exchange price, which should partly reflect the private benefits from the controlling position. Similarly, Black (1992a) argues that the ownership of moderately large blocks (5% - 10% of equity) could results in better governance outcomes than ownership of even larger blocks.

To better capture portfolio concentration in a more meaningful way than pure stake size, no specific metric is introduced but some alternatives can be found. For example, Bushee (1998) introduces four investment behaviour variables: (1) the average percentage of an institution's total equity holdings invested in each portfolio firm, (2) the average size of an investor's ownership position in its portfolio firms, (3) the percentage of the investor's holdings exceeding five percent of the target company's equity and (4) the Herfindahl measure of portfolio concentration.

2.4.2 Investment horizon

Investors' investment horizon describes their ability and choice to engage in the portfolio companies over time. Investors possess different investment horizons for many reasons. Evolutionary reasons may lengthen the investment horizon of large institutional investors as larger stakes discourage exit and a broadly diversified portfolio narrows down the relevant

[12] See, however, Section 2.3 for discussion on why diversified institutions with large stakes may be active (evolutionary reasons for activism).

alternative investment opportunity set. However, for many investors the high liquidity requirements from their principals (ultimate investors in case of funds) may force strategies with short horizons (Gaspar, Massa and Matos 2005). At its simplest, the investment horizon may represent the investor's choice, stemming from organisational preferences.

We argue, nevertheless, that investment horizon captures many of the reasons for activism presented above in Section 2.3. Importantly, academics have argued that while short-term investors may advance myopic management behaviour resulting in weaker long-term performance (Jacobs 1991; Porter 1992), large shareholders with long investment horizons may invest in monitoring and thereby reduce the information asymmetry that drives shareholder and manager myopia (Bhagat, Black and Blair 2004). Perhaps most importantly, investors with short horizons have little incentives to extend resources on monitoring and activism engagements, since corporate improvements typically materialise over several years. Short-term investors are less likely to remain shareholders of the firm long enough to profit from the improvements (Gaspar, Massa and Matos 2005).

While investment horizon is difficult to observe, the literature suggests a number of possible proxies. In his study on activist hedge funds, Clifford (2008) uses the lock-up period of invested capital as a proxy for investment horizon, and he documents an increasing propensity to activism with a longer investment horizon. Gaspar, Massa and Matos (2005), on the other hand, build on a measure of investor turnover of a company. The measure is an ownership stake weighted average of investor churn rates, a measure for portfolio turnover. Gaspar, Massa and Matos (2005) find that companies with short-term shareholders are more likely to receive an acquisition bid but enjoy lower premiums. Chen, Harford and Li (2007) measure investment horizon with the length of time an institution has been invested in the firm as a proxy. Further, they argue that the longer the investor has been invested in the firm, the more familiar the investor will be with its target and its management, which in turn lower the costs of monitoring. Similarly, Bushee (1998) calculates the share of holdings kept successively for two years as a proxy for an investor's investment horizon.

2.5 Activist driven corporate improvements

As we show, some investors, due to their characteristics, are in a strong position to actively monitor their target companies despite proven incentive issues such as the free-rider problem. But what changes do such active investors equipped with the appropriate incentives pursue in the companies they hold? In this section, we discuss the three principal areas of concrete corporate changes the literature suggests activists to pursue. These areas are tied to our hypotheses in Chapter 3 and the individual corporate variables we measure for target firms are specified in Chapter 4.

2.5.1 Activists and agency-sensitive corporate characteristics

Jensen (1993) suggests that active investors are unique namely in their ability and willingness to actively participate in the direction of the companies they hold, when other control mechanisms fail. In other words, activists intervene in mismanaged firms in order to mitigate agency costs to shareholders in circumstances where other owners lack incentives to do so (Brickley, Lease and Smith Jr 1988; Ackermann, McEnally and Ravenscraft 1999; Hu and Black 2007; Kahan and Rock 2007; Brav *et al.* 2008; Clifford 2008). Consequently, shareholder activists pursue changes regarding firm attributes that can be characterised either as

(1) Symptoms of prevailing agency problems or,

(2) Arrangements allowing agency problems to prevail.

The literature is inconclusive about whether some firm attributes such as management pay-performance-sensitivity (Bebchuk 2003; Bebchuk, Cohen and Ferrell 2008) are manifestations of agency problems (1) or whether agency problems are caused by such firm features (2). However, we recognise that differentiating between the two is not important for our analysis: in both alternatives, if activism is potent in reducing agency costs, we expect to witness improvements in agency-sensitive firm attributes in the presence of a significant activist shareholder.

Drawing on literature, we identify a range of agency-sensitive firm attributes and group them into three categories: (1) governance, (2) organisation and (3) payout.

2.5.2 Governance

Governance-related firm attributes are considered especially important to the occurrence and persistence of agency problems, since governance influences the extent to which managers can exercise power within a corporation (Jensen 1993; Shleifer and Vishny 1997; Core, Holthausen and Larcker 1999; Gompers, Ishii and Metrick 2003). Boards with non-independent majorities, for example, often protect poorly performing CEO's and strain shareholder value (Weisbach 1988; Rosenstein and Wyatt 1990; Black 1992b; Byrd and Hickman 1992; Rosenstein and Wyatt 1997; Boone *et al.* 2007). Equally, CEO duality (or plurality)[13] is shown to limit shareholder influence over management by weakening the board's monitoring capabilities (Fama and Jensen 1983; Baliga, Moyer and Rao 1996; Worrell, Nemec and Davidson III 1997). Further, low management pay-performance sensitivity often results in management acting against shareholder interest and disregarding owner value maximisation (Baker, Jensen and Murphy 1988; Jensen and Murphy 1990; Murphy 1999; Bebchuk 2003; Hartzell and Starks 2003). Also, entrenched boards support the persistence of agency problems by protecting the incumbent management, limiting the threat of hostile takeovers and reducing shareholder oversight thus affecting the firm value (Gompers, Ishii and Metrick 2003; Bebchuk and Cohen 2005; Faleye 2007; Bebchuk, Cohen and Ferrell 2008).

We also include control changes in the agency-related governance attributes of interest. The market for corporate control (the external control mechanism facilitating control changes) mitigates agency costs to shareholders, as it allows inefficiently managed firms to be taken over and their managements to be changed (Manne 1965; Fama and Jensen 1983; Jensen and Ruback 1983; Jarrell, Brickley and Netter 1988; Jensen 1988). Agency problems and related anti-takeover provisions, however, seem to affect shareholder wealth by weakening the functioning of the market for corporate control significantly (Bebchuk, Coates and Subramanian 2002; Cremers and Nair 2005; Bebchuk, Cohen and Ferrell 2008; Guo, Kruse and Nohel 2008). Overall, the proper functioning of the market for corporate control is integral in defending shareholder interest (Jensen 1993).

[13] CEO duality implies that CEO, or the equivalent first-ranking executive, acts also as the Chairman of the Board of Directors. Key executive plurality (see e.g. Worrell, Nemec and Davidson III (1997) imply that a single executive holds multiple executive positions.

All in all, we expect shareholder activists to have a significant role in changing target firm governance arrangements towards weaker management discretion and stronger shareholder value maximisation.

2.5.3 Organisation

Organisation of a firm is intensely related to agency problems as well. More specifically, a firm's[14] organisational features often signal agency issues, given that self-serving managers often influence the organisational form in pursuit of private benefits regardless of shareholder value effects (Jensen 1986; Shleifer and Vishny 1989; Morck, Shleifer and Vishny 1990). Such managerial aspirations are shown to result, among others, in unrelated diversification (Morck, Shleifer and Vishny 1990; Denis, Denis and Sarin 1997a) with inefficient internal capital markets (Rajan, Servaes and Zingales 2000; Scharfstein and Stein 2000; Ahn and Denis 2004) and excessive firm growth (Jensen 1986). Through a more diversified organisation, managers seek to enhance job security (Amihud and Lev 1981; Shleifer and Vishny 1989), to reduce personal idiosyncratic risk from incentives (May 1995) or to gain access to a variety of pecuniary and non-pecuniary personal benefits[15] (Gibbons and Murphy 1992; Scharfstein and Stein 2000; Bertrand and Mullainathan 2001; Aggarwal and Samwick 2003)[16]. With excessive growth, often related to diversification, managers seek higher personal compensation (Baker, Jensen and Murphy 1988; Shleifer and Vishny 1989; Jensen and Murphy 1990) or non-pecuniary benefits such as enhanced social status, more power and prestige or empire building (Jensen 1986; Stultz 1990). Both unrelated diversification and excessive growth are shown to have an adverse effect on shareholder value (Lang and Stulz 1994; Berger and Ofek 1995; Denis, Denis and Sarin 1997a; Lamont and Polk 2002; Ahn and Denis 2004). Overall, the literature suggests that activist shareholders may have a significant role in improving agency-poised organisational structures.

2.5.4 Payout

Capital structure and payout policies are integral to the presence and mitigation of agency conflicts between stockholders and managers. The agency-relevance of capital structure is

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[14] We limit our analysis on organisational characteristics of publicly quoted "diffuse ownership corporations", as characterized by Jensen *et al.* (1976).

[15] Non-pecuniary private benefits include improving career prospects, acquiring prestige from managing a complex firm, getting more power, supporting social status or improving skimming opportunities, among others.

[16] Scharfstein *et al.* (2000) model how the seeking of private benefits by both CEOs and divisional managers interacts with diversification discount.

fundamentally laid out by Jensen and Meckling (1976), who show that agency costs result from all non-managerial ownership, including both outside equity and outside debt. They contribute significantly to earlier theory by asserting that a firm's optimal capital structure is dictated not only by tax deductibility of debt and bankruptcy costs but also by agency costs of outside equity and outside debt. Jensen (1986, 1989), however, shows that debt not only *inflicts* agency costs between managers and lenders but also *mitigates* agency costs between management and outside equity holders. He shows that abundant free cash flow (FCF hereafter) is a key driver of agency costs, since it allows managers to undertake uneconomic investment decisions in pursuit of private benefits (see e.g. Lang and Litzenberger 1989; Lehn and Poulsen 1989; Lang, Stulz and Walkling 1991; Blanchard, Lopez-de-Silanes and Shleifer 1994; Harford 1999; Richardson 2006 for empirical evidence on importance of FCF in driving agency costs). Further, in his *control hypothesis of debt creation*, Jensen (1986) presents that incremental debt creation with matching payout to shareholders curbs FCF and thus reduces agency costs by limiting management discretion over firm resources. The importance of debt creation in controlling agency costs from managerial overinvestment has gained wide empirical support in contemporary literature (Opler and Titman 1993; Lang, Ofek and Stulz 1996; Gul and L. Tsui 1997; Bates 2005). Debt creation is shown to mitigate agency costs even for entrenched managers, who *voluntarily* take on debt and bond to their promise to forgo bad investments through risking higher probability of bankruptcy and simultaneously decrease the probability of a takeover[17] (Zwiebel 1996).

To complement the FCF hypothesis, Jensen (1986) predicts that FCF-related agency costs are low for early-stage firms with abundant profitable investment opportunities and high for mature firms with strong cash flow generation and few profitable investment opportunities. The life-cycle hypothesis, too, has been largely validated in contemporary empirical literature (Grullon and Michaely 2004; DeAngelo, DeAngelo and Stulz 2006).

Alongside debt creation, agency costs from free cash flow can be mitigated through payout in form of dividends (Rozeff 1982; Easterbrook 1984; Jensen 1986) or share repurchases (Jensen 1986; Lie 2000). Similarly with debt creation, increased payout reduces investment funds under managerial discretion and exposes the firm to more intense monitoring by the external capital

[17] Zwiebel (1996) assumes that the incumbent (entrenched) management is ousted in case of a bankruptcy or takeover.

markets (Borokhovich *et al.* 2005). Empirical literature largely supports the agency cost-reducing function of payout[18]: most studies corroborate agency problems as an important determinant of dividend payout (La Porta *et al.* 2000; Fenn and Liang 2001; Denis and Osobov 2008) and repurchase of stock (Nohel and Tarhan 1998; Lie 2000; Fenn and Liang 2001; Grullon and Michaely 2004). In conclusion, we expect activist shareholders to curb agency costs of outside equity by increasing payout in their target firms.

3 Hypotheses

In this section, we present and discuss our lead hypotheses. Overall, in line with Section 2.4, we anticipate that propensity to activism increases in investor portfolio concentration and in investment horizon. While we anticipate that portfolio concentration and investment horizon drive activism in general, we hypothesise that propensity to activism differs not only by the investor characteristic but also by the targeted corporate improvement: not all active investors are willing or successful in improving the same corporate shortcomings.

As presented in Section 2.5, we identify three principal areas where literature suggests corporate characteristics are either driven by agency problems or allow agency problems to prevail: (1) corporate governance, (2) organisation and (3) payout. Due to their particular agency sensitivity, we anticipate that activist shareholders, partially exempt from the free-rider problem, are able and willing to facilitate improvements especially in these areas. We develop and test three lead hypotheses to single out the investors who actively improve the different corporate features.

We summarize our hypotheses in Table 14 (Chapter 4), where we show the expected associations between a range of corporate improvements and the entries by investors belonging to our investor groups separately for each of our three hypotheses.

3.1 Corporate governance improvements

We study the effects of different investors on two types of corporate governance improvements. First, we study governance improvements from a wider perspective, and second, we isolate

[18] Limited contemporary critique does, however, exist (see e.g. Brav *et al.* 2005).

board-related improvements for further analysis. We consider altogether 14 individual corporate governance variables.

Setting the division of power within a company and determining the boundaries for steering it (Jensen 1993; Shleifer and Vishny 1997; Gompers, Ishii and Metrick 2003), corporate governance practices are widely deemed a natural area of pursuing change for active investors seeking to unlock value in their holdings (Karpoff 2001; Becht *et al.* 2008; Klein and Zur 2009). In our wide measure for corporate governance, an overall governance index specified later in Chapter 4, we include variables for (1) shareholder protection, (2) market for corporate control and (3) board arrangements. In our measure for board arrangements, a board index specified later in Section 4.4.1.1, we include solely variables depicting the board's ability to defend and promote shareholder interests.

Protecting shareholders against rent-seeking (Bebchuk, Fried and Walker 2002) or entrenched (Berger, Ofek and Yermack 1997) management behaviour with appropriate voting rules and approval requirements is considered important in mitigating agency-costs to shareholders. The relevance of shareholder protection is corroborated by Gompers, Ishii and Metrick (2003) who show that a strategy of buying high shareholder protection firms (Democracy portfolio) and selling low shareholder protection firms (Dictatorship portfolio) would have yielded substantial abnormal returns from 1990 through 1999[19]. Specifically, Gompers, Ishii and Metrick (2003) construct a 24-variable governance index ("G-Score") focusing on shareholder protection and takeover vulnerability and show that better governance is also associated with higher valuations[20]. The findings strengthen our anticipation that activist investors seek to enhance shareholder protection in an effort to unlock firm value. Also, Bebchuk *et al.* (2008) construct an entrenchment index and show that the level of management entrenchment is associated with reductions in firm valuations and negative abnormal returns. Further, using 51 underlying governance variables Brown and Caylor (2009) show that overall governance index ("Gov-Score"), including numerous measures for shareholder protection, is positively related to firm operating performance.

[19] On an annualized basis, Gompers, Ishii and Metrick (2003) indicate an 8.5% abnormal return for the Democracy portfolio.

[20] They authors measure firm valuation through Tobin's *q*.

Exposure to market for corporate control, as Jensen and Ruback (1983) show, is also vital for mitigating agency costs and increasing firm value: a credible threat of outside takeover and subsequent management turnover discipline management to maximise shareholder value. Successful control changes evoked by hostile takeover or internal shareholder pressure may also create value by allowing an outside party to seize company resources and utilise them more efficiently (Jensen 1991; Clifford 2008). In addition to Gompers, Ishii and Metrick (2003) discussed above, Cremers and Nair (2005) further corroborate the importance of a functioning market for corporate control by constructing an index for takeover vulnerability including measures for board classification, poison pills (see Section 4.4 for a definition), allowance of special meetings and acting through written consent. They show that a portfolio buying firms with high takeover vulnerability and selling firms with low takeover vulnerability would have generated 10-15% annual abnormal returns, when blockholder ownership is high. Also, Larcker, Richardson and Tuna (2007), while finding mixed results regarding the effect of antitakeover measures on operating performance and equity returns, include antitakeover measures in the 14 governance dimensions they find relevant[21]. Further, Brown and Caylor (2009) find that anti-takeover measures are significantly positively associated with firm valuation as measured by Tobin's *q*. We thus anticipate that shareholder activists pursue improvements regarding the functioning of the market for corporate control.

In addition to shareholder protection and market for corporate control, we anticipate that board arrangements are pivotal in mitigating agency costs and unlocking firm value. Perhaps most importantly, the board bears primary responsibility for upholding shareholder interest and maximising shareholder value (Fama and Jensen 1983). To efficiently deliver this, a range of board characteristics including board independence (Rosenstein and Wyatt 1997; Faleye 2007), board de-classification (Bebchuk and Cohen 2005), separation of CEO and chairman (Fama and Jensen 1983) and equity ownership by the board of directors (Morck, Shleifer and Vishny 1988) are considered vital. Further, Larcker, Richardson and Tuna (2007) show that board de-classification and board independence are significantly positively associated with firm value, as measured by Tobin's *q*. We thus hypothesise that activist shareholders pursue board improvements.

[21] Larcker, Richardson and Tuna (2007) consider 39 underlying individual governance variables and condense them into 14 governance dimensions through principal component analysis.

Regarding the investors we anticipate to pursue board and overall governance improvements, we expect high portfolio concentration to be a key investor characteristic. Perhaps most importantly, a focused portfolio indicates freedom from diversification and maximum stake regulation (Clifford 2008). This allows investors greater flexibility in mounting pressure on, and shares in, a target (Brav *et al.* 2008). Also, as specified in Section 2.4.1, high concentration implicitly entails that the investors are likely to be entities with higher performance incentives (see e.g. Kahan and Rock 2007 for a discussion on mutual fund, pension fund and hedge fund incentives) and freedom from internal agency problems (see e.g. Black 1992a). Furthermore, the larger expected stake size of focused investors makes them less prone to the free-rider problem (Grossman and Hart 1980; Shleifer and Vishny 1986). We also note that the limited number of significant holdings allows for firm-specific attention and effort, which are often important in mounting successful activist campaigns.

We also anticipate long investment horizon to be important for investors driving governance improvements. Specifically, we anticipate that short-term investors do not engage in governance improvements since their short investment span, caused either by choice or high liquidity requirements (Aragon 2007; Clifford 2008), does not allow waiting for a shareholder approval mostly required to make suggested governance improvements a reality.

Despite indications of attempted activism by studies exploring shareholder activism by large U.S. pension funds (see e.g. Smith 1996; Wahal 1996; Del Guercio and Hawkins 1999), we hypothesise that large diversified investors do not actively improve target firm governance. Even though some suggest (see e.g. Brown and Brooke 1993; Wahal 1996) that large institutions would be inclined to activism as exit is an unfavourable option for investors already holding large positions in a substantial portion of available equities, we anticipate that being typically regulated regarding maximum stake and diversification (Kahan and Rock 2007) does not promote activism. Consistent with Black (1998), who reviews the literature on U.S. institutional activism, we anticipate that diversified institutions are not active to a significant extent, not least because they lack the resources to promote activist campaigns requiring significant target-specific efforts.

H 1 **Investors with high portfolio concentration and long investment horizon improve corporate governance in firms they hold a significant equity participation in**

3.2 Organisational improvements

While poor corporate governance is widely seen as agency cost-fostering, value-destroying organisational features are often deemed symptoms of prevailing agency problems (Shleifer and Vishny 1989). Consequently, we expect activist shareholders to pursue reversal of organisational deficiencies and focus especially on efforts to overturn value-destroying diversification (Morck, Shleifer and Vishny 1990; Denis, Denis and Sarin 1997a) and excessive firm growth (Jensen 1986). We measure diversification and excessive growth reversal through unrelated divestments.

We anticipate that activist shareholders seek to promote unrelated divestments because of the inclination of management to grow and diversify firms beyond the optimum (see e.g. Morck, Shleifer and Vishny 1990) when allowed to do so by prevailing agency problems (see e.g. Denis, Denis and Sarin 1997a). We expect that activists break the shareholder passivity allowing such value-destroying (see e.g. Lang and Stulz 1994; Berger and Ofek 1995; Lins and Servaes 1999)[22] arrangements to prevail and push to reverse excessive growth and diversification through unrelated divestments in an effort to unlock shareholder value. Our suggestion is consistent with Ahn and Denis (2004), who show that spin-offs breaking up conglomerate structures, represented by unrelated divestments in our context, do indeed eliminate the diversification discount clearly detected before the spin-offs. Further, Haynes, Thompson and Wright (2003) find that for U.K. firms, divestment activity increases when management discretion is reduced due to increased leverage or better governance. This is consistent with our view that activist shareholders, by nature rejecting shareholder passivity and limiting management discretion, are likely to promote organisational improvements in form of unrelated divestments.

We expect that focused investors with large stakes and high performance incentives are best suited to reverse excessive diversification and growth, in line with our expectations regarding governance improvements. Importantly, our practitioner interviews support the notion that campaigns to pursue divestments or industry exits require a substantial investor effort typically including repeated private negotiations, investor lobbying or representation in shareholder meetings. We also expect organisational issues, such as divestments, to be mostly under managerial discretion and thus largely beyond the reach of standardised activism seeking to

[22] Lins and Servaes (1999) study diversification discount in an international context and show that diversification discount prevails in the U.K. and partly in Japan, but not in Germany.

influence target decision making through letter-sending or proxy-proposals, as described by Smith (1996) or Black (1992b) in case of U.S. institutional activism. We thus assume that successful campaigns to reduce diversification through spin-offs call for significant company-specific effort, incur material monitoring costs and take time to bear fruit. Consequently, while diversified investors with long investment horizons may be suited for letter-sending, we do not expect them to have resources to pursue such time-consuming firm-specific campaigns in individual target companies. What is more, highly diversified investors, typically with regulated maximum stakes and ban on the use of leverage and derivatives (Ackermann, McEnally and Ravenscraft 1999; Hu and Black 2007)[23], are not able to accumulate large stakes in target companies often required to push through large-scale changes (Bethel, Liebeskind and Opler 1998; Kahan and Rock 2007).

We further hypothesise that investors facilitating organizational improvements require long-investment horizons. Short-term investors, by choice or due to a high demand for liquidity (short investor lock-up) (Clifford 2008), are not willing to embark on complex activist campaigns potentially spanning several years. The lengthy nature of many activist engagements is corroborated by Becht *et al.* (2008) who study Hermes Focus Funds in 1998-2004 and find that the average duration of a confrontational activist campaign for the U.K. activist was nearly 1,300 trading days.

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3.3 Payout improvements

Alongside corporate governance and organisational issues, the extent of cash flow distribution to shareholders is also often influenced by agency problems. As Jensen (1986)[24] shows, the inherent agency costs between management and outside equity (Jensen and Meckling 1976) can be mitigated by harnessing capital structure to curb free cash flow at management disposal. More specifically, increased leverage and ensuing greater payout to equity (or debt) holders serve to

[23] Hu *et al.* (2007) find that hedge funds often use derivatives to decouple votes and ownership to increase influence.

[24] According to Jensen (1986), the control effect from increased leverage works for mature (or low Tobin's *q*) firms.

limit the free cash flow available for managers to invest in value-destroying ends in pursuit of private benefits (Harford 1999; Richardson 2006). Equally, available free cash flow can be curbed by simply increasing direct ordinary payout to equity holders (Lang and Litzenberger 1989) or by launching extraordinary distributions of cash (Lie 2000), such as special dividends[25]. In line with a wide body of contemporary literature (see e.g. Richardson 2006; Brav *et al.* 2008; Klein and Zur 2009) we hypothesise that activist investors pursue changes in payout to reduce agency costs of free cash flow. We measure such improvements with changes in cash dividend payout.

Our anticipation that activists increase payout is consistent with Easterbrook (1984) who fundamentally states that dividends may carry the function of reducing agency costs. Also, our approach is in line with Borokhovich *et al.* (2005), among others, who show that firms with less independent boards experience higher abnormal returns surrounding announcements of sizeable dividend increases. Further, cross-country findings by La Porta *et al.* (2000) indicate that, in general, minority shareholders do indeed exploit higher dividend payout as a means to control the private benefit extraction of corporate insiders when applicable law provides for minority shareholder protection. Overall, we hypothesise that activist shareholders increase dividend payout to match the agency costs of free cash flow.

Our expectations regarding the required investor characteristics to increase dividends are in line with our hypotheses on corporate governance and organisational improvements. Specifically, we deem investors' high portfolio concentration important for successfully pushing for higher payout in target firms. As with the other corporate improvements, investors with larger stakes defy the costs to individual firm targeting (and the free-rider problem) by taking home a larger portion of the upside following a successful event (Barclay and Holderness 1991a). Similarly, we anticipate that investors with long investment horizon can endure extended campaigns, while short-term investors may be bound by short fund withdrawal notifications and thus find it unattractive to invest monitoring costs in a campaign with expected payoff far in the future (see e.g. Chordia 1996).

[25] Jensen (1986) suggests that one-off distributions following increased leverage efficiently curb agency costs from free cash flow.

We again anticipate that investors with diversified portfolios or short investment horizons do not actively promote payout increases in pursuit of mitigating agency costs and unlocking firm value. However, we find it possible that diversified institutional investors may be associated with dividend payout increases in their targets due to firms adapting their dividend payout to cater to investor demand preferring higher dividends (see e.g. Baker and Wurgler 2004 for recent findings supporting the catering hypothesis).

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4 Data and methodology

This chapter presents our research design, data and derived variables and discusses the methodology applied. We begin by presenting our research design, which lays out the structural choices we make. We then discuss the practitioner interviews that we conducted to support the formulation of our research question and hypothesis construction. Next, we present our data and show the modifications we apply to make the raw data applicable to our research setting. We then specify the variables applied in the analysis and depict the variable construction process for dependent and independent variables separately. Finally, we present the statistical methodology we deploy in analysing investor effects on corporate improvements.

4.1 Research design

Our approach to studying investor effects on corporate improvements introduces a novel viewpoint on identifying activist investors and allows linking different types of investors with different discrete improvements in target firms. We note that our research design is influenced by the practitioner interviews we have undertaken prior to defining our research question and hypotheses. We decompose our research design into the following steps:

(1) Drawing extensively on background literature and practitioner interviews, we define the key investor characteristics that make up the propensity to be active. We then condense them into two key dimensions: (1) portfolio concentration and (2) investment horizon.

(2) Next, relying on the theory of the firm (see e.g. Coase 1937; Jensen and Meckling 1976), we identify three areas of corporate characteristics that the literature considers most likely to be improved by active shareholders seeking to fight agency problems and to increase the value of their holdings: (1) corporate governance, (2) organisation and (3) payout.

(3) We construct a unique panel database to measure investor effects on corporate improvements. Our data comprises three underlying data sets: one for our investor universe, one for corporate governance and one for organisational improvements. Further, we deploy standard financial databases to source dividend payout and control variables.

(4) Using exploratory factor analysis and a simple grouping method, we formulate two alternative sets of investors, comprising altogether nine different investor groups in terms of portfolio concentration and investment horizon. We deploy the investor groups as our key explanatory variables.

(5) We choose altogether seven outcome variables to depict discrete corporate changes in our three key areas of improvements and apply them as our dependent variables: two for corporate governance, three for organisation and two for dividend payout.

(6) We apply a range of regression models, including linear and non-linear, panel and non-panel, ordered and binary outcomes specifications, to test whether the entries of investors belonging to our investor groups are associated with following-period changes observed in our seven outcome variables.

(7) We test whether associations observed in our result are robust, considering also endogeneity and comparing our results to alternative independent variable specifications suggested by extant literature.

4.2 Practitioner interviews

Prior to the commencement of the quantitative part of the study, we conduct a number of practitioner interviews to gain insights on the process of activist investing, highlight areas of interest and extract tacit knowledge useful in hypothesis development. As our research design is partly exploratory, qualitative interviews are an important means to better understand the subject (Blumberg, Cooper and Schindler 2005) and to be able to infer causal relationships between variables (Saunders, Lewis and Thornhill 2007). The interviews form an essential addition to our background information gathering as we feel that academic literature may not fully capture the

heterogeneity of activist investors and news articles do not always cover the subject with sufficient rigour. In this section, we present the interviewee selection, research methodology and the interview themes. The interviews are, however, conducted on the condition of anonymity and limited disclosure and thus we do not present exhaustive results for the interviews. We make casual references where our choices regarding the research design or hypotheses are influenced by the interviews.

4.2.1 Data and interviewee selection

The choice of interviewees is based on the objective to gain insights on the activist investing process from a wide perspective. Our total of eight interviewees comprise investment professionals from four activist investment companies and from one private equity public market fund, one senior level executive of a large pension fund, one board professional and one management consultant.

The interviewed activist investors represent investment companies varying from smaller geographically focused funds to large international hedge funds. Two of the investment companies are London-based; the others operate from Switzerland, Sweden, Iceland and Finland. Despite their differing operating settings, the investment professionals communicate a surprisingly coherent view on activism, which improves the reliability of the findings.

Importantly, the practitioners highlight that investors can generally only affect the board of a company and therefore often pursue to appoint representatives to the board (Brav *et al.* 2008; Klein and Zur 2009). Consequently, the investment professionals also acquaint us with an experienced board professional that has worked closely with multiple activist investment companies. His insights are particularly valuable in understanding the ways of influencing company management and the requirements for the investors to successfully improve corporate characteristics.

We also discuss activism from the viewpoint of a large, potentially active institutional investor. Specifically, we examine whether large institutional investors are able and willing to engage in activism (see e.g. Black 1992a), by interviewing a senior level executive of a large pension fund. The interview clarifies our view on large institutional investors as passive or reactive investors in line with Pozen (1994) who describes institutional investors as reluctant activists. The large

number of holdings and a low performance-based compensation reduce the incentives to proactive monitoring, but the interviewee feels strongly about acting in the face of significant events such as the occurrence of an aggressive and public activist engagement in a portfolio company.

Finally, for an outside view of activist investing we interview a senior management consultant that has actively worked with investors engaging in activism. He emphasises the importance of a concentrated portfolio and a medium-to-long-term investment horizon for an activist to be able to implement time-consuming corporate improvements.

Potential biases in the interviewee selection arise from the secretive behaviour of many activist investors and the limited geographical scope of our interviews. First, many of the known activist funds do not maintain an internet site and refrain from providing any contact information publicly. Further, a significant share of those contacted expressed a policy to not give out interviews. This may be reflective of their investment strategies; the most aggressive investors may not want to give out any information regarding their strategy since their operations are already highly flammable both politically and amongst potential targets. We therefore cautiously anticipate that our interviewees may not represent the views of the most aggressive activist funds. Another limiting factor in the interviewee selection process is that only European practitioners are included in the interviews, leaving out North American practitioner views on activism. As mentioned by the interviewees, activist investing in North America is often more aggressive and more public due to historical legislative differences.

4.2.2 Interview research methods

The discussions are conducted as semi-structured interviews. Semi-structured refers to the lack of a predetermined and standardised set of questions, but rather a list of themes and questions to be covered, which may vary from interview to interview (Saunders, Lewis and Thornhill 2007). The interview design enables us to customize the interviews depending on the type of interviewee and allows the interview to diverge to new areas of interest that might arise during the conversation.

We conduct six of the interviews face to face as we feel that meeting in person allows the interviewees to more comfortably discuss issues often sensitive to their companies. Two of the interviews are conducted by telephone due to scheduling difficulties and the distant location of

the interviewees. As anticipated, the interviewees reached by telephone appear more reserved and cautious of the end-use of the information they disclose.

Further, the interviews are conducted in an inductive manner. As described by Saunders *et al.* (2007), the approach allows to start the interviews with preliminary themes and explore them to see which themes or issues should be followed further and focused on. After each interview the additional relevant information is gathered and grouped according to the corresponding theme. In a succeeding interview, new questions are asked based on findings in the previous interview.

4.2.3 Interview themes and key insights

We choose the interview themes to provide overall insight into activist investing, pursued improvements and investors' target selection. We present our five preliminary interview themes below and then discuss each theme in detail:

(1) Investor activism in general; what is investor activism and which investors are active?
(2) Pursued objectives; what do activist investors pursue to change in target companies?
(3) Target selection; what do activist investors look for in a target company?
(4) Regional differences in activism; how do regional factors affect activism in Europe and the U.S.?
(5) Effect of the economic cycle; how does the economic cycle affect the objectives and outcomes of investor activism?

Investor activism in general. The first theme is central in building our understanding of investor activism and the characteristics that distinguish active investors from passive investors. The interviewees are first asked to describe in their own words, what they perceive as investor activism. Follow-up questions deal with who the interviewees consider likely to engage in activism and how activists differ from each other.

The general theme has a strong influence on our choice of portfolio concentration and investment horizon as the two key investor characteristics determining investors' propensity to activism. Activists are seen as minority shareholders who actively analyse their target companies, promote dialogue with other shareholders and company management and challenge the status quo in order to push for value-adding changes. Specifically, the interviewees bring forth two key arguments. First, they argue that in order to properly understand the target companies and their business

environments, activists must possess a limited number of holdings to be able to focus their attention. Second, the interviewees stress that to implement time-consuming corporate improvements and benefit from the results, activists must also have long investment horizons.

Further, the interviewed activist investors feel that the public and many of the contemporary studies on activism have focused on what they see as short-term activism, where typically passive hedge funds engage in publicity-seeking campaigns. The interviewees are keen to differentiate themselves from these investors and claim that hedge funds with very short investment horizons are not willing or able to consistently engage in "real" activism that improves target companies. Their views consolidate our anticipation that activists cannot be grouped under a single legislative group such as hedge funds or pension funds.

Pursued objectives. The second theme contributes to the selection of the dependent variables. The interviewees are shown a table of activist objectives drawn from literature and they are asked to discuss the relative significance of the objectives, their feasibility and whether they would add or take out some of the objectives on the list.

The discussed objectives can be broadly divided into changes in (1) corporate governance, (2) strategy, (3) capital structure, and (4) operations. The interviewees highlight changes in corporate governance since they are often value-adding as such and also empower the minority shareholders and thus enable further changes. The interviewees do not regard any individual corporate governance aspect as most important, which supports the use of a governance index in our study. Strategic changes are considered as relating mainly to the selling of the target company to a third party or divesting unrelated businesses. Due to the limitations of our ownership data discussed in Section 1.3, we are not able to analyse companies that are sold and therefore limit our focus on strategic changes to divestments of unrelated businesses. The interviewees have mixed views on changes in capital structure. For example, many do not consider the increasing of dividends as a proper activist objective but rather as a quick-fix that on the long run leaves the fundamentals of the company unchanged. Finally, the interviewees regard operational improvements as possible activist objectives but do not consider any individual operational improvement more common than others. Examples of operational changes range from disciplining capital expenditures to relocating a company's headquarters.

Target selection. The target selection theme deals with the corporate characteristics that activists look for in target companies. The topic is partly complementary to the second theme as the desired characteristics of a target company may often reveal the underlying objective of the activist. The theme also helps us to understand the nature of activist investing in general and provides additional help for the endogeneity discussion.

The interviewees are unwilling to state any generic target selection criteria as more important than others and emphasise a case-by-case approach which starts from the detection of value creation opportunities. Contrary to our initial belief, however, the interviewees express a preference for engagements in companies with ex ante good management. Replacing management is seen as a last resort, not as a common activist agenda.

Regional differences in activism. As we study investor effects on target companies in a number of European countries and the U.S., it is important to understand the essential regional differences in the context of activism. Questions are open-ended and call on the interviewees to discuss regional differences in governance cultures, legislative issues and shareholder rights.

The interviewees see both the U.S. and the Western European countries as having proper legislative and social environments for activism. Small differences are recognised in the nature of activist campaigns which are generally considered more aggressive in the U.S. compared to Europe. The interviews do not imply a need to treat the regions in different ways in our analysis.

Effect of the economic cycle. We further discuss the effect of the economic cycle on the activist objectives, the number of potential targets and the ease of influencing target company management. The potential differences are important to understand given that our panel data ranges from 2003 to 2009 including years of high economic growth and ending with two years of adverse market conditions.

The main insight with regards to the economic cycle is that, although activists see many opportunities in an economic downturn, the investment companies may face redemptions and difficulties in raising funds. This further highlights the importance of a long investment horizon: investors with long-term capital can weather tight liquidity during the downturn and seize potentially attractive opportunities.

Overall, the interviews add greatly to our understanding of activism and influence our formulation of the key characteristics that drive investors' propensity to activism. As many of the interviewees emphasised that activist investors cannot be grouped under a single legal type, we understood the need to develop measures that capture the right investor characteristics in a more meaningful way.

4.3 Data

In this section, we describe the data used to study investor effects on corporate improvements. First, we depict our firm sample and explain the modifications we make to ensure a clean data set that is appropriate for analysis. As data is gathered from multiple sources with differing suspected data errors, extensive efforts are made to ensure good data quality and clear outliers are removed in appropriate ways. We then present our corporate improvements data separately for (1) corporate governance, (2) organisation and (3) dividend payout. Finally, we present the ownership data we later use to derive our primary explanatory variables. For the ownership data, which we divide into two initial data sets, we also elaborate on the data items extracted to show how we arrive at the final data sets that serve as a basis for constructing our ownership variables.

4.3.1 Firm sample

In our firm sample of potential activist targets, we include two wide equity indices covering the vast majority of publicly quoted equity in Europe and the U.S. For Europe, we choose the STOXX Europe TMI Index, which comprises 1,025 constituent companies ranked according to free float market capitalisations. The index covers 17 developed European countries with target coverage of 95% of the total index universe free float market capitalisation. For the U.S., we choose the S&P 1500 Composite Index, which comprises three underlying indices[26] each covering a different market capitalisation range. S&P 1500 requires constituent firms to retain a minimum of 50% of shares in free float and altogether represents roughly 85% of the total U.S. market capitalisation. The wide indices together comprise 2,525 firm-entries[27] and cover a vast majority of European and U.S. market capitalisations.

[26] Namely, S&P 1500 Composite Index comprises S&P 500, S&P MidCap 400 and S&P SmallCap 600.

[27] The number of individual firms is smaller than the number of entries, since in STOXX Europe TMI, some firms are present in the index with multiple share classes or share types.

4.3.1.1 Modifications to firm sample

For both indices, we fix the constituent list as of December 31, 2002. We then remove firms with more than one class of ordinary shares[28], in line with Gompers, Ishii and Metrick (2003). We argue that multiple share classes disconnect the relationship between voting power and economic interest, confound analysis on relative ownership and render extraction of ownership data unreliable. Finally, we remove firms that have announced to be taken over, merged, defaulted or de-listed for other reason prior to year-end 2002 but have not yet been de-listed or removed from the index as of December 31, 2002 due to the transaction not yet being consummated.

Next, utilising the SDC Platinum database and publicly available information, we manually track the development of each sample firm over our observation period, spanning from January 1, 2003 to December 31, 2009. We then remove firms after the announcement of any of the following events: (1) change-in-control transaction, (2) merger, (3) default or (4) de-listing for other reason than change-in-control transaction, merger or default. Although firms often disappear from data eventually following the completion of such transactions, we choose to remove firms *after the announcement* of an event that will materialise in the future[29]. We do not want to confound activist-driven changes to the numerous governance, organisational and dividend payout changes often taking place in companies (1) agreed to be taken over, (2) agreed to merge or (3) facing bankruptcy proceedings. Further, periods between announcement and closing can extend over multiple years, and we anticipate that including such periods in our sample would produce a substantial bias in the observed changes in the dependent variables.

In change-in-control transactions, we include incidents where an outside party acquires majority of the shares or votes of a constituent company. We remove such firms from the sample from the beginning of the year following an event[30]. We record change-in-control transactions quarterly according to the date when a to-be-successful transaction was (1) in friendly transactions recommended by target board[31] or (2) in hostile transactions approved by the target shareholders meeting and became unconditional[32]. In 2003-2009 we record 534 change-in-control transactions, 68% of which are for our U.S. firms and 32% for our European firms. We note, as expected, that

[28] The STOXX Europe TMI includes double entries for e.g. many Nordic firms, reflecting different share classes.
[29] In other words, we do not remove firms from our sample following announcement of events that did not transpire.
[30] In majority of change-in-control transactions, the company is subsequently taken private and de-listed.
[31] In case of a bidding war, the final target Board recommendation leading to a successful transaction is recorded.
[32] If the shareholder approval date is not available, the announcement date of a to-be-successful bid is recorded.

the transaction frequency is highest in 2007 despite the narrowing firm-base[33] and that the number of transactions is clearly smallest in 2009 (although 2009 transactions do not affect our sample size since related firms would only be removed for 2010).

In mergers, we include events where two firms are combined and at least one of the following criteria is fulfilled: (1) a new legal entity is formed and listed separately or (2) both firms officially refer to the combination as a merger and the combined entity is renamed[34]. Merged firms are removed from the data from the beginning of the year following the transaction and the transaction date is recorded according to the announcement of the merger plan approved by the boards of both parties. In 2003-2009, we observe 65 mergers meeting the above criteria and note that they are roughly equally distributed between the U.S. and European firms. We find the highest frequency of mergers in 2004 and only 4 mergers occurring in 2009 within our sample.

In defaults, the firm is removed from our sample in the year following the event[35] and the filing date of the bankruptcy is recorded as the event date. Over our observation period, we record 64 defaults, 81% of which in the U.S. We observe 16 annual defaults in 2008 and 2009, clearly more than in earlier years despite the ever-narrowing firm-base.

In de-listing for other reasons, we include firms whose public listing is removed due to the firm not meeting the listing criteria. Events are recorded according to announcement by a regulator or the firm announcement and firms are removed beginning the year following an event. We observe 7 de-listings for other reasons, majority of which take place in 2009.

Table 1 presents average financials for firms in our modified sample annually over our observation period for companies with all financials available for all observed years. Further, Table 2 shows the evolution of our firm sample over our observation period 2003-2009 and presents a decomposition of the firms we remove from the data based on above specified reasons.

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[33] The number of firms in our sample decreases as we remove firms from the data following transactions, defaults or other de-listings, as specified above.

[34] If the criteria are not filled and another of the merger parties persists, we consider the event to be a change-in-control transaction.

[35] Firms under bankruptcy protection often undergo substantial changes, which we assume to be unrelated to the equity holders of the insolvent company.

Table 1 – Firm sample – Descriptive financials

The table shows annual averages of key financials for our sample firms over our observation period 2003 through 2009. We include sample firms for which all financials are available for all observed years. All figures are calendar yearly and in millions of U.S. Dollars.

USD millions	2003	2004	2005	2006	2007	2008	2009
Net sales	7,485	8,457	8,650	9,781	10,827	11,321	10,351
Growth	*13.3 %*	*13.0 %*	*2.3 %*	*13.1 %*	*10.7 %*	*4.6 %*	*-8.6 %*
Operating profit	667	836	957	1,114	1,249	1,260	990
Operating profit margin	*8.2 %*	*9.8 %*	*9.8 %*	*10.4 %*	*10.1 %*	*5.5 %*	*5.3 %*
Earnings	325	484	580	667	774	595	494
Profit margin	*1.5 %*	*4.3 %*	*4.8 %*	*5.4 %*	*6.0 %*	*-2.7 %*	*-2.5 %*
Book value of total assets	9,542	10,403	10,616	11,944	13,481	13,769	14,175
Growth	*11.4 %*	*9.0 %*	*2.0 %*	*12.5 %*	*12.9 %*	*2.1 %*	*2.9 %*
Market capitalisation	9,528	10,708	11,121	13,005	14,101	8,421	10,726
Growth	*31.4 %*	*12.4 %*	*3.9 %*	*16.9 %*	*8.4 %*	*-40.3 %*	*27.4 %*

Table 2 – Firm sample – Evolution over time

The table depicts the evolution of our firm panel data 2003 through 2009. **Panel A** presents country-level frequency of sample firms, as included in STOXX Europe TMI and in S&P 1500. The panel shows all index constituents in year-end 2002, firms remaining in the modified sample in year-end 2002 and year-end number of firms per country 2003 through 2009. **Panel B** provides a break-down of the firms removed from our sample, decomposed by the reason of removal. Firms shown to be removed in year T are excluded from the sample beginning the year T+1. **Indices** depicts the full sample comprising all index STOXX Europe TMI and S&P 1500 constituent entries. **Clean** refers to the sample after the initial removal of firms with multiple classes of ordinary shares and annual removal of firms being acquired, merged, in default or de-listed for other reason.

PANEL A - SAMPLE EVOLUTION

Country of origin	2002	2003	2004	2005	2006	2007	2008	2009
	Indices	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Austria	10	10	10	9	9	9	9	9
Belgium	28	24	24	24	21	20	20	20
Denmark	24	19	18	17	16	15	15	15
Finland	26	16	16	16	15	15	14	14
France	105	100	96	91	85	83	78	76
Germany	89	75	73	73	68	66	64	63
Greece	34	33	32	30	29	28	27	27
Ireland	18	18	16	16	15	15	14	13
Italy	84	57	55	54	52	47	44	43
Luxembourg	4	4	4	4	3	3	3	3
Netherlands	60	55	52	49	45	43	36	34
Norway	20	18	17	17	15	14	14	14
Portugal	11	10	9	9	9	9	9	9
Spain	51	50	47	47	45	41	39	38
Sweden	60	38	38	36	34	31	30	30
Switzerland	80	70	67	67	65	63	60	57
U.K.	321	309	296	278	255	236	218	206
U.S.	1,500	1,424	1,384	1,329	1,257	1,179	1,085	1,033
Total	2,525	2,330	2,254	2,166	2,038	1,917	1,779	1,704

PANEL B - REMOVALS FROM SAMPLE

Reason for removal	2002	2003	2004	2005	2006	2007	2008	2009
Sold	-	63	66	111	101	120	53	20
Merged	-	9	16	9	13	9	5	4
Defaulted	-	4	6	8	6	8	16	16
De-listed, other	-	0	0	0	1	1	1	4
Multiple share classes	179	-	-	-	-	-	-	-
Transaction prior to 2002	16	-	-	-	-	-	-	-
Removed from following year	195	76	88	128	121	138	75	44

4.3.2 Corporate governance data – Governance indices

We source our corporate governance data from RiskMetrics[36], the industry leader in governance data for commercial and research purposes. Specifically, we utilise RiskMetrics' Corporate Governance Quotient [hereafter CGQ] database, which provides historical corporate governance data on an annual basis for large and mid-sized companies in the U.S. and in major European markets. In total, the CQG database covers in excess of 100 corporate governance variables on board arrangements, managerial compensation, shareholder rights and general governance structures. The database has been widely applied in analogous research settings (see e.g. Aggarwal *et al.* 2010). As of 2003, the database covers altogether 5,500 and 836 individual firms in the U.S. and Europe respectively, expanding its European coverage significantly to 1,237 companies by 2009.

We follow three steps to match the CGQ data to our cleaned firm sample of 906 STOXX Europe TMI constituents and 1,424 S&P 1500 constituents as of 2003. First, we align the U.S. and European CGQ datasets[37]. Second, we perform identifier-based matching between the now internally uniform RiskMetrics data and our firm sample to locate each of our sample firms in the CQG data. Finally, we manually check all non-matched firms in the sample to make sure that non-matches are actual absentees in the CGQ data and not blanks due to errors in our identifier-based matching process.

After matching our firm sample to the CGQ data, we extract governance data for 14 individual variables of interest to construct two governance indices, detailed specifications and usage of which is elaborated later in Section 4.4.1.1. Following data-extraction, we undertake a stringent audit regarding the quality of the RiskMetrics governance data. First, we break the extracted data down to variable-country-years and look for systematic inconsistencies both over years and between countries. We then take a set of individual firms from each variable, each country and each year and compare RiskMetrics data to corresponding data available in public company filings. While we find no inconsistencies in the U.S. data, we locate a number of dramatic movements between subsequent years in individual governance variables for a number of European countries. We are lead to suspect the patterns to be data errors after checking and

[36] FactSet was formerly known as Institutional Shareholder Service, or ISS.
[37] Small, yet numerous differences in U.S. and European variable descriptions make direct comparison unreliable.

excluding legal or governance standard changes in European countries as an explanation for the anomalies. We locate altogether 13 suspected data error patterns, relating to nine out of our 14 individual corporate governance variables and to five different European countries[38]. The country-year data for which errors are suspected covers more than 3,600 variable-firm-years. We submit our findings to the data provider and receive a subsequent confirmation that all the suspected anomalies were found to be errors in the recording process of the European governance data. As the detected data errors are sporadic and wide-spread, we are unable to exclude the possibility of a significant number of undetected errors in the remaining European data. Consequently, we exclude the European governance data from our analysis. In an unreported analysis, however, we run all governance-regressions (as shown for the U.S. data in Section 5.2) for the European data and find that results for governance improvements (ownership as the key explanatory variable) are both internally inconsistent[39] and mostly statistically insignificant. We perform all our governance analyses only for the U.S. data.

Given our findings on data errors and the data provider's prior lack of awareness regarding the inconsistencies, we cannot exclude the possibility that erroneous data has been applied in previous studies exploiting the European CGQ data. Especially, we note that while Aggarwal *et al.* (2010) study the relationship between governance and institutional holdings using 41 CGQ variables and focusing on non-U.S. firms, they do not report any detected data inconsistencies. Further, they do not communicate any data manipulations targeted at removing potentially erroneous observations.

4.3.3 Organisational data - Divestments

To measure organisational improvements, namely those reversing value-destructive diversification or excessive growth, we study unrelated divestments as discussed in hypotheses construction in Section 3.2. We source our divestments data from Thomson Reuter's SDC Platinum transaction database, which is widely used in transaction-related studies with both a U.S. focus (see e.g. Warusawitharana 2008) and in those requiring international reach (see e.g. Rossi and Volpin 2004). SDC provides a comprehensive tool to search for transaction data for different deal specifications, including mergers, IPOs as well as divestments and spin-offs.

[38] The countries where we locate error patterns are United Kingdom, Switzerland, the Netherlands, Italy and Finland.

[39] We refer to inconsistencies in results between different model specifications.

Hence, the data base is frequently applied in divestments related studies as in Colak and Whited (2007), who study the effect of spin-offs and divestitures on conglomerate investment efficiency.

To explore unrelated divestments within our firm sample, we first utilise SDC Platinum to construct a comprehensive deal database covering all European and U.S. transactions that meet the following criteria: (1) transaction is announced during our observation period 2003 through 2009, (2) the ultimate parent of target is based either in the U.S. or in one of our 17 European markets of interest, (3) the transaction value, including equity and debt[40] is reported and (4) the reported transaction value exceeds 1 million ÚSD. We extract altogether 53,069 transactions, of which 28,532 in the U.S. and 24,537 in our 17 European markets of interest.

We then narrow the all-around deal data to cover only divestments undertaken by our sample firms. First, we match the targets' ultimate parents to our firm universe to find all transactions where one of our firms has been the ultimate parent of the acquired entity[41]. Next, we exclude transactions where the target and the target's ultimate parent or the target's ultimate parent and acquirer are same entities: we only take interest in situations where one of our firms divests a sub-entity to an outside party, not in arrangements where it sells its own shares or performs a within-group re-organisation. We then exclude all transactions where the acquirer owns more than 10% of the target shares prior to the transaction or owns less than 50% of the target shares following the transaction; we only take interest in our sample firms' previously wholly-owned[42] subsidiaries or business units, where majority of shares are divested to an outside acquirer. Overall, for the entire period 2003-2009, we find 10,498 divestments, of which 6,527 in the U.S. and 3,971 in our 17 European markets of interest. For our sample firms and for the period 2004-2009, the years over which we apply the divestments data in our analyses, we locate altogether 3,363 divestments, 1,344 (40%) of which by our U.S. firms and 2,019 (60%) by our European firms.

Finally, we divide the divestments to related and unrelated transactions to capture the unrelated divestments we take primary interest in. We define unrelated divestment as a transaction where all above criteria are met and the target's primary 4-digit SIC code is different from that of the

[40] According to SDC Platinum, debt is included in the measure for transaction value when indicated publicly in conjunction with the transaction.
[41] We perform matching through a variety of identifiers and complete it with an automated name matching.
[42] As indicated above, we allow for pre-transaction ownerships of less than 10%.

ultimate parent's. Over the period 2004-2009, we locate a total of 956 unrelated divestments, of which 487 (51%) by our U.S. sample firms and 469 (49%) by our European sample firms.

Our transaction database is depicted in Table 5, where we show volume and frequency data for all and unrelated divestments where our sample firms are the ultimate parents. We show data for 2004-2009, since 2004 is the first year included in our analysis due to ownership data being available from the beginning of 2003.

Table 3 – Unrelated divestments – Description

The table depicts the divestment data for our U.S. and European sample firms. All divestments include transactions exceeding USD 1 million in value, and unrelated divestments are a sub-group of all divestments where the target 4-digit SIC code is different from the 4-digit SIC code of the target's ultimate parent. **Value of divestments** is the sum of total values of divestments where one of our sample firms has been the ultimate parent and **Number of divestments** is the annual frequency of those divestments, depicted separately for all divestments and unrelated divestments.

		2004	2005	2006	2007	2008	2009	Total	Mean
Value of divestments - USD billion									
All	USA	80	160	208	208	100	36	792	132
	Europe	77	108	171	302	138	131	927	154
	Total	156	268	379	510	239	166	1,718	286
Unrelated	USA	21	32	70	61	18	12	214	36
	Europe	28	25	43	60	28	69	253	42
	Total	49	57	113	121	46	82	467	78
Number of divestments									
All	USA	259	276	277	250	158	124	1,344	224
	Europe	383	425	430	383	233	165	2,019	337
	Total	642	701	707	633	391	289	3,363	561
Unrelated	USA	84	82	100	108	65	48	487	81
	Europe	104	94	102	74	48	47	469	78
	Total	188	176	202	182	113	95	956	159

As seen in Table 3, we note that while our European firms constitute a smaller group than our U.S. firms, we record a higher overall number and higher total value of (all and unrelated) divestments for European than for U.S. firms. While the same is true for the number of all divestments, we record a higher number of unrelated divestments for the U.S. firms. Overall, we note that while year 2007 exhibits clearly the highest total divestment values, the global financial meltdown in 2008 and ensuing downturn are clearly visible in rapidly falling value and number

of divestments in 2008 and 2009. We note, however, that for our firms, the overall value of unrelated divestments does not fall as sharply in 2007-2009 (-32%) as the overall value of all divestments (-67%).

4.3.4 Dividend payout data – Cash dividends

We source our dividend payout data through FactSet. While most U.S. focused, payout-related studies use the Center for Research in Security Prices (CRSP) (see e.g. Michaely, Thaler and Womack 1995; Benartzi, Michaely and Thaler 1997) or the Compustat database (see e.g. Baker and Wurgler 2004; DeAngelo, DeAngelo and Stulz 2006), we note that FactSet provides for an apt coverage in our cross-country setting requiring coverage for both U.S. and European firms. As discussed in the hypotheses Section 3.3, we use cash dividends to measure payout amongst our sample firms, in line with Michaely *et al.* (1995) and Klein and Zur (2009). To provide for our dividend-based variables, we source the following data items for our sample firms over our observation period: (1) calendar-year cash dividends and (2) calendar-year dividend yield. We then winsorize both data items and leave out the top 1-percentile to exclude outliers. The one percent limit adequately eliminates clear outliers such as cash dividends close to the size of total assets. We depict the extracted dividend data in Table 6 in Section 4.4, where our payout variables are specified and discussed.

4.3.5 Ownership data

This section presents our ownership data, which serves a dual purpose. First, it allows us to identify the owners of interest in our sample firms and extract data on their entry over our observation period. Second, it allows us to extract the necessary investor characteristics to produce investor groups that serve as our key independent variables. We first describe our ownership data in general, and then we specify the two separate data sets that we extract: one for indentifying our owners of interest and the other for providing all necessary characteristics for them. For the latter, we also clarify the data items we extract for the variable construction process presented later in Section 4.4.2.

4.3.5.1 Database description

The foundation of our study is a comprehensive owner-firm panel data set matching our firm sample over the observation period 2003-2009. The ownership data is provided by FactSet LionShares Global Ownership database, which allows us to identify the individual owners

present in our sample firms, track their ownership over time and thus extract a range of ownership metrics over the seven-year observation period.

The FactSet LionShares database, applied in analogous research settings and described as a leading information source for global institutional ownership (see e.g. Ferreira, Massa and Matos 2009), collects global equity ownership data for institutions, mutual fund portfolios and insiders/stakeholders, amounting to more than 480,000 individual owners[43]. The database sources the ownership data from a comprehensive range of public filings, annual and quarterly company reports, stock exchange material and national regulatory agencies, reporting all data on a quarterly basis.

For our analysis, we construct two separate ownership data sets:

(1) Our primary owner-firm data set including all owners exceeding the threshold of 1% of common equity for any of our S&P 1500 and STOXX Europe TMI firms of interest

(2) A comprehensive ownership data set covering *all* owners for *all* publicly listed companies in the U.S. and Europe[44] in 2003-2009 to serve as a basis for investor characterisation

The purpose of the first data set is to provide us with our key independent variables, while the second data set provides investor data required to calculate investor characteristics that serve as a basis for investor grouping.

4.3.5.2 Primary owner-firm data set

We identify and extract names and identifiers for all owners present in our sample firms. To include only owners with substantial enough holdings to provide elementary incentives to active monitoring (see e.g. Grossman and Hart 1980; Shleifer and Vishny 1986), we leave out owners holding less than 1% of target equity and end up with 6,337 individual investors. Our choice to exclude holders with less than 1 percent of target shares is in line with Connelly *et al.* (2009),

[43] Information on FactSet LionShares Global Ownership is available online at: http://www.factset.com/data/ownership.

[44] Ownership data is included as represented in FactSet. For Europe, we include the countries present in the STOXX Europe TMI Index.

Johnson and Greening (1999) and Tihanyi *et al.* (2003) and we argue that it allows us to retain a large and diverse pool of owners, especially compared to a five-percent-holding limit as applied in most activist hedge fund studies (among others: Brav *et al.* 2008; Klein and Zur 2009).

While we maintain that a 1% holding limit is well-founded and that FactSet LionShares provides best available holder data for international entities, we cannot rule out that certain types of ownership records are partially excluded. More precisely, based on our expert interviews, extensive press searches and the case study on UK Hermes Focus Funds by Becht *et al.* (2008) we suspect that activist hedge fund holdings might be somewhat under-represented in our sample since non-regulated investors typically keep their holdings private before punctuating a flagging limit so as to allow private negotiations with target Board or management (Becht *et al.* 2008). We note, however, that activist hedge funds do exhibit a strong presence in our data and that FactSet LionShares also sources data actively from press sources allowing us to frequently observe hedge fund holdings below the flagging thresholds[45].

4.3.5.3 Comprehensive holder data for investor characterisation

After generating the primary owner-firm data set for holders of over 1% in our sample firms, we proceed to extract characteristics data for our 6,337 investors of interest. Since FactSet LionShares does not support data extraction for a large set of owners (instead, queries can only be made for companies), we produce *all* recorded shareholders for *all* U.S., Canadian and European publicly listed companies quarterly for the period January 1, 2003 through December 31, 2009. The data set features 17.9 million unique quarter-owner-firm combinations. From this extensive holder data, we calculate the portfolio features we anticipate are most important regarding the propensity to activism (as presented and motivated in Section 2.4) for the 6,337 investors that hold more than 1% of any of our sample firms:

Churn rate – Following Gaspar, Massa and Matos (2005), we calculate the churn rate to depict the portfolio turnover and thus the investment horizon of our owners of interest. Churn rate measures the relative, price-corrected quarterly portfolio movements and is defined as:

[45] The flagging threshold is in most European countries at 5%, however with the following exceptions: Ireland (3%), Italy (2%), Portugal (2%), Spain (3%), Switzerland (3%), and the U.K. (3%).

$$CR_{i,t} = \frac{\sum_{j\epsilon Q}\left|N_{j,i,t}P_{j,t} - N_{j,i,t-1}P_{j,t-1} - N_{j,i,t-1}\Delta P_{j,t}\right|}{\sum_{j\epsilon Q}\frac{N_{j,i,t}P_{j,t} + N_{j,i,t-1}P_{j,t-1}}{2}}, \quad (1)$$

where $N_{j,i,t}$ is the number of shares held by investor i in company j in quarter t and $P_{j,t}$ is the share price for company j in quarter t. Further we calculate the owner-specific time-invariant churn rate CR_i as the average of company i's quarterly churn rates.

Share of holdings held for over six quarters – Adopting from Bushee (1998), who measures the share of holdings held for the past two years and in line with Chen *et al.* (2007), we construct a further measure of investment horizon. We account for our limited observation period and define the stability measure for each investor as the share of all holdings (held at any stage of our observation period) that were kept in the portfolio for six or more quarters. A minimum holding period of six quarters implies that the investor has been present in the company at least during one annual general meeting.

Number of holdings – To measure the diversification of the portfolio of our owners, we calculate the maximum quarterly number of holdings for every investor during 2003-2009. We restrict the maximum number of quarterly holdings to twice the number of the third largest quarterly figure. The chosen restriction eliminates efficiently errors in data where an investor's number of holdings suddenly increases significantly in one quarter. A standardised winsorising would not be suitable as the number of holdings varies significantly across investors.

Herfindahl index (HHI) – In line with Bushee (1998), we measure investors' HHI to produce another metric describing the diversification of the holder portfolios, taking into account the potentially uneven value distribution of holdings. The HHI is calculated for each owner quarterly, and the average quarterly HHI is reported for each owner over our observation period. We define the quarterly HHI for investor i in quarter t as follows:

$$HHI_{i,t} = \sum_{j=1}^{N}\left(\frac{MV_{i,j,t}}{PR_{i,t}}\right)^2, \quad (2)$$

where $MV_{i,j}$ is the market value of ith investor's holding in firm j and PR_i is the total market value of ith investor's portfolio.

Share of holdings exceeding 1% of target shares – Adopting from Bushee (1998), who measures the share of investors' holdings that exceed 5% in target equity, we produce a third measure of portfolio concentration. Specifically, we calculate the quarterly share of holdings (out of total number of holdings) that exceed 1% of the target firm equity. We then record the median of the quarterly figures for each investor.

4.3.5.4 Modifications to the initial owner universe

Having produced the above five measures for all of our 6,337 holders, we undertake the following procedures to produce a final set of holders:

(1) All owners, for which data is not available to produce all five characteristics, are removed (372 holders removed).
(2) All holders with a maximum quarterly number of holdings of one are removed, which is in line with Cronqvist *et al.* (2008), who show that single holding entities are typically employee stock trusts, managerial holdings or company founders and their families (2,535 holders removed).

We end up with 3,430 individual investors that qualify for our investor universe.

4.4 Variables

In this section, we specify the variables applied in our study. First, we specify and motivate our dependent variables from the three areas of corporate improvements: corporate governance, organisation and payout. We then present the construction process for our key dependent variables, the investor groups. We describe our two alternative methods of grouping investors based on their investment behaviour and provide descriptive statistics regarding the statistical process and resulting investor groups. Finally, we present and motivate the control variables applied.

4.4.1 Dependent variables

This section presents the dependent variables by the area of corporate improvement. We first show how our two corporate governance variables are constructed, based on a range of 14 individual underlying governance variables. We then depict and motivate our organisational outcome variables, which comprise three different measures for unrelated divestments. Finally,

we discuss our dividend payout outcomes by specifying and motivating our two cash dividend variables. We construct our corporate governance variables solely for the U.S. firms in our sample, but we apply organisational and dividend payout variables for both U.S. and European firms.

4.4.1.1 Corporate governance

Compatible with our hypotheses on investor effects on corporate governance (see Chapter 3 for discussion), we extract data for 14 individual governance variables describing our sample firms' (1) overall corporate governance arrangements and (2) board arrangements. Specifically, the 14 individual variables depict the strength of shareholder protection and functionality of the board as an efficient corporate organ pursuing shareholder interest. Due to the data inconsistencies reported above, we exclude the European RiskMetrics CGQ data from the analysis and focus solely on the U.S. To follow our dual -focus of overall governance and board arrangements, we construct two governance indices and apply the changes in both indices as our dependent governance variables. Specifically, we apply the following two-level approach:

(1) First, we choose 14 individual corporate governance variables we regard as most agency-sensitive, as specified in Section 2.5 and for which data is available. We then make all variables binary (eight out of 14 are binary in CGQ to begin with) and condense them into an annual overall corporate governance index with potential values ranging from 0 to 1 (or 0/14 to 14/14). As with the governance index by Brown and Caylor (2009), higher values indicate better overall governance. Finally, we extract annual changes for the overall index and define the variable *Change in overall governance index* as the overall index level in year T less the overall index level in year T-1.

(2) Second, within the 14 agency-sensitive corporate governance variables, we isolate six that we consider the most important in depicting functionality, independence and strength of the board of directors in protecting shareholder interest. We then condense them into a sub-index measuring the board arrangements of our sample firms and receiving values from 0 to 1 (or 0/6 to 6/6), with high values indicating higher board quality. As with the wider index, we then extract annual changes for the board index and define the variable

Change in board index as the board index level in year T less the board index level in year T-1.

To measure annual changes in the in the overall governance and board indices, we balance the individual governance variable data by filling in intermittent data gaps. We first locate all variable-firm-years where no data is available in any of the 14 governance variables and define them as no-data years. We then replace all variable-firm-years, where data is missing for an individual variable, but not for all 14 variables, with the first preceding value available. If no preceding observation is available, we replace the missing observation with the first succeeding value available. In other words, if an observation for variable *z* in firm *k* in year *t* is missing, we replace it with the first available preceding value (*z,k,t-1...-n*) or with the first available succeeding value (*z,k,t+1...+n*) when the preceding value is missing. We end up with a balanced governance data set where the potential maximum for the overall governance and board indices always equals 14 and 6, respectively.

While we formulate our dependent governance variables as *changes* in our overall and board indices, most governance studies utilizing indices focus on studying *levels*. Perhaps most importantly, Gompers, Ishii and Metrick (2003) study the association between corporate governance[46] and equity returns and valuation levels, showing that a strategy comprising a bought portfolio of high shareholder protection firms and a sold portfolio of low shareholder protection firms would have produced an annual 8.5% abnormal return from 1990 through 1999. Further, Larcker, Richardson and Tuna (2007) study the effect of corporate governance, using a proxy of 39 underlying governance variables and 14 condensed constructs (indices), on corporate performance, valuation, accruals, class action lawsuits and future returns. Also, Brown and Caylor (2009) study the association between level of overall governance and firm operating performance through their 51-variable governance index. We argue, however, that studying governance changes, rather than levels is well-suited for our research question: we look at the discrete corporate improvements that activist investors facilitate. Our approach of studying changes is in line with Aggarwal *et al.* (2010), who study the effect of institutional ownership on corporate governance in an analogous setting. While Aggarwal *et al.* (2010) study both governance levels and changes, they suggest that changes are better suited to mitigate the

[46] Gompers, Ishii and Metrick (2003) apply a 24-variable governance index as their main proxy for governance.

endogeneity issues, discussed in detail in Chapter 5. We further argue that while Aggarwal *et al.* (2010) study the effect of level of institutional ownership on governance, our activist setting by nature favours studying changes. We anticipate that when an activist enters a firm, improvements will ensue. Consequently, we explain *changes* in governance with *changes* in ownership.

Based on the U.S. data, we report each of the 14 individual corporate governance variables in Table 4, where we also show the annual positive and negative changes in each variable for our sample firms over our observation period. Table 4 also depicts the allocation of variables into the overall governance index and the board index.

As Table 4 shows, in 12 out of 14 of our corporate governance variables, less than 90% of the firms in our sample are on an improved level[47] as of the beginning of our observation period in 2003. *Board independence* and *Director stock compensation*, however, seem to start from a level above 90%. Further, in *Board amendments to bylaws* and *Changes in board size*, only less than 10% of the firms are on an improved-level as of 2003. All variables, however, show both improvements and deteriorations annually across our observation period, with *Board classification, CEO/Chairman separation, Poison pill and Filling procedure of Board vacancies* exhibiting the most consistent improvement trends over time.

All 14 individual underlying corporate governance variables are defined and discussed below.

Board independence – The CGQ data reveals the share of independent outside directors as a portion of all directors, defining whether the ratio is (1) below 50%, (2) 50% - 66.7%, (3) 66.7% - 75%, (4) 75%-90% or (5) either >90% or comprising a single non-independent and non-outside director. In line with RiskMetrics methodology, we define outsider directors as neither current firm officers/employees nor direct/indirect majority shareholders. Similarly, we require that independent directors are not former employees or officers or their relatives, have no significant business, transactional or regulatory relationship with the firm and are not founders of the firm. We translate the multi-level variable into binary format and define independent board as one where the share of independent outside directors as a portion of all directors is more than 50%. The dummy variable equals one if the board is independent and zero otherwise.

[47] All variables are binary, and equal one if the specific characteristics is in a desirable state and zero otherwise, as specified for each of our 14 governance variables separately below.

Table 4 – Corporate governance – Variables and description

The table depicts our corporate governance variable data sourced from RiskMetrics. The data covers the US firms in our sample and reveals the annual positive and negative changes in all 14 individual binary corporate governance variables. We also show annually the portion of all firms, where the individual binary variables are improved. Finally, we show the allocation of individual variables into (1) the overall governance index and (2) the board index.

Governance variable		2003	2004	2005	2006	2007	2008	2009	Overall index	Board index
Board independence	Improved %	91 %	97 %	98 %	99 %	99 %	99 %	99 %		
	Improvements	-	96	29	13	6	5	2	Yes	Yes
	Deteriorations	-	14	6	6	5	2	5		
Board classification	Improved %	38 %	39 %	41 %	43 %	48 %	52 %	54 %		
	Improvements	-	23	23	24	60	41	28	Yes	Yes
	Deteriorations	-	6	5	2	3	7	7		
CEO / Chairman separation	Improved %	36 %	35 %	38 %	41 %	43 %	44 %	46 %		
	Improvements	-	88	114	87	64	72	56	Yes	Yes
	Deteriorations	-	103	61	50	47	62	38		
Director stock compensation	Improved %	94 %	95 %	96 %	96 %	94 %	96 %	96 %		
	Improvements	-	27	22	15	7	28	19	Yes	Yes
	Deteriorations	-	17	12	9	28	13	14		
Nominating committee independence	Improved %	65 %	81 %	86 %	89 %	90 %	91 %	90 %		
	Improvements	-	280	121	69	54	36	35	Yes	Yes
	Deteriorations	-	65	56	35	35	28	45		
Compensation committee independence	Improved %	84 %	89 %	92 %	94 %	95 %	96 %	94 %		
	Improvements	-	114	72	42	33	35	19	Yes	Yes
	Deteriorations	-	50	33	28	14	24	36		
Poison pill	Improved %	39 %	40 %	43 %	51 %	58 %	64 %	72 %		
	Improvements	-	30	48	107	75	80	93	Yes	No
	Deteriorations	-	13	9	5	7	8	11		
Cumulative voting rights	Improved %	10 %	9 %	10 %	10 %	9 %	9 %	9 %		
	Improvements	-	4	2	4	2	2	0	Yes	No
	Deteriorations	-	8	3	3	6	9	3		
Written consent acceptance	Improved %	21 %	22 %	21 %	21 %	23 %	23 %	23 %		
	Improvements	-	47	28	17	24	20	20	Yes	No
	Deteriorations	-	49	32	18	9	20	18		
Special meeting rules	Improved %	44 %	44 %	44 %	43 %	44 %	45 %	46 %		
	Improvements	-	18	4	18	13	22	16	Yes	No
	Deteriorations	-	30	5	21	6	9	15		
Board amendments to bylaws	Improved %	4 %	3 %	4 %	3 %	3 %	3 %	3 %		
	Improvements	-	9	9	1	6	1	5	Yes	No
	Deteriorations	-	20	5	6	3	6	8		
Shareholder approval of stock-incentive plans	Improved %	80 %	71 %	79 %	83 %	78 %	84 %	85 %		
	Improvements	-	63	131	64	38	102	70	Yes	No
	Deteriorations	-	186	29	13	99	46	56		
Changes in board size	Improved %	12 %	6 %	6 %	4 %	4 %	4 %	4 %		
	Improvements	-	17	3	6	4	7	6	Yes	No
	Deteriorations	-	100	6	29	4	9	16		
Filling procedure of board vacancies	Improved %	46 %	49 %	51 %	55 %	59 %	60 %	62 %		
	Improvements	-	99	36	71	53	36	35	Yes	No
	Deteriorations	-	56	6	32	8	20	18		

Board de-classification – The CGQ data shows whether a firm's board is re-elected entirely every year, or whether directors are divided into multiple (typically three) classes of which only one is elected annually by the shareholder meeting. We define a board as de-classified when the entire board is elected annually. The dummy variable takes the value of one if the firm board is de-classified and zero otherwise.

CEO / Chairman separation – The CGQ data reveals whether the Chief Executive Officer (or corresponding first-ranking manager, CEO hereafter) also holds the position of the Chairman of the board. We do not differentiate between having a lead director and not having one and instead define CEO and Chairman to be separated when they are not the same person. We assign the variable the value of one if CEO and Chairman are separated and zero otherwise

Director stock compensation – The CGQ data shows whether directors, collectively, were awarded with cash only or with cash and stock during the measured year. We define director stock compensation as an arrangement where all directors are paid in cash and stock, or in stock only. The dummy variable is equal to one if director stock compensation exists and zero otherwise.

Nominating committee independence – The CGQ data reveals the composition of companies' nominating committees and specifies whether such a committee, primarily responsible for identifying and approving board nominees, exists as a separate entity. We anticipate that independent and outside committee members are vital in ensuring the nomination of an independent board safeguarding the shareholder interest. We therefore define independent nominating committee as one separated from the board and comprising solely independent[48] outsiders. The variable obtains the value of one if the nominating committee is independent and zero otherwise.

Compensation committee independence – The CGQ data also depicts the composition of firms' compensation committees, primarily responsible for setting the guidelines for management pay. We consider compensation committee independence important in ensuring a well-incentivised and controlled management and define independent compensation committee as one separated

[48] In Nominating committee and Compensation committee variables, board seat does not make a committee member insider or affiliated.

from the board and comprising solely independent outsiders. The dummy variable equals one if the compensation committee is independent and zero otherwise.

Poison pill – The CGQ data describes whether or not a firm had an active poison pill, or a shareholder rights plan, in the measured year. We include all poison pill types where the shareholders enjoy a pre-determined right to purchase shares in the *old* or *new* (in case of mergers) company with discounted prices at the expense of an outside party pursuing a takeover or a merger. We consider all such plans regardless of whether they include TIDE provision[49], "Sunset" provision[50], qualified offer clause[51], shareholder approval requirements or specific trigger thresholds. We define a poison pill as any of the aforementioned arrangements and anticipate that poison pills are, in all above cases, a material inhibition to a functioning market for corporate control. We thus assign the dummy the value of one if no poison pill is in place and zero otherwise.

Cumulative voting rights – The CGQ data shows whether or not shareholders are allowed to concentrate their votes to a single nominee, most importantly in board elections. We anticipate that the permission to concentrate votes to a single nominee instead of only being able to vote for the entire board significantly strengthens shareholders' ability to ensure board independence and promote the owner interest by allowing for the voting of "minority directors". The dummy thus takes the value of one if cumulative voting is allowed for shareholders and zero otherwise.

Written consent acceptance – The CGQ data shows whether the shareholders of a company are permitted to act by written consent or not. We anticipate that allowing shareholders to deliver their votes through mail, without convening for a physical meeting, serves to enhance shareholder position since otherwise shareholders might have to wait for the next scheduled meeting to remove directors or initiate a shareholder resolution. We assign the dummy the value of one if shareholders are freely allowed to act by written consent and zero otherwise, including arrangements, where written consent is allowed only if they are unanimous.

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[49] Three-year independent director evaluation refers to an arrangement where an outside director committee evaluates the poison pill every 2-3 years and decides whether it is continued or rescinded.

[50] In a Sunset provision, shareholders have the opportunity to ratify or reject the poison pill at a regular interval, e.g. every 2-3 years.

[51] Qualified offer clause refers to a pre-determined clause restricting the use of a poison pill if an offer meets certain pre-defined criteria.

Special meetings rules – The CGQ data reveals whether or not shareholders are permitted, individually or as a group passing a given ownership threshold, to convene a special meeting. We anticipate that shareholders' ability to call a special meeting at their discretion is important in maintaining the owners' power to initiate shareholder resolutions or influence board composition. Also, we anticipate that the right to call a special meeting is vital in de-insulating management in takeover situations; a special meeting allows shareholders to respond to a bid and makes it more difficult for management to turn down beneficial offers without shareholder consultation. The dummy therefore equals one if shareholders are permitted to call special meetings and zero otherwise.

Board amendments to bylaws – The CGQ data allows us to infer whether board is permitted to amend the company's bylaws without shareholder approval. We anticipate that shareholder approval requirement in amending firm bylaws is important in making sure the management can not deteriorate the shareholders' position without their consent. The dummy takes the value of one if amendments to bylaws require shareholder approval and zero otherwise.

Shareholder approval of stock-incentive plans – The CGQ data reveals whether all of a firm's stock-based incentive plans were adopted with shareholder approval, or whether all or some of them were issued without such consent. We anticipate that shareholder approval for stock-incentive plans is significant in maintaining shareholder oversight on structuring management pay in an efficient way. We therefore assign the dummy the value of one if all stock-incentive plans are shareholder approved and zero otherwise.

Changes in board size – The CGQ data shows whether the shareholders of a firm have the right to increase or decrease the number of directors in the board. Given that changes in board size are often used as a takeover defence by the management, we anticipate that it is important to allow shareholders to decide on the changes in the board size to avoid management insulation and ensure shareholder discretion on potential takeover bids. The dummy variable thus equals one if shareholder approval is required to change board size and zero otherwise.

Filling procedure of board vacancies – The CGQ data reveals whether the appointment of directors chosen to fill board vacancies is subject to shareholder approval (vote). If shareholder approval is not required, the board can self-select new directors to fill vacancies. Since this would

allow the board to replace directors removed by the shareholders, we anticipate that shareholder approval for filling board vacancies is important in maintaining independent boards with strong management oversight. In the case of classified boards, we consider the arrangement where proposed board candidates are subject to same approval than candidates applying for the regularly freeing board seats equivalent to shareholder approval requirement. We assign the dummy variable the value of one if all added directors are subject to shareholder approval in the next annual general meeting and zero otherwise.

4.4.1.2 Organisation

In analysing the investor effects on organisational improvements, we focus on unrelated divestments, as laid out in Chapter 3. Specifically, based on the deal data we extract from SDC Platinum, we construct three specific divestments variables comprising the (1) occurrence of unrelated divestments, (2) initiation of unrelated divestments and (3) magnitude of unrelated divestments. We exhibit all variables annually. The three variables are discussed and motivated individually below. Descriptive data on the three variables, showing all divestments and unrelated divestments for our sample firms, are presented in Table 5.

Occurrence of unrelated divestments – We extract annual data on whether our sample firms undertake divestments of unrelated entities over our observation period. Drawing from Ahn and Denis (2004), who study spin-offs' effect on firm valuation and investment efficiency, we anticipate that the occurrence of unrelated divestments signals reversal of value-destroying unrelated diversification and excessive growth. We assign the dummy variable the value of one if a firm announced unrelated divestments in a given year and zero otherwise. We only account for divestments that were subsequently closed or divestments announced post to January 1, 2008 and labelled "pending" as of year-end 2009[52].

Initiation of unrelated divestments – We extract annual data on whether our firm universe constituents initiated unrelated divestments over our observation period. We define unrelated divestments initiation as one or more unrelated entities being divested in year T but no such divestments occurring in year T-1. As with the previous variable, we anticipate that initiation of unrelated divestments signals reversal of diversification and excessive growth. The dummy

[52] Since divestments often take more than one year to close, we include divestments announced after 2008 and pending in year-end 2009 so as not to exclude valid observations.

variable receives the value of one if unrelated divestments are initiated and zero otherwise. We only account for closed transactions and pending transactions for those announced in 2008 or later.

Magnitude of unrelated divestments – In addition to occurrence and initiation of unrelated divestments, we measure the annual enterprise-value-normalised magnitude of unrelated divestments. We define the annual continuous variable as the sum of the values of unrelated divestments where our firm panel constituent was an ultimate parent divided by the average enterprise value over the year measured[53]. To exclude outliers, we leave out ratios exceeding 0.5.

[53] In other words, for measuring *Magnitude of unrelated divestments* –ratio for a given firm for 2003, the denominator is $(EV_{2002} + EV_{2003}) / 2$, where the EV-measures are as of year-end.

Table 5 – Unrelated divestments – Variables

The table depicts the divestment data for our U.S. and European sample firms showing our three unrelated divestments variables. For all three variables, we show both all divestments and unrelated divestments. All divestments include transactions exceeding USD 1 million in value and unrelated divestments are a sub-group of all divestments where the target 4-digit SIC code is different from the 4-digit SIC code of the target's ultimate parent. **Occurrence of divestments** is the number of our sample firms where divestments were undertaken in year T. **Initiation of divestments** is the number of our sample firms where divestments were undertaken in year T, but not in year T-1. **Magnitude of unrelated divestments** is the average of sums of divestment transaction values (for firms in our sample) divided by the average EV of the divesting firm.

		2004	2005	2006	2007	2008	2009	Total	Mean
Occurrence of divestments									
All	USA	171	179	181	178	123	97	929	155
	Europe	200	237	234	203	129	115	1,118	186
	Total	371	416	415	381	252	212	2,047	341
Unrelated	USA	61	59	80	82	58	42	382	64
	Europe	77	72	79	60	33	37	358	60
	Total	138	131	159	142	91	79	740	123
Initiation of divestments									
All	USA	110	121	117	119	76	67	610	102
	Europe	97	119	109	92	57	70	544	91
	Total	207	240	226	211	133	137	1,154	192
Unrelated	USA	51	47	60	63	45	31	297	50
	Europe	60	51	60	38	29	32	270	45
	Total	111	98	120	101	74	63	567	95
Magnitude of divestments									
All	USA	4 %	5 %	6 %	6 %	5 %	3 %	-	5 %
	Europe	2 %	4 %	5 %	7 %	4 %	7 %	-	5 %
	Total	3 %	5 %	5 %	7 %	5 %	5 %	-	5 %
Unrelated	USA	5 %	5 %	7 %	6 %	6 %	3 %	-	5 %
	Europe	1 %	5 %	4 %	10 %	3 %	8 %	-	5 %
	Total	3 %	5 %	6 %	8 %	4 %	6 %	-	5 %

4.4.1.3 Dividend payout

We study dividends to measure investor effects on payout improvements (increases), as discussed in Chapter 3. In special, we construct two individual variables based on the data sourced from FactSet: (1) Change in dividend yield and (2) Initiation of cash dividends. We discuss and motivate the variables individually below. Description for dividends amongst our sample firms is presented in Table 6.

Change in dividend yield – We measure changes in the dividend payout by observing changes in firms' dividend yields. We use dividend yield to make cross-sectional comparison more meaningful, as with Benartzi *et al.* (1997), who study dividends' signalling effect of earnings using both dividend yields and dividends deflated by prior-period dividends. In an analogous study to ours, Clifford (2008) studies changes in the dividend yield of firms targeted by activist blockholders. Brown and Caylor (2009) use dividend yield as a proxy for payout when studying the effect of corporate governance on a variety of firm performance metrics. We define dividend yield as the annual total cash dividend payout divided by the year-end share price. We further define the continuous variable *Change in dividend yield* as the dividend yield in T less the dividend yield in T-1.

Initiation of cash dividends – We measure the occurrence of cash dividends annually and define the initiations of cash dividends as events when a firm pays cash dividends in year T but has not paid cash dividends in years T-1 and T-2. In an analogous context Klein and Zur (2009) study Activist hedge funds and find that they are successful in initiating cash dividends in target companies. Our approach is largely in line with Michaely *et al.* (1995), who study the price reactions from initiations and omissions of cash dividends. Using their longer data set covering 25 years, Michaely *et al.* (1995) only account for the actual first cash dividends on CRSP[54] record, excluding cash dividend reinstitutions. We however, consider a two-year quarantine period appropriate for our data only spanning from 2003 (2004[55]) to 2009. The dummy variable equals one if cash dividends are initiated, and zero otherwise.

[54] Center for Research in Security Prices
[55] 2004 is the first year measured for dependent variables, since ownership data is reliably available only from 2003.

Table 6 – Dividends – Variables and description

The table depicts the cash dividend yields in our firm sample 2003 through 2009. **Average dividend yield** shows the average annual dividend yield for our firm sample when zero-dividend payers are included. **Average dividend yield – Non-zero** shows the same when zero-dividend payers are excluded. **Initiation of dividends** depicts the number of firms commencing dividend payments in T, who have not paid cash dividends in T-1 and T-2.

		2003	2004	2005	2006	2007	2008	2009	Total	Mean
Average dividend yield	USA	1.0 %	1.0 %	1.1 %	1.1 %	1.3 %	2.0 %	1.5 %	-	1.3 %
	Europe	2.3 %	2.3 %	2.3 %	2.2 %	2.7 %	3.8 %	2.6 %	-	2.6 %
	Total	1.5 %	1.5 %	1.6 %	1.5 %	1.9 %	2.7 %	1.9 %	-	1.8 %
Average dividend yield - Non-zero	USA	1.8 %	1.7 %	1.9 %	1.8 %	2.2 %	3.3 %	2.4 %	-	2.2 %
	Europe	2.8 %	2.7 %	2.6 %	2.5 %	3.1 %	4.4 %	3.3 %	-	3.1 %
	Total	2.3 %	2.2 %	2.2 %	2.1 %	2.6 %	3.8 %	2.8 %	-	2.6 %
Initiation of dividends	USA	41	47	37	13	22	7	13	180	26
	Europe	19	27	22	23	13	11	10	125	18
	Total	60	74	59	36	35	18	23	305	44

We note that the average annual dividend yields are consistently somewhat higher in Europe than in the U.S. Further, we note that average dividend yields increase significantly in 2008, which we assume to be a result of rapidly decreasing market valuations but relatively more stagnant dividend levels (see Lintner 1956). While the average dividend yields decrease in 2009, they remain mostly above the seven-year average amongst both U.S. and European firms. The total dividend initiations are distributed between U.S. and Europe roughly in line with the number of constituent firms in the sample. We note, however, that the number of firms initiating cash dividends drops significantly more in the U.S. from 2007 to 2008 (-68%) when compared to Europe (-15%).

4.4.2 Key independent variables

We produce our key independent ownership variables by classifying the 3,430 investors into groups based on the two key characteristics that we hypothesise to define the propensity to activism, as laid out in Chapter 2: (1) portfolio concentration and (2) investment horizon. As neither can be described with an unambiguous single measure, we assume two different methods to group the investors: (1) factoring-based grouping and (2) simple grouping based on two individual underlying investor metrics. Specifically, our annual investor variables take a binary form and indicate whether investors belonging to the different investor groups have entered a given sample firm during the year measured or not.

Drawing from Bushee (1998) and related literature, we argue that the measures for portfolio concentration should incorporate the ability of an investor to focus its portfolio both into large ownership stakes and into a low number of companies. Consequently, we adapt from Bushee (1998) to our activism-specific purpose and argue that the following measures capture portfolio concentration comprehensively in our setting: (1) total number of holdings, (2) the Herfindahl measure of portfolio concentration and (3) the share of holdings exceeding 1% of target equity.

We also draw on the literature to identify the relevant proxies for investment horizon in our activist-specific setting. As suggested by Clifford (2008), the lock-up period, although a suitable measure for hedge funds, is problematic with a broader investor group. Open-ended mutual funds can face daily redemptions whereas individual investors, government investment vehicles and the largest pension funds have their capital locked-up practically indefinitely. Consequently, we draw from Gaspar, Massa and Matos (2005), Chen, Harford and Li (2007) and Bushee (1998) and argue that the two most relevant measures for investment horizon in our activist-setting are: (1) investor churn rate and (2) the share of holdings held for at least six quarters.

The factoring division is based on factor analysis to first produce two factors describing portfolio concentration and investment horizon by exploiting all five underlying investor characteristics. The simple division uses only two of the underlying investor characteristics as proxies: the *Herfindahl index* for portfolio concentration and *Churn rate* for investment horizon. We first present both approaches and then compare them to produce a coherent view of similarities and differences. Finally, we present our investor group-based key independent variables describing entries by investors from different investor groups.

4.4.2.1 Factoring division

We apply factor analysis to condense the set of five above described portfolio characteristics into two factors, one depicting portfolio concentration and one depicting investment horizon.

Amongst the five characteristics, we relate *Churn rate* and *Share of holdings held for over six quarters* to investment horizon and *Number of holdings*, *Herfindahl index* and *Share of holdings exceeding 1% of target shares* to portfolio concentration. We anticipate that while all five characteristics relate clearly to either portfolio concentration or investment horizon, each convey different, complementary information. Furthermore, the choice of one single variable to describe

each of the two key characteristics is difficult to justify. All in all, we anticipate that factor analysis condenses more relevant information from the five portfolio characteristics and results in more relevant portfolio concentration and investment horizon estimates for each investor than an approach relying on only two individual portfolio characteristics. Below, we describe the factor analysis procedure and present the k-means clustering used to group investors based on the factor scores generated from our factor analysis.

Factor analysis is used in research to describe a large number of observable variables by a smaller group of unobservable, or hypothetical, factors. The analysis is based on the assumption that the observed variables are linear combinations of some underlying factors that are orthogonal to each other. The underlying model is presented in Equation (3):

$$y_{ij} = z_{i1}b_{ij} + z_{i2}b_{2j} + \ldots + z_{iq}b_{qj} + e_{ij}, \quad (3)$$

where y_{ij} is the value of the ith observation on the jth variable, z_{ik} is the ith observation on the kth common factor, b_{kj} are factor loadings, or the set of linear coefficients, and e_{ij} corresponds to a residual but, in factor analysis, it is the jth variable's unique factor. Factor analysis can broadly be divided into three steps: extracting the initial factors, rotation and interpreting the factors (Sharma 1996).

Before extracting the initial factors, we perform a number of measures suggested by Sharma (1996) to check whether our investor characteristics data is appropriate for factor analysis. First, we examine the correlation matrix of the five portfolio characteristics variables. High correlations among variables indicate that the variables can be grouped under common factors (Sharma 1996). By examining the correlation matrix presented in Panel A of Table 7 we find sets of variables that are highly correlated. Variables that are a priori presumed to correlate are bolded. Our presumptions hold fairly well, and the correlations are logical. *Number of holdings* correlates negatively with *Herfindahl index* and *Share of holdings exceeding 1% of target shares* showing the intuitive relation that portfolio concentration decreases in number of holdings. Regarding the proxies for investment horizon, *Churn rate* and *Share of holdings held for over six quarters* show strong negative correlation, which implies, as expected, that the share of long-term holdings decreases in portfolio turnover. *Share of holdings held for over six quarters* also correlates positively with *Herfindahl index*, which can be explained by investors, such as wealthy

individuals, who typically concentrate their ownership into a very limited number of holdings and hold on to them at length.

We also examine negative anti-image correlations that should be small for the variables to be appropriate for factoring. The negative anti-image correlation matrix is presented in Panel B of Table 7. Although "small" is a judgemental question in relation to the examination of anti-image correlations (Sharma 1996), it appears that the figures are sufficiently small to support appropriateness of factor analysis for our investor characteristics data.

As a final check we calculate the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (Kaiser 1970). Our overall measure of 0.584 implies a mediocre sampling adequacy (Kaiser and Rice 1974). We thus conclude that our investor characteristics data is suitable for factor analysis.

Table 7 – Factor analysis - Correlation and anti-image correlation matrices

Panel A shows the correlation matrix for the five portfolio features. Panel B shows the anti-image correlations, or partial correlations controlling for all other variables, for the portfolio features. Portfolio features are as follows: **Number of holdings** is the maximum number of quarterly holdings; **Herfindahl index** is the Herfindahl measure for portfolio concentration; **Share of holdings exceeding 1% of target shares** is the quarterly share of holdings that exceed 1% of the target firm equity; **Churn rate**, a measure for portfolio turnover, is the relative, price-corrected quarterly portfolio movement; **Share of holdings held for over six quarters** is calculated as the share of holdings held at any stage of our observation period for more than six quarters to all holdings.

PANEL A - CORRELATION MATRIX

Variable	(1)	(2)	(3)	(4)	(5)
(1) Number of holdings	1				
(2) Herfindahl index	**-0.359**	1			
(3) Share of holdings exceeding 1% of target shares	**-0.323**	**0.551**	1		
(4) Churn rate	-0.037	-0.250	-0.186	1	
(5) Share of holdings held for over six quarters	0.058	0.443	0.251	**-0.702**	1

PANEL B - ANTI-IMAGE CORRELATION COEFFICIENTS

Variable	(1)	(2)	(3)	(4)	(5)
(1) Number of holdings	1.000				
(2) Herfindahl index	0.315	1.000			
(3) Share of holdings exceeding 1% of target shares	0.166	-0.426	1.000		
(4) Churn rate	-0.039	-0.125	0.065	1.000	
(5) Share of holdings held for over six quarters	-0.222	-0.398	0.004	0.673	1.000

We first perform principal factor analysis to extract the initial factors. The principal factor method is appropriate when the analysis is exploratory rather than confirmatory and is used in a similar setting by Bushee (1998) and Dechow *et al.* (1991). The results from the extraction of the initial factors are presented in Panel A of Table 8. First, potential orthogonal factors, Factor1 through Factor5, are generated. Factors 3-5 are then left out from the analysis on the basis of negative eigenvalues. Eigenvalues represent the amount of variance explained by the factors (Kim and Mueller 1978), and factors with low eigenvalues are contributing little to the variances in the variables and may therefore be left out. With values of close to or over one, the two remaining factors are considered meaningful.

In Panel B of Table 8, factor loadings and uniqueness are presented for the two chosen factors, namely Factor1 and Factor2. Factor loadings are high for Factor1 and imply a relation to the investment horizon. Loadings are slightly lower for Factor2, but overall, there is a clear pattern to the signs: if Factor2 were to be portfolio concentration as we anticipate, the sign of the loadings should be positive for *Number of holdings* and negative for *Herfindahl index* and *Share of holdings exceeding 1% of target shares*. Similarly, if Factor1 were to be investment horizon, a higher *Churn rate* should decrease and a higher *Share of holdings held for over six quarters* should increase the measure.

We proceed with rotation, which is applied to achieve a clearer factor structure and make the factors more meaningful. Following Bushee (1998), we choose oblique rotation over an orthogonal rotation. Orthogonal (varimax) rotation relies on the assumption that the factors are independent, whereas in oblique rotation, the rotated factors are not constrained to be orthogonal to each other (Sharma 1996)[56]. An orthogonal rotation, however, produces very similar results in our case. The results of the oblique rotation are presented in Table 9. Interpreting the factors is a subjective process, but in this case, the results indicate that the factors have been successfully derived to represent the two desired characteristics: Factor1 depicts investment horizon and Factor2 depicts portfolio concentration.

[56] An orthogonal rotation is applied as verification and yields practically identical results.

Table 8 – Factor analysis – Initial factors

Panel A shows the eigenvalues of five extracted initial factor variables. The **Factor#** variables describe the potential orthogonal factors incorporating the five portfolio features. Panel B shows the Factor Loadings corresponding to the two factors with positive eigenvalues.

PANEL A - FACTOR ANALYSIS - EIGENVALUES

Factor	Eigenvalues	Difference	Proportion	Cumulative
Factor1	1.743	0.950	0.831	0.831
Factor2	0.793	0.854	0.378	1.209
Factor3	-0.061	0.069	-0.029	1.180
Factor4	-0.130	0.117	-0.062	1.118
Factor5	-0.247	.	-0.118	1.000
LR test: Independent vs. saturated:				
Chi2(15)	269.07			
Prob > chi2	0.000			

PANEL B - FACTOR LOADINGS

Variable	Factor1	Factor2	Uniqueness
Number of holdings	-0.227	-0.480	0.718
Herfindahl index	0.676	0.341	0.427
Share of holdings exceeding 1% of target shares	0.530	0.372	0.581
Churn rate	-0.630	0.415	0.431
Share of holdings held for over six quarters	0.747	-0.368	0.307

Table 9 – Factor analysis – Rotated factor loadings

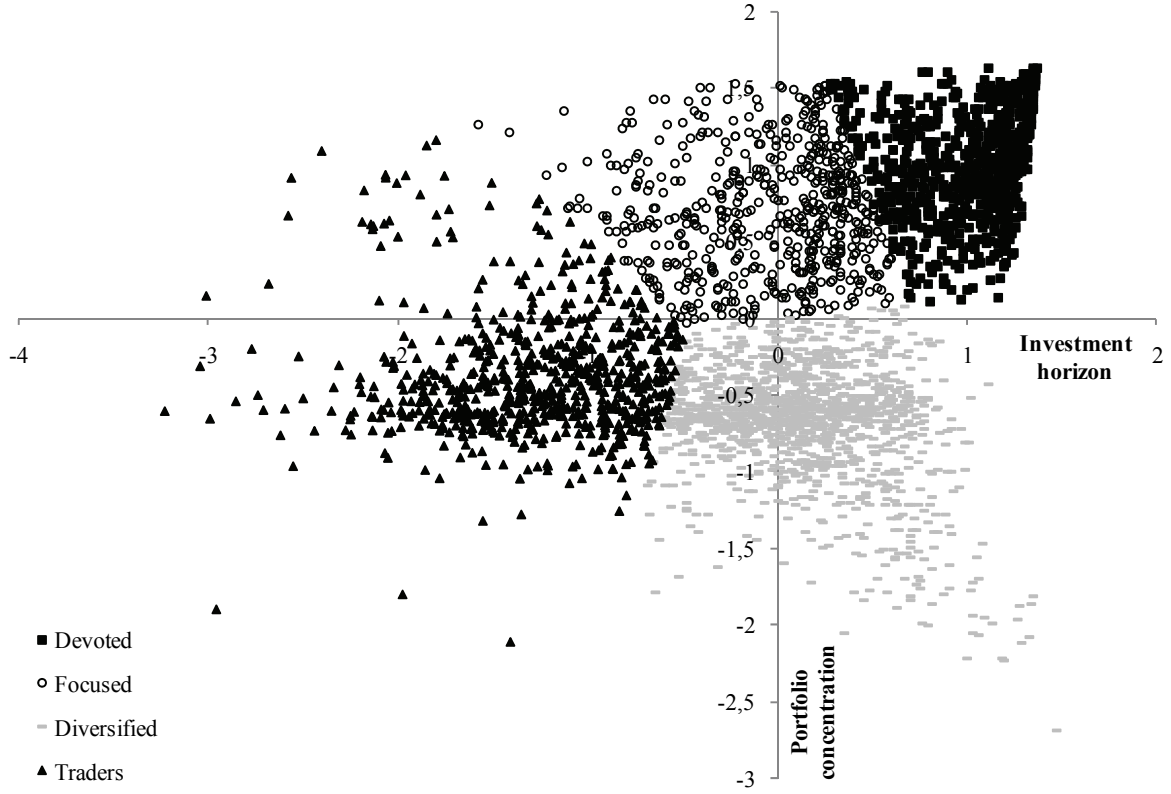
The table shows the rotated factor loadings for the portfolio features. Portfolio features are as follows: **Number of holdings** is the maximum number of quarterly holdings; **Herfindahl index** is the Herfindahl measure for portfolio concentration; **Share of holdings exceeding 1% of target shares** is the quarterly share of holdings that exceed 1% of the target firm equity; **Churn rate**, a measure for portfolio turnover, is the relative, price-corrected quarterly portfolio movement; **Share of holdings held for over six quarters** is calculated as the share of holdings held at any stage of our observation period for more than six quarters to all holdings. The rotation is performed with the oblique rotation method. The **Factor#** variables describe the potential orthogonal factors incorporating the five investment behaviour measures.

Variable	Factor1	Factor2	Uniqueness
Number of holdings	0.222	-0.546	0.718
Herfindahl index	0.192	0.683	0.427
Share of holdings exceeding 1% of target shares	0.069	0.625	0.581
Churn rate	-0.754	-0.001	0.431
Share of holdings held for over six quarters	0.797	0.109	0.307

Next, we group our 3,430 investors of interest based on the two factors identified in the factor analysis. More specifically, we estimate factor scores for all investors and perform k-means cluster analysis on the factor scores. Cluster analysis is a technique for combining observations into groups, such that each group is homogeneous and different from other groups (Sharma 1996). K-means cluster analysis is a non-hierarchical clustering technique for which the number of clusters must be decided a priori. The choice of the number of clusters is an iterative one where we examine the division and its meaningfulness. After examining the number of groups from two to five, we result in an investor division with four groups. The groups are illustrated in Figure 1 and named based on their distinguishing characteristics as (1) *Devoted*, (2) *Focused*, (3) *Diversified* and (4) *Traders*. We use the entries by investors belonging to the four groups, which all differ from each other in terms of portfolio concentration and investment horizon, as our key independent variables in regressions studying owner effects on a range of corporate improvements.

Figure 1 – Factoring division: Graphical representation

The figure illustrates the division of investors into four groups based on the factoring division: **Devoted, Focused, Diversified** and **Traders**. The axes, **Investment horizon** and **Portfolio concentration**, are produced by factor analysis on five measures of investment behaviour.



4.4.2.2 Simple division

In addition to our factoring division, we construct a simpler investor division based on two individual underlying investor characteristics, instead of all five. We produce the second division to validate our factoring division: we anticipate that any results found for factoring based owner groups should also be discernable for investor groups determined through two individual investor characteristics depicting portfolio concentration and investment horizon. As the two individual characteristics, we choose the *Herfindahl index* as a proxy for investor portfolio concentration and *Churn rate* as a proxy for investors' investment horizon.

We choose HHI because we expect it captures, on a stand-alone basis, portfolio concentration from a wider perspective than the other two of our concentration characteristics. While *Number of holdings* only accounts for the number of different target firms an investor invests in and *Share of holdings exceeding 1% of target shares* only accounts for the magnitude of individual stakes, HHI accounts for both.

Similarly, we choose to use *Churn rate* as it captures the average holding period across the entire portfolio of an investor, while *Share of holdings held for over six quarters* might prove misleading on a stand-alone basis, especially when an investor applies different investment styles simultaneously. In addition, *Churn rate* has been previously used in analogous circumstances (Bushee 1998; Gaspar, Massa and Matos 2005). To make representation compatible with the factoring-based investor grouping, we use the inverse of *Churn rate* (ICR) as our single measure for investment horizon. The *Inverse churn rate* for investor *i* is calculated as follows:

$$ICR_i = 1 - \left(\frac{CR_i}{MAX(CR)}\right), \quad (4)$$

where *MAX(CR)* is the maximum churn rate amongst our investor sample. By dividing the investor-specific figures with the maximum figure we adjust the range to between 0 to 1, and subtracting the figure from 1 turns the scale to run in a more intuitive manner; the higher the *Inverse churn rate*, the longer the investment horizon. Figure 2 plots our 3,430 investors of interest based on HHI and ICR.

To produce independent variables based on our simple division, we construct a grouping comparable to the four-group division in our factoring approach. We group our investors into

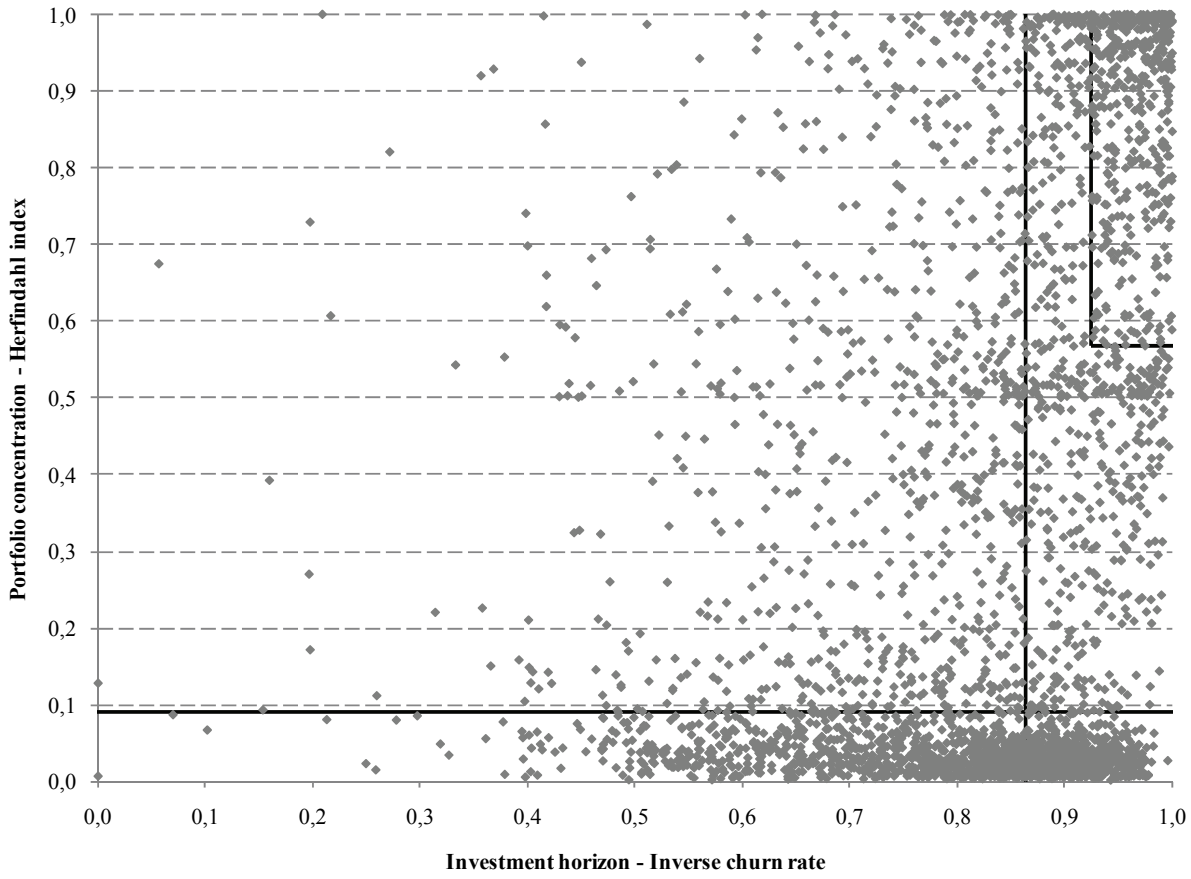
quartiles through the following procedure: First, we divide the investors evenly into low-concentration and high-concentration investors using the median *Herfindahl index* as a cut-off. Then, we further divide the investors evenly into short-horizon and long-horizon investors, using the median *Inverse churn rate* as a cut-off. As with the factoring-based division, we arrive at four groups with uneven numbers of investors and highest frequency of investors in the low-concentration long-horizon group. The distribution is laid out in Figure 2. Overall, we name our four groups according to the combination of characteristics they represent: (1) *HighHHI-HighICR*, (2) *LowHHI-HighICR*, (3) *HighHHI-LowICR* and (4) *LowHHI-LowICR*. As with the groups generated from factoring and subsequent k-means clustering, we use the entries by investors belonging to the simple division groups as our key independent variables in explaining owner effects on corporate improvements.

Based on preliminary findings regarding the types of investors included in the factoring-based group *Devoted*, we define a fifth group constituting the investors with the highest Herfindahl index and highest Inverse churn rate. Namely, we note that in sharp contrast with the other groups, the frequency of individual investors is extremely high amongst the *Devoted* and we also choose to isolate them in our simple division. As discussed in Section 2.4, we anticipate that such individual shareholders with very large average stakes and very long investment horizons may have a unique approach towards facilitating corporate improvements due to the presence of potentially significant private benefits (see e.g. Denis, Denis and Sarin 1997a, who show that while management ownership generally decreases diversification, very high levels of managerial ownership actually increase it). Consequently, we further isolate the upper right quarter of the *HighHHI-HighICR* quartile, define it as *TopHHI-TopICR* and test it separately. The *TopHHI-TopICR* is drawn in Figure 2.

Overall, we note that for the simple division groups, the three absent metrics are largely in line with the two chosen as basis for grouping the investors: when HHI is high, the *Number of holdings* is low and the *Share of holdings exceeding 1% of target shares* is high. Similarly, when *Churn rate* is high, the *Share of holdings held for over six quarters* is low.

Figure 2 – Simple division: Graphical representation

The figure illustrates the division of investors into five groups based on the quartile division: **TopHHI-TopCR**, **HighHHI-HighICR**, **LowHHI-HighICR**, **HighHHI-LowICR** and **LowHHI-LowICR**. *Inverse churn rate* and the *Herfindahl index* and are used as proxies for **Investment horizon** and **Portfolio concentration**.



4.4.2.3 Comparison of division methods

We compare our two investor divisions by calculating all five underlying investor portfolio characteristics for each of our altogether nine investor groups, as presented in panel A of Table 10. Further, to improve comparability we calculate the average percent stakes[57] for all groups. We then calculate the investor overlaps between all nine groups, as shown in panel B of Table 10. We also show correlations among the presence and entry of the different investor groups in Table 11. Comparison of the divisions implies that the simple division, although built on two individual characteristics, is largely consistent but not identical with the factoring division.

[57] Average percent stakes are defined as the average percentage of target shares held by an investor, as calculated for all investors over all quarterly holdings over our observation period.

The *Devoted* -group, comprising a large portion of individual investors, exhibits investor characteristics well in line with those of *TopHHI-TopICR*. This is not surprising since 73% of *Devoted* investors are included in the *TopHHI-TopICR* –group. Further, the *Focused* investors seem to be relatively well in line with the *HighHHI-HighICR* -group, despite showing a smaller number of average holdings. Overlap tabulation shows that 59% of *Focused* investors belong to the *HighHHI-HighICR* -group. The *Diversified* investors, primarily comprising large institutional investors, seem strongly aligned with the *LowHHI-HighICR* -group: all portfolio characteristics are aligned and 90% of *Diversified* investors are included in the *LowHHI-HighICR* -group. In slight contrast with other factoring-division groups, *Traders* do not seem to be strongly associated with any of the individual simple division groups. Instead, their portfolio characteristics seem to be a hybrid of *LowHHI-LowICR* and *HighHHI-LowICR* -groups. Further, *Traders* include investors allocated to the *LowHHI-HighICR* -group in simple division.

Overall, we conclude that our two investor classification approaches are internally consistent and relatively well in line with each other. We argue, however, that the factoring-based classification produces clearer and more robust groups since more portfolio data is absorbed in the grouping process. As the groups are aligned but not identical, we anticipate that they are well-suited to be run side-by-side in analysing owner effects on corporate improvements.

Table 10 – Comparison of division methods

Panel A shows descriptive statistics for the four groups produced by factor and cluster analysis, the five groups produced by the simple division with *Herfindahl index* and *Inverse churn rate* and for all investors. Panel B shows the total amount of investors in each group and the amount of investors that overlap between the groups produced by the two methods. **Devoted, Focused, Diversified** and **Traders** are the four groups produced in the factoring division. **TopHHI-TopCR**, **HighHHI-HighICR**, **LowHHI-HighICR**, **HighHHI-LowICR** and **LowHHI-LowICR** are the groups produced in the simple division. Bolded figures are intersections of the groups that are expected to overlap.

PANEL A - DESCRIPTIVE STATISTICS FOR FACTORING AND SIMPLE GROUPS

	General		Portfolio concentration			Investment horizon	
	Number of investors	Average percentage stake in target equity	Average number of holdings	Average Herfindahl index	Average Share of Holdings Exceeding 1% of Target Shares	Average churn rate	Average share of holdings held for over six quarters
Factoring division							
Devoted	781	7.5 %	4	0.76	66.2 %	0.14	92.7 %
Focused	566	6.9 %	13	0.55	70.5 %	0.35	53.8 %
Diversified	1,342	0.6 %	592	0.04	14.7 %	0.26	61.1 %
Traders	741	1.0 %	154	0.13	25.4 %	0.75	19.7 %
Simple division							
TopHHI-TopICR	750	6.5 %	5	0.86	61.6 %	0.16	82.4 %
HighHHI-HighICR	789	6.2 %	45	0.36	60.3 %	0.32	59.8 %
LowHHI-HighICR	1,496	0.7 %	538	0.03	17.4 %	0.31	55.1 %
HighHHI-LowICR	176	2.7 %	46	0.42	41.3 %	0.98	24.4 %
LowHHI-LowICR	219	0.0 %	304	0.04	14.4 %	0.94	16.8 %
All investors	3,430	3.3 %	268	0.31	38.0 %	0.35	58.2 %

PANEL B - OVERLAP OF INVESTORS AMONG INVESTOR GROUPS

	TopHHI-TopICR	HighHHI-HighICR	LowHHI-HighICR	HighHHI-LowICR	LowHHI-LowICR	Total
Devoted	**568**	211	2	0	0	781
Focused	178	**332**	16	40	0	566
Diversified	0	121	**1,210**	1	10	1,342
Traders	4	125	268	135	**209**	741
Total	750	789	1,496	176	219	3,430

Table 11 – Investor groups – Correlation matrix

The table shows the correlations among the presence and entry of the different investor groups produced by the two division methods. **Devoted, Focused, Diversified** and **Traders** are the four groups produced in the factoring division. **TopHHI-TopCR**, **HighHHI-HighICR**, **LowHHI-HighICR**, **HighHHI-LowICR** and **LowHHI-LowICR** are the groups produced in the simple division. Underlined figures are correlations of over 0.5.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	Investor entry																		
1	Devoted	1																	
2	Focused	0.08	1																
3	Diversified	-0.03	0.01	1															
4	Traders	0.02	0.06	0.18	1														
5	TopHHI-TopCR	0.49	0.09	0.00	0.02	1													
6	HighHHI-HighICR	0.35	0.25	-0.01	-0.01	0.03	1												
7	LowHHI-HighICR	-0.04	0.03	0.70	0.20	-0.01	-0.03	1											
8	HighHHI-LowICR	0.13	0.48	0.05	0.24	0.02	0.06	0.05	1										
9	LowHHI-LowICR	-0.03	0.07	0.48	0.39	0.00	-0.03	0.28	0.08	1									
	Investor presence																		
10	Devoted	0.34	0.05	-0.11	-0.03	0.16	0.12	-0.11	0.04	-0.11	1								
11	Focused	0.05	0.50	-0.07	0.01	0.04	0.14	-0.06	0.26	-0.04	0.06	1							
12	Diversified	-0.06	-0.02	0.39	0.08	-0.03	-0.03	0.27	0.00	0.20	-0.09	-0.05	1						
13	Traders	0.00	0.06	0.20	0.84	0.01	-0.01	0.21	0.20	0.41	-0.04	0.01	0.10	1					
14	TopHHI-TopCR	0.15	0.02	-0.05	-0.01	0.27	0.01	-0.04	0.00	-0.05	0.65	0.06	-0.04	-0.01	1				
15	HighHHI-HighICR	0.15	0.12	-0.13	-0.09	0.00	0.45	-0.14	0.03	-0.16	0.33	0.28	-0.09	-0.09	0.03	1			
16	LowHHI-HighICR	-0.05	-0.02	0.38	0.11	-0.02	-0.04	0.38	0.00	0.19	-0.11	-0.06	0.69	0.13	-0.05	-0.14	1		
17	HighHHI-LowICR	0.09	0.36	0.02	0.22	0.01	0.06	0.03	0.72	0.08	0.08	0.37	-0.03	0.22	-0.02	0.06	-0.04	1	
18	LowHHI-LowICR	-0.04	0.03	0.44	0.25	0.00	-0.04	0.28	0.06	0.61	-0.12	-0.02	0.33	0.30	-0.07	-0.16	0.25	0.05	1

4.4.2.4 Comparison to legal types

One of the key contributions of our study is to show that the dominant design of studying investor activism through certain legal types of investors does not fully capture the investor characteristics pivotal to activism (for hedge funds see e.g. Boyson and Mooradian 2007 and Klein and Zur 2009, for pension funds Wahal 1996 and Del Guercio and Hawkins 1999 and for mutual funds Ashraf and Jayaraman 2007). To compare our investor divisions with legal type based alternatives, we tabulate the legal type composition of our investor groups in Table 12. In general, our investor groups comprise of a broad variety of legal types. The observation implies that investors belonging to a certain legal type group may be very different from each other in terms of portfolio concentration and investment horizon. For example, a significant number of hedge funds belong to groups with high concentration and long horizon, and we argue that they play a very different role in terms of activism than hedge funds in the groups with low concentration and short horizon.

While most legal types are, to a significant extent, dispersed over our specific investor groups, certain generalisations can be made. As discussed, the groups with highest concentration and

longest horizon consist mainly of individuals (67% and 70% of *Devoted* and *TopHHI-TopICR* investors are individuals, respectively), whereas investment advisors make up the majority of investors in groups with low concentration and long horizon (54% and 52% of *Diversified* and *LowHHI-HighICR* investors are investment advisors, respectively). Further, mutual funds (85% and 73% belong to *Diversified* and *LowHHI-HighICR* investors, respectively) and asset managers (86% and 79% belong to *Diversified* and *LowHHI-HighICR* investors, respectively) are mostly investors with long horizon and low concentration. Conversely, government investment vehicles and non-governmental organizations are characterised by long horizon and high concentration, with 89% or more included in *Devoted* or *Focused* (factoring division) and *TopHHI-TopICR* or *HighHHI-HighICR* investors (simple division).

We further explore how activist hedge funds, the focus of numerous recent activist studies (see e.g. Brav *et al.* 2008; Klein and Zur 2009) are divided amongst our investor groups. We compile a list of 194 activist hedge funds from news searches and SEC 13D filings. Table 13 shows the division of these investors amongst our investor groups. For the factoring based division, we see that half of the activist hedge funds are in the *Traders* group. This is consistent with the view of many of our interviewees that many of the so-called activist hedge funds generally follow a highly diversified and short-term investment strategy but might sometimes, in a very limited number of investments, turn active[58]. We also note that 52 (27%) of the activist hedge funds are included in the *Focused* investor group. A closer look reveals that this cross-section includes investors such as Cevian Capital, Governance for Owners, Cerberus Capital Management and the Children's Investment Fund, all well known activist funds who invest in a very limited number of companies and run target-specific activist campaigns.

[58] The matter has been largely ignored in research but is discussed in the press. See e.g. "Activists buoyed by shareholder chorus", Financial News, 29.03.2010, available online on 12.06.2010: http://www.efinancialnews.com/story/2010-03-29/activists-buoyed-by-shareholder-chorus.

Table 12 – Legal type comparison – Composition of the investor groups

The table shows the legal type composition of our division groups based on factoring and simple division. The factoring division groups are **Devoted**, **Focused**, **Diversified** and **Traders**. Simple division groups include **TopHHI-TopICR**, **HighHHI-HighICR**, **LowHHI-HighICR**, **HighHHI-LowICR** and **LowHHI-LowICR**. Documented figures include the number of investors belonging to each legal type and, in parenthesis, the proportion of each investor group belonging to the different legal types. For example, 92 out of 566, or 16%, of the *Focused* investors are hedge funds.

	All investors	Factoring division				Simple division				
	Total	Devoted	Focused	Diversified	Traders	TopHHI - TopICR	HighHHI - HighICR	LowHHI - HighICR	HighHHI - LowICR	LowHHI - LowICR
Asset management	222	3	15	191	13	8	35	175	3	1
	(6 %)	*(0 %)*	*(3 %)*	*(14 %)*	*(2 %)*	*(1 %)*	*(4 %)*	*(12 %)*	*(2 %)*	*(0 %)*
Bank	232	49	96	55	32	52	104	40	26	10
	(7 %)	*(6 %)*	*(17 %)*	*(4 %)*	*(4 %)*	*(7 %)*	*(13 %)*	*(3 %)*	*(15 %)*	*(5 %)*
Government	26	16	8	1	1	12	13	0	1	0
	(1 %)	*(2 %)*	*(1 %)*	*(0 %)*	*(0 %)*	*(2 %)*	*(2 %)*	*(0 %)*	*(1 %)*	*(0 %)*
Hedge fund	645	21	92	65	467	12	160	216	81	176
	(19 %)	*(3 %)*	*(16 %)*	*(5 %)*	*(63 %)*	*(2 %)*	*(20 %)*	*(14 %)*	*(46 %)*	*(80 %)*
Holding company	79	36	34	4	5	32	39	2	6	0
	(2 %)	*(5 %)*	*(6 %)*	*(0 %)*	*(1 %)*	*(4 %)*	*(5 %)*	*(0 %)*	*(3 %)*	*(0 %)*
Individuals	684	527	149	1	7	523	149	0	12	0
	(20 %)	*(67 %)*	*(26 %)*	*(0 %)*	*(1 %)*	*(70 %)*	*(19 %)*	*(0 %)*	*(7 %)*	*(0 %)*
Investment adviser	995	21	73	731	170	20	138	783	23	31
	(29 %)	*(3 %)*	*(13 %)*	*(54 %)*	*(23 %)*	*(3 %)*	*(17 %)*	*(52 %)*	*(13 %)*	*(14 %)*
Mutual fund	177	2	7	150	18	3	19	147	7	1
	(5 %)	*(0 %)*	*(1 %)*	*(11 %)*	*(2 %)*	*(0 %)*	*(2 %)*	*(10 %)*	*(4 %)*	*(0 %)*
Non-governmental organization	63	35	21	4	3	34	26	2	1	0
	(2 %)	*(4 %)*	*(4 %)*	*(0 %)*	*(0 %)*	*(5 %)*	*(3 %)*	*(0 %)*	*(1 %)*	*(0 %)*
Private equity / Venture capital	62	27	25	1	9	13	41	1	7	0
	(2 %)	*(3 %)*	*(4 %)*	*(0 %)*	*(1 %)*	*(2 %)*	*(5 %)*	*(0 %)*	*(4 %)*	*(0 %)*
Pension & insurance	245	44	46	139	16	41	65	130	9	0
	(7 %)	*(6 %)*	*(8 %)*	*(10 %)*	*(2 %)*	*(5 %)*	*(8 %)*	*(9 %)*	*(5 %)*	*(0 %)*
Total	3,430	781	566	1,342	741	750	789	1,496	176	219
	(100 %)	*(100 %)*	*(100 %)*	*(100 %)*	*(100 %)*	*(100 %)*	*(100 %)*	*(100 %)*	*(100 %)*	*(100 %)*

Table 13 – Legal type comparison – Known activist hedge funds in investor groups

The table shows the number of known activist hedge funds in each of our investor groups. The factoring division groups are **Devoted**, **Focused**, **Diversified** and **Traders**. Simple division groups include **TopHHI-TopICR**, **HighHHI-HighICR**, **LowHHI-HighICR**, **HighHHI-LowICR** and **LowHHI-LowICR**. For example, 52 out of 566 *Focused* investors are known activist hedge funds.

PANEL A - FACTORING DIVISION

	Devoted	Focused	Diversified	Traders	Total
Activist hedge funds	9	52	37	96	194
Number of investors in group	781	566	1,342	741	3,430

PANEL B - SIMPLE DIVISION

	TopHHI - TopICR	HighHHI - HighICR	LowHHI - HighICR	HighHHI - LowICR	LowHHI - LowICR	Total
Activist hedge funds	6	77	77	15	19	194
Number of investors in group	750	789	1,496	176	219	3,430

4.4.2.5 Investor entry

As key independent variables explaining the corporate improvements, we apply separately the nine investor groups classified in our factoring and simple divisions. Specifically, when measuring the determinants of corporate improvements in period T, we define our independent ownership variables as lagged dummy variables that take the value of one if one or more investors belonging to an investor group *punctuate* the ownership threshold of 1% of target firm common stock[58] in T-1. In other words, we explain observed corporate improvements with the previous period entries by investors from each investor group. We define entry as an event where an investor exceeds 1% ownership, irrespective of the ownership level in the previous period. We choose to define our key independent ownership variables as investor entries primarily for two reasons.

First, while partly analogous studies, such as Bushee (1998) who studies the effect of institutional owners on R&D cuts, construct ownership variables based on the concentration of certain type of investors across all owners, we argue that in studying activism, average measures depicting all owners may not be relevant. On the contrary, based on our expert interviews and a wide body of activist literature (see e.g. Becht *et al.* 2008; Brav *et al.* 2008), we anticipate that a single activist

[58] We motivate our choice of the 1% ownership threshold in Section 4.3.5.

investor is often responsible for pursuing a campaign for corporate improvements. Such individual holders would likely not be discernable in average measures based on all owners, especially since the large diversified institutional investors (mostly captured in *Diversified*) dominate such overall figures. However, our dummy variable approach, which indicates whether one or more investors from each investor group entered the firm or not, captures such individual and potentially highly influential investors.

Second, we choose dummies depicting investor entry instead of investor presence, since we anticipate, in line with Clifford (2008), that the effect of an investor willing and able to drive corporate improvements is best observed in the period following her entry. Since most of our dependent variables are binary[59] and most investors hold their positions over multiple years, using presence-based dummies would be misleading: a binary improvement can only occur once. With presence dummies, individual investors would influence the dummies of the investor groups they belong to over all the years they act as owners. Furthermore, we note that explaining the corporate improvements by investor entries provides an a priori stronger setting for controlling endogeneity and getting the causality right (discussed in detail in Chapter 6): we explicitly link the entry of an investor into improvements taking place the following year.

4.4.3 Control variables

To control for potential time-variant and time-invariant firm-specific factors as well as industry and legislation-related factors, we apply a number of control variables. We extract our control variable data through FactSet. All control variables are lagged one year, except where specified otherwise. We discuss the choice of each control variable individually below. We also indicate in brackets with which corporate improvements each control variable has been applied[60] and motivate the expected associations. In addition to specified controls below, we apply year-dummies in all regressions. Table 14 summarises the applied control variables and exhibits expected associations to all seven outcome variables.

Firm size [C, O, P] – We use the natural logarithm of sales to control for firm size. Since our sample includes a substantial number of financial firms, presence of which is elemental to the

[59] Including all underlying individual corporate governance variables that make up our overall governance and board indices.

[60] C indicates corporate governance improvements, O indicates organisational improvements and P indicates payout improvements.

study, we do not use total assets as a measure for size but instead rely on the sales-based figure. For all dependent governance variables, in line with Aggarwal *et al.* (2010), we hypothesise that firm size is positively related to governance improvements: larger companies are subject to greater public scrutiny and investor attention and may therefore feel more pressure to improve governance. Similarly, for all organisational dependent variables, we hypothesise that firm size is positively related to unrelated divestments since diverse firms are likely to be larger (Berger and Ofek 1995; Chen and Ho 2000). For initiation of dividends, we hypothesise that firm size has a negative coefficient. Our expectation is in line with Michaely *et al.* (1995) who find that dividend initiating firms are smaller than average, and with the corporate life-cycle approach implying that mature firms are more likely to have already initiated dividend payments due to their limited set of profitable investment opportunities (Fama and French 2001; Grullon, Michaely and Swaminathan 2002; DeAngelo, DeAngelo and Stulz 2006). Similarly, we hypothesise that firm size is positively related to changes in dividend yield.

Tobin's q [C, O, P] – Following Jensen (1986), who claims that mature companies are most prone to agency costs arising from free cash flow, we control for Tobin's *q* as measured by the sum of market capitalisation and total debt divided by total assets at quarter end, an approach that is consistent with Denis and Osobov (2008). Along Jensen (1986), we anticipate that since nascent companies have weaker cash flow and larger set of positive net present value investment opportunities, mature firms with a lower Tobin's *q* are more prone to agency problems. Consequently, we hypothesise that Tobin's *q* is negatively related to all our outcome variables, with the exception of initiation of dividends, where we assign the control a positive expected sign because we expect that nascent firms are more likely to have not yet initiated dividend payments (Grullon, Michaely and Swaminathan 2002).

Relative return [C, O, P] - Our expert interviews suggest that corporate improvements become easier to implement when a company's financial performance deteriorates. Also Gillan and Starks (2000) point out for corporate governance that stakeholders pay more attention to governance practices in times of distress and may mount pressure on the board and management to improve them. Moreover, in meagre times, board members and managers may want to voluntarily exhibit their willingness for improvement (Shipilov, Greve and Rowley 2009). To control for the relative financial performance of the target firm, we follow Gillan and Starks (2000) and calculate the

relative return as the 5-year buy-and-hold return for each company less the 5-year buy-and-hold return on the Standard and Poor's 1500 Index[61] for U.S. firms and on the local Large Cap indices for the European countries. We calculate total return similarly, except on a yearly basis and relative to each company's main domestic index outside the U.S. In line with expert interviews and related literature, we hypothesise that relative return is negatively related to all our eight outcome variables.

Two-year average sales growth [C, O, P] – In line with Aggarwal *et al.* (2010) for corporate governance, Denis *et al.* (1997a) for reducing diversification and Denis *et al.* (2008) for payout, we anticipate that past sales growth may have an effect on the occurrence of corporate improvements. Along Aggarwal *et al.* (2010), we measure sales growth with the lagged two-year constant average growth rate of sales. We hypothesise that the two-year lagged sales growth is negatively related to all our outcome variables. Specifically, we anticipate that companies showing strong growth are less likely to experience significant pressure to improve governance, organisation or payout.

Cash [P] – In line with a wide body of activist literature (see e.g. Brav *et al.* 2008; Clifford 2008; Klein and Zur 2009), we anticipate that the level of cash companies hold may affect the occurrence of payout changes. In agreement with DeAngelo *et al.* (2006) we recognise that the expected association of previous year cash level with the following year payout is ambiguous. It could signal high accumulation of cash well suited for distribution, or accumulation of cash to be used for investments. Jensen's (1986) discussion also indicates that high cash levels may signal agency problems in the previous term, perhaps implying that no payout increases take place the following term. We measure cash as the sum of cash and short-term investments divided by total assets, and due to inconclusive predictions we do not assign the control an expected sign.

Leverage [O, P] – Jensen (1986) expects firms with higher leverage to exhibit lower agency costs of free cash flow due to smaller management discretion over the free cash flow generated by the firm. Moreover, we expect previous-year leverage to be positively associated with the unrelated divestments outcomes. Our expectation is also in line with Gertner, Powers and Scharfstein (2002), who show that parent companies of spun-off entities tend to have a significantly positive

[61] Gillan and Starks (2000) use the S&P 500 as their relative return benchmark.

industry-adjusted leverage in the year prior to divestment. Regarding payout, we expect leverage to have a negative association to the probability of initiating or increasing dividend payout. We anticipate that the higher the leverage, the less there is cash to be distributed to residual claim holders and, in line with the agency hypothesis, the less there is pressure and need to increase pay-out since agency problems are at bay. We measure leverage as total debt divided by total assets.

Legislative environment [C, O, P] – To control for differences in legislative environments concerning shareholder rights and their potential effect on the occurrence of corporate improvements, we apply a dummy variable for firms' domestic legal categories. Following La Porta *et al.* (1998), we divide countries into four legislative families: (1) English-origin, (2) French-origin, (3) German-origin and (4) Scandinavian-origin. We do not anticipate, a priori, for the legislative dummies to take on specific signs and do not present them in Table 14 since the variables are not ordinal.

Industry controls [C, O, P] – Corporate improvements may also relate to industry-specific factors. For instance, due to its vital position in the economy, the financial industry may be more prone to outside pressure to improve governance. To control for industry influence on corporate improvements we follow Shipilov (2009) and apply a one-digit Standard Industry Classification (SIC) code to group firms into eight broad industry categories: (1) agriculture, forestry and fishing, (2) mining and construction, (3) manufacturing, (4) transportation and public utilities, (5) wholesale and retail trade, (6) finance, insurance and real estate, (7) services and (8) public administration. We do not anticipate, a priori, for the industry dummies to take on specific signs and do not present them in Table 14 since the variables are not ordinal.

Lagged index level [C] – In studying improvements for our overall corporate governance index, we anticipate that the past period index level may affect index improvements (or deteriorations). Specifically, we anticipate that the higher the index level, the smaller the probability for further improvements, especially since all underlying individual corporate governance variables are binary. We thus control for the overall index level in period T-1 when studying changes in overall index at T, and expect a negative association.

Lagged board index level [C] – As with overall governance index, we anticipate that past board index level may affect the occurrence of changes in our board index. We thus control for the board index level at T-1 when studying changes in board index at T, and expect a negative association.

Lagged industry-adjusted dividend yield [P] – Following La Porta *et al.* (2000) we expect that the past relative dividend yield level affects changes in dividend yield. If past dividend yield has been poor compared to industry peers, the company may feel pressure to increase payout. We calculate the past relative dividend yield as the difference between a company's dividend yield and its industry's average dividend yield and expect the control to take on a negative association with dividend yield increases and to the probability to initiate dividends.

4.4.4 Expected associations

We summarise our key independent ownership variables and control variables in Table 14, where we link each of our seven corporate outcome variables, pertaining to our three hypotheses, to the two sets of investor group entries serving as our key independent variables. We also show the expected associations between the corporate outcome variables and the control variables.

Table 14 – Applied variables – Expected associations

The table shows all variables in the study and specifies the expected associations for each of our seven outcome variables related to the three hypotheses. We show associations for the four factoring division groups and the five simple division groups separately, and specify the expected associations for all control variables. Expected signs are defined as follows: + depicts positive association between the independent variable and respective corporate improvement, - indicates negative association and +/- implies that the expected association is ambiguous and we are unsure which effect dominates. Further, **?** indicates that there is no expected association and applies only for the entry variables of ownership groups we do not expect to be active. **Blanks** imply that the independent variable is not applied in explaining the corporate change in question.

Hypo-thesis	Dependant variable	Key independent variables Investor entry - Factoring division				Key independent variables Investor entry - Simple division					Control variables								
		Devoted	Focused	Diversified	Traders	TopHHI-TopICR	HighHHI-HighICR	LowHHI-HighICR	HighHHI-LowICR	LowHHI-LowICR	Firm size	Tobin's *q*	Relative return	Sales growth	Cash	Leverage	Lagged overall index	Lagged board index	Lagged industry adj. DY
1	Change in overall governance index	+	+	?	?	+	+	?	?	?	+	-	-	-			-		
	Change in board index	+	+	?	?	+	+	?	?	?	+	-	-	-				-	
2	Occurrence of unrelated divestments	+	+	?	?	+	+	?	?	?	+	-	-	-		+			
	Initiation of unrelated divestments	+	+	?	?	+	+	?	?	?	+	-	-	-		+			
	Change in magnitude of unrelated divest.	+	+	?	?	+	+	?	?	?	+	-	-	-		+			
3	Initiation of dividends	+	+	?	?	+	+	?	?	?	-	+	-	-	+/-	-			
	Change in dividend yield	+	+	?	?	+	+	?	?	?	+	-	-	-	+/-	-			-

4.5 Statistical methods

In this section we introduce and describe the methodology applied in our analysis. We attempt to relate corporate improvements to the entry of investors that are classified based on their investment horizon and portfolio concentration. This is done by means of regression analysis on our panel data set. The regressions differ by the nature of the corporate improvements in three ways. Namely the measured improvements can be either: (1) continuous, (2) binary or (3) ordered. We first introduce the regression models employed to each type of improvements. We then discuss the implications of the use of panel data and motivate the choice of regression models for each of our explanatory variables.

4.5.1 Continuous outcomes

Continuous outcomes are modelled with the simple linear ordinary least squares (OLS) regression model shown in Equation (5).

$$y_i = x'\beta + u_i, \tag{5}$$

where x are the included regressors, β are the estimated coefficients and u_i the error terms. The OLS estimator minimizes the sum of squared errors.

4.5.2 Binary outcomes

Binary outcomes are present in our data when the dependent variable can obtain values of 1 or 0. For example, if an improvement occurs in year t, the dependent variable is given the value of one, and a zero otherwise. Consequently, instead of a linear model, we apply a logistic regression model.

Binary outcomes are modelled by using a latent variable y* (Cameron and Trivedi 2009) as shown in Equation 6.

$$y^* = x'\beta + u \tag{6}$$

The latent variable is not observed, but what we do observe is

$$y = 1, \qquad if\ y^* > 0, \tag{7}$$

$$y = 0, \qquad if\ y^* \leq 0, \tag{8}$$

We then have the probability

$$Pr(y = 1) = Pr(x'\beta + u > 0) \quad (9)$$

$$= Pr(-u < x'\beta)$$

$$= F(x'\beta),$$

where F is the cumulative distribution function of -u, in logistic models:

$$F(x'\beta) = \frac{e^{x'\beta}}{1+e^{x'\beta}} = \Lambda(x'\beta). \quad (10)$$

4.5.3 Ordered outcomes

In addition to continuous and binary variables, we also observe outcomes based on categorical data. Specifically, categorical data relates to circumstances where the number of possible outcomes is above two but is not enough to allow for treating the data as continuous. Sometimes the data is naturally ordered, i.e. it can be ranked in order of superiority. For example, our *Board governance index* comprises six binary variables that obtain the value of 1, if improved, and 0 if not. Consequently the index can obtain values from 0/6 to 6/6 indicating better governance as the value rises to a higher level. Although the outcome is discrete, a multinomial logit or probit model would not account for the ordinal nature of the change and therefore an ordered logit model is required (Greene 2000).

Ordered outcomes are modelled similarly to binary outcomes by using a latent variable y*. The outcomes are modelled to arise successively as y* crosses progressively higher outcomes (Cameron and Trivedi 2009). For company *i*,

$$y^* = x_i'\beta + u_i, \quad (11)$$

where x are the measurable independent variables and u_i are unobservables. The latent variable remains unobserved as the observations for a J-alternative model are

$$y = 0, \quad if\ y^* \leq 0, \quad (12)$$

$$y = 1, \quad if\ 0 < y^* \leq \mu_1,$$

$$y = 2, \quad if\ \mu_1 < y^* \leq \mu_2,$$

$$\vdots$$
$$y = J, \qquad if\ \mu_{J-1} < y^* \leq \mu_J,$$

As described by Cameron (2009) we then have probabilities

$$\begin{aligned} \Pr(y_i = J) &= \Pr\left(\alpha_{J-1} < y_i^* \leq \alpha_J\right), \\ &= \Pr\left(\alpha_{J-1} < x_i'\beta + u_i \leq \alpha_J\right), \\ &= \Pr\left(\alpha_{J-1} - x_i'\beta < u_i \leq \alpha_J - x_i'\beta\right), \\ &= \mathrm{F}\left(\alpha_J - x_i'\beta\right) - \mathrm{F}\left(\alpha_{J-1} - x_i'\beta\right), \end{aligned} \tag{13}$$

where F is the cumulative distribution function of u_i. For the ordered logit model, u is logistically distributed with $F(z) = e^z/(1+e^z)$. The regression parameters, β, and the J-1 threshold parameters, $\alpha_1, \ldots, \alpha_{J-1}$, are obtained by maximising the log likelihood with $p_{ij} = \Pr(y_i = J)$ as defined above. The interpretation of the regression parameters is straightforward. If β_j is positive, an increase in x_{ij} decreases the probability of falling into the lowest category and increases the probability of being in the highest category.

4.5.4 Use of panel data and panel regressions

Longitudinal, or panel, data typically refer to data sets that follow a given sample of individuals or, in this case, companies over time. Panel data includes at least two dimensions including a cross-sectional dimension and a time series dimension. Consequently, the data includes multiple observations for the same individual across time. Due to a more costly and time consuming data collection process and a requirement for abundant data availability, researchers have traditionally favoured cross-sectional or time series data, although the use of panel data has increased significantly during the past 10 years (Hsiao 2003). As described by Hsiao (2003), the use of panel data entails several major advantages which stem from the larger amount of data and the possibility to assess inter-individual differences and intra-individual dynamics. Panel data has been used in similar contexts by, among others, David, Kochar and Levitas (1998) who study the effect of institutional investors on CEO compensation, Short, Zhang and Keasey (2002) who study of the association between ownership structures and dividend policies as well as Shipilov,

Greve and Rowley (2009), who study board interlocks and the diffusion of corporate governance practices.

The use of panel data raises a number of considerations as recited by Cameron and Trivedi (2009).

1. *Time interval.* Panel data is usually observed at regular time intervals. Accordingly, we construct our data set on a yearly basis.
2. *Balanced vs. unbalanced panel data.* Our panel data is unbalanced as not all individuals are observed in all time periods for all variables. Statistical programs are capable of analyzing unbalanced panel data, but the inconsistency raises a possibility for a sample-selection bias. We note, however, that we manually balance the data for our two governance indices in order to calculate index changes consistently.
3. *Short and long panels.* Our data set is a short panel; we document observations for a large number of companies over a small number of years. The short span of the panel has implications especially relating to binary outcomes, which are discussed further in Section 4.5.5.
4. *Correlation of model errors*. With panel data, model errors are likely to be correlated. Emphasis is normally on the correlation over time for a given individual, with independence over individuals, although e.g. in country panels there may be correlation across individuals. We correct ordinary least-squares with cluster-robust estimates of the standard errors.

The most fundamental consideration in the use of panel data, however, arises from the heterogeneity across units (Greene 2000). Usually the heterogeneity is assumed to be independent over individuals, and there are several different regression models for panel data, all treating heterogeneity in different ways. Next, we briefly introduce the models most relevant to our study: the fixed effects, random effects and population averaged models. First, we introduce a general individual-specific-effects model for the dependent variable y_{it} as shown in Equation (14):

$$y_{it} = \alpha_i + x'_{it}\beta + \varepsilon_{it}, \tag{14}$$

where x_{it} are the regressors, and the error term u_{it} is decomposed into individual-specific effects α_i, and idiosyncratic error ε_{it}.

Fixed effects. In the fixed effects model, the time-invariant individual-specific effect α_i is unobserved, but it is permitted to correlate with x_{it}. The approach thus considers α_i an individual-specific constant term in the regression model while continuing to assume that x_{it} is uncorrelated with the idiosyncratic error ε_{it}. Micro econometrics usually emphasises the fixed-effects model (Cameron and Trivedi 2009). The drawback with the fixed effects model is that, by nature, it cannot produce estimates of coefficients for individual time-invariant regressors.

Random effects. With the random effects model, it is assumed that the unobserved individual heterogeneity α_i is purely random, i.e. uncorrelated with the included variables. The advantage is that the random effects model produces estimates for all coefficients, but if the regressors are not completely exogenous, estimates are inconsistent.

Population averaged. The population averaged, or pooled model assumes that the regressors are exogenous and that the individual-specific effects α_i are constant. In this case, there is no unobserved effect at all.

Our analysis is executed with the statistical software program Stata. Panel regression models are readily available in Stata for continuous and binary outcomes. The user may, in both cases, choose between fixed, random and population averaged models. Panel regression models, however, are not available for ordered outcomes.

4.5.5 Choice of regression model

In this section, we discuss the choice of regression models for all of our dependent variables. Finally, we summarise our choices in Table 15.

The choice between linear, binary and ordered models stems from the nature of the dependent variable and will be considered individually for each of them. The choice of fixed, random and population averaged models is not as clear cut. When comparing fixed and random effects, in principle the random effects model is more attractive since time-invariant variables are retained in the model (Dougherty 2007). If, however, one of the preconditions for using random effects is violated, fixed effects should be used. The first precondition for random effects is that the observations can be described as being drawn randomly from a given population. In our case, we do not expect major violations of this prediction, since our sample includes the vast majority of the population, which comprises the constituents of the S&P 1500 and the STOXX Europe TMI

indices. We cannot exclude, however, the presence of violations of random sampling, given the systematic omission of the ceased to exist firms from our sample (see discussion in Sections 1.3 and 0. The second precondition is that the unobserved effect is distributed independently of the x_i variables. This can be tested with the Durbin-Wu-Hausman test for the null hypothesis that α_i *are distributed independently of the* x_i. We run the test when applicable.

In theory, the fixed effects specification should be more appropriate for our setting. Problems arise, however, with binary outcome data, where the fixed effects model drops out all observations with no variance in the dependent variable. In a similar setting, Shipilov *et al.* (2009) argue that dropping out all observations from companies where no improvements are documented makes it difficult to rule out a selectivity bias if the fixed effects estimator were applied. They end up using the population averaged estimator.

Furthermore, with a low fixed number of time periods, in our case six years, and a high number of observed individuals, the fixed effects estimator of the logistic model is biased due to the incidental parameter problem (Lancaster 2000). As described by Greene (2004), in face of this problem there are three alternatives that each have a biased and an inconsistent estimator: (1) Use the fixed effects estimator in spite of the incidental parameters issue, (2) run the random effects model estimator even though it is in theory inappropriate, or (3) ignore the heterogeneity among individuals and use the population averaged model. Greene (2000) performs simulations with the three alternatives with the number of time periods (T) of 3 and 8. He concludes that the random effects estimator is clearly the worst of the three. For T = 8, the choice between the fixed effects and the population averaged estimator is unclear. For T = 3, the population averaged estimator is superior. Consequently we run both fixed effects and population averaged models, where applicable.

4.5.5.1 Corporate governance improvements

The corporate governance variables consist of two types of data: changes and simple changes in *Overall* and *Board indices*. The *Overall index* includes 14 variables, and therefore 14 possible categories, while the *Board index* includes 6 variables. Therefore, the change in these indices can obtain values between [-1, 1] with 1/14 and 1/6 intervals correspondingly. The choice between models for linear and ordered models is not self-evident. Ordered categorical data is often treated as continuous, and studies have shown that with at least five categories, the bias from treating the

data as continuous is small (Babakus, Ferguson and Jöreskog 1987). A similar study by Aggarwal *et al.* (2010) runs regressions on the change in a governance index with linear regressions, but the used governance index includes 41 underlying variables. Consequently, we choose to apply the linear panel regression as the primary model. We run the fixed effects and random effects model. We further test for the independence of α_i from x_i with the Durbin-Wu-Hausman test. We reject the null hypothesis and thus use the fixed effects model. Due to the uncertainty relating to the nature of the dependent variable, we also document the ordered logistic regression for changes in both governance indices.

Simple changes in governance indices indicate an improvement, no change or deterioration in the *Overall index* or *Board index* regardless of the magnitude of change. It is therefore, by nature, an ordered variable with values in order of superiority: -1, 0, 1. Consequently, we run the ordered logistic regression for simple changes in both governance indices.

4.5.5.2 Organisational improvements

Organisational improvements consist of three dependent variables: *Occurrence of unrelated divestments, Initiation of unrelated divestments* and *Change in magnitude of unrelated divestments*. *Occurrence* and *Initiation of unrelated divestments* are binary. In line with the discussion above, we apply logistic panel regression models with both the population averaged and the fixed effects estimators. Following with Greene (2000) and Aggarwal (2010), we regard the population averaged model as the primary model. *Change in magnitude of unrelated divestments* is a continuous variable, for which we run the linear panel regression model with fixed effects.

4.5.5.3 Payout improvements

Our two payout improvement variables also include a binary outcome, *Initiation of cash dividends* and a continuous outcome, *Change in dividend yield.* Correspondingly, and in line with above discussion, we apply the logistic panel regression model with the population averaged estimator as the primary model and with the fixed effects estimator as a secondary model for the *Initiation of cash dividends*. For *Change in dividend yield,* we apply the linear panel regression model with fixed effects.

Table 15 – Choice of regression models

The table shows the choice of regression models for each of the dependent variables. To indicate the chosen model specifications in a condensed manner we show the corresponding STATA abbreviations. The models are as follows: **xtreg** is a linear panel regression model; **xtlogit** is a logistic panel regression model; **ologit** is an ordered logistic regression model. Estimator specifications are as follows: **fe** stands for the fixed effects estimator; **pa** stands for the population averaged, or pooled, estimator.

	Corporate governance			Organisational			Dividend payout	
	Change in overall index	Change in board index	Simple change in indices	Occurrence of unrelated divestments	Initiation of unrelated divestments	Magnitude of unrelated divestments	Initiation of cash dividend	Change in dividend yield
Variable type	Ordered/ Continuous	Ordered/ Continuous	Ordered	Binary	Binary	Continuous	Binary	Continuous
Primary model	xtreg, fe	xtreg, fe	xtlogit, pa	xtlogit, pa	xtlogit, pa	xtreg, fe	xtlogit, pa	xtreg, fe
Secondary model	ologit	ologit	xtlogit, fe	xtlogit, fe	xtlogit, fe	-	xtlogit, fe	-

5 Results

This section presents our results for the effect of entries by our investor groups on corporate improvements observed in their target companies. We begin by measuring and discussing potential multicollinearity issues in our regressions. We then present results for our two corporate governance outcomes. Next, we present results for our three organisational improvement outcomes as depicted by unrelated divestments. Finally, we cover the results for our two payout increase outcomes, as measured by cash dividends.

5.1 Multicollinearity analysis

To detect potential multicollinearity among the independent variables we calculate the correlation matrix and the Variance Inflation Factor (VIF) statistics[62]. The correlation matrix for the independent variables is presented in Table 17. We do not observe variables with high correlations (absolute values of over 0.50) except for the lagged overall governance index and the lagged board governance index. While high correlation between the governance index controls was expected since board index is included in the overall governance index, we do not anticipate problems since the two governance controls are not applied in same regressions.

[62] The correlation matrix and VIF statistics are only used for multicollinearity analysis and should not be used to draw further conclusions as they ignore the intra-group correlations present in panel data

We further check for multicollinearity by calculating the VIF statistic. The VIF, for a given variable, shows the increase in the variance of its coefficient that can be attributable to the variable not being orthogonal to other variables in the model (Greene 2000). Table 16 shows the number of variables with VIF over 5 as well as the maximum and the mean VIF for all the outcomes in our regression models. The highest VIF among our explanatory variables is 6.64, and thus falls below the common threshold of 10 for high multicollinearity (Baum 2006). Additionally, only three variables obtain VIF-values of over 5: the industry-dummies for *Manufacturing* and *Financial institutions* as well as the legislative region dummy for *English-speaking regions*. These analyses imply that multicollinearity should not pose a significant problem in our regression analysis.

Table 16 – Variance inflation factor statistics

The table shows the **number of variables with Variance Inflation Factor (VIF) statistics over 5**, the **Variable with maximum VIF value**, the **Maximum VIF** and the **Mean VIF** for all regressions applied. Panel A shows for regressions with investor groups from the Factoring division, Panel B for Simple division. Different regression specifications are not shown independently as differences in VIF-values differ only fractionally.

PANEL A - FACTORING DIVISION

	Dependent variable	Number of variables with VIF > 5	Variable(s) with VIF > 5	Maximum VIF	Mean VIF
Corporate governance	Change in overall index	1	Industry-dummy for manufacturing	6.35	2.27
	Change in board index	1	Industry-dummy for manufacturing	6.34	2.27
Organisational	Changes in unrelated divestments	1	Industry-dummy for manufacturing	6.36	2.53
Dividend payout	Changes in dividends	2	Industry-dummy for financial institutions, Industry-dummy for manufacturing	6.64	2.55

PANEL B - SIMPLE DIVISION

	Dependent variable	Number of variables with VIF > 5	Variable(s) with VIF > 5	Maximum VIF	Mean VIF
Corporate governance	Change in overall index	1	Industry-dummy for manufacturing	6.35	2.22
	Change in board index	1	Industry-dummy for manufacturing	6.34	2.22
Organisational	Changes in unrelated divestments	2	Industry-dummy for manufacturing, English-speaking legislative region	6.36	2.49
Dividend payout	Changes in dividends	2	Industry-dummy for financial institutions, Industry-dummy for manufacturing	6.61	2.50

Table 17 – Correlation matrix

The table depicts the correlation matrix for independent variables. The main explanatory variables include the investor group variables for the division by factoring (**Devoted, Focused, Diversified,** and **Traders**) and the division by quartiles (**TopHHI-TopCR**, **HighHHI-HighICR**, **LowHHI-HighICR**, **HighHHI-LowICR**, **LowHHI-LowICR**). Both investor group entry and presence variables are displayed. Empty cells are for correlations among investor group variables that are not used simultaneously in regressions. Control variables are as follows: **Size** is the natural logarithm of a firm's net sales; **Tobin's *q*** is calculated as the ratio of the market value of total capital to the book value of total assets; **Relative return** is the yearly buy-and-hold return for a firm less the yearly buy-and-hold return for the firm's domestic main stock index; **Two-year average sales growth** is the compound annual growth rate over a lagging two year period; **Leverage** is the ratio of total debt to total assets. **Cash** is the ratio of total cash holdings to total assets; **Lagged overall governance index** (only employed in Overall governance index regression) is the one-year lagged corporate governance index level; **Lagged board governance index** (only employed in Board governance index regression) is the one-year lagged board governance index level; **Industry-adjusted dividend yield** (only employed in Dividend yield regression) is the yearly dividend yield for a firm less the yearly average dividend yield for the firm's industry.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Investor Entry																											
Devoted	1																										
Focused	0.08	1																									
Diversified	-0.03	0.01	1																								
Traders	0.02	0.06	0.18	1																							
TopHHI-TopCR	-	-	-	-	1																						
HighHHI-HighICR	-	-	-	-	0.03	1																					
LowHHI-HighICR	-	-	-	-	-0.01	-0.03	1																				
HighHHI-LowICR	-	-	-	-	0.02	0.06	0.05	1																			
LowHHI-LowICR	-	-	-	-	0.00	-0.03	0.28	0.08	1																		
Investor Presence																											
Devoted	-	-	-	-	-	-	-	-	-	1																	
Focused	-	-	-	-	-	-	-	-	-	0.06	1																
Diversified	-	-	-	-	-	-	-	-	-	-0.09	-0.05	1															
Traders	-	-	-	-	-	-	-	-	-	-0.04	0.01	0.10	1														
TopHHI-TopCR	-	-	-	-	-	-	-	-	-	-	-	-	-	1													
HighHHI-HighICR	-	-	-	-	-	-	-	-	-	-	-	-	-	0.03	1												
LowHHI-HighICR	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.05	-0.14	1											
HighHHI-LowICR	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.02	0.06	-0.04	1										
LowHHI-LowICR	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.07	-0.16	0.25	0.05	1									
Controls																											
Size	-0.03	0.00	-0.09	-0.29	-0.02	-0.01	-0.08	-0.07	-0.23	-0.03	0.03	-0.03	-0.34	-0.05	0.03	-0.02	-0.10	-0.18	1								
Tobin's *q*	-0.03	-0.07	0.02	-0.02	-0.01	-0.04	0.01	-0.09	0.04	0.01	-0.09	0.00	-0.02	0.06	-0.03	0.01	-0.11	0.03	-0.12	1							
Relative return	0.00	-0.06	0.02	0.02	0.01	-0.03	0.01	-0.03	0.03	-0.01	-0.04	0.00	0.02	0.00	-0.01	0.00	-0.03	0.01	0.01	0.22	1						
Two-year avg. sales growth	0.01	-0.02	-0.04	-0.01	0.00	0.01	-0.04	-0.04	-0.03	0.04	-0.05	-0.05	-0.02	0.02	0.04	-0.06	-0.05	-0.03	0.07	0.13	0.05	1					
Leverage	0.04	0.05	-0.05	-0.08	0.02	0.02	-0.04	0.07	-0.08	0.01	0.04	-0.04	-0.09	-0.03	0.04	-0.07	0.09	-0.08	0.19	-0.30	-0.03	-0.04	1				
Cash	-0.03	-0.01	0.02	0.11	0.00	-0.01	0.01	-0.02	0.07	-0.02	0.01	0.02	0.13	0.02	-0.02	0.02	-0.02	0.04	-0.31	0.36	0.04	-0.02	-0.41	1			
Lagged overall governance index	0.02	0.02	-0.01	0.01	0.00	0.01	-0.01	-0.02	-0.03	0.01	0.04	0.01	0.02	0.00	0.02	0.01	-0.01	-0.03	0.07	0.00	-0.03	-0.02	-0.02	0.02	1		
Lagged board governance index	-0.05	0.01	0.26	0.34	-0.02	-0.07	0.25	0.01	0.33	-0.11	-0.07	0.16	0.38	-0.04	-0.22	0.22	0.00	0.29	-0.12	0.08	-0.02	-0.08	-0.13	0.10	**0.52**	1	
Industry-adjusted dividend yield	0.02	0.01	-0.10	-0.27	0.01	0.02	-0.10	-0.02	-0.16	0.02	0.04	-0.07	-0.30	-0.03	0.06	-0.08	-0.02	-0.13	0.22	-0.17	-0.12	-0.07	0.15	-0.19	0.00	-0.27	1

5.2 Corporate governance outcomes

In this section, we present our results for the analysis of investor effects on corporate governance. We first discuss results for our overall governance index regressions, examining which investor groups are associated with changes in our wide governance index comprising 14 agency sensitive governance variables. We then present results for the board index comprising six board specific governance variables. Next, we show results for our overall and board indices in a binary formulation, where we only account for index improvements and deteriorations, leaving out the magnitude of change.

5.2.1 Overall governance index

We analyse the effects of our investor groups on changes in the overall governance index using both fixed effects (models 1 and 3) and ordered logistic (models 2 and 4) specifications. We apply both specifications for factoring-based groups, which we consider our primary approach and for simple division groups. We exhibit results for both specifications and both investor divisions in Table 18.

Overall, our findings for investor effects on overall governance changes imply that investors with high portfolio concentration and long investment horizon are associated with governance improvements in their target firms, but investors with *highest* concentration and *longest* horizon are not. As expected, entries of investors with low concentration or short horizon are not consistently associated with governance improvements.

5.2.1.1 Factoring based investor groups

In all, the results for our factoring based, primary investor grouping are partly supportive of Hypothesis 1. For the fixed effects specification, coefficients for entries of all four investor groups are insignificant at the 10% level. Importantly, and inconsistent with our Hypothesis 1, the results imply that entries by *Devoted* or *Focused* investors do not have a significant association with changes in target firm overall governance. The lack of association between entries by *Traders* and *Diversified* investors overall governance changes is in line with our expectations.

For the ordered logistic specification, however, we find that entries by *Focused* investors are positively associated with target governance improvements in the following year, significant at

Table 18 – Regression results for changes in overall corporate governance index

The table presents results for the fixed effects panel regression and ordered logistic panel regression models for **Changes in overall corporate governance index**. The main explanatory variables include the investor group variables for the division by factoring (**Devoted, Focused, Diversified** and **Traders**) and the division by quartiles (**TopHHI-TopCR**, **HighHHI-HighICR**, **LowHHI-HighICR**, **HighHHI-LowICR**, **LowHHI-LowICR**). Control variables are as follows: **Lagged index level** is the one-year lagged corporate governance index level; **Size** is the natural logarithm of a firm's net sales; **Tobin's *q*** is calculated as the ratio of the market value of total capital to the book value of total assets; **Relative return** is the yearly buy-and-hold return for a firm less the yearly buy-and-hold return for the firm's domestic main stock index; **Two-year average sales growth** is the compound annual growth rate over a lagging two year period.

Investor entry	Expected effect	Factoring division		Simple division	
		Fixed effects	Ordered logit	Fixed effects	Ordered logit
		(1)	(2)	(3)	(4)
Devoted	+	-0.005	-0.014		
		(-1.00)	(-0.09)		
Focused	+	0.002	0.179**		
		(0.98)	(2.17)		
Diversified	?	-0.003	-0.131		
		(-0.42)	(-0.74)		
Traders	?	0.002	-0.002		
		(1.18)	(-0.03)		
TopHHI-TopCR	+			0.003	0.125
				(0.39)	(0.43)
HighHHI-HighICR	+			0.009***	0.273**
				(2.66)	(2.25)
LowHHI-HighICR	?			0.004	0.120
				(1.29)	(1.08)
HighHHI-LowICR	?			0.001	0.166**
				(0.38)	(2.19)
LowHHI-LowICR	?			-0.004	-0.183*
				(-1.33)	(-1.70)
Lagged index level	-	-0.720***	-4.362***	-0.720***	-4.368***
		(-38.85)	(-19.99)	(-38.84)	(-19.88)
Size	+	0.008	0.056***	0.007	0.052***
		(1.12)	(3.01)	(1.06)	(2.89)
Tobin's *q*	-	0.000	-0.040	0.000	-0.038
		(0.18)	(-1.33)	(0.22)	(-1.28)
Relative return	-	-0.000	-0.107	-0.000	-0.096
		(-0.14)	(-1.06)	(-0.04)	(-0.95)
Two-year average sales growth	-	0.003	0.255	0.003	0.268
		(0.29)	(1.17)	(0.32)	(1.24)
Industry fixed effects		-	Yes	-	Yes
Legislative region fixed effects		-	Yes	-	Yes
Year fixed effects		Yes	Yes	Yes	Yes
Observations		4,848	4,848	4,848	4,848
Number of companies		1,001	1,001	1,001	1,001
R-squared		0.368	-	0.369	-
Pseudo R-squared		-	0.0317	-	0.0325

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

the 5% level. Further confirming our expectations, we find that *Diversified* and *Traders* are not significantly associated with governance improvements. Interestingly, our results persistently imply no effect for *Devoted* investors. Firm size is associated with governance improvements at the 1% level, which is consistent with our expectations and findings by Aggarwal *et al.* (2010).

5.2.1.2 Simple division investor groups

Results for our secondary approach, the simple division investor groups, are largely in line with results for factoring-based investor groups and similarly offer partial support for Hypothesis 1. Overall, the results imply that entries by focused long-term investors are associated with overall governance improvements in their targets.

For the fixed effects specification, the results show that *HighHHI-HighICR* investors are associated with ensuing governance improvements at the 1% level, which is consistent with Hypothesis 1. Interestingly, however, we find that entries by *TopHHI-TopICR* investors are not associated with overall governance improvements, which is inconsistent with Hypothesis 1 but consistent with our findings for *Devoted* investors. In line with our expectations, investors with low portfolio concentration or short investment horizon (namely, *LowHHI-HighICR, HighICR-LowHHI* and *LowHHI-LowICR* investors) are not associated with overall governance changes.

For the ordered logistic specification, our results show that entries by *HighHHI-HighICR* investors are positively associated with ensuing overall governance improvements. Significant at the 5% level, the result supports Hypothesis 1 and is consistent with the preceding results. Also, consistent with preceding results, *TopHHI-TopICR* investors do not exhibit significant association with target firm governance changes. Surprisingly, we also find that *HighHHI-LowICR* investors are positively associated with governance improvements following their entry. On the contrary, *LowHHI-LowICR* investors are weakly negatively associated with governance improvements. While the result lacks intuitive interpretation, it is not inconsistent with Hypothesis 1. Further in line with our expectations, we find that lagged firm size is associated with governance improvements at the 1 % level.

5.2.2 Board index

As with the overall governance index, we apply both fixed effects (models 1 and 3) and ordered logistic (models 2 and 4) specifications to study the effect of entries by our investor groups on

board improvements. Similarly, we first discuss results for our primary, factoring-based investor grouping and then show results for the simple division investor groups. Results are exhibited in Table 19.

Overall, we find similar results with those for changes in overall governance. While our results provide partial support for Hypothesis 1 and imply that high concentration and long horizon investors are associated with board improvements, our finding of no association for very high concentration and very long horizon investors persists. With the exception of mixed results from the ordered logistic specification for simple division investor groups, we find support for our expectation that entries by low concentration or short horizon investors are not associated year board improvements in the following year.

Regarding the model specifications in estimating investor effects on changes in board index, we anticipate that the linear fixed effects specification does not work optimally due to the semi-continuous nature of changes in the board index. Specifically, since six is the largest value the board index takes, the annual positive or negative changes in board index are clustered to one, two or three levels. As the linear specification is generally considered to require a dependent variable to take no less than five different values (Babakus, Ferguson and Jöreskog 1987), we anticipate that the ordered logistical specification is better suited to measure investor effects on changes in the board index. Although considering ordered logistic model to be the primary specification, we present results also for the fixed effects specification.

5.2.2.1 Factoring based investor groups

For the fixed effects specification, our results do not imply significant association with changes in board arrangements for any of the four investor groups, which is in line with results for overall governance changes. Importantly and contrary to Hypothesis 1, *Focused* and *Devoted* investors are not associated with board improvements, significant at the 10% level. Supporting our expectations, investors with low portfolio concentration or short investment horizon, namely *Diversified* investors and *Traders*, are not associated with board improvements. Further, firm size is weakly positively associated with board improvements as expected.

For the ordered logistic specification, our results are also fully in line with those for the overall governance changes. Specifically, we find that entries by *Focused* investors are associated with

board improvements in the following year, significant at the 5% level. *Diversified* investors and *Traders* show no association with changes in board arrangements following their entry. Perhaps most interestingly, our finding that *Devoted* investors do not exhibit any association with governance improvements persists. As expected, relative stock returns are negatively associated with board improvements, implying that poorly performing firms are more likely to undergo board improvements in the following year.

5.2.2.2 Simple division investor groups

For the fixed effects specification, we find that none of the five investor group is positively associated with following year board improvements at the 10% level. We note, however, that *LowHHI-LowICR* investors seem to be negatively associated with board improvements at the 5% level. While we struggle to find an intuitive reason for the result, it is not contrary to Hypothesis 1. We also find in line with our expectations that firm size is weakly positively associated with board improvements.

Results from the ordered logistical model are mixed, and do not provide support for Hypothesis 1. We find that entries by *HighHHI-HighICR* investors are not associated with board improvements in target firms at the 10% level, despite exhibiting a clearly positive coefficient. Results are, however, consistent with all prior findings on *TopHHI-TopICR* investors exhibiting no association with board improvements. We also find that *LowHHI-HighICR* investors, mostly diversified institutions, are significantly positively associated with board improvements in the year following their entry. This provides our first and only evidence in support of the argument that institutional investors would improve target governance. Surprisingly, the ordered logistical model also implies that *HighHHI-LowICR* investors are associated with board improvements, significant at the 1% level. While the result is surprising, high portfolio concentration may in some cases be sufficient to drive governance improvements in target firms, as cautiously implied by Brav *et al.* (2008) for activist hedge funds. We caution drawing inferences from these results, given that they are provided by our secondary, less accurate investor grouping and they are not present in the results for any other governance-related model. Finally and in line with our expectations, we note that relative stock returns are negatively related to board improvements in the following year.

Table 19 – Regression results for changes in board index

The table presents the results for the fixed effects panel regression and ordered logistic panel regression models for **Changes in board governance index**. The main explanatory variables include the investor group variables for the division by factoring (**Devoted, Focused, Diversified** and **Traders**) and the division by quartiles (**TopHHI-TopCR**, **HighHHI-HighICR**, **LowHHI-HighICR**, **HighHHI-LowICR**, **LowHHI-LowICR**). Control variables are as follows: **Lagged board index level** is the one-year lagged board governance index level; **Size** is the natural logarithm of a firm's net sales; **Tobin's *q*** is calculated as the ratio of the market value of total capital to the book value of total assets; **Relative return** is the yearly buy-and-hold return for a firm less the yearly buy-and-hold return for the firm's domestic main stock index; **Two-year average sales growth** is the compound annual growth rate over a lagging two year period.

Investor entry	Expected effect	Factoring division		Simple division	
		Fixed effects	Ordered logit	Fixed effects	Ordered logit
		(1)	(2)	(3)	(4)
Devoted	+	-0.008	-0.081		
		(-1.01)	(-0.41)		
Focused	+	0.006	0.229**		
		(1.53)	(2.36)		
Diversified	?	-0.006	-0.198		
		(-0.65)	(-0.94)		
Traders	?	-0.001	0.028		
		(-0.37)	(0.39)		
TopHHI-TopCR	+			-0.012	-0.387
				(-0.75)	(-0.97)
HighHHI-HighICR	+			0.010	0.249
				(1.64)	(1.63)
LowHHI-HighICR	?			0.009	0.291**
				(1.61)	(2.23)
HighHHI-LowICR	?			0.004	0.260***
				(1.11)	(2.83)
LowHHI-LowICR	?			-0.013**	-0.288**
				(-2.32)	(-2.29)
Lagged board index level	-	-0.789***	-6.210***	-0.788***	-6.204***
		(-40.15)	(-22.42)	(-40.10)	(-22.52)
Size	+	0.019*	0.034	0.019*	0.026
		(1.68)	(1.46)	(1.66)	(1.12)
Tobin's *q*	-	-0.001	-0.023	-0.001	-0.021
		(-0.31)	(-0.58)	(-0.22)	(-0.53)
Relative return	-	0.000	-0.264**	0.000	-0.248**
		(0.04)	(-2.20)	(0.09)	(-2.05)
Two-year average sales growth	-	-0.020	-0.100	-0.019	-0.069
		(-1.13)	(-0.36)	(-1.07)	(-0.25)
Industry fixed effects		-	Yes	-	Yes
Legislative region fixed effects		-	Yes	-	Yes
Year fixed effects		Yes	Yes	Yes	Yes
Observations		4,848	4,848	4,848	4,848
Number of companies		1,001	1,001	1,001	1,001
R-squared		0.429		0.430	
Pseudo R-squared			0.0887		0.0905

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

5.2.3 Simple changes in the governance indices

With three possible outcomes and a clear order of superiority, *Simple changes in governance indices* is analysed with an ordered logistic model. We apply the model to both factoring-based groups and simple division groups. We first document the results for *Overall index simple change* and then for *Board index simple change*. The results are exhibited in Table 20.

Overall, the results for the simple changes are in line with the corresponding results for the changes in governance indices.

5.2.3.1 Overall index simple change

The results for both the factoring-based and simple division groups are similar to the ordered logistics specification for *Change in overall governance index*, and partly support Hypothesis 1.

For the factoring-based division, we find a positive, yet weak, relationship between the *Focused* investors and S*imple overall index change*. For simple division groups, we find that *HighHHI–HighICR* and *HighHHI-LowICR* investors are positively associated with *Simple overall index change* at a 5% and 10% level of significance, respectively. Again, we find no results for the investors with highest portfolio concentration and longest investment horizon.

5.2.3.2 Board index simple changes

Results for the regression on *Simple board index changes* are mixed. For the factoring-based division, we find support for the findings from previous analyses that the entry of *Focused* investors is positively associated with board index changes in the following year and other investor groups are not. However, results from our secondary investor division method, the simple division, are harder to interpret. The same discrepancy was found and discussed in the results for *Change in board index*.

Table 20 – Regression results for simple changes in the governance indices

The table presents results for the ordered logistic panel regression models for **Simple changes in overall and board governance indices**. The main explanatory variables include the investor group variables for the division by factoring (**Devoted, Focused, Diversified** and **Traders**) and the division by quartiles (**TopHHI-TopCR**, **HighHHI-HighICR**, **LowHHI-HighICR**, **HighHHI-LowICR**, **LowHHI-LowICR**). Control variables are as follows: **Size** is the natural logarithm of a firm's net sales; **Tobin's *q*** is calculated as the ratio of the market value of total capital to the book value of total assets; **Relative return** is the yearly buy-and-hold return for a firm less the yearly buy-and-hold return for the firm's domestic main stock index; **Two-year average sales growth** is the compound annual growth rate over a lagging two year period.

Investor entry	Expected effect	Overall index simple change		Board index simple change	
		Factoring Ordered logit	Simple Ordered logit	Factoring Ordered logit	Simple Ordered logit
		(5)	(6)	(5)	(6)
Devoted	+	0.023		-0.039	
		(0.15)		(-0.21)	
Focused	+	0.143*		0.207**	
		(1.76)		(2.16)	
Diversified	?	-0.094		-0.188	
		(-0.53)		(-0.90)	
Traders	?	-0.001		0.016	
		(-0.02)		(0.23)	
TopHHI-TopCR	+		0.117		-0.373
			(0.42)		(-1.02)
HighHHI-HighICR	+		0.265**		0.237
			(2.21)		(1.58)
LowHHI-HighICR	?		0.122		0.283**
			(1.10)		(2.18)
HighHHI-LowICR	?		0.142*		0.258***
			(1.87)		(2.87)
LowHHI-LowICR	?		-0.176		-0.303**
			(-1.62)		(-2.38)
Lagged index level	-	-3.856***	-3.863***	-5.638***	-5.638***
		(-19.28)	(-19.18)	(-22.28)	(-22.31)
Size	+	0.056***	0.052***	0.031	0.023
		(3.10)	(2.94)	(1.37)	(1.04)
Tobin's *q*	-	-0.039	-0.038	-0.027	-0.025
		(-1.34)	(-1.29)	(-0.70)	(-0.65)
Relative return	-	-0.076	-0.064	-0.205*	-0.190
		(-0.74)	(-0.62)	(-1.71)	(-1.57)
Two-year average sales growth	-	0.234	0.246	-0.121	-0.088
		(1.10)	(1.17)	(-0.45)	(-0.33)
Industry fixed effects		Yes	Yes	Yes	Yes
Legislative region fixed effects		Yes	Yes	Yes	Yes
Year fixed effects		Yes	Yes	Yes	Yes
Observations		4,848	4,848	4,848	4,848
Number of companies		1,001	1,001	1,001	1,001
Pseudo R-squared		0.0363	0.0373	0.0923	0.0946

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

5.3 Organisational structure

This section presents our results for investor effects on organisational improvements, as measured through unrelated divestments. Again, we consider the factoring based investor division our primary approach, but also present results for the simple division groups. We discuss results for our three dependent variables: (1) Occurrence of unrelated divestments, (2) initiation of unrelated divestments and (3) magnitude of unrelated divestments as measured by the annual sum of transaction values per EV. Occurrence and initiation are measured as binary outcome variables, whereas the magnitude of unrelated divestments is measured as a continuous variable receiving values between 0 and 0.5.

5.3.1 Occurrence of unrelated divestments

In studying the effect of investor entries on the occurrence of unrelated divestments, a binary outcome variable, we apply population averaged as well as fixed effects specifications. We note that while the fixed effects specification rightly accounts for firm-specific time-invariant effects, its use in this case is disputed, given that it reduces our N from 9,471 to 2,083 by disqualifying all firms experiencing either no unrelated divestments or unrelated divestments on every measured year. Additionally, with T<8 and a high N, the fixed effects estimator is biased due to the incidental parameter problem, as discussed in Section 4.5.4. We thus consider the population averaged specification model primary and discuss results separately for our factoring groups and simple division groups. The results are exhibited in Table 21.

Overall, our results provide support for Hypothesis 2, which suggests that entries by investors with high portfolio concentration and long investment horizon are positively related to occurrence of unrelated divestments. Furthermore, we utilise our two separate investor groupings and find that the investors with strongest relation to ensuing unrelated divestments reside in the cross-section of *Devoted* and *HighHHI-HighICR* investors.

5.3.1.1 Factoring based investor groups

The results for the population averaged specification are straight forward. In line with Hypothesis 2, entries by *Devoted* investors are positively associated with the occurrence of unrelated divestments in the following year, significant at the 5% level. While the coefficient for *Focused* investors is clearly positive, it is not significant at the 10% level. Supporting our expectations, coefficients for both *Diversified* investors and *Traders* are insignificant at the 10% level.

For the fixed effects specifications, our results are consistent with the preceding findings for the population averaged model. *Devoted* investors show a positive association significant at the 5% level, while the remaining three groups show no significant associations with the occurrence of unrelated divestments following their entry. Importantly, the results show a positive, yet insignificant, coefficient for *Focused* investors, and thus provide only partial support for Hypothesis 2.

Further, consistent with our expectations, we find that firm size and leverage are positively, while Tobin's *q* and relative return are negatively related to the occurrence of unrelated divestments in the following year. This implies that in general, large mature firms with high levels of debt and poor past stock price performance are most likely to undertake unrelated divestments.

5.3.1.2 Simple division investor groups

For the population averaged specification, the results show that *HighHHI-HighICR* investors are positively associated with the occurrence of unrelated divestments in the year following their entry, significant at the 1% level. While the finding is in line with Hypothesis 2, it seems initially contradictory to our finding for the *Devoted* investors. A closer scrutiny reveals, however, that the investors who are positively associated with the occurrence of unrelated divestments following their entry seem to be clustered in the cross-section of *Devoted* and *HighHHI-HighICR* groups. Specifically, we refer to Table 10, which displays the overlaps between investor groups, and indicates that the two groups share 211 investors, constituting 27% of investors in both groups. Our conclusion that the investors with strong positive association to occurrence of unrelated divestments cluster in the cross-section of *Devoted* and *HighHHI-HighICR* groups is supported by the clearly positive, yet insignificant, coefficients for *Focused* and *TopHHI-TopICR* investors.

Table 21 – Regression results for the occurrence of unrelated divestments

The table presents results for the population averaged and fixed effects logistic panel regression models for the **Occurrence of unrelated divestments**. The main explanatory variables include the investor group variables for the division by factoring (**Devoted, Focused, Diversified** and **Traders**) and the division by quartiles (**TopHHI-TopCR**, **HighHHI-HighICR**, **LowHHI-HighICR**, **HighHHI-LowICR**, **LowHHI-LowICR**). Control variables are as follows: **Size** is the natural logarithm of a firm's net sales; **Tobin's *q*** is calculated as the ratio of the market value of total capital to the book value of total assets; **Relative return** is the yearly buy-and-hold return for a firm less the yearly buy-and-hold return for the firm's domestic main stock index; **Two-year average sales growth** is the compound annual growth rate over a lagging two year period; **Leverage** is the ratio of total debt to total assets.

Investor entry	Expected effect	Factoring division		Simple division	
		Population averaged	Fixed effects	Population averaged	Fixed effects
		(1)	(2)	(3)	(4)
Devoted	+	0.375**	0.534**		
		(1.96)	(2.08)		
Focused	+	0.172	0.055		
		(1.42)	(0.38)		
Diversified	?	0.085	-0.294		
		(0.52)	(-1.29)		
Traders	?	0.019	0.213		
		(0.16)	(1.38)		
TopHHI-TopCR	+			0.243	0.290
				(0.82)	(0.76)
HighHHI-HighICR	+			0.444***	0.397**
				(2.96)	(2.13)
LowHHI-HighICR	?			0.135	-0.165
				(0.95)	(-0.93)
HighHHI-LowICR	?			0.027	-0.093
				(0.21)	(-0.58)
LowHHI-LowICR	?			-0.087	-0.188
				(-0.73)	(-1.26)
Size	+	0.427***	0.483	0.422***	0.461
		(10.65)	(1.60)	(10.69)	(1.53)
Tobin's *q*	-	-0.219***	-0.143	-0.222***	-0.154
		(-2.85)	(-0.96)	(-2.89)	(-1.04)
Relative return	-	-0.475***	-0.417**	-0.466***	-0.401**
		(-2.71)	(-2.19)	(-2.66)	(-2.10)
Two-year average sales growth	-	-0.145	0.400	-0.143	0.422
		(-0.36)	(0.82)	(-0.35)	(0.87)
Leverage	+	1.012***	1.843**	1.020***	1.995**
		(2.89)	(2.20)	(2.89)	(2.38)
Industry fixed effects		Yes	-	Yes	-
Legislative region fixed effects		Yes	-	Yes	-
Year fixed effects		Yes	Yes	Yes	Yes
Observations		9,471	2,083	9,471	2,083
Number of companies		1,656	357	1,656	357
Wald Chi2		195.9	-	201.6	-
df		24	-	25	-
Pseudo R-squared		-	0.0359	-	0.0360

Robust z-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Findings from the fixed effects specification reinforce our interpretation that investors residing in both *Devoted* and *HighHHI-HighICR* are strongly associated with unrelated divestments following their entry. Fully consistent with the population averaged specification, entries by *HighHHI-HighICR* investors are significantly positively associated with the occurrence of unrelated divestments, while those of *TopHHI-TopICR* and low portfolio concentration or short investment horizon investors are not. As with the factoring division groups, firm size and leverage are positively and Tobin's *q* and relative stock return are negatively associated with unrelated divestments in the following year.

5.3.2 Initiation of unrelated divestments

As with the occurrence, the initiation of unrelated divestments is also a binary outcome variable for which we apply population averaged and fixed effects specifications. We note, again, that while the fixed effects model reduces our N from 9,471 to 2,026 by excluding all firms showing no variation in the dependent variable, we consider the population averaged model the primary one. We show results separately for our factoring groups and simple division groups and present the results in Table 22.

Overall, the results for investor effects on the initiation of unrelated divestments are strongly in line with the results for the occurrence of unrelated divestments, although providing slightly weaker evidence in support of Hypothesis 2. The results seem to be driven by a definitive group of investors residing in the cross-section of *Devoted* and *HighHHI-HighICR* investors. Further, in line with our results for governance improvements, entries by investors with very high concentration and very long horizon may not be associated with initiation of unrelated divestments.

5.3.2.1 Factoring based investor groups

For the population averaged specification, our results are consistent with results for the occurrence of unrelated divestments. *Devoted* investors are positively associated with the initiation of unrelated divestments the year following their entry, significant at the 10% level. The coefficient for *Focused* investors is again positive, yet insignificant at the 10% level. Consistent with our expectations, entries by *Diversified* and *Traders* show no significant association to initiation of unrelated divestments the year following their entry.

The results for the fixed effects specification show a positive association for the entries by *Devoted* investors, significant at the 5% level. While *Focused* investors again exhibit a positive coefficient, it is not significant at the 10% level. While entries by *Diversified* investors are not significantly associated with initiation of unrelated divestments, *Traders* unexpectedly exhibit a weak positive coefficient that is significant at the 10% level. While the result is contrary to Hypothesis 2, we note that it results from our secondary model and is not present for any other unrelated divestments model. Consequently, we refrain from drawing conclusions regarding the weak unexpected outcome. However, in Section 6.1 we examine whether the endogeneity explanation gives rise to the finding.

Overall, and in line with the results for occurrence of unrelated divestments, we find that larger and more mature firms with high leverage and poor stock price performance are most likely to initiate unrelated divestments.

5.3.2.2 Simple division investor groups

For the population averaged specification, our results are closely aligned with findings in the occurrence of unrelated divestments. Specifically, *HighHHI-HighICR* investors are positively associated with initiation of unrelated divestments the year following their entry, significant at the 5% level. Partly contradicting the predictions of Hypothesis 2, *TopHHI-TopICR* investors, however, are not significantly associated with initiation of unrelated divestments. Consistent with results for the occurrence of unrelated divestments, we recognise that the investors strongly positively associated with the initiation of unrelated divestments seem to reside in the cross-section of *Devoted* and *HighHHI-HighICR* investors. Investors with low concentration or short horizon are not associated with initiation of unrelated divestments, which is consistent with our expectations.

Table 22 – Regression results for the initiation of unrelated divestments

The table presents results for the population averaged and fixed effects logistic panel regression models for **Initiation of unrelated divestments**. The main explanatory variables include the investor group variables for the division by factoring (**Devoted, Focused, Diversified** and **Traders**) and the division by quartiles (**TopHHI-TopCR**, **HighHHI-HighICR**, **LowHHI-HighICR**, **HighHHI-LowICR**, **LowHHI-LowICR**). Control variables are as follows: **Size** is the natural logarithm of a firm's net sales; **Tobin's *q*** is calculated as the ratio of the market value of total capital to the book value of total assets; **Relative return** is the yearly buy-and-hold return for a firm less the yearly buy-and-hold return for the firm's domestic main stock index; **Two-year average sales growth** is the compound annual growth rate over a lagging two year period; **Leverage** is the ratio of total debt to total assets.

Investor entry	Expected effect	Factoring division		Simple division	
		Population averaged	Fixed effects	Population averaged	Fixed effects
		(1)	(2)	(3)	(4)
Devoted	+	0.427*	0.604**		
		(1.93)	(2.31)		
Focused	+	0.195	0.055		
		(1.43)	(0.37)		
Diversified	?	0.269	-0.057		
		(1.31)	(-0.23)		
Traders	?	-0.007	0.314*		
		(-0.05)	(1.93)		
TopHHI-TopCR	+			0.425	0.393
				(1.30)	(1.03)
HighHHI-HighICR	+			0.416**	0.364*
				(2.46)	(1.85)
LowHHI-HighICR	?			0.277	-0.014
				(1.56)	(-0.07)
HighHHI-LowICR	?			0.017	-0.043
				(0.12)	(-0.25)
LowHHI-LowICR	?			-0.111	-0.154
				(-0.80)	(-0.97)
Size	+	0.348***	0.321	0.341***	0.273
		(9.25)	(1.03)	(9.45)	(0.87)
Tobin's *q*	-	-0.181**	-0.098	-0.185**	-0.107
		(-2.47)	(-0.63)	(-2.50)	(-0.69)
Relative return	-	-0.616***	-0.480**	-0.609***	-0.463**
		(-2.97)	(-2.40)	(-2.92)	(-2.30)
Two-year average sales growth	-	-0.395	0.123	-0.397	0.182
		(-1.01)	(0.24)	(-1.01)	(0.36)
Leverage	+	0.751**	1.421	0.763**	1.591*
		(2.13)	(1.63)	(2.17)	(1.82)
Industry fixed effects		Yes	-	Yes	-
Legislative region fixed effects		Yes	-	Yes	-
Year fixed effects		Yes	Yes	Yes	Yes
Observations		9,471	2,026	9,471	2,026
Number of companies		1,656	347	1,656	347
Wald Chi2		162.2	-	162.7	-
df		24	-	25	-
Pseudo R-squared		-	0.0266	-	0.0239

Robust z-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

For the fixed effects specification, the results are again consistent with preceding results and show that *HighHHI-HighICR* investors are positively associated with initiation of unrelated divestments in the following year, significant at the 10% level. Inconsistent with Hypothesis 2, entries by *TopHHI-TopICR* investors exhibit a positive coefficient, which persistently remains insignificant at the 10% level. All other investor groups exhibit insignificant coefficients, as expected.

In line with previous findings on unrelated divestments, we find that larger mature firms with high debt levels and meagre stock price performance are most likely to initiate unrelated divestments, as expected.

5.3.3 Change in magnitude of unrelated divestments

In addition to the occurrence and initiation of unrelated divestments, we examine investor effects on the change in magnitude of unrelated divestments. *Change in magnitude of unrelated divestments* is a continuous variable for which we run a linear panel regression model with fixed effects. We run separate models using first factoring based groups and then simple division groups and present the results in Table 23.

Overall, the results provide weak evidence for Hypothesis 2 and are partly inconsistent with the results for the occurrence and initiation of unrelated divestments.

5.3.3.1 Factoring based investor groups

The results for factoring division investors are mixed. Importantly, we do not find support for Hypothesis 2, since *Devoted* and *Focused* investors are not significantly associated with changes in magnitude of unrelated divestments following their entry. Further, we find a negative association between *Diversified* investors and changes in the magnitude, significant at the 5% level. Although not contrary to Hypothesis 2, the result is not in line with our expectations. *Traders* are not associated with changes in the magnitude of unrelated divestments.

5.3.3.2 Simple division investor groups

Results for simple division investor groups offer weak support for Hypothesis 2. Specifically, entries by *HighHHI-HighICR* investors are positively associated with change in the magnitude of unrelated divestments, significant at the 10% level. Contrary to Hypothesis 2, although consistent with our results for investor effects on the occurrence and initiation of unrelated divestments,

TopHHI-TopICR investors are not associated with changes in magnitude of unrelated divestments. Further, in line with our expectations, coefficients for investors with low portfolio concentration or short investment horizon are not significant at the 10% level.

For both factoring based investor groups and simple division investor groups, we note that larger firms with more leverage and poor stock price performance seem to be most likely to increase the magnitude on unrelated divestments in the following year. Contrary to our expectation, we also note that Tobin's q seems to be weakly positively associated with increases in magnitude of unrelated divestments. While we struggle to find a relevant explanation for this result, it implies that more nascent firms are more likely to increase the magnitude of unrelated divestments.

Table 23 – Regression results for the change in magnitude of unrelated divestments

The table presents results for the fixed effects panel regression model for the **Change in magnitude of unrelated divestments**. The main explanatory variables include the investor group variables for the division by factoring (**Devoted, Focused, Diversified** and **Traders**) and the division by quartiles (**TopHHI-TopCR**, **HighHHI-HighICR**, **LowHHI-HighICR**, **HighHHI-LowICR**, **LowHHI-LowICR**). Control variables are as follows: **Size** is the natural logarithm of a firm's net sales; **Tobin's *q*** is calculated as the ratio of the market value of total capital to the book value of total assets; **Relative return** is the yearly buy-and-hold return for a firm less the yearly buy-and-hold return for the firm's domestic main stock index; **Two-year average sales growth** is the compound annual growth rate over a lagging two year period; **Leverage** is the ratio of total debt to total assets.

Investor entry	Expected effect	Factoring division (1)	Simple division (2)
Devoted	+	0.000	
		(0.02)	
Focused	+	0.001	
		(0.80)	
Diversified	?	-0.001**	
		(-2.13)	
Traders	?	-0.001	
		(-1.08)	
TopHHI-TopICR	+		-0.001
			(-0.86)
HighHHI-HighICR	+		0.002*
			(1.73)
LowHHI-HighICR	?		-0.000
			(-0.33)
HighHHI-LowICR	?		-0.000
			(-0.09)
LowHHI-LowICR	?		-0.000
			(-0.70)
Size	+	0.003**	0.004**
		(2.02)	(2.06)
Tobin's *q*	-	0.002*	0.002*
		(1.73)	(1.72)
Relative return	-	-0.003***	-0.003***
		(-3.05)	(-3.08)
Two-year average sales growth	-	0.002	0.002
		(0.91)	(0.87)
Leverage	+	0.009*	0.009*
		(1.90)	(1.91)
Year fixed effects		Yes	Yes
Observations		9,471	9,471
Number of companies		1,656	1,656
R-squared		0.0050	0.0050

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

5.4 Payout

This section presents our results for investor effects on changes in payout, which we measure through cash dividends. As with governance changes and organisational improvements, we apply our primary, factoring based investor groups as well as the simple division groups. We first discuss our results for the *Initiation of cash dividends* and then for the *Change in dividend yield.*

5.4.1 Initiation of cash dividends

In our analysis on the initiation of cash dividends, a binary variable, we apply the logistic panel regression with the population averaged estimator as the primary model and the fixed effects estimator as the secondary. In line with the previous discussions, the fixed effects model, although in theory the most appropriate, is problematic due to the model specification that drops out all observations with no initiation of cash dividends and the incidental parameter problem with small T. We present the results in Table 24 separately for factoring based and simple division investor groups.

5.4.1.1 Factoring based investor groups

The results for the factoring-based groups do not support Hypothesis 3; investors with high portfolio concentration and long investment horizon do not, at the 10% significance level, relate positively to the initiation of cash dividends. The result holds over the population averaged and the fixed effects specifications. However, with the fixed effects specification we find a positive association between the entries of investors belonging to the group *Diversified* and initiation of cash dividends. The association is significant at the 1% level. We discuss the possible explanations below in the discussion of payout results. Entries by investor groups with low concentration or short horizon do not yield significant coefficients.

In the population averaged specification firm size is negatively associated with the initiation of dividends at the 10% level, and in the fixed effects specification, leverage is negatively associated and lagged level of cash positively associated, at the 5% and 10% levels, respectively. Although the above results are in line with our expectations, we unexpectedly find that in the population averaged specification, relative return is positively associated with dividend initiation at the 5% level. We cautiously propose an intuitive explanation that firms initiating dividend payments are likely to be firms with strong performance in the previous year: initiating a cash payout might be difficult and disruptive for firms for poor performance in the previous year.

5.4.1.2 Simple division investor groups

The simple division population averaged specification produces results that are partly in line with our hypotheses. Specifically, in the population averaged specification entries by *HighHHI-HighICR* investors are weakly associated with initiation of dividends, while entries by all other investor groups are not. For the fixed effects specification, no investor group yields significant coefficients. The results for the control variables are identical to our results for the factoring based investor groups.

Table 24 – Regression results for the initiation of cash dividends

The table presents results for the population averaged and fixed effect panel logit regression model for the **Change in dividend yield**. The main explanatory variables include the investor group variables for the division by factoring (**Devoted, Focused, Diversified** and **Traders**) and the division by quartiles (**TopHHI-TopCR**, **HighHHI-HighICR**, **LowHHI-HighICR**, **HighHHI-LowICR**, **LowHHI-LowICR**). Control variables are as follows: **Size** is the natural logarithm of a firm's net sales; **Tobin's *q*** is calculated as the ratio of the market value of total capital to the book value of total assets; **Relative return** is the yearly buy-and-hold return for a firm less the yearly buy-and-hold return for the firm's domestic main stock index; **Two-year average sales growth** is the compound annual growth rate over a lagging two year period; **Leverage** is the ratio of total debt to total assets. **Cash** is the ratio of total cash holdings to total assets.

Investor entry	Expected effect	Factoring division		Simple division	
		Population averaged	Fixed effect	Population averaged	Fixed effect
		(1)	(2)	(3)	(4)
Devoted	+	-0.048	0.008		
		(-0.13)	(0.02)		
Focused	+	0.311	-0.038		
		(1.58)	(-0.16)		
Diversified	?	1.451***	0.531		
		(2.62)	(0.92)		
Traders	?	0.226	0.061		
		(1.29)	(0.26)		
TopHHI-TopCR	+			0.524	0.447
				(1.27)	(0.85)
HighHHI-HighICR	+			0.434*	0.380
				(1.75)	(1.23)
LowHHI-HighICR	?			0.518	-0.042
				(1.63)	(-0.13)
HighHHI-LowICR	?			0.278	0.023
				(1.39)	(0.09)
LowHHI-LowICR	?			0.147	-0.429
				(0.58)	(-1.53)
Size	-	-0.101*	-0.769	-0.100*	-0.767
		(-1.87)	(-1.49)	(-1.89)	(-1.49)
Tobin's *q*	+	0.060	0.009	0.056	0.017
		(0.92)	(0.05)	(0.87)	(0.11)
Relative return	-	0.393**	0.246	0.382**	0.279
		(2.26)	(1.24)	(2.21)	(1.41)
Two-year average sales growth	-	-0.282	0.850	-0.300	0.908
		(-0.69)	(1.12)	(-0.73)	(1.20)
Leverage	-	-0.540	-3.273**	-0.584	-3.351**
		(-1.01)	(-2.43)	(-1.11)	(-2.48)
Cash	+/-	0.633	2.730*	0.699	2.784*
		(1.30)	(1.88)	(1.45)	(1.92)
Industry fixed effects		Yes	-	Yes	-
Legislative region fixed effects		Yes	-	Yes	-
Year fixed effects		Yes	Yes	Yes	Yes
Observations		8,570	977	8,570	977
Number of companies		1,475	166	1,475	166
R-squared		-	0.113	-	0.118
Wald Chi2		124.7	-	114.8	-
df		25	-	26	-

Robust z-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 25 – Regression results for the change in dividend yield

The table presents results for the fixed effects panel regression model for the **Change in dividend yield**. The main explanatory variables include the investor group variables for the division by factoring (**Devoted, Focused, Diversified** and **Traders**) and the division by quartiles (**TopHHI-TopCR**, **HighHHI-HighICR**, **LowHHI-HighICR**, **HighHHI-LowICR**, **LowHHI-LowICR**). Control variables are as follows: **Industry-adjusted dividend yield** is the yearly dividend yield for a firm less the yearly average dividend yield for the firm's industry. **Size** is the natural logarithm of a firm's net sales; **Tobin's *q*** is calculated as the ratio of the market value of total capital to the book value of total assets; **Relative return** is the yearly buy-and-hold return for a firm less the yearly buy-and-hold return for the firm's domestic main stock index; **Two-year average sales growth** is the compound annual growth rate over a lagging two year period; **Leverage** is the ratio of total debt to total assets. **Cash** is the ratio of total cash holdings to total assets.

Investor entry	Expected effect	Factoring division (1)	Simple division (2)
Devoted	+	-0.058	
		(-1.05)	
Focused	+	-0.024	
		(-0.71)	
Diversified	?	-0.015	
		(-0.27)	
Traders	?	-0.014	
		(-0.45)	
TopHHI-TopCR	+		-0.088
			(-1.13)
HighHHI-HighICR	+		-0.055
			(-1.16)
LowHHI-HighICR	?		0.016
			(0.40)
HighHHI-LowICR	?		-0.004
			(-0.11)
LowHHI-LowICR	?		0.030
			(0.92)
Industry-adjusted dividend yield	-	-0.750***	-0.751***
		(-30.78)	(-30.83)
Size	+	0.160**	0.159**
		(2.35)	(2.33)
Tobin's *q*	-	0.018	0.018
		(0.84)	(0.84)
Relative return	-	0.031	0.031
		(0.90)	(0.88)
Two-year average sales growth	-	0.072	0.073
		(0.79)	(0.80)
Leverage	-	-0.472***	-0.472***
		(-2.64)	(-2.63)
Cash	+/-	0.034	0.037
		(0.19)	(0.21)
Year fixed effects		Yes	Yes
Observations		8,428	8,428
Number of companies		1,475	1,475
R-squared		0.485	0.485

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

5.4.2 Change in dividend yield

In our analysis on change in dividend yield, a continuous variable, we apply panel regression specification with fixed effects. As with all preceding outcomes, we run the model separately for the factoring based and simple division investor groups.

The results for the *Change in dividend yield*, presented in Table 25, do not produce significant associations at the 10% level between entries of our investor groups and changes in the dividend yield. The insignificant associations hold across factoring based and simple division investor groupings.

To assess the appropriateness of our choice of dividend measure we also test two other variables: dividends per earnings and dividends per sales (see La Porta *et al.* 2000). In undocumented results, no significant associations for any of our nine investor groups are found.

Control variables are in line with our expectations. The industry-adjusted dividend yield is negatively associated with changes in dividend yield at the 1% level implying that if a company's payout has previously exceeded that of its peers, the firm is not likely to increase it further. Moreover, firm size is positively associated with changes in dividend yield at the 5% significance level. Finally, leverage is negatively associated with changes in the dividend yield at the 1% significance level.

6 Robustness tests

While our results support our hypotheses about investors with high portfolio concentration and long investment horizon as active corporate improvers, we perform a range of additional tests to further validate our results. First, we perform reverse regression to acquire additional reassurance that the causality runs from investors to corporate improvements and not the other way around. We then measure the joint explanatory power of our investor groups and test whether our results are unchanged when running regressions with individual investor groups separately. Next, we discuss and cautiously examine potential survivorship bias in our data due to shortcomings in our ownership data. We then implement an additional set of measures for investors' portfolio concentration and investment horizon to test the validity and power of our investor groupings.

6.1 Endogeneity

In line with efforts in analogous settings by Aggarwal *et al.* (2010) and Chen *et al.* (2007), we take on to validate the direction of causality in our results. We consider the possibility that instead of running from the entry of certain type of investors to corporate improvements, the causality runs from corporate improvements to investor entry. The endogeneity concern is raised on two accounts: (1) the general understanding that investors may select target companies based on the targets' corporate governance arrangements, organisational features or payout and (2) specific findings in recent literature, such as Leuz, Lins and Warnock (2008) who find that US investors invest significantly less in foreign firms with poor governance, or Bushee, Carter and Gerakos (2010) who locate a "governance sensitive" group of institutions who systematically prefer to invest in firms with good governance[63].

We address the potential endogeneity issues in two ways. First, we account for the direction of the causality in our research design by choosing to study changes for both independent and dependent variables, rather than levels (Aggarwal *et al.* 2010). We argue that while it certainly does not quell all uncertainty on endogeneity, explaining *changes* in an outcome variable with *lagged changes* in ownership somewhat mitigates the potential problem of investors choosing to invest in certain kinds of targets. To test the selection hypothesis further, we follow Aggarwal *et al.* (2010) and Chen *et al.* (2007) and perform reverse regressions for all our dependent variables. Specifically, we use the lagged governance improvements, lagged organisational improvements and lagged payout increases as the explanatory variables and entries of our nine investor groups as the dependent variables. We report all reverse regression results in the Appendix 9 and include an adopted set of control variables as in our primary regressions. In the reverse regressions, we report results from the population averaged model. In unreported tests, however, we run the reverse regressions with a fixed effects specification (where the narrowing number of observations allows) and find the results to correspond with the ones reported.

Our results in reverse regressions give no implications of reverse causality regarding governance improvements. Change in our lagged overall governance index does not statistically significantly explain entries of any of our investor groups. Importantly, the coefficients explaining the entries

[63] Bushee, Carter and Gerakos (2010) also find evidence implying that "governance sensitive" institutions actively improve governance in firms they target.

of investors belonging to *Focused* and *HighHHI-HighICR* are negative and statistically insignificant at the 10% level. The results for board improvements are in line with those of the overall governance index. We report, however, that change in board index seems to have a weak negative association with entry of *Diversified* investors. While the result is barely significant at 10% level, the negative sign does not lead us to assume reverse causality even for the *Diversified* investors, for whom we found no evidence of activism regarding governance improvements. We thus find no evidence of "governance sensitive" institutional investors, as specified by Bushee, Carter and Gerakos (2010).

The reverse regression results for the occurrence of unrelated divestments do not imply reverse causality. Interestingly, however, we report a weak positive coefficient for the lagged occurrence of unrelated divestments in explaining the entries of Focused investors, significant at 10% level. Results for the lagged initiation of unrelated divestments explaining investor entries do not produce statistically significant coefficients. For the magnitude of unrelated divestments, we report a weak positive coefficient in explaining entries of *HighHHI-LowICR* investors.

For payout increases, the reverse regressions produce interesting results. While we do not find evidence that reverse causality drives our results for *Diversified* investors, the *LowHHI-HighICR* seem to be attracted to firms that start paying dividends. The result is somewhat confounding given that we hypothesise *Diversified* and *LowHHI-HighICR* investors to be largely similar in nature. Also, we find that entries by *Focused* as well as *HighHHI-LowICR* investors seem to be attracted by initiation of dividends. While we found no evidence of activism from any of our investor groups regarding changes in dividend yield, the reverse regressions imply that *TopHHI-TopICR* investor are attracted to enter firms based on positive dividend yield changes in the previous period.

Overall, the reverse regressions do not provide evidence that our results are caused by investors selecting into target firms. We note, however, that while we do not find evidence of endogeneity affecting our results, we cannot rule out the possibility of investors targeting our sample firms *in anticipation* of governance, organisational or payout improvements. In such scenarios first wave events, as specified by Shipilov *et al.* (2009) in the context of governance improvements, facilitate ensuing further improvements.

Finally, we note that selection hypothesis could be further studied through an IV-treatment, such as performed in Aggarwal *et al.* (2010) and Becker *et al.* (2009). We argue, however, that an IV-treatment, equivalent to that of Aggarwal *et al.* (2010), who use the Morgan Stanley Capital International World index participation as an instrument for institutional ownership, or Becker *et al.* (2009), who apply the density of wealthy individuals as an instrument for the presence of large individual shareholders, would be difficult to implement for our self-classified investor groups. Specifically, it is by definition difficult to find a common factor e.g. for all *HighHHI-HighICR* investors so that it would not systematically apply also to investors in other groups. Any successful IV-treatment in our research setting would require locating a sub-group of investors residing within only one of our self-classified investor groups and constructing an instrument for them. Even if such a sub-group and a relevant instrument could be pinpointed, the validity of potential results for the entire investor group would be difficult to show. We leave such endeavours for further research and content ourselves with our endogeneity checks, thus providing no support for the selection hypothesis.

6.2 Joint significance

To check the robustness of our results further, we test whether our investor group entries are jointly significant in explaining the occurrence of corporate improvements in our target firms. As shown in Table 26, the results vary with the method of investor division and the dependent variable and, for the majority of the regressions, the investor group entries are jointly insignificant at the 10% level. We argue, however, that the result is not surprising. While we hypothesise and show in our analysis that investors with high portfolio concentration and long investment horizon facilitate corporate improvements, we do not expect the same for all investors. Further, given that our a priori hypothesised and later confirmed activists only account for a fraction of all measured investors, we are not surprised by the partial insignificance of investor group entries as whole in explaining corporate improvements.

Table 26 – Joint significance of the investor group entries

The table shows the joint significance of the investor group entries as independent variables for each of the dependent variables. Panel A shows for Corporate governance changes, Panel B for Organisational changes and Panel C for Dividend payout changes. The factoring division groups are *Devoted*, *Focused*, *Diversified* and *Traders*. Simple division groups include *TopHHI-TopICR*, *HighHHI-HighICR*, *LowHHI-HighICR*, *HighHHI-LowICR* and *LowHHI-LowICR*. Regression specifications are shown as with their corresponding STATA abbreviations. The models are as follows: **xtreg** is a linear panel regression model; **xtlogit** is a logistic panel regression model; **ologit** is an ordered logistic regression model. Estimator specifications are as follows: **fe** stands for the fixed effects estimator; **pa** stands for the population averaged, or pooled, estimator. For ordered and logistic regressions, the table shows the Chi squared statistic, for linear models the F-statistic. Corresponding p-values are in parenthesis.
*** p<0.01, ** p<0.05, *p<0.1.

PANEL A - CORPORATE GOVERNANCE

Governance variable	Factoring division		Simple division	
Specification	*(1)*	*(2)*	*(1)*	*(2)*
Change in overall index	0.93	4.99	2.02*	13.57**
(1) xtreg, fe; (2) ologit	(0.44)	(0.29)	(0.07)	(0.02)
Change in board index	0.92	6.64	2.29**	20.31***
(1) xtreg, fe; (2) ologit	(0.45)	(0.16)	(0.04)	(0.00)
Simple change in overall index	3.27	-	11.83**	-
(1) ologit	(0.51)	-	(0.04)	-
Simple change in board index	5.52	-	19.74***	-
(1) ologit	(0.24)	-	(0.00)	-

PANEL B - ORGANISATIONAL

Organisational variable	Factoring division		Simple division	
Specification	*(1)*	*(2)*	*(1)*	*(2)*
Occurrence of unrelated divestments	7.12	7.81*	11.17**	7.93
(1) xtlogit, pa; (2) xtlogit, fe	(0.13)	(0.10)	(0.05)	(0.16)
Initiation of unrelated divestments	8.46*	9.2*	10.75*	5.66
(1) xtlogit, pa; (2) xtlogit, fe	(0.08)	(0.06)	(0.06)	(0.34)
Magnitude of unrelated divestments	1.44	-	0.8	-
(1) xtreg, fe	(0.22)	-	(0.55)	-

PANEL C - DIVIDEND PAYOUT

Payout variable	Factoring division		Simple division	
Specification	*(1)*	*(2)*	*(1)*	*(2)*
Initiation of cash dividend	13.03**	0.94	11.01*	4.29
(1) xtlogit, pa; (2) xtlogit, fe	(0.01)	(0.92)	(0.05)	(0.51)
Change in dividend yield	0.49	-	0.69	-
(1) xtreg, fe	(0.74)	-	(0.63)	-

Further, we test whether the results suggesting that the entry by individual investor groups explain corporate improvements are reliant on the presence of the other, non-significant investor variables. Consequently, we run all regressions with the same model specifications including only the investor groups which we found in Section 5, to actively improve the measured corporate characteristics. We find, in undocumented results, that the results remain practically unchanged, with only fractional differences in coefficients and corresponding p-values. The results imply that the positive associations between our investor groups and corporate improvements is not caused by the presence of other, perhaps negatively associated, investor groups.

6.3 Survivorship bias

We note, that since our ownership data does not allow inference of holder information for our sample firms that have ceased to exist as of December 31, 2009, a problem of survivorship bias may arise. More specifically, we are only able to observe ownership data for firms that were listed and included in our two indices as of December 31, 2002 and continued to be listed as the same entities as of December 31 2009. Before we discuss how survivorship bias could affect our results, we note that the modifications to our firm sample, described in Section 4.3.1.1[64], are done independently and directly to the firm sample, regardless of whether ownership information was available for the removed entity or not. Altogether, ownership data is missing for 680 firms out of the total of 2,525. Majority of the 680 firms with no ownership data are firms that have ceased to exist and a minority are firms for which ownership data was not available through FactSet for other reasons.

While survivorship bias is commonly considered severe especially in performance-measuring research settings, as presented by Brown *et al.* (1992) and Elton, Gruber and Blake (1996) for mutual funds performance and Brown, Goetzmann and Ibbotson (1999) for hedge funds, we recognize that it may affect our results for discrete corporate improvements as well. In general, survivorship bias arises from a research setting where only the survived entities, often the best performers, are observed whereas failed entities are not. In mutual fund research, as Brown *et al.* (1992) show, observing only the survived funds may cause a significant upward bias in the

[64] Specifically, we remove firms due to (1) being acquired, (2) merger, (3) default or (4) de-listing for other reason.

observed returns for mutual funds and give rise to a faulty perception of persistence in the performance of the survived money managers.

In our research setting, where we focus on analysing the effects of investor entries on different corporate improvements, we anticipate that survivorship bias could affect the results in case associations between different investor entries and ensuing corporate improvements would behave differently than with the survived firms that we observe. While we have no good reason to expect that the entries by our altogether nine investor groups would have opposite associations in the ceased-to-exist firm sample, we recognise that the investor effect, *in general,* may be different from the observed sample comprising only the surviving firms. Specifically, we hypothesise that our results could be affected at least in the presence of the following two circumstances:

(1) Amongst the ceased-to-exist firms, there were a substantially lower overall number of changes
(2) Amongst the ceased-to-exist firms, the level of the variables, for which we measure changes (improvements, deteriorations), were substantially different from the observed sample

In case of (1), by not including the ceased-to-exist firms from our sample, we could exclude the firms where association by any investor group to corporate changes is the weakest and thus boost our results. For corporate governance, for instance, we would exclude the firms where corporate governance improvements do not take place. In case of (2), there would be reason to doubt that the improvements would behave differently, since the base level for our outcome variables would be significantly different. For unrelated divestments, for instance, we could exclude firms with substantially lower scores on average for overall and board indices than amongst our observed sample.

While we have no access to payout data for the ceased-to-exist firms, we cautiously test whether our data raises doubts that circumstances (1) or (2) are present in our corporate governance and unrelated divestments data. Since they are drawn from different databases, we have equal access to data regarding firms that ceased to exist over our observation period and firms that survived.

For our corporate governance data, we first calculate the annual mean *levels* for our overall and board indices separately for the ceased-to-exist firms and for firms where ownership data is available. We examine whether the two firm samples show large differences regarding the level of corporate governance (see (2) above). We then calculate the mean levels of corporate governance over our sample period for the two firms samples separately, weighting within-year averages by the number of firms present in that year[65]. Second, we calculate the annual portion of firms experiencing *a change*, improvement or deterioration in overall governance or board index for the two firm groups separately. We then, again, calculate weighted means over our sample period for both changes in overall and board indices and for cease-to-exist and observed firms separately. Overall, we show years 2004 through 2009, since 2004 is the first year in which our outcome variables are present in our regressions[66]. The results, presented in panel A of Table 27, show that regarding corporate governance, the ceased-to-exist firm sample is very similar to the observed firm sample. While the level of corporate governance is slightly better in the observed firm sample regarding both overall index (51% to 50%) and board index (77% to 75%), there are slightly more annual changes occurring in the ceased-to-exist firm sample regarding both overall index (48% to 47% of all firms on average) and board index (32% to 31% of all firms on average). We conclude that regarding corporate governance improvements, we do not observe large differences in either the level or the changes between our excluded ceased-to-exist firms and the observed firms. Hence, we cautiously anticipate that heterogeneity of governance attributes of observed and unobserved firms is unlikely to give rise to significant survivorship bias in our results.

For organisational improvements, we first calculate the annual portion of firms where unrelated divestments occur for ceased-to-exist firms and observed firms separately. We then measure the weighted mean portion of firms divesting unrelated entities annually over our observation period. Results show that within both groups, 6% of firms divest unrelated entities annually on average. Second, we calculate the annual potion of firms where unrelated divestments are initiated for ceased-to-exist firms and observed firms separately and calculate the weighted mean portion over our observation period. Results imply that within both firm groups, 4% of firms annually initiate

[65] Annual weights are necessary, since in the ceased-to-exist firm sample, the number of firms drops rapidly after 2004.

[66] As discussed in Chapter 4, ownership data is reliably available from 2003.

unrelated divestments on average. Third, we calculate the annual average changes in the magnitude of unrelated divestments for ceased-to-exist firms and observed firms separately. In line with our regression analysis, we measure the magnitude of unrelated divestments with the total value of annual unrelated divestments divided by the average parent EV. We then calculate the weighted mean for the annual average changes over our observation period. While the annual variation for the ceased-to-exist firms seems large due to the small number of firms in the sample for the last years, the magnitude of unrelated divestments changes on average just over 0% for both groups. Overall, regarding organisational improvements, we find that ceased-to-exist firm sample and the observed firm sample are largely similar, and we cautiously anticipate that heterogeneity in our firm sample regarding organisational improvements is unlikely to give rise to significant survivorship bias in our results. The results are presented in panel B or Table 27.

Although we find that the firms excluded from our sample due to the lack of ownership data and the observed firms are largely similar in terms of governance and unrelated divestments, we cannot exclude the possibility that the association between investor entries and corporate improvements would behave differently for the two different groups. While we find no reason to believe this would be the case given the similar corporate improvement data for the two firm samples, we thus recognise that survivorship bias could bias our results for investor effects either positively or negatively.

In calculations for corporate governance and organisation (divestments), for consistency, we apply the same pre-2003 sample modifications to the ceased-to-exist firms and observed firms, as with the data for our principal regression analyses (modifications discussed in detail in Section 4.3.1.1). Specifically, we do not include (1) firms being acquired, merged, defaulted or de-listed prior to year-end 2002 or (2) firms with more than one class of ordinary shares.

Table 27 – Survivorship bias: Sample comparison

The table shows organisational improvements (Panel A) and corporate governance improvement (Panel B) separately for the ceased-to-exist firms (out-of sample) and observed firms (in-sample).**Occurrence of unrelated divestments** shows the portion of firms that undertook one of more unrelated divestments in the observed year. **Initiation of unrelated divestments** shows the portion of firms undertaking unrelated divestments in the measured year but not the year before. **Change in magnitude of unrelated divestments** is the across-sample average of our measure for magnitude of unrelated divestments, defined as the change in total values of unrelated divestments divided by the enterprise value of the divesting company.

PANEL A - ORGANISATION (UNRELATED DIVESTMENTS)

Dependant variable	Sample	2004	2005	2006	2007	2008	2009	Weighted mean
Occurrence of unrelated divestments	Ceased-to-exist firms	6 %	6 %	7 %	6 %	5 %	0 %	6 %
	Observed firms	6 %	5 %	7 %	7 %	5 %	4 %	6 %
Initiation of unrelated divestments	Ceased-to-exist firms	4 %	4 %	6 %	5 %	4 %	0 %	4 %
	Observed firms	5 %	4 %	5 %	5 %	4 %	3 %	4 %
Change in magnitude of unrelated divestments	Ceased-to-exist firms	2 %	-1 %	0 %	3 %	-7 %	-	0 %
	Observed firms	1 %	0 %	1 %	0 %	-1 %	1 %	0 %

PANEL B - CORPORATE GOVERNANCE

Dependant variable	Sample	2004	2005	2006	2007	2008	2009	Weighted mean
Overall governance index - Level	Ceased-to-exist firms	47 %	49 %	51 %	53 %	54 %	53 %	50 %
	Observed firms	49 %	51 %	53 %	54 %	55 %	56 %	51 %
Board index - Level	Ceased-to-exist firms	72 %	74 %	76 %	77 %	79 %	80 %	75 %
	Observed firms	73 %	76 %	77 %	78 %	80 %	80 %	77 %
Overall governance index - Changes	Ceased-to-exist firms	55 %	45 %	42 %	45 %	50 %	78 %	48 %
	Observed firms	59 %	42 %	42 %	36 %	40 %	40 %	47 %
Board index - Changes	Ceased-to-exist firms	39 %	31 %	25 %	28 %	35 %	33 %	32 %
	Observed firms	42 %	30 %	22 %	22 %	23 %	22 %	31 %

6.4 Alternative approaches

To further test our results and show the need for a novel approach to define the explanatory ownership variables in studying investor effects on corporate improvements, we conduct our analyses with two alternative approaches used in extant literature. First, we calculate general ownership structure figures for portfolio concentration and investment horizon and use them as explanatory variables. Second, we test whether the entries of known activist hedge funds are associated with corporate improvements.

6.4.1 General ownership structure

Our results indicate that engaging in company improvements is owner-specific. In large public companies where ownership is dispersed, a single owner with a large stake can make a difference. Our approach and findings are rather novel as the vast majority of studies have examined the relationship between firms' general ownership structures and corporate improvements, such as governance or performance enhancements.

For example, Hartzell and Starks (2003) use the proportion of the institutional ownership accounted for by the top five institutional investors of a firm, and a company-specific institutional ownership concentration figure to explain CEO compensation. Chen, Harford and Li (2007) also measure the aggregate ownership of the five largest institutional investors but also categorize these holdings by the length of holding (greater or less than one year) to study acquisitions and post-merger performance. Gaspar, Massa and Matos (2005) calculate the ownership-weighted investment horizon of a company's institutional shareholders and find that target firms with short-term shareholders are more likely to receive an acquisition bid but get lower premiums. In a similar setting, Qiu (2008) shows that the presence of large public pension fund shareholders reduces bad acquisitions although he disagrees with Gaspar, Massa and Matos on whether the investment horizon has any effect.

We argue that these general ownership structure figures are problematic in terms of endogeneity and are unlikely to produce meaningful results. To show this with our data, we run our regressions with general ownership structure figures for investment horizon, portfolio concentration and their interaction.

6.4.1.1 Method

In line with Gaspar, Massa and Matos (2005), we calculate the ownership-weighted investment horizon of a company's shareholders and define the *Company inverse churn rate* as the ownership-weighted inverse churn rate for all the company's shareholders with more than 1% of shares. The calculation is as follows:

$$Company\ inverse\ churn\ rate_{\mathrm{j}} = \sum_{i=1}^{N} w_{j,i} ICR_i, \quad (15)$$

where $w_{j,i}$ is the weight of investor i's ownership in the total percentage held by shareholders with ownership of over 1% in company j and N is the total number of owners in our sample.

We calculate the *Company Herfindahl index* as a proxy for the company's shareholders' ownership-weighted portfolio concentration:

$$Company\ Herfindahl\ index_{\mathrm{j}} = \sum_{i=1}^{N} w_{j,i} HHI_i, \quad (16)$$

where HHI_i is the *Herfindahl index* for company i, $w_{j,i}$ is the weight of investor i's ownership in the total percentage of shares held by shareholders with ownership of over 1% in company j and N is the total number of owners in our sample.

Further, we calculate an interaction term to measure the significance of the interaction of the two variables. The interaction term, often calculated as the product of two variables incurs a multicollinearity problem among the explanatory variables, which is best dealt with by centring the variables (Aiken and West 1991). The variables are centred by subtracting the mean score from each data point for each of the variables. The interaction term, *Interaction,* is then calculated as the product of the two centred variables.

6.4.1.2 Findings

The results are presented in Table 28, Table 29 and Table 30 for governance, organisational and payout changes, respectively. As presumed, the results are either insignificant or meaningless in relation to activism. We argue that the mixed results stem from the domination of large institutional investors, who are present in our factoring-based group *Diversified*. The overall company figures are to a great extent determined by the large number of *Diversified* investors and their presence in a vast majority of the companies. Moreover, we cautiously suggest that as the

general ownership structure figures measure investor presence, the results might not present findings for investor influence but merely the preferences of large institutional investors.

For the changes in the *Overall index* of corporate governance variables, the only significant explanatory variable is the *Company inverse churn rate* in the simple change specification. The relation is significant at the 10% level but negative. The most plausible explanation would hardly be that long-term shareholders negatively influence governance changes in their target companies, but instead that large institutional investors have a tendency to be invested in companies with good governance. The institutional preference for corporate governance is studied among others by Ferreira and Matos (2008), who find that all institutional investors seek firms with strong governance, as well as Lenz, Lins and Warnock (2008), who show that foreign institutional investors invest less in firms with poor governance. In other words, companies with good corporate governance have attracted numerous large institutional investors, which is reflected as a high *Company inverse churn rate*[67]. As the companies have few governance improvement opportunities left, the high *Inverse churn rate* is then associated negatively with the amount of governance improvements.

For the *Board index,* we find a weak positive relation between the *Company Herfindahl index* and board improvements. Although the relation is in line with our hypothesis that investors with high portfolio concentration are willing and able to improve governance, arguing between selection and influence is again difficult. Similarly to the findings in the *Overall index*, if large institutional investors with very low *Herfindahl index* figures dominate the *Company Herfindahl index* and large institutional investors invest in companies with good governance, the selection explanation appears reasonable. The better the governance and the less opportunities for improvements, the greater the institutional ownership and the lower the *Company Herfindahl index*.

The regressions for organisational changes do not yield significant results for the overall company figures as key independent variables. The absence of results may suggest that ownership and corporate diversification are unrelated, which is in line with the findings of Lane, Canella and Lubatkin (1998). We argue, however, that the results support our hypothesis of the

[67] As shown in Table 12, large institutional investors such as investment advisers are mainly present in the *Diversified* and *LowHHI – HighICR* investor groups, which both have very high inverse churn rate figures.

importance of capturing the presence of individual large, concentrated and long-term investors instead of studying overall ownership structure figures.

In the results for changes in payout, we find a significant negative relation between *Company inverse churn rate* and the *Initiation of cash dividends* and a significant positive relation between *Company inverse churn rate* and *Change in dividend yield*. Again, we argue that the dominance of large institutional investors in the overall company ownership structure figures and their selection into certain type of stock affect the results. As Gompers and Metrick (2001) show for U.S. institutions and Ferreira and Matos (2008) internationally, large institutions[68] prefer stocks of large companies. In other words, large institutions invest less in smaller companies where the likelihood of an initiation of divestments is higher (Michaely, Thaler and Womack 1995). Similarly, dividend increases, or positive changes in the *Dividend yield*, are common to large firms that have grown and entered more mature phases in their life cycles (Grullon, Michaely and Swaminathan 2002). Furthermore, Grinstein and Michaely (2005) provide evidence that institutions prefer dividend-paying firms. As discussed in Section 5.4, the catering explanation may also drive the positive relationship between high *Inverse churn rate,* indicating a large number of institutional owners, and changes in dividend yield.

In conclusion, we argue that the use of overall ownership structure figures is problematic for at least three reasons: (1) It is not necessarily the ownership structure as a whole that matters but instead the presence of individual investors willing and able to engage in activism, (2) *Diversified* investors dominate the ownership structure figures due to their size and number and (3) Determining between selection and influence is especially difficult when using explanatory variables that are based on the presence, not entry, of investors as discussed in Section 6.1. These problems are reflected in insignificant or meaningless results for overall ownership structure in explaining observed corporate improvements in our sample firms.

[68] Gompers and Metrick (2001) define large institutions as money managers with at least $100 million under management.

Table 28 – Governance changes with general ownership structure

The table shows regression results for the changes in the **Overall index**, including 14 governance variables, and the **Board index**, including 6 board-related governance variables. **Change** refers to a change in the index figure; **Simple change** takes the value of 1, if an improvement happens, 0 if no change occurs and -1 if there is deterioration in the governance level. The main explanatory variables are as follows: **Company Herfindahl index (centred)** is the mean-centred ownership-weighted measure for a company's shareholders' portfolio concentration; **Company inverse churn rate (centred)** is the mean-centred ownership-weighted measure for a company's shareholders' inverse portfolio turnover; **Interaction** is the product of the Centred Herfindahl index and the Centred inverse churn rate. Controls are as follows: **Lagged index level** is the one-year lagged corresponding governance index level; **Size** is the natural logarithm of a firm's net sales; **Tobin's *q*** is calculated as the ratio of the market value of total capital to the book value of total assets; **Relative return** is the yearly buy-and-hold return for a firm less the yearly buy-and-hold return for the firm's domestic main stock index; **Two-year average sales growth** is the compound annual growth rate over a lagging two year period.

Weighted overall figures	Expected effect	Overall index			Board index		
		Change Fixed effects	Change Ordered logit	Simple change Ordered logit	Change Fixed effects	Change Ordered logit	Simple change Ordered logit
		(1)	(2)	(3)	(4)	(5)	(6)
Company Herfindahl index (centred)	+	0.077	0.118	0.052	0.135*	0.583	0.470
		(1.62)	(0.23)	(0.11)	(1.76)	(0.91)	(0.77)
Company inverse churn rate (centred)	+	-0.009	-1.108	-1.241*	-0.028	-1.386	-1.367
		(-0.22)	(-1.64)	(-1.86)	(-0.40)	(-1.58)	(-1.58)
Interaction	+	-0.210	2.729	2.828	-0.397	4.043	3.094
		(-0.42)	(0.53)	(0.58)	(-0.54)	(0.62)	(0.50)
Lagged index level	-	-0.721***	-4.079***	-3.868***	-0.790***	-6.245***	-5.674***
		(-38.99)	(-19.99)	(-19.29)	(-40.36)	(-22.58)	(-22.38)
Size	+	0.009	0.072***	0.074***	0.020*	0.053**	0.051**
		(1.18)	(3.64)	(3.79)	(1.80)	(2.12)	(2.06)
Tobin's *q*	-	0.000	-0.035	-0.033	-0.001	-0.019	-0.023
		(0.15)	(-1.16)	(-1.13)	(-0.29)	(-0.50)	(-0.60)
Relative return	-	-0.000	-0.132	-0.102	0.000	-0.295**	-0.235**
		(-0.10)	(-1.32)	(-0.99)	(0.01)	(-2.48)	(-1.98)
Two-year average sales growth	-	0.003	0.212	0.191	-0.020	-0.148	-0.170
		(0.31)	(0.98)	(0.90)	(-1.13)	(-0.54)	(-0.63)
Industry fixed effects		-	Yes	Yes	-	Yes	Yes
Legislative region fixed effects		-	Yes	Yes	-	Yes	Yes
Year fixed effects		Yes	Yes	Yes	Yes	Yes	Yes
Observations		4,848	4,848	4,848	4,848	4,848	4,848
Number of companies		1,001	1,001	1,001	1,001	1,001	1,001
R-squared		0.368	-	-	0.429	-	-
Pseudo R-squared		-	0.0316	0.0364	-	0.0885	0.0921

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 29 – Organisational changes with general ownership structure

The table shows regression results for the organisational changes: **Occurrence of unrelated divestments, Initiation of unrelated divestments** and **Magnitude of unrelated divestments.** The main explanatory variables are as follows: **Company Herfindahl index (centred)** is the mean-centred ownership-weighted measure for a company's shareholders' portfolio concentration; **Company inverse churn rate (centred)** is the mean-centred ownership-weighted measure for a company's shareholders' inverse portfolio turnover; **Interaction** is the product of the Centred Herfindahl index and the Centred inverse churn rate. Controls are as follows: **Size** is the natural logarithm of a firm's net sales; **Tobin's *q*** is calculated as the ratio of the market value of total capital to the book value of total assets; **Relative return** is the yearly buy-and-hold return for a firm less the yearly buy-and-hold return for the firm's domestic main stock index; **Two-year average sales growth** is the compound annual growth rate over a lagging two year period; **Leverage** is the ratio of total debt to total assets.

Weighted overall figures	Expected effect	Occurrence of unrelated divestments		Initiation of unrelated divestments		Magnitude of unrelated divestments
		Population averaged	Fixed effects	Population averaged	Fixed effects	Fixed effects
		(1)	(2)	(3)	(4)	(5)
Company Herfindahl index (centred)	+	-0.103	0.232	0.086	0.529	0.000
		(-0.26)	(0.22)	(0.23)	(0.48)	(0.12)
Company inverse churn rate (centred)	+	-1.045	0.192	-0.758	-0.554	-0.000
		(-0.96)	(0.10)	(-0.68)	(-0.27)	(-0.04)
Interaction (centered)	+	-1.059	9.263	-2.007	11.513	0.027
		(-0.35)	(0.90)	(-0.69)	(1.09)	(1.12)
Size	+	0.430***	0.452	0.346***	0.281	0.003**
		(10.51)	(1.50)	(9.26)	(0.90)	(2.02)
Tobin's *q*	-	-0.216***	-0.149	-0.181**	-0.103	0.002*
		(-2.81)	(-1.01)	(-2.46)	(-0.66)	(1.70)
Relative return	-	-0.479***	-0.403**	-0.621***	-0.466**	-0.003***
		(-2.73)	(-2.11)	(-2.99)	(-2.32)	(-3.09)
Two-year average sales growth	-	-0.139	0.448	-0.390	0.226	0.002
		(-0.34)	(0.93)	(-0.99)	(0.45)	(0.83)
Leverage	+	1.010***	1.908**	0.739**	1.502*	0.009*
		(2.86)	(2.29)	(2.09)	(1.73)	0.009*
Industry fixed effects		Yes	-	Yes	-	-
Legislative region fixed effects		Yes	-	Yes	-	-
Year fixed effects		Yes	Yes	Yes	Yes	Yes
Observations		9,471	2,083	9,471	2,026	9,471
Number of companies		1,656	357	1,656	347	1,656
R-squared		-	-	-	-	0.005
Pseudo R-squared		-	0.0313	-	0.0208	-
Wald Chi2		187.0	-	153.1	-	-
df		23	-	23	-	-

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 30 – Dividend payout changes with general ownership structure

The table shows regression results for the payout changes: **Initiation of cash dividends** and **Change in dividend yield**. The main explanatory variables are as follows: **Company Herfindahl index (centred)** is the mean-centred ownership-weighted measure for a company's shareholders' portfolio concentration; **Company inverse churn rate (centred)** is the mean-centred ownership-weighted measure for a company's shareholders' inverse portfolio turnover; **Interaction** is the product of the Centred Herfindahl index and the Centred inverse churn rate. Controls are as follows: **Size** is the natural logarithm of a firm's net sales; **Tobin's *q*** is calculated as the ratio of the market value of total capital to the book value of total assets; **Relative return** is the yearly buy-and-hold return for a firm less the yearly buy-and-hold return for the firm's domestic main stock index; **Two-year average sales growth** is the compound annual growth rate over a lagging two year period; **Leverage** is the ratio of total debt to total assets; **Cash** is the ratio of total cash holdings to total assets.

Weighted overall figures	Expected effect	Initiation of cash dividend		Change in dividend yield
		Population averaged	Fixed effects	Fixed effects
		(1)	(2)	(3)
Company Herfindahl index (centred)	+	-0.499	0.819	0.077
		(-0.86)	(0.53)	(0.29)
Company inverse churn rate (centred)	+	-2.998**	-0.801	0.714*
		(-2.05)	(-0.27)	(1.75)
Interaction	+	-3.718	-17.765	-2.807
		(-0.85)	(-0.87)	(-1.54)
Lagged index level	-			-0.751***
				(-30.76)
Size	- / +	-0.085	-0.760	0.154**
		(-1.60)	(-1.46)	(2.26)
Tobin's *q*	+	0.069	0.009	0.021
		(1.08)	(0.06)	(0.97)
Relative return	+	0.368**	0.263	0.033
		(2.11)	(1.33)	(0.96)
Two-year average sales growth	+	-0.269	0.874	0.084
		(-0.67)	(1.15)	(0.91)
Leverage	-	-0.607	-3.266**	-0.479***
		(-1.15)	(-2.41)	(-2.68)
Cash	+	0.667	2.885**	0.043
		(1.37)	(1.99)	(0.24)
Industry fixed effects		Yes	-	-
Legislative region fixed effects		Yes	-	-
Year fixed effects		Yes	Yes	Yes
Observations		8,570	977	8,428
Number of companies		1,475	166	1,475
R-squared		-	-	0.486
Pseudo R-squared		-	0.1130	-
Wald Chi2		116.8	-	-
df		24	-	-

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

6.4.2 Activist hedge fund entries

In line with the extant literature on hedge fund activism, an alternative research design to ours would be to study whether the entries of known activist hedge funds are associated with corporate improvements in the following year. As argued in Section 4.4.2.4, however, known activist hedge funds are a heterogeneous group in terms of investment horizon and portfolio concentration, which we anticipate would lead to weak or non-existent results. To examine this, we run the regressions applied in Section 5 with the entry of a known activist hedge fund as the key explanatory variable. Results are shown in Table 31, Table 32 and Table 33 for governance, organisational and payout changes, respectively.

As the result tables show, *Activist hedge fund entries* are not significantly associated with any of the corporate improvements. The findings are in line with our earlier observation that known activist hedge funds are, in fact, very different from each other in terms of the characteristics that drive propensity to activism. As pointed out in our practitioner interviews, many of the hedge funds that have been labelled as activists are passive frequent traders in most of their holdings, but may turn active in a very small portion of target companies.

The U.S. legislation provides a convenient way to identify activist campaigns through the 13D filing that any investor must file in the event of cumulating a 5% ownership stake with the intention of being active. Researchers have used the 13D filings data to produce a number of recognized papers on abnormal returns around the filing date, target selection criteria and changes occurring in the companies after the filings (see e.g. Brav *et al.* 2008; Clifford 2008; Klein and Zur 2009).

Our research design, however, is by nature different from the 13D –based event-type studies. Most importantly, we are able to detect and identify investors that are generally active, instead of focusing solely on the nature or consequences of a set of pre-determined activist events. For example, our *Focused* investors, who we show to be generally active, include well known "pure-play" activist hedge funds[69] such as Centaurus Capital (maximum number of quarterly holdings: 14), Cerberus Capital Management (22), Cevian Capital (4), Governance for Owners (7), Icahn

[69] The term "pure play activist" is adapted from the news article "Activists buoyed by shareholder chorus", Financial News, 29.03.2010, available online on 12.06.2010: http://www.efinancialnews.com/story/2010-03-29/activists-buoyed-by-shareholder-chorus.

Associates (33), K Capital Management (7), Oaktree Capital Management (22), Pardus Capital Management (7), Parvus Asset Management (9), Relational Investors (23) and The Children's Investment Fund (13). Activist hedge funds that are not likely to be active in all their targets, such as Atticus Capital (125), Perry Capital (155), Soros Fund Management (609) and JANA Partners (94) fall into our group *Traders*. Our results are therefore of a more general nature; we show which types of investors are normally willing and able to engage in activism. It appears that the activist hedge funds labelled in earlier studies, in general, are not.

Table 31 – Governance changes with the entries by known activist hedge funds

The table shows regression results for the changes in the **Overall index**, including 14 governance variables, and the **Board index**, including 6 board-related governance variables. **Change** refers to a change in the index figure; **Simple change** takes the value of 1, if an improvement happens, 0 if no change occurs and -1 if there is deterioration in the governance level. The main explanatory variable is the **Entry of activist hedge fund**. Controls are as follows: **Lagged index level** is the one-year lagged corresponding governance index level; **Size** is the natural logarithm of a firm's net sales; **Tobin's *q*** is calculated as the ratio of the market value of total capital to the book value of total assets; **Relative return** is the yearly buy-and-hold return for a firm less the yearly buy-and-hold return for the firm's domestic main stock index; **Two-year average sales growth** is the compound annual growth rate over a lagging two year period.

	Expected effect	Overall index			Board index		
		Change	Change	Simple Change	Change	Change	Simple Change
		Fixed effects	Ordered logit	Ordered logit	Fixed effects	Ordered logit	Ordered logit
		(1)	(2)	(3)	(4)	(5)	(6)
Entry of activist hedge fund	+	-0.000	0.009	0.013	0.001	0.097	0.083
		(-0.09)	(0.15)	(0.23)	(0.29)	(1.40)	(1.21)
Lagged index level	-	-0.721***	-4.068***	-3.856***	-0.790***	-6.218***	-5.646***
		(-39.00)	(-19.96)	(-19.26)	(-40.19)	(-22.51)	(-22.36)
Size	+	0.008	0.057***	0.057***	0.019*	0.036	0.034
		(1.11)	(3.22)	(3.29)	(1.70)	(1.62)	(1.55)
Tobin's *q*	-	0.000	-0.042	-0.041	-0.001	-0.023	-0.027
		(0.10)	(-1.41)	(-1.39)	(-0.33)	(-0.59)	(-0.70)
Relative return	-	-0.000	-0.117	-0.085	0.000	-0.275**	-0.216*
		(-0.12)	(-1.17)	(-0.83)	(0.01)	(-2.30)	(-1.81)
Two-year average sales growth	-	0.003	0.236	0.220	-0.020	-0.119	-0.142
		(0.27)	(1.09)	(1.04)	(-1.15)	(-0.44)	(-0.53)
Industry fixed effects		-	Yes	Yes	-	Yes	Yes
Legislative region fixed effects		-	Yes	Yes	-	Yes	Yes
Year fixed effects		Yes	Yes	Yes	Yes	Yes	Yes
Observations		4,848	4,848	4,848	4,848	4,848	4,848
Number of companies		1,001	1,001	1,001	1,001	1,001	1,001
R-squared		0.367	-	-	0.428	-	-
Pseudo R-squared		-	0.0313	0.0360	-	0.0881	0.0917

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 32 – Organisational changes with the entries by known activist hedge funds

The table shows regression results for the organisational changes: **Occurrence of unrelated divestments, Initiation of unrelated divestments** and **Magnitude of unrelated divestments.** The main explanatory variable is the **Entry of activist hedge fund**. Controls are as follows: **Size** is the natural logarithm of a firm's net sales; **Tobin's *q*** is calculated as the ratio of the market value of total capital to the book value of total assets; **Relative return** is the yearly buy-and-hold return for a firm less the yearly buy-and-hold return for the firm's domestic main stock index; **Two-year average sales growth** is the compound annual growth rate over a lagging two year period; **Leverage** is the ratio of total debt to total assets.

	Expected effect	Occurrence of unrelated divestments		Initiation of unrelated divestments		Magnitude of unrelated divestments
		Population averaged	Fixed effects	Population averaged	Fixed effects	Fixed effects
		(1)	(2)	(3)	(4)	(5)
Entry of activist hedge fund	+	0.074	0.132	-0.049	0.035	-0.000
		(0.70)	(0.95)	(-0.39)	(0.24)	(-0.04)
Size	+	0.423***	0.445	0.338***	0.272	0.003**
		(10.80)	(1.48)	(9.49)	(0.87)	(2.03)
Tobin's *q*	-	-0.220***	-0.135	-0.191**	-0.099	0.002*
		(-2.86)	(-0.92)	(-2.57)	(-0.64)	(1.73)
Relative return	-	-0.470***	-0.406**	-0.621***	-0.465**	-0.003***
		(-2.68)	(-2.13)	(-2.96)	(-2.32)	(-3.07)
Two-year average sales growth	-	-0.133	0.448	-0.389	0.209	0.002
		(-0.33)	(0.93)	(-0.99)	(0.41)	(0.88)
Leverage	+	1.030***	1.919**	0.771**	1.514*	0.009*
		(2.95)	(2.31)	(2.21)	(1.75)	(1.92)
Industry fixed effects		Yes	-	Yes	-	-
Legislative region fixed effects		Yes	-	Yes	-	-
Year fixed effects		Yes	Yes	Yes	Yes	Yes
Observations		9,471	2,083	9,471	2,026	9,471
Number of companies		1,656	357	1,656	347	1,656
R-squared		-	-	-	-	0.005
Pseudo R-squared		-	0.0312	-	0.0198	-
Wald Chi2		187.9	-	152.8	-	-
df		21	-	21	-	-

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 33 – Dividend payout changes with the entries by known activist hedge funds

The table shows regression results for the payout changes: **Initiation of cash dividends** and **Change in dividend yield**. The main explanatory variable is the **Entry of activist hedge fund**. Controls are as follows: **Size** is the natural logarithm of a firm's net sales; **Tobin's *q*** is calculated as the ratio of the market value of total capital to the book value of total assets; **Relative return** is the yearly buy-and-hold return for a firm less the yearly buy-and-hold return for the firm's domestic main stock index; **Two-year average sales growth** is the compound annual growth rate over a lagging two year period; **Leverage** is the ratio of total debt to total assets; **Cash** is the ratio of total cash holdings to total assets.

	Expected effect	Initiation of cash dividend		Change in dividend yield
		Population averaged	Fixed effects	Fixed effects
		(1)	(2)	(3)
Entry of activist hedge fund	+	0.262	0.011	-0.032
		(1.49)	(0.05)	(-1.13)
Lagged index level	-			-0.750***
				(-30.84)
Size	- / +	-0.103**	-0.781	0.161**
		(-1.99)	(-1.52)	(2.37)
Tobin's *q*	+	0.053	0.005	0.018
		(0.81)	(0.03)	(0.82)
Relative return	+	0.411**	0.267	0.031
		(2.42)	(1.35)	(0.88)
Two-year average sales growth	+	-0.252	0.871	0.070
		(-0.63)	(1.14)	(0.76)
Leverage	-	-0.553	-3.248**	-0.472***
		(-1.06)	(-2.42)	(-2.64)
Cash	+	0.663	2.793*	0.038
		(-5.46)	(1.93)	0.038
Industry fixed effects		Yes	-	-
Legislative region fixed effects		Yes	-	-
Year fixed effects		Yes	Yes	Yes
Observations		8,570	977	8,428
Number of companies		1,475	166	1,475
R-squared		-	-	0.485
Pseudo R-squared		-	0.1110	-
Wald Chi2		104.1	-	-
df		22	-	-

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

7 Discussion and conclusions

In this chapter we discuss our results individually for each area of corporate improvement and relate our findings to extant literature. We then conclude our findings and contribution. Finally, we lay out avenues for future research on shareholder activism.

7.1 Discussion on key results

In this section, we discuss our key results presented in Section 5 and tested in Section 6. We focus separately on our three areas of corporate improvements.

7.1.1 Corporate governance improvements

Our results for overall corporate governance and board arrangements provide partial support for Hypothesis 1. Importantly, entries by investors with high portfolio concentration and long horizon are associated with corporate governance improvements in the following year. Surprisingly, however, our findings suggest that investors with *highest* concentration and *longest* horizon are consistently not associated with following-year improvements. As expected, entries by other investor groups do not show consistent positive association with governance improvements. Further, our results cautiously suggest that no individual legal type is capable of capturing the group of governance activists that we identify.

Our key finding that entries by high concentration and long horizon investors (*Focused* and *HighHHI-HighICR* investor groups) are generally associated with ensuing overall governance and board improvements is fundamentally in line with Jensen (1993) who suggests that there are indeed active investors who play an important role in ensuring "well-functioning governance" in a world where internal controls often fail. While Jensen, however, implies that banks, pension funds, insurers or money managers are natural activists, our results suggest that instead of any specific externally labelled type, it is the investor's concentrated portfolio, comprising large stakes and a small number of investments and long investment horizon that make her active. This central finding is in line with Barclay and Holderness (1991b) and Shleifer and Vishny (1986), who suggest that large shareholders may have incentives to undertake value-creative improvements in corporate policy since they are partly exempt from the free-rider problem (Grossman and Hart 1980): *Focused* and *HighHHI-HighICR* investors are indeed large owners, holding on average 6.9% and 6.2% of target equity, respectively. Further, the result is consistent

with our practitioner interviews suggesting that activism requires a sufficiently small number of investments to allow for target-specific efforts: *Focused* and *HighHHI-HighICR* investors held, on average, only 13 and 16 targets, respectively. Moreover, our finding is also consistent with Becht *et al.* (2008) who state that activist campaigns require substantial firm-specific efforts and Black (1998) who suggests that standardised activism has limited reach. Further, our finding that *Focused* and *HighHHI-HighICR* investors actively improve governance obviously implies that activists are largely not regulated in terms of maximum stake or diversification. We thus provide indirect support for Brav *et al.* (2008) and Kahan and Rock (2007) who suggest that high performance-based incentives, uncommon at regulated investors such as pension funds while typical of unregulated investor organisations such as hedge funds, are an important precondition for activism. Further, we provide indirect support for Bethel *et al.* (1998) and Brav *et al.* (2008) who imply that ability to freely amass large individual stakes to pressure a target is important in facilitating improvements. Finally, our key finding in determining governance activists supports the suggestion by Clifford (2008) that sufficiently long investment horizon, studied through investor-lock-up in his hedge fund context, is an important prerequisite for activism: *Focused* and *HighHHI-HighICR* investors have an average Churn rate of only 0.14 and 0.16 and on average hold as much as 93% and 82% of their holdings for more than 1.5 years, respectively.

Although high concentration and long horizon investors are associated with governance improvements, we find that investors with *highest* concentration and *longest* horizon (groups *Devoted* and *TopHHI-TopICR*) are not. The result is contrary to Hypothesis 1 and consistent over fixed effects and ordered specifications for both factoring and simple divisions. Closer examination reveals that *Devoted* and *TopHHI-TopICR* investors differ from other investors in two important characteristics. First, as shown in Table 10, individuals form the vast majority of investors in both groups (67% of *Devoted* and 70% of *TopHHI-TopICR*). Second, their average stake sizes are larger (7.5% for *Devoted* and 6.5% for *TopHHI-TopICR*) than for other investors. Thus, we cautiously interpret our results in line with Barclay and Holderness (1989) and Rock (1994) and suggest that investors with highest concentration and longest horizon may not be incentivised to improve governance in their target firms, since they are in a position to extract private benefits in status quo. Barclay and Holderness (1989) find in the U.S. that during 1978-1982, block trades involving more than 5% of common stock were traded at a substantial premium to post-announcement exchange prices and suggest that their findings signal the

presence of private benefits of control to investors holding large blocks in publicly quoted firms. Importantly, they suggest that the evident block premiums imply the presence of private benefits to holders of large blocks, not shared benefits of control available to all shareholders. Also, later studies find evidence on the presence of premiums in large block trades, as shown by Mikkelson and Regassa (1991) for U.S. and Nicodano and Sembenelli (2004) for Italy. Consistent with this, we suggest that *Devoted* and *TopHHI-TopICR* investors may infer pecuniary benefits, such as excess salary for executive blockholders (see e.g. Jensen and Meckling 1976), or non-pecuniary benefits, such as preferential access to sports events or country clubs, "psychic" rewards from the controlling ownership of, for instance, a sports team or a newspaper (see e.g. Holderness 2003; Dyck and Zingales 2004) or the benefit of diversification of personal wealth (see e.g. Amihud and Lev 1981). These private benefits available only to the large blockholder may outweigh the benefits from any increase in the firm value achievable through governance improvements. Moreover, while the overall governance or board improvements we measure would enhance the position of shareholders collectively, extraction of private benefits may be dependent on poor governance arrangements allowing a single shareholder to exercise control through representation in the management or board (see e.g. Holderness and Sheehan 1988, who find that large blockholders almost always have their representatives serve in target board or management). Consequently, investors with highest concentration and longest horizon may not have incentives to improve overall governance or board arrangements.

Also, in line with our expectations, all investors with either low concentration or short horizon do not show consistent association with governance improvements observed the year following their entry. We note that the vast majority of diversified institutional investors, including pension funds, insurance companies, mutual funds and investment advisers, reside amongst these investors, depicted by *Diversified* and *Traders* for factoring division and *LowHHI-HighICR, HighHHI-LowICR* and *LowHHI-LowICR* for simple division. Consequently, our results are consistent with Black (1998), who finds that U.S. institutional activism yields little governance improvements in target firms and do not improve target performance discernibly. Our finding, however, contradicts Smith (1996), who finds that CalPERS[70] is relatively effective is pushing

[70] The California Public Employees' Retirement System, one of the largest U.S. public pension funds.

through governance changes[71], Wahal (1996), who suggests that U.S. public pension funds are reasonably successful in driving corporate governance changes[72], and Del Quercio and Hawkins (1999), who imply that U.S. institutions institutional activists are at least somewhat successful in promoting changes in target firms.

Importantly, our results also cast a shadow on the assumption that hedge funds would be natural activists simply due to their freedom from regulation and high performance incentives. Specifically, as shown in Table 12, the vast majority of hedge funds are clustered in factoring division to *Traders* (72% of all hedge funds) and in simple division to *LowHHI-HighICR* and *LowHHI-LowICR* investors (61% of all hedge funds), none of which are consistently associated with governance improvements. In other words, most hedge funds seem to have a relatively short investment horizon or a relatively diversified portfolio. We thus suggest that hedge funds, similarly with all other investors, are not associated with governance improvements following their entry, unless they possess a concentrated portfolio and a long investment horizon. Our suggestion is supported by Clifford (2008), who shows that propensity to hedge fund activism increases in investor lock-up, which he uses as a proxy for investment horizon. We further suggest that even defining activists as 13D-filers or otherwise "known" activist hedge funds might be misleading since most hedge funds seem to be active only in a small portion of their investments while retaining passive short-term investing as their primary strategy. We test and discuss the effect of entries by known activist hedge funds on corporate characteristics separately in Section 6.4.

Overall, our findings on investor effects on governance improvements imply that concentrated long-term investors are associated with governance improvements. Interestingly and contrary to our hypothesis, however, we find that very concentrated and very long-term investors are not associated with governance improvements, and suggest a private benefit explanation for the finding. Perhaps most importantly, our results suggest that the investors associated with governance improvements cannot be identified through any individual externally labelled group, including hedge funds.

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[71] Smith (1996) shows that in 1987–1993, 50% of the proxy proposals filed by CalPERS to increase the number of independent directors were partly or wholly adopted by target firms.

[72] For U.S. pension funds in 1987-1993, Wahal (1996) shows that 56% of all proposals were corporate governance related and that 71 out of 199 proposals were subsequently adopted.

7.1.2 Organisational improvements

Our results for the effect of investor entries on unrelated divestments are largely supportive of Hypothesis 2, which implies that investors with high portfolio concentration and long investment horizon facilitate organisational improvements in target firms. Importantly, results for the investor effects on the occurrence and initiation of dividends are consistent with one another and imply that a specific group of investors with high concentration and long horizon, residing in the cross-section of *Devoted* and *HighHHI-HighICR*, are strongly associated with the occurrence and initiation of unrelated divestments. Other investors do not exhibit consistent association to either outcome variable. The results for investor effects on changes in the magnitude of unrelated divestments are mixed and provide only weak and partial support for Hypothesis 2. Further, our results persistently support the suggestion that investor with very high concentration and very long horizon do not facilitate improvements in target firms.

Our key finding that entries by high concentration and long horizon investors residing in the cross-section of our investor groups are significantly positively associated with unrelated divestments is fundamentally in line with Bethel *et al.* (1998) who show that block share purchases by activist investors are followed by increases in asset divestitures. The investors we find to have a strong association to unrelated divestments certainly hold large stakes: the average holdings for *Devoted* and *HighHHI-HighICR* investors are 7.5% and 6.2%, respectively. Thus, our findings are also in line with the general proposition of Shleifer and Vishny (1986) that large shareholders may have incentives to undertake value-creative improvements since their large stakes render them partly free of the free-rider problem.

Overall, we cautiously suggest that our results imply that high concentration and long horizon investors are able to repair organisational damage caused by prevailing agency costs and misaligned managerial actions. As Jensen (1986) Shleifer and Vishny (1989) and Morck, Shleifer and Vishny (1990) suggest, firms where agency problems prevail tend to exhibit management-driven growth and diversification beyond the optimum. Such excess diversification or growth leads to value losses (see e.g. Lang and Stulz 1994; Berger and Ofek 1995; Denis, Denis and Sarin 1997a), which are reversed when firms reduce diversification through spinoffs or unrelated divestments (see Ahn and Denis 2004). Largely in line with Bethel *et al.* (1998), we suggest that investors with a high portfolio concentration and a long investment horizon may facilitate such

unrelated divestments to reduce value losses to shareholders. Our findings are also supported by Haynes, Thompson and Wright (2003) who show with U.K. data that divestment activity is reduced when governance is enhanced, which we find is also brought about by high concentration and long horizon investors, as discussed regarding results for corporate governance improvements in Section 5.2.

Further, our results for investors improving target organisation by reducing diversification are also largely in line with extant studies exploring the objectives of activist hedge funds in their target firms. Perhaps most importantly, Becht *et al.* (2008) find that the U.K. activist Hermes UK Focus Funds (HUKFF) sought to refocus its target firms by selling noncore divisions in a large portion of their engagements and enjoyed a success rate of above 50%[73]. Also, Brav *et al.* (2008) mention that blocking diversification is generally considered an important reason for activism.

In addition to our key finding that a specific group of high concentration and long horizon investors are associated with organisational improvements in targets, we notice that the behaviour of very concentrated and very long horizon investors is in line with the preceding results for governance improvements. Specifically, while we find that the positive association between the occurrence and initiation of unrelated divestments and *Devoted* investors seems to be driven by investors also included in *HighHHI-HighICR*, we anticipate that the *Devoted* investors with highest concentration and longest horizon do not exhibit significant positive association with unrelated divestments. This suggestion is supported by the consistent insignificance of *TopHHI-TopICR* investors, 76% of which are also included in *Devoted*. In line with our discussion on governance improvements, we cautiously suspect that private benefits of control (see e.g. Barclay and Holderness 1989; Holderness 2003; Dyck and Zingales 2004) are to blame. Regarding the potential private benefits from diversification, we suspect that the fundamental proposition by Jensen and Meckling (1976) that owner-managers who have all their wealth invested in a single firm tend to diversify is relevant in our setting. We cautiously suggest that blockholders with very large stakes, as with the most of investors in *Devoted* and *TopHHI-TopICR*, may consider firm diversification preferable since it lowers their personal risk. Consequently, such investors may not strive to promote unrelated divestments, regardless of their potentially positive effect on firm

[73] Becht *et al.* (2008) show that out of 28 attempts by HUKFF, in 15.5 an outcome was achieved (for partially achieved outcomes, the authors allot 0.5).

value (see Ahn and Denis 2004). In their seminal paper on managerial tendency to diversify, Amihud and Lev (1981) mention that large outside blockholders may also find firm diversification preferable, but state that managerial incentive to do so is more powerful (for discussion on managerial tendency to diversify, see also May 1995 and Aggarwal and Samwick 2003)

Overall, our results imply that investors with high concentration and long horizon facilitate organisational improvements by overturning agency-inflicted value-destroying diversification.

7.1.3 Payout improvements

Overall, our results for changes in payout are weak and show little support for Hypothesis 3. Contrary to our findings for governance and organisational improvements, where clear results are observed, the results imply that either (1) our approach of grouping investors based on portfolio concentration and investment horizon does not capture investor characteristics relevant to payout activism or (2) payout is simply not on activist agendas. While we cannot exclude the first alternative as a reason for our weak results, we discuss the second alternative below and reflect it against our findings for both the initiations of dividends and the changes in dividend yield.

While the literature generally suggests that payout is elemental in curbing agency costs of free cash flow (Jensen 1986), some also suggest that ordinary payout has shortfalls in fulfilling that task. Perhaps most importantly, Jensen himself subtly indicates that the announcement of an increase in dividends still leaves managers in control over the use of *future* free cash flows. In other words, the promise to payout excess cash flows through dividends (or any other form of ordinary payout) is weak because dividends can be relatively easily reversed in the future. Further, in his study on U.S. hedge fund activism, Clifford (2008) finds only weak evidence of activist blockholders increasing the dividend yield of their targets in the year following the 13D filing. He further notes that hedge fund activists actually target companies with lower levels of cash relative to peers, which makes it unlikely that the funds' objective would be to increase payout.

In contrast with the above suggestions, Klein and Zur (2009) find that hedge funds activists frequently demand an initiation of dividends, but other entrepreneurial activists do not. Similarly,

firms targeted by hedge fund activists experience significant increases in dividends per share, whereas firms targeted by other entrepreneurial activists[74] do not.

Regarding our results on investor effects on changes in dividend yield, suggestions by Jensen (1986) and Clifford (2008) imply that increasing dividends may not be high on activist agendas. Findings of Klein and Zur (2009), however, provide support for the other option, namely that our investor characterisation may not be well-suited to capture propensity to payout activism. Specifically, they find that while hedge funds consistently increase dividends, other activists, who in our data are relatively concentrated and long-term, do not. Our findings support the views of some of our practitioner interviewees who do not regard increasing cash dividends as an important objective for long-term activists. Instead they consider dividend demands typical of speculative publicity seeking campaigns often launched by short-term investors such as hedge funds.

Regarding our results on the *Initiation of cash dividends* that suggest the *Diversified* investors to be positively related to dividend initiation, we propose three alternative explanations.

First, *Diversified* investors may invest in companies where they anticipate an initiation of cash dividends to occur. We test this selection hypothesis with reverse regressions in Section 6.1 discussing the potential endogeneity issues related to all our outcome variables. The reverse regressions do not support a direct selection explanation for the positive association between *Diversified* investors and dividend initiations. We note, however, that for *LowHHI-HighICR* investors, who have a 90% overlap with *Diversified* investors (see Table 10), the reverse regressions support the suggestion that the investors select into firms that initiate dividend payments in the following year.

Second, the results may support the view that *Diversified* investors successfully engage in standardised activism to initiate dividends. As described by Smith (1996) and Black (1992b) for U.S. institutional fund activism, standardised activism seeks to influence firm decision making through letter-sending or proxy-proposals. Since requests for payout increases do not necessarily require significant firm-specific efforts, diversified investors, who seek economies of scale

[74] Klein and Zur (2009) include individuals, private equity funds, venture capital firms and asset managers in their group of other entrepreneurial activists.

(Black 1998) in managing activist campaigns, may be willing and able to pursue payout increases.

Thirdly, and in our view perhaps most probably, the decision to pay dividends is driven by investor demand for dividends, i.e. the catering explanation (Baker and Wurgler 2004). Evidence of the institutional preference for dividends has been also presented by Grinstein and Michaely (2005). Interestingly, they show that institutions prefer dividend-paying firms to non-paying but do not show any preference for firms that pay high dividends, which might explain why no relationship between *Diversified* investors and the *Change in dividend yield* is observed. Similarly, in a survey of 384 financial executives and 23 in-depth interviews, Brav *et al.* (2005) find that managers of non-payers initiate dividend payments for two dominant reasons: a sustainable increase in earnings and the demand by institutional investors.

Overall, we recognise that the evidence provides no support for our Hypothesis 3 regarding investor effects on initiation of cash dividends. We cautiously suggest, however, that our results for initiation of cash dividends may be a result of the fact that dividend initiation is not on activist agendas. While we find some support for a potential selection explanation, the literature seems to agree on the presence of catering where firms choose to pay dividends when they anticipate investors to prefer them.

7.2 Conclusions

We deploy a novel approach to identify activist shareholders and find that investors with concentrated portfolios and long investment horizons improve their target companies. We depart from the extant activist literature and produce two alternative investor groupings based on portfolio concentration and investment horizon to predict investor propensity to activism. We examine corporate improvements occurring in a sample of large publicly traded corporations in U.S. and 17 European markets and focus on (1) corporate governance, (2) organisational and (3) payout improvements.

Our results for investor effects on corporate governance and organisational improvements show that investors with few large equity stakes and long holding periods are consistently associated with improvements in their target firms. Specifically, concentrated long-term investors relate to better overall governance and board arrangements as well as corporate diversification reductions.

We find no evidence of a selection explanation for our results and therefore cautiously suggest that concentrated long-term investors improve their target companies. Equally importantly, we discover that investors with very high portfolio concentration and very long investment horizon exhibit no association to governance or organisational improvements. We propose a private benefit explanation and suggest that investors with very large and concentrated equity stakes do not pursue corporate improvements, but rather exploit their position to extract benefits potentially not available to other shareholders.

Our findings contribute to the present-day perception of who activist investors are and how they improve the companies they invest in. We show that no externally labelled investor group, including activist hedge funds, adequately defines the investors that are actively improving governance or organisation in the companies they hold. Furthermore, we test the association between general ownership structure and corporate improvements and find insignificant results. We thus provide additional support for our anticipation that investor activism relies primarily on individual investors with distinct characteristics rather than the overall ownership structure.

Our results for investor effects on increasing or initiating dividends are mixed. Specifically, we find no evidence for concentrated long-term investors as dividend activists. We explore potential explanations for our weak results and cautiously suggest that increasing cash dividends may not be high on activists' agenda.

We recognise that alternative explanations, specifically survivorship bias and endogeneity may influence our results. Our concern regarding survivorship bias arises from the exclusion of ceased-to-exist firms in our sample. While we find no specific reason to assume the problem is severe, we cannot exclude it. The endogeneity concern arises from the possibility that concentrated long-term investors select into companies in which they anticipate improvements will occur. While our efforts to counter this concern do not provide evidence supporting the selection explanation, we recognise that it may influence our results materially.

7.3 Avenues for future research

While we consider our findings an encouraging opening in determining the nature and role of activist investors, we acknowledge that our results could be further improved in many respects. In particular, we see improvement potential in three individual areas.

First, we anticipate that a research design adapted to explicitly account for investors' performance incentives could further clarify our findings. Numerous studies have suggested that tying fund manager compensation to fund performance facilitates investors' active monitoring of target companies (see e.g. Brav *et al.* 2008; Clifford 2008; Kahan and Rock 2007; Klein and Zur 2009; Woidtke 2002). Accounting for the performance incentives is, however, problematic. Importantly, it is often difficult to determine whose incentives should be monitored in an investor organization. Further, incentives are not easily quantifiable for all investors and it may be difficult to compare incentives between different investors. For example, comparing the easily quantifiable performance fee of a hedge fund manager to the incentives of a private individual or a government investment vehicle is not straight forward. Finally, the availability of incentive and compensation data is limited; data for fund manager compensation or investor fee structures are rarely disclosed publicly.

Second, further efforts to find new ways to account for the endogeneity in the activism context could be value-adding. A number of papers study the role of shareholders and ownership structures in firm performance and corporate policies but we have not found a fully satisfying way to separate investor effects from selection. Primarily, future research should attempt to find instrumental variables for activist investors in the context of our research design. Analogous examples of instrumental variables for ownership include the *density of wealthy individuals near a firm's headquarters* used by Becker, Cronqvist and Fahlenbrach (2009) for blockholder ownership and *Morgan Stanley Capital International World index membership* used by Aggarwal *et al.* (2010) for institutional ownership.

Third, we recognise that studying the interplay between individual investors could extend and strengthen our results significantly. Determining whether activists' success in facilitating corporate improvements is conditional on the presence of other investors, such as large diversified institutions, could provide valuable insights for both the investing entities and target companies.

8 References

Ackermann, C., McEnally, R., Ravenscraft, D., 1999. The Performance of Hedge Funds: Risk, Return, and Incentives. The Journal of Finance 54, 833-874

Aggarwal, R., Erel, I., Ferreira, M.A., Matos, P., 2010. Does Governance Travel Around the World? Evidence from Institutional Investors. SSRN eLibrary - Revised

Aggarwal, R.K., Samwick, A.A., 2003. Why Do Managers Diversify Their Firms? Agency Reconsidered. The Journal of Finance 58, 71-118

Agrawal, A., Gershon, N.M., 1990. Large Shareholders and the Monitoring of Managers: The Case of Antitakeover Charter Amendments. The Journal of Financial and Quantitative Analysis 25, 143-161

Ahn, S., Denis, D.J., 2004. Internal capital markets and investment policy: evidence from corporate spinoffs. Journal of Financial Economics 71, 489-516

Aiken, L.S., West, S.G., 1991. Multiple Regression: Testing and Interpreting Interactions. Sage Publications, Thousand Oaks, CA.

Alchian, A.A., Demsetz, H., 1972. Production, Information Costs, and Economic Organization. The American Economic Review 62, 777-795

Almazan, A., Hartzell, J.C., Starks, L.T., 2005. Active Institutional Shareholders and Costs of Monitoring: Evidence from Executive Compensation. Financial Management 34, 5-34

Amihud, Y., Lev, B., 1981. Risk Reduction as a Managerial Motive for Conglomerate Mergers. The Bell Journal of Economics 12, 605-617

Aragon, G.O., 2007. Share restrictions and asset pricing: Evidence from the hedge fund industry. Journal of Financial Economics 83, 33-58

Ashraf, R., Jayaraman, N., 2007. Determinants and Consequences of Proxy Voting By Mutual Funds on Shareholder Proposals. SSRN eLibrary

Babakus, E., Ferguson, C.E., Jöreskog, K.G., 1987. The Sensitivity of Confirmatory Maximum Likelihood Factor Analysis to Violations of Measurement Scale and Distributional Assumptions. Journal of Marketing Research 24, 222-228

Baker, G.P., Jensen, M.C., Murphy, K.J., 1988. Compensation and Incentives: Practice vs. Theory. The Journal of Finance 43, 593-616

Baker, M., Wurgler, J., 2004. A Catering Theory of Dividends. The Journal of Finance 59, 1125-1165

Baliga, B.R., Moyer, R.C., Rao, R.S., 1996. CEO Duality and Firm Performance: What's the Fuss? Strategic Management Journal 17, 41-53

Barclay, M.J., Holderness, C.G., 1989. Private benefits from control of public corporations. Journal of Financial Economics 25, 371-395

Barclay, M.J., Holderness, C.G., 1991a. CONTROL OF CORPORATIONS BY ACTIVE BLOCK INVESTORS. Journal of Applied Corporate Finance 4, 68-77

Barclay, M.J., Holderness, C.G., 1991b. Negotiated Block Trades and Corporate Control. The Journal of Finance 46, 861-878

Bates, T.W., 2005. Asset Sales, Investment Opportunities, and the Use of Proceeds. The Journal of Finance 60, 105-135

Baum, C.F., 2006. An Introduction to Modern Econometrics Using Stata. Stata Press, Texas.

Bebchuk, L., Cohen, A., Ferrell, A., 2008. What Matters in Corporate Governance? Rev. Financ. Stud. 22, 783-827

Bebchuk, L., Fried, J., Walker, D., 2002. Managerial Power and Rent Extraction in the Design of Executive Compensation. Harvard Law School - Discussion Paper 306

Bebchuk, L.A., Coates, J.C., Subramanian, G., 2002. The Powerful Antitakeover Force of Staggered Boards: Theory, Evidence, and Policy. Stanford Law Review, Vol. 54, pp. 887-951

Bebchuk, L.A., Cohen, A., 2005. The costs of entrenched boards. Journal of Financial Economics 78, 409-433

Bebchuk, L.A.F., Jesse M., 2003. Executive Compensation as an Agency Problem. Journa of Economic Perspectives 17, 71-92

Becht, M., Franks, J., Mayer, C., Rossi, S., 2008. Returns to Shareholder Activism: Evidence from a Clinical Study of the Hermes UK Focus Fund. Rev. Financ. Stud., hhn054

Becker, B., Cronqvist, H., Fahlenbrach, R., 2009. Estimating the Effects of Large Shareholders Using a Geographic Instrument. SSRN eLibrary

Benartzi, S., Michaely, R., Thaler, R., 1997. Do Changes in Dividends Signal the Future or the Past? The Journal of Finance 52, 1007-1034

Berger, P.G., Ofek, E., 1995. Diversification's effect on firm value. Journal of Financial Economics 37, 39-65

Berger, P.G., Ofek, E., Yermack, D.L., 1997. Managerial Entrenchment and Capital Structure Decisions. The Journal of Finance 52, 1411-1438

Berle, A., Means, G., 1932. The Modern Corporation and Private Property. Macmillan, New York.

Bertrand, M., Mullainathan, S., 2001. Are CEOS Rewarded for Luck? The Ones without Principals Are*. Quarterly Journal of Economics 116, 901-932

Bethel, J.E., Liebeskind, J.P., Opler, T., 1998. Block Share Purchases and Corporate Performance. The Journal of Finance 53, 605-634

Bhagat, S., Black, B., Blair, M., 2004. Relational Investing And Firm Performance. The Journal of Financial Research 27, 1-30

Black, B.S., 1992a. Agents Watching Agents: The Promise of Institutional Investor Voice. UCLA Law Review, Vol. 39, pp. 811-893

Black, B.S., 1992b. The Value of Institutional Investor Monitoring: The Empirical Evidence. UCLA Law Review, Vol. 39, pp. 895-939

Black, B.S., 1998. Shareholder Activism and Corporate Governance in the United States. SSRN eLibrary

Blanchard, O.J., Lopez-de-Silanes, F., Shleifer, A., 1994. What do firms do with cash windfalls? Journal of Financial Economics 36, 337-360

Blumberg, B., Cooper, D.R., Schindler, P.S., 2005. Business Research Methods. McGraw-Hill, Maidenhead.

Boone, A.L., Casares Field, L., Karpoff, J.M., Raheja, C.G., 2007. The determinants of corporate board size and composition: An empirical analysis. Journal of Financial Economics 85, 66-101

Borokhovich, K.A., Brunarski, K.R., Harman, Y., Kehr, J.B., 2005. Dividends, Corporate Monitors and Agency Costs. The Financial Review 40, 37-65

Bottazzi, L., Da Rin, M., Hellmann, T., 2008. Who are the active investors?: Evidence from venture capital. Journal of Financial Economics 89, 488-512

Boyson, N.M., Mooradian, R.M., 2007. Hedge Funds as Shareholder Activists from 1994-2005. SSRN eLibrary

Brav, A., Graham, J.R., Harvey, C.R., Michaely, R., 2005. Payout policy in the 21st century. Journal of Financial Economics 77, 483-527

Brav, A., Jiang, W., Partnoy, F., Thomas, R., 2008. Hedge fund activism, corporate governance, and firm performance. Journal of Finance 63, 1729-1775

Brickley, J.A., Lease, R.C., Smith Jr, C.W., 1988. Ownership structure and voting on antitakeover amendments. Journal of Financial Economics 20, 267-291

Brown, K.C., Brooke, B.A., 1993. Institutional Demand and Security Price Pressure: The Case of Corporate Spinoffs. Financial Analysts Journal 49, 53-62

Brown, L., Caylor, M., 2009. Corporate governance and firm operating performance. Review of Quantitative Finance and Accounting 32, 129-144

Brown, S.J., Goetzmann, W., Ibbotson, R.G., Ross, S.A., 1992. Survivorship Bias in Performance Studies. The Review of Financial Studies 5, 553-580

Brown, S.J., Goetzmann, W.N., Ibbotson, R.G., 1999. Offshore Hedge Funds: Survival and Performance, 1989-95. The Journal of Business 72, 91-117

Bushee, B., Carter, M.E., Gerakos, J., 2010. Institutional Investor Preferences for Corporate Governance Mechanisms. Working Paper, 50

Bushee, B.J., 1998. The Influence of Institutional Investors on Myopic R&D Investment Behavior. The Accounting Review 73, 305-333

Byrd, J.W., Hickman, K.A., 1992. Do outside directors monitor managers? : Evidence from tender offer bids. Journal of Financial Economics 32, 195-221

Cameron, A.C., Trivedi, P., 2009. Microeconometrics Using Stata. Stata Press, Lakeway Drive.

Carleton, W.T., Nelson, J.M., Weisbach, M.S., 1998. The Influence of Institutions on Corporate Governance through Private Negotiations: Evidence from TIAA-CREF. The Journal of Finance 53, 1335-1362

Chan, L.K.C., Lakonishok, J., 1993. Institutional trades and intraday stock price behavior. Journal of Financial Economics 33, 173-199

Chen, S.-S., Ho, K.W., 2000. Corporate diversification, ownership structure, and firm value: The Singapore evidence. International Review of Financial Analysis 9, 315-326

Chen, X., Harford, J., Li, K., 2007. Monitoring: Which institutions matter? Journal of Financial Economics 86, 279-305

Choi, D., 1991. Toehold Acquisitions, Shareholder Wealth, and the Market for Corporate Control. The Journal of Financial and Quantitative Analysis 26, 391-407

Chordia, T., 1996. The structure of mutual fund charges. Journal of Financial Economics 41, 3-39

Clifford, C.P., 2008. Value creation or destruction? Hedge funds as shareholder activists. Journal of Corporate Finance 14, 323-336

Coase, R.H., 1937. The Nature of the Firm. Economica 4, 386-405

Coffee, J.C., 1991. Liquidity Versus Control - the Institutional Investor as Corporate Monitor. Columbia Law Review 91, 1277-1368

Colak, G., Whited, T.M., 2007. Spin-offs, Divestitures, and Conglomerate Investment. Rev. Financ. Stud. 20, 557-595

Comment, R., Schwert, G.W., 1995. Poison or placebo? Evidence on the deterrence and wealth effects of modern antitakeover measures. Journal of Financial Economics 39, 3-43

Connelly, B.L., Tihanyi, L., Certo, S.T., Hitt, M.A., 2009. Marching to the Beat of Different Drummers: The Influence of Institutional Owners on Competitive Actions. Academy of Management Journal, 2009

Core, J.E., Holthausen, R.W., Larcker, D.F., 1999. Corporate governance, chief executive officer compensation, and firm performance. Journal of Financial Economics 51, 371-406

Cornett, M.M., Marcus, A.J., Saunders, A., Tehranian, H., 2007. The impact of institutional ownership on corporate performance. Journal of Banking & Finance 31, 1771-1794

Coughlan, A.T., Schmidt, R.M., 1985. Executive compensation, management turnover, and firm performance : An empirical investigation. Journal of Accounting and Economics 7, 43-66

Cremers, K.J.M., Nair, V.B., 2005. Governance Mechanisms and Equity Prices. The Journal of Finance 60, 2859-2894

Cronqvist, H., Fahlenbrach, R., 2008. Large Shareholders and Corporate Policies. Rev. Financ. Stud., hhn093

Dahya, J., McConnell, J.J., Travlos, N.G., 2002. The Cadbury Committee, Corporate Performance, and Top Management Turnover. The Journal of Finance 57, 461-483

David, P., Kochhar, R., Levitas, E., 1998. The Effect of Institutional Investors on the Level and Mix of CEO Compensation. The Academy of Management Journal 41, 200-208

DeAngelo, H., DeAngelo, L., Stulz, R.M., 2006. Dividend policy and the earned/contributed capital mix: a test of the life-cycle theory. Journal of Financial Economics 81, 227-254

Dechow, P.M., Sloan, R.G., 1991. Executive incentives and the horizon problem : An empirical investigation. Journal of Accounting and Economics 14, 51-89

Del Guercio, D., Hawkins, J., 1999. The Motivation and Impact of Pension Fund Activism. Journal of Financial Economics 52, 293-340

Deli, D.N., 2002. Mutual Fund Advisory Contracts: An Empirical Investigation. The Journal of Finance 57, 109-133

Demsetz, H., 1983. The Structure of Ownership and the Theory of the Firm. University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship

Denis, D.J., Denis, D.K., 1995. Performance Changes Following Top Management Dismissals. The Journal of Finance 50, 1029-1057

Denis, D.J., Denis, D.K., Sarin, A., 1997a. Agency Problems, Equity Ownership, and Corporate Diversification. The Journal of Finance 52, 135-160

Denis, D.J., Denis, D.K., Sarin, A., 1997b. Ownership structure and top executive turnover. Journal of Financial Economics 45, 193-221

Denis, D.J., Osobov, I., 2008. Why do firms pay dividends? International evidence on the determinants of dividend policy. Journal of Financial Economics 89, 62-82

Dougherty, C., 2007. Introduction to Econometrics. Oxford University Press, Oxford.

Dyck, A., Zingales, L., 2004. Private Benefits of Control: An International Comparison. The Journal of Finance 59, 537-600

Easterbrook, F.H., 1984. Two Agency-Cost Explanations of Dividends. The American Economic Review 74, 650-659

Elton, E.J., Gruber, M.J., Blake, C.R., 1996. Survivorship Bias and Mutual Fund Performance. The Review of Financial Studies 9, 1097-1120

Faleye, O., 2007. Classified boards, firm value, and managerial entrenchment. Journal of Financial Economics 83, 501-529

Fama, E.F., French, K.R., 2001. Disappearing dividends: changing firm characteristics or lower propensity to pay? Journal of Financial Economics 60, 3-43

Fama, E.F., Jensen, M.C., 1983. Separation of Ownership and Control. The Journal of Law and Economics 26, 301

Fenn, G.W., Liang, N., 2001. Corporate payout policy and managerial stock incentives. Journal of Financial Economics 60, 45-72

Ferreira, M.A., Massa, M., Matos, P., 2009. Shareholders at the Gate? Institutional Investors and Cross-Border Mergers and Acquisitions. Rev. Financ. Stud., hhp070

Ferreira, M.A., Matos, P., 2008. The colors of investors' money: The role of institutional investors around the world. Journal of Financial Economics 88, 499-533

Gaspar, J.-M., Massa, M., Matos, P., 2005. Shareholder investment horizons and the market for corporate control. Journal of Financial Economics 76, 135-165

Gertner, R., Powers, E., Scharfstein, D., 2002. Learning about Internal Capital Markets from Corporate Spin-offs. The Journal of Finance 57, 2479-2506

Gibbons, R., Murphy, K.J., 1992. Optimal Incentive Contracts in the Presence of Career Concerns: Theory and Evidence. The Journal of Political Economy 100, 468-505

Gillan, S.L., Starks, L.T., 2000. Corporate governance proposals and shareholder activism: the role of institutional investors. Journal of Financial Economics 57, 275-305

Gillan, S.L., Starks, L.T., 2007. The Evolution of Shareholder Activism in the United States. SSRN eLibrary

Golec, J.H., 1992. Empirical Tests of a Principal-Agent Model of the Investor-Investment Advisor Relationship. The Journal of Financial and Quantitative Analysis 27, 81-95

Gompers, P., Ishii, J., Metrick, A., 2003. Corporate Governance and Equity Prices*. Quarterly Journal of Economics 118, 107-155

Gompers, P.A., Metrick, A., 2001. Institutional Investors and Equity Prices*. Quarterly Journal of Economics 116, 229-259

Gordon, L.A., Pound, J., 1993. Information, Ownership Structure, and Shareholder Voting: Evidence from Shareholder-Sponsored Corporate Governance Proposals. The Journal of Finance 48, 697-718

Greene, W., 2000. Econometric Analysis. Prentice Hall.

Greene, W., 2004. The Behavior of the Maximum Likelihood Estimator of Limited Dependent Variable Models in the Presence of Fixed Effects. Econometrics Journal 7, 98-119

Greenwood, R., Schor, M., 2009. Investor activism and takeovers. Journal of Financial Economics 92, 362-375

Grinstein, Y., Michaely, R., 2005. Institutional Holdings and Payout Policy. The Journal of Finance 60, 1389-1426

Grossman, S.J., Hart, O.D., 1980. Takeover Bids, The Free-Rider Problem, and the Theory of the Corporation. The Bell Journal of Economics 11, 42-64

Grullon, G., Michaely, R., 2004. The Information Content of Share Repurchase Programs. The Journal of Finance 59, 651-680

Grullon, G., Michaely, R., Swaminathan, B., 2002. Are Dividend Changes a Sign of Firm Maturity? The Journal of Business 75, 387-424

Gul, F.A., L. Tsui, J.S., 1997. A test of the free cash flow and debt monitoring hypotheses:: Evidence from audit pricing. Journal of Accounting and Economics 24, 219-237

Guo, R.-J., Kruse, T.A., Nohel, T., 2008. Undoing the powerful anti-takeover force of staggered boards. Journal of Corporate Finance 14, 274-288

Harford, J., 1999. Corporate Cash Reserves and Acquisitions. The Journal of Finance 54, 1969-1997

Hart, O.D., 1983. The Market Mechanism as an Incentive Scheme. The Bell Journal of Economics 14, 366-382

Hartzell, J.C., Starks, L.T., 2003. Institutional Investors and Executive Compensation. The Journal of Finance 58, 2351-2374

Haynes, M., Thompson, S., Wright, M., 2003. The determinants of corporate divestment: evidence from a panel of UK firms. Journal of Economic Behavior & Organization 52, 147-166

Hirschman, A.O., 1970. Exit, Voice, and Loyalty. Harvard University Press, Cambridge, Massachusetts and London, England.

Holderness, C.G., 2003. A survey of blockholder and corporate control. Economic Policy Review 9, 13

Holderness, C.G., Sheehan, D.P., 1985. Raiders or Saviors? The Evidence on Six Controversial Investors. Journal of Financial Economics 14, 555-579

Holderness, C.G., Sheehan, D.P., 1988. The role of majority shareholders in publicly held corporations: An exploratory analysis. Journal of Financial Economics 20, 317-346

Holthausen, R.W., Leftwich, R.W., Mayers, D., 1990. Large-block transactions, the speed of response, and temporary and permanent stock-price effects. Journal of Financial Economics 26, 71-95

Hsiao, C., 2003. Analysis of Panel Data. Cambridge University Press, Cambridge.

Hu, H.T.C., Black, B., 2007. Hedge funds, insiders, and the decoupling of economic and voting ownership: Empty voting and hidden (morphable) ownership. Journal of Corporate Finance 13, 343-367

Huson, M.R., Malatesta, P.H., Parrino, R., 2004. Managerial succession and firm performance. Journal of Financial Economics 74, 237-275

Huson, M.R., Parrino, R., Starks, L.T., 2001. Internal Monitoring Mechanisms and CEO Turnover: A Long-Term Perspective. The Journal of Finance 56, 2265-2297

Jacobs, M., 1991. Short-Term America. Harvard Business School Press, Boston.

Jarrell, G.A., Brickley, J.A., Netter, J.M., 1988. The Market for Corporate Control: The Empirical Evidence Since 1980. The Journal of Economic Perspectives 2, 49-68

Jensen, M.C., 1986. Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers. The American Economic Review 76, 323-329

Jensen, M.C., 1988. Takeovers: Their Causes and Consequences. The Journal of Economic Perspectives 2, 21-48

Jensen, M.C., 1989. Eclipse of the Public Corporation. Harvard Business Review 67, 61-74, revised 1997

Jensen, M.C., 1991. Corporate Control and the Politics of Finance. Journal of Applied Corporate Finance 4, 13-33

Jensen, M.C., 1993. The Modern Industrial Revolution, Exit, and the Failure of Internal Control Systems. The Journal of Finance 48, 831-880

Jensen, M.C., Meckling, W.H., 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. Journal of Financial Economics 3, 305-360

Jensen, M.C., Murphy, K.J., 1990. Performance Pay and Top-Management Incentives. The Journal of Political Economy 98, 225-264

Jensen, M.C., Ruback, R.S., 1983. The Market for Corporate Control: The Scientific Evidence. Journal of Financial Economics 11, 5-50

Johnson, R.A., Greening, D.W., 1999. The Effects of Corporate Governance and Institutional Ownership Types on Corporate Social Performance. The Academy of Management Journal 42, 564-576

Kahan, M., Rock, E.B., 2007. Hedge Funds in Corporate Governance and Corporate Control. University of Pennsylvania Law Review 155, 1021-1093

Kahn, C., Winton, A., 1998. Ownership Structure, Speculation, and Shareholder Intervention. The Journal of Finance 53, 99-129

Kaiser, H.F., 1970. A second generation little jiffy. Psychometrika 35, 401-415

Kaiser, H.F., Rice, J.R., 1974. Little Jiffy, Mark IV. Psychological Measurement 34, 111-117

Kaplan, S.N., 1994. Top Executive Rewards and Firm Performance: A Comparison of Japan and the United States. The Journal of Political Economy 102, 510-546

Karpoff, J.M., 2001. The Impact of Shareholder Activism on Target Companies: A Survey of Empirical Findings. SSRN eLibrary

Khorana, A., Servaes, H., Tufano, P., 2008. Mutual Fund Fees Around the World. Rev. Financ. Stud., hhn042

Kim, J.-O., Mueller, C.W., 1978. Statistical Methods and Practical Issues. Sage Publications, Inc.

Klein, A., Zur, E., 2009. Entrepreneurial Shareholder Activism: Hedge Funds and Other Private Investors. Journal of Finance 64, 187-229

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R.W., 1998. Law and Finance. The Journal of Political Economy 106, 1113-1155

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R.W., 2000. Agency Problems and Dividend Policies around the World. The Journal of Finance 55, 1-33

Lamont, O.A., Polk, C., 2002. Does diversification destroy value? Evidence from the industry shocks. Journal of Financial Economics 63, 51-77

Lancaster, T., 2000. The incidental parameter problem since 1948. Journal of Econometrics 95, 391-413

Lane, P.J., Cannella, A.A., Jr., Lubatkin, M.H., 1998. Agency Problems as Antecedents to Unrelated Mergers and Diversification: Amihud and Lev Reconsidered. Strategic Management Journal 19, 555-578

Lang, L., Ofek, E., Stulz, R., 1996. Leverage, investment, and firm growth. Journal of Financial Economics 40, 3-29

Lang, L.H.P., Litzenberger, R.H., 1989. Dividend announcements : Cash flow signalling vs. free cash flow hypothesis? Journal of Financial Economics 24, 181-191

Lang, L.H.P., Stulz, R., Walkling, R.A., 1991. A test of the free cash flow hypothesis: The case of bidder returns. Journal of Financial Economics 29, 315-335

Lang, L.H.P., Stulz, R.M., 1994. Tobin's q, Corporate Diversification, and Firm Performance. The Journal of Political Economy 102, 1248-1280

Larcker, D.F., Richardson, S.A., Tuna, A.I., 2007. Corporate Governance, Accounting Outcomes, and Organizational Performance. Accounting Review, October 2007

Lehn, K., Poulsen, A., 1989. Free Cash Flow and Stockholder Gains in Going Private Transactions. The Journal of Finance 44, 771-787

Leuz, C., Lins, K.V., Warnock, F.E., 2008. Do Foreigners Invest Less in Poorly Governed Firms? Rev. Financ. Stud., hhn089

Li, D., Moshirian, F., Pham, P.K., Zein, J., 2006. When Financial Institutions Are Large Shareholders: The Role of Macro Corporate Governance Environments. Journal of Finance 61, 2975-3007

Lie, E., 2000. Excess Funds and Agency Problems: An Empirical Study of Incremental Cash Disbursements. The Review of Financial Studies 13, 219-247

Lins, K., Servaes, H., 1999. International Evidence on the Value of Corporate Diversification. The Journal of Finance 54, 2215-2239

Lintner, J., 1956. Distribution of Incomes of Corporations Among Dividends, Retained Earnings, and Taxes. The American Economic Review 46, 97-113

Manne, H.G., 1965. Mergers and the Market for Corporate Control. The Journal of Political Economy 73, 110-120

May, O.D., 1995. Do Managerial Motives Influence Firm Risk Reduction Strategies? The Journal of Finance 50, 1291-1308

Michaely, R., Thaler, R.H., Womack, K.L., 1995. Price Reactions to Dividend Initiations and Omissions: Overreaction or Drift? The Journal of Finance 50, 573-608

Mikkelson, W.H., Regassa, H., 1991. Premiums Paid in Block Transactions. Managerial and Decision Economics 12, 511-517

Mikkelson, W.H., Ruback, R.S., 1985. An empirical analysis of the interfirm equity investment process. Journal of Financial Economics 14, 555-579

Moeller, T., 2005. Let's make a deal! How shareholder control impacts merger payoffs. Journal of Financial Economics 76, 167-190

Morck, R., Shleifer, A., Vishny, R.W., 1988. Management Ownership and Market Valuation: An Empirical Analysis. Journal of Financial Economics 20, 293-315

Morck, R., Shleifer, A., Vishny, R.W., 1989. Alternative Mechanisms for Corporate Control. The American Economic Review 79, 842-852

Morck, R., Shleifer, A., Vishny, R.W., 1990. Do Managerial Objectives Drive Bad Acquisitions? The Journal of Finance 45, 31-48

Murphy, K.J., 1999. Executive Compensation. University of Southern California, Marshall School of Business, Working Paper Series

Murphy, K.J., Zimmerman, J.L., 1993. Financial performance surrounding CEO turnover. Journal of Accounting and Economics 16, 273-315

Nicodano, G., Sembenelli, A., 2004. Private benefits, block transaction premiums and ownership structure. International Review of Financial Analysis 13, 227-244

Noe, T.H., 2002. Investor Activism and Financial Market Structure. The Review of Financial Studies 15, 289-318

Nohel, T., Tarhan, V., 1998. Share repurchases and firm performance: new evidence on the agency costs of free cash flow. Journal of Financial Economics 49, 187-222

Opler, T., Titman, S., 1993. The Determinants of Leveraged Buyout Activity: Free Cash Flow vs. Financial Distress Costs. The Journal of Finance 48, 1985-1999

Payne, T.H., Millar, J.A., William Glezen, G., 1996. Fiduciary responsibility and bank-firm relationships: An analysis of shareholder voting by banks. Journal of Corporate Finance 3, 75-87

Porter, M.E., 1992. Capital Choices: Changing the Way America Invests in Industry. Journal of Applied Corporate Finance 5, 4-16

Pound, J., 1988. Proxy contests and the efficiency of shareholder oversight. Journal of Financial Economics 20, 237-265

Pozen, R.C., 1994. Institutional Investors: The Reluctant Activist. Harvard Business Review 72, 140-149

Qiu, L.X., 2008. Selection or Influence? Institutional Investors and Corporate Acquisitions. SSRN eLibrary

Rajan, R., Servaes, H., Zingales, L., 2000. The Cost of Diversity: The Diversification Discount and Inefficient Investment. The Journal of Finance 55, 35-80

Richardson, S., 2006. Over-investment of free cash flow. Review of Accounting Studies 11, 159-189

Rock, E.B., 1994. Controlling the Dark Side of Relational Investing. Cardozo Law Review 15, 987-1031

Romano, R., 1993. Public Pension Fund Activism in Corporate Governance Reconsidered. Columbia Law Review 93, 795-853

Rosenstein, S., Wyatt, J.G., 1990. Outside directors, board independence, and shareholder wealth. Journal of Financial Economics 26, 175-191

Rosenstein, S., Wyatt, J.G., 1997. Inside directors, board effectiveness, and shareholder wealth. Journal of Financial Economics 44, 229-250

Rossi, S., Volpin, P.F., 2004. Cross-country determinants of mergers and acquisitions. Journal of Financial Economics 74, 277-304

Rozeff, M.S., 1982. Growth, beta and agency costs as determinants of dividend payout ratios. Journal of Financial Research 5, 249

Saunders, M., Lewis, P., Thornhill, A., 2007. Research Methods for Business Students. Pearson Education Limited, Essex.

Scharfstein, D.S., Stein, J.C., 2000. The Dark Side of Internal Capital Markets: Divisional Rent-Seeking and Inefficient Investment. The Journal of Finance 55, 2537-2564

Sharma, S., 1996. Applied Multivariate Techniques. John Wiley & Sons.

Shipilov, A.V., Greve, H.R., Rowley, T., 2009. When Do Interlocks Matter? Institutional Logics and the Diffusion of Multiple Corporate Governance Practices. Academy of Management Journal, Forthcoming

Shleifer, A., Vishny, R.W., 1986. Large Shareholders and Corporate Control. Journal of Political Economy 94, 461

Shleifer, A., Vishny, R.W., 1989. Management entrenchment: The case of manager-specific investments. Journal of Financial Economics 25, 123-139

Shleifer, A., Vishny, R.W., 1997. A Survey of Corporate Governance. The Journal of Finance 52, 737-783

Short, H., Zhang, H., Keasey, K., 2002. The link between dividend policy and institutional ownership. Journal of Corporate Finance 8, 105-122

Smith, A., 1937. The Wealth of Nations (1776). Random House, New York.

Smith, M.P., 1996. Shareholder Activism by Institutional Investors: Evidence from CalPERS. The Journal of Finance 51, 227-252

Stultz, M.R., 1990. Managerial discretion and optimal financing policies. Journal of Financial Economics, 3-27

Tihanyi, L., Johnson, R.A., Hoskisson, R.E., Hitt, M.A., 2003. Institutional Ownership Differences and International Diversification: The Effects of Boards of Directors and Technological Opportunity. The Academy of Management Journal 46, 195-211

Tirole, J., 2006. The Theory of Corporate Finance. Princeton University Press.

Useem, M., Bowman, E.H., Myatt, J., Irvine, C.W., 1993. US institutional investors look at corporate governance in the 1990s. European Management Journal 11, 175-189

Wahal, S., 1996. Pension Fund Activism and Firm Performance. The Journal of Financial and Quantitative Analysis 31, 1-23

Walsh, J.P., Kosnik, R.D., 1993. Corporate Raiders and Their Disciplinary Role in the Market for Corporate Control. The Academy of Management Journal 36, 671-700

Warner, J.B., Watts, R.L., Wruck, K.H., 1988. Stock Prices and Top Management Changes. Journal of Financial Economics 20, 461-492

Warusawitharana, M., 2008. Corporate asset purchases and sales: Theory and evidence. Journal of Financial Economics 87, 471-497

Weisbach, M.S., 1988. Outside directors and CEO turnover. Journal of Financial Economics 20, 431-460

Woidtke, T., 2002. Agents watching agents?: evidence from pension fund ownership and firm value. Journal of Financial Economics 63, 99-131

Worrell, D.L., Nemec, C., Davidson III, W.N., 1997. One Hat Too Many: Key Executive Plurality and Shareholder Wealth. Strategic Management Journal 18, 499-507

Zwiebel, J., 1996. Dynamic Capital Structure under Managerial Entrenchment. The American Economic Review 86, 1197-1215

9 Appendix - Reverse regressions

Table 34 – Reverse regressions with change in overall governance index

The table shows reverse regressions for the entry of different investor groups. **Change in overall governance index** is the key explanatory variable indicating a change in the corporate governance index built from 14 individual governance variables. The dependent variables are the entries of the four investor groups based on factoring (**Devoted, Focused, Diversified** and **Traders**) and the five investor groups derived from the simple division (**TopHHI-TopCR**, **HighHHI-HighICR**, **LowHHI-HighICR**, **HighHHI-LowICR**, **LowHHI-LowICR**). Control variables are as follows: **Size** is the natural logarithm of a firm's net sales; **Tobin's *q*** is calculated as the ratio of the market value of total capital to the book value of total assets; **Relative return** is the yearly buy-and-hold return for a firm less the yearly buy-and-hold return for the firm's domestic main stock index; **Two-year average sales growth** is the compound annual growth rate over a lagging two year period; **Leverage** is the ratio of total debt to total assets. **Cash** is the ratio of total cash holdings to total assets.

	Factoring division				Simple division				
Explanatory variable:	Devoted	Focused	Diversified	Traders	TopHHI-TopICR	HighHHI-HighICR	LowHHI-HighICR	HighHHI-LowICR	LowHHI-LowICR
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Change in overall governance index	-0.790	-0.229	-1.520	0.016	-0.187	-0.663	-1.028	-1.033	0.105
	(-0.52)	(-0.34)	(-1.28)	(0.03)	(-0.07)	(-0.61)	(-1.35)	(-1.62)	(0.13)
Size	-0.263***	-0.045	-0.234**	-0.439***	-0.190*	-0.080	-0.015	-0.211***	-0.495***
	(-3.76)	(-1.29)	(-2.10)	(-13.02)	(-1.80)	(-1.35)	(-0.25)	(-6.24)	(-8.26)
Tobin's *q*	-0.022	-0.156***	0.033	-0.220***	0.086	0.043	0.059	-0.183***	-0.132**
	(-0.19)	(-2.72)	(0.25)	(-5.06)	(0.60)	(0.62)	(0.73)	(-3.08)	(-2.27)
Relative return	-0.104	-0.695***	1.051***	0.200**	-0.203	-0.453*	0.352*	-0.330**	0.549***
	(-0.32)	(-3.86)	(3.27)	(2.07)	(-0.44)	(-1.77)	(1.89)	(-2.06)	(2.94)
Two-year average sales growth	0.383	0.127	1.179	0.576**	0.876	0.099	1.268**	-0.350	1.056**
	(0.57)	(0.37)	(1.14)	(2.10)	(0.78)	(0.17)	(2.51)	(-1.11)	(2.15)
Leverage	2.002***	0.873***	0.313	1.079***	2.102**	-0.017	-0.112	1.534***	0.803
	(3.29)	(2.58)	(0.38)	(3.83)	(2.30)	(-0.03)	(-0.23)	(4.97)	(1.58)
Cash	-1.447*	0.269	-1.066	0.314	-1.854*	-0.944	-0.885*	-0.162	0.223
	(-1.82)	(0.66)	(-1.33)	(0.94)	(-1.65)	(-1.39)	(-1.65)	(-0.46)	(0.35)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Legislative region fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,293	4,293	4,293	4,293	4,293	4,293	4,293	4,293	4,293
Number of companies	904	904	904	904	904	904	904	904	904
Wald Chi2	58.29	98.32	80.27	294.3	29.26	44.38	72.34	199.6	159.5
df	18	18	18	18	18	18	18	18	18
Robust z-statistics in parentheses									
*** p<0.01, ** p<0.05, * p<0.1									

Table 35 – Reverse regressions with change in board governance index

The table shows reverse regressions for the entry of different investor groups. **Change in board governance index** is the key explanatory variable indicating a change in the board governance index built from 6 individual governance variables. The dependent variables are the entries of the four investor groups based on factoring (**Devoted, Focused, Diversified** and **Traders**) and the five investor groups derived from the simple division (**TopHHI-TopCR**, **HighHHI-HighICR**, **LowHHI-HighICR**, **HighHHI-LowICR**, **LowHHI-LowICR**). Control variables are as follows: **Size** is the natural logarithm of a firm's net sales; **Tobin's *q*** is calculated as the ratio of the market value of total capital to the book value of total assets; **Relative return** is the yearly buy-and-hold return for a firm less the yearly buy-and-hold return for the firm's domestic main stock index; **Two-year average sales growth** is the compound annual growth rate over a lagging two year period; **Leverage** is the ratio of total debt to total assets. **Cash** is the ratio of total cash holdings to total assets.

	Factoring division				Simple division				
Explanatory variable:	Devoted	Focused	Diversified	Traders	TopHHI-TopICR	HighHHI-HighICR	LowHHI-HighICR	HighHHI-LowICR	LowHHI-LowICR
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Change in board governance index	-0.656	0.200	-1.246*	0.048	-0.935	-0.269	-0.722	-0.145	-0.263
	(-0.80)	(0.55)	(-1.76)	(0.17)	(-0.59)	(-0.44)	(-1.59)	(-0.40)	(-0.57)
Size	-0.264***	-0.045	-0.242**	-0.439***	-0.191*	-0.081	-0.018	-0.212***	-0.496***
	(-3.77)	(-1.29)	(-2.18)	(-13.02)	(-1.81)	(-1.37)	(-0.30)	(-6.28)	(-8.27)
Tobin's *q*	-0.024	-0.156***	0.028	-0.220***	0.083	0.043	0.059	-0.183***	-0.132**
	(-0.20)	(-2.71)	(0.21)	(-5.06)	(0.58)	(0.62)	(0.72)	(-3.07)	(-2.26)
Relative return	-0.105	-0.691***	1.059***	0.200**	-0.205	-0.451*	0.355*	-0.324**	0.549***
	(-0.32)	(-3.85)	(3.30)	(2.07)	(-0.45)	(-1.77)	(1.92)	(-2.03)	(2.95)
Two-year average sales growth	0.390	0.126	1.161	0.576**	0.876	0.101	1.268**	-0.347	1.053**
	(0.58)	(0.37)	(1.13)	(2.09)	(0.78)	(0.18)	(2.52)	(-1.11)	(2.15)
Leverage	2.004***	0.873***	0.342	1.079***	2.108**	-0.016	-0.106	1.538***	0.800
	(3.29)	(2.58)	(0.41)	(3.83)	(2.31)	(-0.03)	(-0.22)	(4.99)	(1.57)
Cash	-1.435*	0.262	-1.059	0.312	-1.837*	-0.948	-0.877	-0.169	0.232
	(-1.81)	(0.64)	(-1.32)	(0.94)	(-1.64)	(-1.40)	(-1.64)	(-0.48)	(0.36)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Legislative region fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,293	4,293	4,293	4,293	4,293	4,293	4,293	4,293	4,293
Number of companies	904	904	904	904	904	904	904	904	904
Wald Chi2	58.16	99.15	80.74	294.2	26.95	44.38	72.88	198.2	161.2
df	18	18	18	18	18	18	18	18	18
Robust z-statistics in parentheses									
*** p<0.01, ** p<0.05, * p<0.1									

Table 36 – Reverse regressions with the occurrence of unrelated divestments

The table shows reverse regressions for the entry of different investor groups. **Occurrence of unrelated divestments** is the key explanatory variable indicating the occurrence of unrelated divestments and is lagged by one year. The dependent variables are the entries of the four investor groups based on factoring (**Devoted, Focused, Diversified** and **Traders**) and the five investor groups derived from the simple division (**TopHHI-TopCR**, **HighHHI-HighICR**, **LowHHI-HighICR**, **HighHHI-LowICR**, **LowHHI-LowICR**). Control variables are as follows: **Size** is the natural logarithm of a firm's net sales; **Tobin's *q*** is calculated as the ratio of the market value of total capital to the book value of total assets; **Relative return** is the yearly buy-and-hold return for a firm less the yearly buy-and-hold return for the firm's domestic main stock index; **Two-year average sales growth** is the compound annual growth rate over a lagging two year period; **Leverage** is the ratio of total debt to total assets. **Cash** is the ratio of total cash holdings to total assets.

	Factoring division				Simple division				
Explanatory variable:	Devoted	Focused	Diversified	Traders	TopHHI-TopICR	HighHHI-HighICR	LowHHI-HighICR	HighHHI-LowICR	LowHHI-LowICR
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Occurrence of unrelated divestments	-0.314	0.230*	0.236	-0.134	0.216	0.015	0.086	0.063	0.091
	(-1.04)	(1.65)	(1.19)	(-1.20)	(0.51)	(0.08)	(0.55)	(0.48)	(0.60)
Size	-0.196***	-0.050**	-0.000	-0.330***	-0.130*	-0.130***	0.010	-0.144***	-0.224***
	(-4.44)	(-1.97)	(-0.01)	(-11.58)	(-1.88)	(-4.05)	(0.31)	(-5.80)	(-6.56)
Tobin's *q*	-0.039	-0.147***	-0.045	-0.136***	-0.066	0.038	-0.045	-0.181***	-0.069**
	(-0.51)	(-3.31)	(-0.83)	(-4.16)	(-0.57)	(0.88)	(-1.09)	(-3.99)	(-2.08)
Relative return	0.047	-0.310***	0.240*	0.078	-0.286	-0.161	0.134	-0.115	0.436***
	(0.28)	(-2.66)	(1.75)	(1.16)	(-0.99)	(-1.18)	(1.34)	(-1.12)	(4.40)
Two-year average sales growth	-0.068	0.014	0.360	0.153	0.948	-0.371	0.500**	-0.016	0.093
	(-0.17)	(0.06)	(1.14)	(0.85)	(1.28)	(-1.24)	(2.09)	(-0.07)	(0.40)
Leverage	1.304***	0.946***	-0.132	0.534**	2.280***	0.452	-0.211	1.314***	0.286
	(3.07)	(3.72)	(-0.35)	(2.45)	(3.48)	(1.46)	(-0.74)	(5.73)	(1.07)
Cash	-0.937*	0.536*	-0.286	0.533**	-0.629	-0.916**	-0.648*	0.337	0.441
	(-1.73)	(1.82)	(-0.58)	(2.14)	(-0.69)	(-2.22)	(-1.87)	(1.24)	(1.20)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Legislative region fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,344	8,344	8,344	8,344	8,344	8,344	8,344	8,344	8,344
Number of companies	1,468	1,468	1,468	1,468	1,468	1,468	1,468	1,468	1,468
Wald Chi2	129.3	134.9	679.3	721.3	50.93	168.5	737.2	302.3	1140
df	22	22	22	22	22	22	22	22	22

Robust z-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 37 – Reverse regressions with the initiation of unrelated divestments

The table shows reverse regressions for the entry of different investor groups. **Initiation of unrelated divestments** is the key explanatory variable indicating an initiation of unrelated divestments and is lagged by one year. The dependent variables are the entries of the four investor groups based on factoring (**Devoted, Focused, Diversified** and **Traders**) and the five investor groups derived from the simple division (**TopHHI-TopCR**, **HighHHI-HighICR**, **LowHHI-HighICR**, **HighHHI-LowICR**, **LowHHI-LowICR**). Control variables are as follows: **Size** is the natural logarithm of a firm's net sales; **Tobin's *q*** is calculated as the ratio of the market value of total capital to the book value of total assets; **Relative return** is the yearly buy-and-hold return for a firm less the yearly buy-and-hold return for the firm's domestic main stock index; **Two-year average sales growth** is the compound annual growth rate over a lagging two year period; **Leverage** is the ratio of total debt to total assets. **Cash** is the ratio of total cash holdings to total assets.

	Factoring division				Simple division				
Explanatory variable:	Devoted	Focused	Diversified	Traders	TopHHI-TopICR	HighHHI-HighICR	LowHHI-HighICR	HighHHI-LowICR	LowHHI-LowICR
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Initiation of unrelated divestments	-0.211	0.208	0.166	-0.171	0.237	0.154	0.072	-0.158	0.130
	(-0.58)	(1.28)	(0.67)	(-1.37)	(0.46)	(0.74)	(0.39)	(-1.01)	(0.72)
Size	-0.199***	-0.047*	0.002	-0.331***	-0.129*	-0.131***	0.011	-0.140***	-0.224***
	(-4.54)	(-1.87)	(0.04)	(-11.64)	(-1.87)	(-4.10)	(0.33)	(-5.71)	(-6.58)
Tobin's *q*	-0.038	-0.148***	-0.046	-0.136***	-0.067	0.038	-0.045	-0.183***	-0.069**
	(-0.50)	(-3.33)	(-0.86)	(-4.16)	(-0.57)	(0.90)	(-1.10)	(-4.03)	(-2.09)
Relative return	0.045	-0.309***	0.238*	0.078	-0.286	-0.161	0.134	-0.113	0.435***
	(0.27)	(-2.65)	(1.74)	(1.16)	(-0.99)	(-1.19)	(1.34)	(-1.10)	(4.39)
Two-year average sales growth	-0.058	0.009	0.350	0.152	0.946	-0.361	0.497**	-0.031	0.093
	(-0.14)	(0.04)	(1.11)	(0.84)	(1.27)	(-1.21)	(2.08)	(-0.15)	(0.40)
Leverage	1.297***	0.950***	-0.131	0.533**	2.282***	0.448	-0.210	1.321***	0.287
	(3.06)	(3.74)	(-0.35)	(2.45)	(3.49)	(1.45)	(-0.74)	(5.75)	(1.08)
Cash	-0.940*	0.540*	-0.287	0.534**	-0.629	-0.919**	-0.647*	0.346	0.442
	(-1.74)	(1.84)	(-0.59)	(2.14)	(-0.69)	(-2.23)	(-1.87)	(1.27)	(1.20)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Legislative region fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,344	8,344	8,344	8,344	8,344	8,344	8,344	8,344	8,344
Number of companies	1,468	1,468	1,468	1,468	1,468	1,468	1,468	1,468	1,468
Wald Chi2	129.7	134.3	678.7	723.6	51.58	169.4	737.5	303.7	1139
df	22	22	22	22	22	22	22	22	22

Robust z-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 38 – Reverse regressions with change in magnitude of unrelated divestments

The table shows reverse regressions for the entry of different investor groups. **Magnitude of unrelated divestments** is the key explanatory variable measuring the ratio of the total value of divested unrelated businesses in a given year to the selling company enterprise value and is lagged by one year. The dependent variables are the entries of the four investor groups based on factoring (**Devoted, Focused, Diversified** and **Traders**) and the five investor groups derived from the simple division (**TopHHI-TopCR**, **HighHHI-HighICR**, **LowHHI-HighICR**, **HighHHI-LowICR**, **LowHHI-LowICR**). Control variables are as follows: **Size** is the natural logarithm of a firm's net sales; **Tobin's *q*** is calculated as the ratio of the market value of total capital to the book value of total assets; **Relative return** is the yearly buy-and-hold return for a firm less the yearly buy-and-hold return for the firm's domestic main stock index; **Two-year average sales growth** is the compound annual growth rate over a lagging two year period; **Leverage** is the ratio of total debt to total assets. **Cash** is the ratio of total cash holdings to total assets.

	Factoring division				Simple division				
Explanatory variable:	Devoted	Focused	Diversified	Traders	TopHHI-TopICR	HighHHI-HighICR	LowHHI-HighICR	HighHHI-LowICR	LowHHI-LowICR
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Change in magnitude of unrelated div.	0.325	1.818	-0.277	0.581	1.010	0.359	0.846	1.931*	-0.740
	(0.22)	(1.32)	(-0.25)	(0.60)	(0.76)	(0.21)	(0.98)	(1.73)	(-0.60)
Size	-0.201***	-0.045*	0.004	-0.333***	-0.126*	-0.130***	0.012	-0.143***	-0.222***
	(-4.59)	(-1.78)	(0.09)	(-11.73)	(-1.80)	(-4.02)	(0.35)	(-5.81)	(-6.54)
Tobin's *q*	-0.037	-0.148***	-0.047	-0.134***	-0.068	0.038	-0.046	-0.180***	-0.070**
	(-0.48)	(-3.34)	(-0.88)	(-4.10)	(-0.58)	(0.88)	(-1.11)	(-3.98)	(-2.12)
Relative return	0.044	-0.307***	0.237*	0.075	-0.283	-0.160	0.134	-0.113	0.435***
	(0.27)	(-2.63)	(1.74)	(1.13)	(-0.98)	(-1.18)	(1.35)	(-1.10)	(4.40)
Two-year average sales growth	-0.048	0.000	0.337	0.160	0.936	-0.372	0.492**	-0.018	0.085
	(-0.12)	(0.00)	(1.07)	(0.89)	(1.26)	(-1.25)	(2.07)	(-0.08)	(0.37)
Leverage	1.290***	0.953***	-0.130	0.530**	2.293***	0.452	-0.211	1.315***	0.287
	(3.05)	(3.75)	(-0.34)	(2.43)	(3.52)	(1.46)	(-0.74)	(5.74)	(1.08)
Cash	-0.946*	0.539*	-0.285	0.520**	-0.623	-0.916**	-0.648*	0.330	0.448
	(-1.74)	(1.83)	(-0.58)	(2.08)	(-0.69)	(-2.22)	(-1.87)	(1.21)	(1.22)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Legislative region fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,344	8,344	8,344	8,344	8,344	8,344	8,344	8,344	8,344
Number of companies	1,468	1,468	1,468	1,468	1,468	1,468	1,468	1,468	1,468
Wald Chi2	130.6	135.6	681.9	720.2	50.36	168.4	736.7	304.1	1143
df	22	22	22	22	22	22	22	22	22
Robust z-statistics in parentheses									
*** p<0.01, ** p<0.05, * p<0.1									

Table 39 – Reverse regressions with initiation of cash dividends

The table shows reverse regressions for the entry of different investor groups. **Initiation of cash dividends** is the key explanatory variable indicating the initiation of cash dividend payments after two preceding years with no cash dividend payments and is lagged by one year. The dependent variables are the entries of the four investor groups based on factoring (**Devoted, Focused, Diversified** and **Traders**) and the five investor groups derived from the simple division (**TopHHI-TopCR**, **HighHHI-HighICR**, **LowHHI-HighICR**, **HighHHI-LowICR**, **LowHHI-LowICR**). Control variables are as follows: **Size** is the natural logarithm of a firm's net sales; **Tobin's *q*** is calculated as the ratio of the market value of total capital to the book value of total assets; **Relative return** is the yearly buy-and-hold return for a firm less the yearly buy-and-hold return for the firm's domestic main stock index; **Two-year average sales growth** is the compound annual growth rate over a lagging two year period; **Leverage** is the ratio of total debt to total assets. **Cash** is the ratio of total cash holdings to total assets.

	Factoring division				Simple division				
Explanatory variable:	Devoted	Focused	Diversified	Traders	TopHHI-TopICR	HighHHI-HighICR	LowHHI-HighICR	HighHHI-LowICR	LowHHI-LowICR
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Initiation of cash dividends	-0.259	0.538***	0.125	0.189	0.166	0.233	0.449**	0.436**	0.032
	(-0.62)	(2.98)	(0.58)	(1.34)	(0.27)	(0.92)	(2.08)	(2.40)	(0.21)
Size	-0.161***	-0.041*	-0.029	-0.345***	-0.106*	-0.089***	-0.017	-0.166***	-0.239***
	(-3.96)	(-1.79)	(-0.64)	(-12.84)	(-1.65)	(-2.91)	(-0.51)	(-7.06)	(-7.66)
Tobin's *q*	-0.025	-0.105***	0.156**	-0.061**	-0.039	0.029	0.097**	-0.124***	0.065
	(-0.38)	(-2.80)	(2.16)	(-2.10)	(-0.42)	(0.67)	(2.02)	(-3.17)	(1.63)
Relative return	-0.063	-0.378***	0.014	0.030	-0.431*	-0.272**	-0.047	-0.221**	0.211***
	(-0.40)	(-3.36)	(0.15)	(0.53)	(-1.68)	(-1.96)	(-0.63)	(-2.14)	(3.13)
Two-year average sales growth	0.463	0.135	-0.294	0.015	0.691	0.158	0.109	0.098	-0.286*
	(1.32)	(0.67)	(-1.28)	(0.10)	(1.16)	(0.59)	(0.59)	(0.50)	(-1.77)
Leverage	1.075***	0.738***	-0.811**	0.174	1.339**	0.388	-0.669**	1.164***	-0.358
	(2.78)	(3.16)	(-2.40)	(0.89)	(2.28)	(1.34)	(-2.54)	(5.38)	(-1.60)
Cash	-0.708	0.221	-0.222	0.215	0.090	-0.854**	-0.587*	0.274	0.087
	(-1.42)	(0.81)	(-0.57)	(0.96)	(0.13)	(-2.30)	(-1.88)	(1.03)	(0.31)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Legislative region fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	9,720	9,720	9,720	9,720	9,720	9,720	9,720	9,720	9,720
Number of companies	1,474	1,474	1,474	1,474	1,474	1,474	1,474	1,474	1,474
Wald Chi2	100.3	110.9	143.4	352.6	85.42	48.08	142.5	272.1	279.8
df	19	19	19	19	19	19	19	19	19
Robust z-statistics in parentheses									
*** p<0.01, ** p<0.05, * p<0.1									

Table 40 – Reverse regressions with change in dividend yield

The table shows reverse regressions for the entry of different investor groups. **Change in dividend yield** is the key explanatory variable measuring the difference in dividend yields of two consecutive years and is lagged by one year. The dependent variables are the entries of the four investor groups based on factoring (**Devoted, Focused, Diversified** and **Traders**) and the five investor groups derived from the simple division (**TopHHI-TopCR**, **HighHHI-HighICR**, **LowHHI-HighICR**, **HighHHI-LowICR**, **LowHHI-LowICR**). Control variables are as follows: **Size** is the natural logarithm of a firm's net sales; **Tobin's *q*** is calculated as the ratio of the market value of total capital to the book value of total assets; **Relative return** is the yearly buy-and-hold return for a firm less the yearly buy-and-hold return for the firm's domestic main stock index; **Two-year average sales growth** is the compound annual growth rate over a lagging two year period; **Leverage** is the ratio of total debt to total assets. **Cash** is the ratio of total cash holdings to total assets.

	Factoring division				Simple division				
Explanatory variable:	Devoted	Focused	Diversified	Traders	TopHHI-TopICR	HighHHI-HighICR	LowHHI-HighICR	HighHHI-LowICR	LowHHI-LowICR
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Change in dividend yield	0.003	0.044	-0.023	-0.016	0.167**	0.024	-0.045*	-0.034	-0.014
	(0.05)	(1.30)	(-0.69)	(-0.94)	(2.00)	(0.51)	(-1.72)	(-1.18)	(-0.59)
Size	-0.158***	-0.043*	-0.038	-0.350***	-0.105	-0.088***	-0.021	-0.163***	-0.239***
	(-3.87)	(-1.89)	(-0.83)	(-12.93)	(-1.62)	(-2.83)	(-0.62)	(-6.89)	(-7.64)
Tobin's *q*	-0.024	-0.106***	0.150**	-0.064**	-0.038	0.026	0.093**	-0.123***	0.061
	(-0.37)	(-2.84)	(2.10)	(-2.19)	(-0.41)	(0.59)	(1.96)	(-3.16)	(1.54)
Relative return	-0.027	-0.340***	-0.005	0.031	-0.242	-0.216	-0.072	-0.215**	0.208***
	(-0.17)	(-2.98)	(-0.05)	(0.52)	(-0.95)	(-1.56)	(-0.89)	(-2.08)	(2.93)
Two-year average sales growth	0.500	0.123	-0.289	0.043	0.761	0.223	0.070	0.126	-0.249
	(1.41)	(0.61)	(-1.25)	(0.30)	(1.26)	(0.83)	(0.37)	(0.64)	(-1.52)
Leverage	1.061***	0.728***	-0.771**	0.144	1.239**	0.331	-0.724***	1.137***	-0.413*
	(2.72)	(3.10)	(-2.27)	(0.73)	(2.10)	(1.12)	(-2.73)	(5.17)	(-1.83)
Cash	-0.697	0.240	-0.295	0.203	0.109	-0.845**	-0.632**	0.293	0.027
	(-1.40)	(0.88)	(-0.77)	(0.90)	(0.16)	(-2.26)	(-2.03)	(1.10)	(0.10)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Legislative region fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	9,625	9,625	9,625	9,625	9,625	9,625	9,625	9,625	9,625
Number of companies	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473
Wald Chi2	96.18	101.1	139.2	357.3	82.36	45.66	138.4	268.2	276.4
df	19	19	19	19	19	19	19	19	19

Robust z-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1