The value of stable ownership during the global financial crisis

Abstract

We investigate the value of stable ownership for a large sample of European firms from 2005 until 2010, exploiting the global financial crisis as an exogenous shock and using the pre-crisis period as a benchmark period. Controlling for ownership concentration, we find that stable blockholder ownership resulted into higher stock returns and market valuations during the crisis, although it did not affect firm value before the crisis. During the crisis, ownership stability was also associated with lower idiosyncratic risk and higher investments. The beneficial impact of ownership stability applies to both family blockholders and institutional blockholders. We find similar results for ownership concentration. However, while the beneficial impact of ownership stability is similar across all countries, the positive effect of ownership concentration is higher in countries with better investor protection.

"Our success is not least based on a stable shareholder structure with a long-term focus"
(Martin Winterkorn, CEO Volkswagen Group AG, in Annual Report 2009)

1 Introduction

While ownership stability is often considered as a key contributing factor to the long-term value of a firm, empirical support for this proposition is very scarce. There is a substantial body of research on the relation between ownership structure and firm value, but little is known about the value of ownership stability. In this study, we aim to fill this void by investigating whether firms can benefit from a stable ownership. In this way, we also aim to contribute to the debate whether increased shareholder voting power with the duration of ownership might be a way to reduce adverse effects of capital market myopia on firm performance (e.g., Fox and Lorsch 2012).

Ownership stability could indeed be an important factor in corporate finance and governance settings since it might reduce agency problems. It might allow corporate managers to focus on the creation of long-term value rather than on boosting short-term results (Stein 1989; Wahal and McConnell 2000). It might also strengthen shareholder's incentives and abilities to monitor the firm, as owners who stay longer with the firm are more likely to reap the benefits from monitoring and have more time to learn about the firm (Gaspar et al. 2005; Elyasiani and Jia 2010). However, stable ownership might also exacerbate agency problems. Stable owners may find it easier to extract private benefits of control than transient owners (Bhagat et al. 2004). Stable shareholders might also become passive monitors, leaving managers more discretion to pursue their own interests. Finally, the absence of important short-term owners might limit the influence of governance by trading. Short-term investors who sell their stocks if they are dissatisfied might be able to put pressure on the management to improve real efficiency (e.g., Admati and Pfleiderer 2009; Edmans 2009). The net effect of stable ownership is therefore a priori not clear.

In this study, we investigate the value of stable ownership for a sample of 2,250 firms from 29 European countries from 2005 until 2010. This time frame allows us to exploit the global financial crisis as an exogenous shock, while using the pre-crisis period as a benchmark period. A natural experiment like this eliminates a potential simultaneity problem and hereby overcomes endogeneity issues (e.g., Mitton 2000; Baek et al. 2004). Europe is an appealing setting to investigate the value of ownership stability, because there are considerable differences within Europe with respect to investor protection. These differences allow us to additionally examine how the institutional environment in which firms operate affects the value of stable ownership.

First, we investigate the relation between ownership stability and firm value. We observe that stable blockholder ownership was indeed valuable during the global financial crisis. Using several measures for ownership stability and controlling for ownership concentration, we find that firms with a more stable ownership experienced significantly higher stock returns during the crisis. Ownership stability also had a positive effect on the market-to-book ratio during the crisis, but it did not affect firm value before the crisis.

Next, we consider the relation between ownership stability and idiosyncratic risk. Idiosyncratic risk is driven by investor uncertainty about future profits (e.g., Wei and Zhang 2006), and crisis periods typically coincide with temporarily higher levels of idiosyncratic risk (e.g., Campbell et al. 2001; Brandt et al. 2010). Such an increase has also been observed during the recent global financial crisis (e.g., Panousi and Papanikolau 2012). We expect that ownership stability lowers investor uncertainty during a crisis, thereby reducing idiosyncratic risk. Our findings confirm the expectations: while idiosyncratic risk significantly increased during the global financial crisis, it was lower for firms with a more stable ownership.

Third, we investigate how ownership stability is related to investment policy. The positive valuation effect of stable ownership might simply reflect investor sentiment, without

being related to real corporate decisions. On the other hand, if stable ownership is indeed associated with better monitoring, it may help countering managerial decisions that sacrifice long-term value to boost short-term results. Managers might reduce investments during a crisis to meet short-term earnings targets and avoid punishment by the capital market (e.g., Graham et al. 2005). However, we expect that firms with stable ownership suffer less from short-termism and invested more during the crisis compared to other firms. Our results confirm the expectation that ownership stability not only affects valuation, but also influences real corporate decision- making.

We also test whether the effect of stable ownership depends on the level of investor protection in countries. Stable blockholders might be harmful to minority shareholders if these blockholders extract private benefits of control. If stable blockholders are more likely to extract private benefits of control, we expect the beneficial effect of stable ownership to be higher in countries with better investor protection, which makes expropriation more difficult. However, we find that the positive crisis effect of ownership stability was similar across countries with different levels of investor protection, indicating that stable ownership *per se* is not associated with the threat of private benefits extraction.

Finally, we distinguish between different types of blockholders. While institutional blockholders trade more frequently than other blockholders (Elyasiani and Jia 2010) and are blamed for short-termism (e.g., The Economist 2009), family blockholders are typically considered as long-term investors with higher incentives for both monitoring and expropriation (e.g., Anderson and Reeb 2003; Villalonga and Amit 2006). We find that the stability of both family and institutional blockholders was positively related to stock returns during the crisis. The stability of corporate blockholders on the other hand does not seem to be significantly related to stock returns.

Since ownership stability is likely to be higher when ownership is more concentrated (Elyasiani and Jia 2010), we control for the influence of ownership concentration in all our analyses. Ownership concentration might lower agency problems by reducing the free rider problem in monitoring the managers (e.g., Shleifer and Vishny 1986). On the other hand, it might also exacerbate agency problems by increasing the risk on expropriation of minority shareholders by the controlling shareholder (e.g., Shleifer and Vishny 1997), reducing managerial initiative by over-monitoring (e.g., Burkart et al. 1997) and limiting the influence of governance by trading (e.g., Admati and Pfleiderer 2009; Edmans 2009). The net effect of concentrated ownership is therefore also not clear a priori. We observe that not only stable ownership, but also concentrated ownership was valuable during the global financial crisis. Firms with a more concentrated ownership had higher stock returns and a higher market-to-book ratio during the crisis. They also had less idiosyncratic risk and invested more during the crisis. We also find that, while the positive crisis effect of ownership stability is unrelated to investor protection, ownership concentration is more valuable in countries with better investor protection. This indicates that, contrary to ownership stability, ownership concentration is associated with the threat of private benefits extraction.

Our study contributes to the ownership literature in several ways. To the best of our knowledge we are the first to investigate the value of ownership stability during a crisis period. Prior work generally focuses on the effect of concentrated ownership on crisis period valuations and documents a positive relation (Mitton 2000; Baek et al. 2004; Bae et al. 2012; Lins et al. 2012). However, these studies disregard the role of ownership stability, despite the well-established evidence that differences in investor horizons matter. Studies have found that firms with long-term institutional investors are less likely to reduce R&D expenditures to reverse an earnings decline (Bushee 1998); have a lower stock return volatility (Bushee and Noe 2000; Elyasiani et al. 2010); have a higher post-acquisition performance (Gaspar et al.

2005; Chen et al. 2007); have a lower cost of debt (Elyasiani et al. 2010) and have a higher overall performance (Elyasiani and Jia 2008 2010). However, while these studies only consider institutional investors, we take into account different types of blockholders. Moreover, although governance might be of critical importance during a crisis, none of these studies consider such an exogenous shock like the recent global financial crisis. We are to the best of our knowledge the first to show that not only ownership concentration, but also ownership stability increases firm value during a crisis.

We also provide several additional insights into the role of stable and concentrated ownership during a crisis by investigating their influence on idiosyncratic risk and investments and considering differences in country-level governance. We find that both stable and concentrated ownership have a negative relation with idiosyncratic risk. This suggests that large and stable blockholders not only positively affect firm valuation, but also reduce the perceived riskiness of firms. We also observe that both stable and concentrated ownership have a positive relation with investments. This indicates that the increasing value not only reflects investor sentiment, but is also related to real corporate decision-making. Finally, our result that the beneficial influence of stable ownership is similar across countries with different levels of investor protection, suggests that ownership stability *per se* is not associated with the threat of private benefits extraction. The beneficial impact of concentrated ownership increases with investor protection, however, indicating that ownership concentration is associated with expropriation risk.

The remainder of the paper is structured as follows. In Section 2 we describe the sample, explain how we measure ownership, and discuss our empirical models. We present and discuss the empirical findings with the results and robustness checks in Section 3. Section 4 concludes.

2 Methodology

2.1 Sample

For each year in the 2003-2010 period, we gathered ownership data for all listed firms included in the yearly tapes (December issues) of the *Amadeus* ownership database of *Bureau van Dijk*. Bureau Van Dijk collects the ownership data, which are based on voting shares, from official bodies, associated information providers or directly from these firms. For each firm that we observe at least once in the database, we identified all shareholders for each available year. *Amadeus* reports total ownership and/or direct ownership of each shareholder.[1] Total ownership is based on both direct and indirect shareholdings. As noted by Bureau Van Dijk, the Amadeus ownership database might contain some unidentified overlaps between total ownership and direct ownership.[2] In the analyses reported in this study, we use data on direct ownership holdings which is available for most shareholders, in order to have a consistent measure of ownership. However, as a robustness check we re-estimated all the regressions reported in this paper using total ownership when available, with very similar results (see Section 3.7). Following e.g. Dlugosz et al. (2006), we focus on blockholders defined as shareholders having at least five percent shareholdings. This is the level at which shareholders are typically required to reveal their ownership stake (Holderness 2009).[3]

*** Table 1 about here ***

We combine the ownership data with financial statement data from the Amadeus database of Bureau Van Dijk and stock market data from the Datastream database of Thomson Reuters. After excluding financial firms (US SIC Code 6000-6999) and firm-year observations

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[1] For 82% of all shareholders, only direct ownership data are available. For 14% of all shareholders, only total ownership data are available. For 4% of all shareholders, both data on direct and total ownership are available.

[2] To illustrate that total ownership might exceed 100%, suppose that a firm A directly owns 100% of a firm B, which directly owns 100% of a firm C. If an information source also indicates that firm A holds a total ownership of 100% in firm C, then the total ownership percentage in the database will be 200%.

[3] As suggested by Dlugosz et al. (2006), we truncate our sample at a total blockholder ownership of 100%: about 2% of the observations is removed.

for which insufficient information is available to determine the variables, our sample consists of 2,250 firms located across 29 European countries. Table 1 reports the distribution of this sample across the different countries. Most observations come from the United Kingdom (21.38%), France (13.16%) and Germany (11.02%). Table 1 also reports rule of law scores (2005) from the World Bank and anti-director rights scores (2003) from Djankov et al. (2008) for each country in the sample, which we use to investigate the role of investor protection. The rule of law score serves as a proxy for the quality of a country's legal institutions (Kaufmann et al. 2010) and ranges from a minimum of -0.92 (Russia) to +1.98 (Iceland) in our sample. The anti-director rights score considers the country's laws protecting minority shareholders (Djankov et al. 2008) and ranges from 2 to 5 in our sample. Higher values of these scores correspond to stronger investor protection.

2.2 Ownership

Following Elyasiani and Jia (2010), we measure ownership stability in two different ways. *Non-Zero-Points Duration* is the number of years in which a blockholder has non-zero holdings. *Maintain-Stake-Points Duration* is the number of years in which a blockholder maintains its stake (i.e. either keeps the same ownership percentage or increases its shareholding). [4] We calculate the average of each of these two measures across all blockholders of a firm. The higher the value of *Zero-Points Duration* and *Maintain-Stake-Points Duration*, the higher the stability of the firm's ownership. For each firm-year observation, these variables are measured over the three preceding years.

We use three measures of ownership concentration. Following e.g. Mitton (2002) and Baek et al. (2004), we distinguish between the ownership of the largest blockholder and total

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[4] As an ownership percentage might decrease when new shares are issued (e.g., when incentive stock options are exercised), we also define "maintain its stake" as having a stake that is higher than or equal to its ownership percentage of the prior period less a small ownership percentage (e.g., 2%). Results are qualitatively very similar.

blockholder ownership. *Largest Blockholder Ownership* is the ownership percentage of the largest blockholder. We calculate *Total Blockholder Ownership* by summing together the ownership percentages of all blockholders. Following studies on multiple blockholders (e.g., Maury and Pajuste 2005; Laeven and Levine 2008; Konijn et al. 2011), we also consider a measure of blockholder dispersion, i.e. the extent to which total blockholder ownership is divided over different blockholders. Blockholder dispersion is measured by a scaled *Herfindahl Index* based on the ownership percentages of the five largest blockholders (e.g., Konijn et al. 2011), which is calculated as follows:

$$Herfindahl\ Index = \frac{\sum_{i=1}^{5} w_i^2}{\left(\sum_{i=1}^{5} w_i\right)^2} \tag{1}$$

where w_i is the shareholding percentage of blockholder i. A higher value of the Herfindahl Index implies a more concentrated ownership structure. All these variables are measured at the beginning of each year.[5]

2.3 Empirical models

2.3.1 Stock returns

To examine the relation between ownership stability and firm value, we first consider cumulative stock returns (buy-and-hold returns) over three different time windows in the period 2005-2010: a pre-crisis period, the crisis period, and the post-crisis recovery period (e.g., Mitton 2002; Bae et al. 2012). The three time windows are determined by the evolution of the European financial markets in the period considered. The first European victim of the global financial crisis was IKB Deutsche Industriebank in July 2007 (Brunnermeier 2009). We define the start of the crisis as the day in that particular month after which the Datastream

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[5] We also use other ownership concentration measures. Following Lins et al. (2012), we distinguish between non-widely held and widely held firms, with non-widely held firms being firms with a total blockholder ownership of at least 25 percent. Following Konijn et al. (2011), we also estimate our models using different measures of blockholder dispersion (instead of the Herfindahl Index): a Gini coefficient and the number of blockholders. Results are qualitatively very similar.

Total Market Index (covering 2,450 European stocks) started to dip, i.e. July 16, 2007. We set the *crisis period* as the period from July 16, 2007 to the day when this index has reached its lowest level, i.e. March 9, 2009. During this period, the market index fell down from 8,386 to 3,184 points (-62%). After this crash period, financial markets revived and stock prices were on the rise again. We set the *recovery period* as the period from March 9, 2009 to the day when the index has reached a new high, i.e. January 11, 2010. During this period, the index sharply increased again from 3,184 to 6,263 points (+97%). We use the year 2006 as the *pre-crisis period*.[6]

We estimate the following cross-sectional OLS-model for each time window:

$$Stock\ Return_j = \alpha_j + \beta_1 Ownership_j + \beta_2 Controls_j + \varepsilon_j \tag{2}$$

Ownership refers to the ownership stability and concentration measures described in Section 2.2. We include a number of control variables that are commonly used in studies investigating the relation between ownership and stock returns during a crisis (e.g., Lemmon and Lins 2003; Baek et al. 2004; Bae et al. 2012; Lins et al. 2012). Larger firms might suffer less during a crisis as they have less information asymmetry problems and have easier access to external financing. We measure firm size by the book value of *Total Assets*. Firms with higher leverage and less cash might suffer more during a crisis as they face stronger financing constraints. *Leverage* is total debt divided by the book value of total assets, and *Cash Holdings* is calculated as cash and cash equivalents over the book value of total assets. Accounting performance is expected to have a positive influence on returns during the crisis. *Return on Assets* is defined as earnings before interest and taxes divided by the book value of total assets.

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[6] When we use the year 2005 as the pre-crisis period, we obtain the same results.

We also include measures for systematic risk (*Beta*) and firm-specific risk (*Idiosyncratic Risk*). In line with previous studies, we also expect that firms with higher risk will suffer more during a crisis. These variables are measured by estimating a market model regression that nets out the proportion of returns attributable to common market factors. Our market model regression is based on the following equation:

$$r_{j,t} = \alpha_j + \beta_{1,j}r_{m,t-3} + \beta_{2,j}r_{m,t-2} + \beta_{3,j}r_{m,t-1} + \beta_{4,j}r_{m,t} + \beta_{5,j}r_{m,t+1} + \varepsilon_{j,t} \tag{3}$$

where $r_{j,t}$ is the return on stock j in week t and $r_{m,t}$ is the return on our market index (Datastream Total Market Index; 2,450 European stocks) in week t. We include three lag terms and one lead term to correct for nonsynchronous trading bias (Dimson, 1979). *Beta* is the sum of the estimated slope coefficients of the different market factors. *Idiosyncratic Risk* is the standard deviation of the residuals from equation (3) ($\varepsilon_{j,t}$).

The asset pricing literature provides evidence that value stocks outperform growth stocks (e.g., Lakonishok et al. 1994; Fama and French 1995). To distinguish value stocks from growth stocks, we include the market-to-book ratio as a control. *Market-to-Book* is calculated by dividing the sum of the market value of equity and book value of debt by the book value of total assets. We calculate the average market value over the course of the year. The book value of debt and total assets are measured at the beginning of the year. To capture a momentum or contrarian effect, we measure the *Past Stock Return* as the cumulative stock return (buy-and-hold return) in the year prior to the year in which the considered time period starts. Since ownership might influence firm value through its impact on stock liquidity, we also control for this factor. We measure *Stock Liquidity* as the percentage of market days the firms' stock was traded. As a measure for the quality of law enforcement, we include the *Rule of Law* score from the World Bank. We expect that firms in countries with stronger legal institutions will suffer less during the crisis as minority shareholders are better protected

(Johnson et al. 2000). To control for industry effects, we also include dummy variables based on the two-digit SIC code.

Firm size, leverage, cash holdings, return on assets, quality of law enforcement and industry are measured at the beginning of the year in which the considered time period starts, while risk, market-to-book, past stock return and stock liquidity are measured over the year prior to the year in which the considered time period starts.

2.3.2 Market-to-book

Second, we investigate the relation between ownership stability and the market-to-book ratio over the period 2005-2010. We estimate the following firm fixed effects model[7]:

$$Ln(Market\text{-}to\text{-}Book)_{j,t} = \alpha_j + \beta_1 Ownership_{j,t} + \beta_2 Ownership_{j,t} * Year\, Dummy_t$$
$$+ \beta_3 Controls_{j,t} + \beta_4 Year\, Dummy_t + \varepsilon_{j,t} \qquad (4)$$

The dependent variable *Market-to-Book* and the ownership variables are defined as before. To capture the differential effect of ownership stability and ownership concentration before and during the crisis, we include interaction terms between the ownership variables and year dummies for 2007, 2008, 2009 and 2010. These year dummies are also included separately. We use control variables that are typically used in studies on the relationship between ownership and market-to-book: firm size, leverage, cash holdings, return on assets, asset tangibility, risk and stock liquidity (e.g., Demsetz and Villalonga 2001; Cronqvist and Nilsson 2003; Maury and Pajuste 2005; Laeven and Levine 2008; Konijn et al. 2011). Larger firms are typically more mature firms (i.e. low-growth firms). Debt might increase firm value by reducing free cash flow and disciplining managers, but it might also negatively affect firm value by increasing the risk of financial distress. Cash might reduce financing constraints, but it might also create agency costs. Return on assets and stock liquidity are expected to be

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[7] We used Hausman tests to investigate whether the fixed or random effects estimator is appropriate.

positively related to firm value. We also control for *Asset Tangibility*, computed as tangible fixed assets divided by the book value of total assets, which is a negative proxy for a firm's growth opportunities. All other variables are defined as before.

2.3.3 Idiosyncratic risk and investments

The relation between ownership stability and idiosyncratic risk is investigated by estimating the following firm fixed effects model for the period 2005-2010:

$$Ln(Idiosyncratic\ Risk)_{j,t} = \alpha_j + \beta_1 Ownership_{j,t} + \beta_2 Ownership_{j,t} * Year\ Dummy_t$$
$$+ \beta_3 Controls_{j,t} + \beta_4 Year\ Dummy_t + \varepsilon_{j,t} \tag{5}$$

The dependent variable *Idiosyncratic Risk* and the ownership variables are defined as before. Idiosyncratic risk is driven by investor uncertainty about future profits (e.g., Wei and Zhang 2006). We expect that investor uncertainty is lower for larger firms as they have less information asymmetry problems. Leverage might increase idiosyncratic risk by augmenting the risk of financial distress, but it might also lower investor uncertainty by mitigating managerial agency problems. Cash might reduce idiosyncratic risk by reducing financial constraints, but also increase uncertainty if it creates agency costs. A higher return on assets is expected to reduce idiosyncratic risk (e.g., Fink et al., 2010). We expect that there exists less uncertainty about firms with more tangible assets as information asymmetry increases with the fraction of intangible assets for which the payoffs are more difficult to observe (e.g., Habib and Ljungqvist 2005). High market-to-book firms might have higher idiosyncratic risk if the information asymmetry problem increases with investment opportunities (e.g., Smith and Watts 1992), or lower idiosyncratic risk if value stocks are riskier than growth stocks (e.g., Fama and French 1995). We also include stock liquidity as it could be an investor sentiment indicator (Baker and Stein 2004). Finally, we expect that earnings volatility

increases idiosyncratic risk.[8] Earnings volatility is measured by the *Standard Deviation of Return on Assets* over the previous three years. All other variables are again defined as before.

Finally, we investigate the relation between ownership stability and investments over the period 2005-2010. *Capital Expenditures* in year t is calculated as (Fixed Assets in year t - Fixed Assets in year t-1 + Depreciation in year t) divided by (Total Assets in year t-1). We estimate the following firm fixed effects model:

$$Ln(Capital\ Expenditures)_{j,t} = \alpha_j + \beta_1 Ownership_{j,t} + \beta_2 Ownership_{j,t} * Year\,Dummy_t$$
$$+ \beta_3 Controls_{j,t} + \beta_4 Year\,Dummy_t + \varepsilon_{j,t} \qquad (6)$$

We include firm size, leverage, cash and return on assets as proxies for financial constraints, and market-to-book as a proxy for investment opportunities (e.g., Barro 1990; Hubbard 1998; Lamont et al. 2001). We also control for idiosyncratic risk as Panousi and Papanikolau (2012) find that when idiosyncratic risk increases, firm investment drops. All variables are defined as before.

2.4 Dealing with endogeneity

It is well known that ownership structure might be endogenously determined by the contracting environment (e.g., Demsetz and Lehn 1985; Himmelberg et al. 1999). Therefore, ownership structure might differ in ways consistent with shareholder value maximization. As shareholders might change their ownership stake in the firm to maximize their profits, it directly follows that ownership stability can be endogenous as well.

A first concern is that ownership might be driven by simultaneity bias. Coles et al. (2012) show that, at least in the ownership-performance context, simultaneity bias cannot be

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[8] Prior studies use earnings volatility also as a proxy for corporate risk-taking (e.g., John et al. 2008) and find a significant relation with ownership (e.g., Paligorova 2010; Faccio et al. 2011; Mishra 2011). By including this control variable, we reduce the concern that our results reflect influence on corporate risk-taking rather than on investor uncertainty.

solved by using standard econometric approaches such as fixed effects and instrumental variables. Therefore, to deal with a simultaneity problem, we use the global financial crisis as an exogenous shock. Moreover, we measure ownership variables on a *pre-crisis* basis to investigate its influence *during* the period from 2007 until 2010. Since the global financial crisis was an unanticipated event at that time (e.g., Lins et al. 2012) and we measure ownership variables on a *pre-crisis* basis, we consider it unlikely that our results for the influence of ownership during the crisis are driven by simultaneity bias.

A second concern is that our results might be driven by unobservable heterogeneity and therefore would simply reflect differences in firm-specific contracting environment. Besides of controlling for a wide variety of firm characteristics, we reduce this concern in two other ways. First, we estimate our panel data models with firm fixed effects. This allows us to remove time-invariant unobservable heterogeneity. Second, we simultaneously consider ownership stability and ownership concentration. This avoids that the influence of ownership stability would reflect an ownership concentration effect (or vice versa).

*** Table 2 about here ***

3 Results

3.1 Descriptive Statistics

Table 2 reports descriptive statistics based on the full sample over the period 2005-2010, except for *Crisis Period Stock Return* and *Past Stock Return*, which are based on the crisis period and the pre-crisis period respectively (cf. section 2.3.1). With regard to *Capital Expenditures*, we exclude firm-years during which investments are larger than the book value of total assets to assure that results are only driven by non-merger investment decisions. Other continuous variables are winsorized at the top and bottom 1 percentiles to mitigate the impact of outliers. The mean non-zero-points and maintain-stake-points durations are 1.963

and 0.725, respectively, implying that over a three year period, blockholders on average hold a block in the firm for about 2 years (minimum of 1 year and maximum of 3 years) and maintain (or increase) their block for about 0.725 x 12 months = approximately 9 months (minimum of 0 year and maximum of 2 years).[9] The mean shareholdings of the largest blockholder and all blockholders are 34% and 55% respectively. The stock return during the crisis period is -60% on average. The average firm has a market-to-book of 1.7. The mean idiosyncratic risk is 5.3 percentage points. The average firm invests for about 7% of its total assets.

*** Table 3 about here ***

Table 3 reports Pearson correlation coefficients. Our ownership stability measures are positively correlated with the stock return during the crisis period and negatively correlated with the market-to-book ratio and idiosyncratic risk. All ownership concentration measures are positively correlated with the stock return during the crisis period.

*** Table 4 about here ***

3.2. Ownership and stock returns

Table 4 reports the results for the OLS regressions on stock returns during the crisis. Models (1) and (2) report results for regressions with *Non-Zero-Points Duration* as ownership stability measure, while in models (3) and (4) ownership stability is measured by *Maintain-Stake-Points Duration*. We employ the same sequence in the other analyses.

The results suggest that ownership stability had a significant positive influence on stock returns during the global financial crisis. The coefficients for both *Non-Zero-Points Duration* and *Maintain-Stake-Points Duration* are positive and significant (p < 0.01). A one

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[9] If we only consider the largest blockholder of each firm, we observe that the mean non-zero-points and maintain-stake-points durations are considerably longer: 2.514 (about 2 years and 6 months) and 1.069 (about 1 year and 1 month), respectively. The median non-zero-points and maintain-stake-points durations are 3 and 1, respectively.

standard deviation increase in the non-zero-points duration and maintain-stake-points duration are, respectively, associated with a 2.41 and 3.14 percentage points higher stock return, indicating that the relation between ownership stability and stock returns is also economically significant. We also find a significant positive influence of ownership concentration on stock returns. We observe significant positive coefficients for *Largest Blockholder Ownership*, *Herfindahl Index* and *Total Blockholder Ownership* (p < 0.01). A one standard deviation increase in the ownership of the largest blockholder, our Herfindahl index and the total blockholder ownership are, respectively, associated with a 3.17, 2.34 and 2 percentage points higher stock return. The results for the control variables are in line with previous findings in the literature.

*** Table 5 about here ***

We investigate whether these ownership effects are specific to the crisis period by considering the pre-crisis period and the post-crisis recovery period. Regression models (5) through (8) in Table 5 show the results for a pre-crisis period: the pre-crisis year 2006. Regression models (9) through (12) report results for the recovery period. We do not find any significant relationship between our ownership measures and the stock return in these time periods. This suggests that while in both the pre-crisis period and the post-crisis recovery period, stock market prices already incorporated the value of stable ownership as perceived by investors, the global financial crisis was an exogenous shock that increased the value of stable ownership, leading to higher stock returns for firms with a more stable ownership.

*** Table 6 about here ***

3.3. Ownership and market-to-book

In a second approach, we consider the relation between ownership stability and the market-to-book ratio from 2005 until 2010. Results are reported in Table 6. Consistent with

our results on stock returns, we do not find a significant relation between ownership stability and firm value in the pre-crisis period.[10] However, ownership stability is significantly and positively related to market-to-book during the crisis years. The coefficients for both *Non-Zero-Points Duration* and *Maintain-Stake-Points Duration* are positive and significant in 2008 and 2009 ($p < 0.01$). The *Maintain-Stake-Points Duration* are also significantly positive in 2010 ($p < 0.05$). We also find that ownership concentration had a significant positive impact on market-to-book during the crisis. The coefficients for *Largest Blockholder Ownership*, *Herfindahl Index* and *Total Blockholder Ownership* are all positive and significant ($p < 0.01$) in 2008. The *Largest Blockholder Ownership* and *Herfindahl Index* coefficients are also significant in 2009 ($p < 0.05$). The results for the control variables are in line with previous findings in the literature.

*** Table 7 about here ***

3.4. Ownership, idiosyncratic risk and investments

We also investigate how ownership is related to idiosyncratic risk and investments. In Table 7, we find that ownership stability was significantly and negatively related to idiosyncratic risk in each year since 2008. This suggests that a stable ownership has reduced investor uncertainty during and just after the crisis. The concentration of ownership was also significantly and negatively related to idiosyncratic risk during and after the crisis. The coefficients for *Largest Blockholder Ownership* and *Total Blockholder Ownership* are also negative and significant ($p < 0.01$) in 2008. The coefficients for *Herfindahl Index* are negative and marginally significant ($p < 0.10$) in 2009. Results on the control variables are as

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[10] The *insignificant* negative relation between total blockholder ownership and firm value prior to the crisis is a surprise as Thomsen et al. (2006) have found a *significant* negative relation in Europe during a non-crisis period. However, they doubt whether a systematic relation will persist in the long-run as this negative relation might be an out-of-equilibrium effect following corporate governance and finance restructurings in Europe during the 1990s. Consistent with this view, we do not find such a relation in Europe in the beginning of the 21st century.

expected, except for stock liquidity. The negative relation with stock liquidity might reflect that idiosyncratic risk reduces the willingness to trade.

*** Table 8 about here ***

The regression results on investments, which are reported in Table 8, suggest that firms with more stable ownership invested significantly more in 2008. The coefficients for *Non-Zero-Points Duration* and *Maintain-Stake-Points Duration* are positive and significant in 2008, respectively, at the 1% and 5% level. We also find that ownership concentration positively affected investments in 2008. The coefficients for *Largest Blockholder Ownership*, and *Herfindahl Index* are positive and significant ($p < 0.01$) The results for the control variables are in line with previous findings in the literature.

*** Table 9 about here ***

3.5. Investor protection

If stable ownership is associated with expropriation risk, we expect that the observed positive effect of ownership stability will only be observed in countries where investor protection is stronger. To test this conjecture, we interact the ownership variables in our model of stock returns during the crisis period with a measure of the quality of legal institutions: the rule of law score from the World Bank. As investor protection also depends on the extent to which laws protect investors, we additionally multiply the rule of law score with the updated anti-director rights index of Djankov et al. (2008).[11] The results are reported in Table 9. We do not find a significant effect of investor protection on the relation between ownership stability and stock returns during the crisis, which suggests that the benefits of

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[11] We use the updated anti-director rights index from Djankov et al. (2008) because a score is available for 26 countries in our sample. Spamann (2010) only provides a score for 15 countries. Regressions with only the legal rights component do not provide significant results. As the rule of law index from the World Bank has a minimum of approximately -1 for our sample countries, we first add one point to this score to create a positive value for all countries.

ownership stability are independent from the degree of investor protection. On the other hand, the positive effect of ownership concentration on stock returns does depend on the level of investor protection. In all regressions of Table 9, the coefficients of the interaction between ownership concentration and investor protection are positive and significant, while the ownership concentration variables have a negative coefficient. This indicates that ownership concentration is perceived as negative in weak investor protection countries and is only beneficial in countries with strong investor protection.[12] These results suggest that poor investor protection increases the likelihood that concentrated owners may be expropriating firm value during crisis periods at the expense of minority shareholders.

*** Table 10 about here ***

3.6. Blockholder types

Our findings raise the question whether the observed value of ownership stability applies to different types of blockholders. Based on the classification of shareholders in the Amadeus database, we consider family blockholders (families/individuals) and institutional blockholders (banks, financial firms, insurance firms, mutual and pension funds, and private equity firms) separately. Since the ownership measures in our main analysis are based on direct shareholdings, our sample also includes a substantial number of corporate blockholders. 28% of the blockholders are family blockholders, 34% are institutional investors (banks: 6%; financial firms: 7%; insurance firms: 2%; mutual and pension funds: 17%; private equity firms: 1%) and 36% are corporate blockholders.[13] We separately calculate our ownership stability measures for each category and test their impact on stock returns during the crisis. Panels A, B and C of Table 10 report results on family, institutional and corporate blockholders respectively. The samples with overlapping observations

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[12] We have plotted marginal effects from our ownership stability and concentration measures as a function of the investor protection measures. These graphs are available from the authors upon request.

[13] The other 2% are governments, foundations/research institutes and employees/managers.

respectively include 826 firms with family blockholders, 1,071 firms with institutional blockholders, and 1,286 firms with corporate blockholders. Not surprisingly, a comparison of the reported mean and median values for both stability measures indicates that blockholdings by families and by corporations are more stable than those of institutional investors.[14] The regression results suggest a significantly positive relation between the ownership stability measures and stock returns during the crisis for family blockholders ($p < 0.05$) and for institutional blockholders ($p < 0.01$).[15] However, we do not find a significant relation for the stability of corporate blockholders. For firms with corporate blockholders, it might be the stability of the ultimate shareholders that matters, rather than the stability of the direct corporate shareholders.

3.7. Robustness checks

We performed several robustness checks. All (unreported) results are available from the authors upon request. First, so far we have only used direct ownership data which is available for most shareholders. As a robustness check, we re-estimated our analyses using total ownership data which takes into account indirect shareholdings when available. When total ownership is missing but direct ownership data is available, direct ownership is used.[16] The results fully confirm those reported in the paper.

Second, we measured ownership stability over rolling periods of three years. However, this period might be too short to measure ownership stability in a reliable way. To investigate this issue, we re-estimate our crisis period stock return regressions with ownership

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[14] A t-test confirms that the differences between family blockholders and corporate blockholders vis-à-vis institutional blockholders are statistically significant at the 1% level.

[15] The coefficient for institutional blockholders is significantly higher at the 5% level than for family blockholders in model 39 (vs. model 35) and model 40 (vs. model 36). Chi-Squared Statistics are reported in Panel B of Table 10.

[16] As suggested by Dlugosz et al. (2006), we truncate our sample at a total blockholder ownership of 100%. About 9% of the observations in the database is removed. When we only consider direct ownership data, only 2% is removed. As noted by Bureau Van Dijk, the Amadeus ownership database might contain some unidentified overlaps between total ownership and direct ownership (cf. Footnote 2).

stability measured over a period of five years from 2003 until 2007. Although the estimated coefficients appear to be smaller, the significance of the coefficients is very similar to those reported in Table 4.

Third, we calculated the average of our ownership stability measures across all blockholders of a firm, giving each blockholder equal weight. However, these measures do not take into account that ownership stability might be more important for larger blockholders. Therefore, we re-calculate the average of our ownership stability measures across all blockholders, giving each blockholder a weight according to their fraction in the total blockholder ownership. Results are qualitatively very similar as those reported in the paper.

Fourth, an important ownership structure variable might be missing, which has been seen to significantly affect firm value (e.g., Claessens et al. 2002; Lins 2003; Maury and Pajuste 2005): the divergence between voting rights and cash flow rights of the ultimate shareholder. The available data does not allow us to measure this wedge. However, we reduce the concern that this omitted variable will bias our results by re-estimating our regressions without firms in those countries in which the divergence between ownership and control is substantial: Belgium, Italy, Norway, Sweden and Switzerland (Faccio and Lang 2002) and the Netherlands (La Porta et al. 2002). The results are qualitatively very similar as those reported in the paper.

4 Conclusion

In this study we have investigated the value of a stable ownership for a large sample of listed firms in 29 European countries, while controlling for ownership concentration. Our results suggest that a stable ownership is beneficial. During the global financial crisis, firms with stable blockholders had higher stock returns and had a higher stock market value. We

identify two channels behind this effect: ownership stability reduced idiosyncratic risk and increased investments during the crisis. We find that the beneficial effect of ownership stability is similar across countries with different levels of investor protection, which indicates that stable ownership is not associated with the threat of expropriation of minority shareholders. We find similar results for concentrated ownership. One exception is our finding that ownership concentration is more valuable in countries with stronger investor protection, suggesting that a concentrated ownership increases expropriation risk when investor protection is poor.

These findings contribute to the ongoing debate with regard to the role of corporate ownership and the proper design of legal institutions. Our result that long-term investors are beneficial confirms the belief that a good corporate governance system should give a favored role to long-term shareholders (e.g., Fox and Lorsch 2012). Our result that ownership concentration is more valuable in countries with stronger investor protection also suggests the need for policy-makers to develop an institutional framework in which minority shareholders are protected from expropriation by large shareholders (cf. Shleifer and Vishny 1997).

Acknowledgments

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Table 1 Country distribution of sample

Country	N° of firms	% of firms	Rule of law	Anti-director rights	Country	N° of firms	% of firms	Rule of law	Anti-director rights
Austria	20	0.89%	1.86	2.5	Lithuania	29	1.29%	0.58	4
Belgium	78	3.47%	1.24	3	Luxembourg	4	0.18%	1.82	2
Bulgaria	65	2.89%	-0.17	3	Netherlands	92	4.09%	1.75	2.5
Croatia	67	2.98%	0.10	2.5	Norway	69	3.07%	1.91	3.5
Cyprus	3	0.13%	0.90	n/a	Poland	112	4.98%	0.42	2
Czech Republic	10	0.44%	0.86	4	Portugal	26	1.16%	1.19	2.5
Estonia	9	0.40%	0.93	n/a	Romania	28	1.24%	-0.18	5
Finland	69	3.07%	1.96	3.5	Russia	41	1.82%	-0.92	4
France	296	13.16%	1.40	3.5	Slovakia	2	0.09%	0.52	3
Germany	248	11.02%	1.65	3.5	Slovenia	6	0.27%	0.85	n/a
Greece	174	7.73%	0.77	2	Spain	92	4.09%	1.10	5
Iceland	6	0.27%	1.98	4.5	Sweden	54	2.40%	1.78	3.5
Ireland	16	0.71%	1.57	5	Switzerland	20	0.89%	1.89	3
Italy	126	5.60%	0.46	2	United Kingdom	481	21.38%	1.55	5
Latvia	7	0.31%	0.57	4	Total	2,250	100%		

This table reports the country distribution of the sample. The final two columns of this table show for each country the rule of law score from the World Bank and the updated anti-director rights score from Djankov et al. (2008).

Table 2 Descriptive statistics

	Firms	Obs.	Mean	25th Pctl.	Median	75 Pctl.	SD
Ownership variables							
Non-Zero-Points Duration	2,250	9,743	1.963	1.500	1.857	2.333	0.595
Maintain-Stake-Points Duration	2,250	9,743	0.725	0.300	0.600	1.000	0.566
Largest Blockholder Ownership	2,250	9,743	0.341	0.1464	0.285	0.500	0.227
Herfindahl Index	2,250	9,743	0.559	0.317	0.501	0.797	0.279
Total Blockholder Ownership	2,250	9,743	0.547	0.352	0.571	0.740	0.247
Dependent variables							
Crisis Period Stock Return	1,702	1,702	-0.596	-0.806	-0.659	-0.470	0.286
Market-to-Book	2,250	9,743	1.691	1.007	1.353	1.928	1.206
Idiosyncratic Risk	2,250	9,743	0.053	0.032	0.044	0.063	0.033
Capital Expenditures	1,987	8,312	0.071	0.004	0.042	0.108	0.153
Control variables							
Total Assets (th €)	2,250	9,743	1,112,407	45,759	132,927	529,236	3,202,002
Leverage	2,250	9,743	0.194	0.029	0.157	0.311	0.181
Cash Holdings	2,250	9,743	0.088	0.012	0.043	0.118	0.118
Return on Assets	2,250	9,743	0.031	-0.004	0.036	0.084	0.119
SD(Retun on Assets)	2,211	9,417	0.043	0.011	0.023	0.048	0.061
Asset Tangibility	2,250	9,743	0.220	0.032	0.142	0.343	0.228
Beta	2,250	9,743	0.731	0.194	0.639	1.176	0.888
Liquidity	2,250	9,743	0.845	0.862	0.962	0.969	0.241
Past Stock Return	1,702	1,702	0.347	0.02	0.220	0.509	0.590
Rule of Law	2,250	9,743	1.277	0.825	1.463	1.713	0.596

This table reports descriptive statistics based on the full sample over the period 2005-2010, except for Crisis Period Stock Return and Past Stock Return which are based on the crisis period and the pre-crisis period respectively. With regard to *Capital Expenditures*, we exclude firm-years during which investments are larger than the book value of total assets to assure that results are only driven by non-merger investment decisions. Other continuous variables are Winsorized at the top and bottom 1 percentiles to mitigate the impact of outliers. Ownership variables are as defined in Section 2.2. Dependent variables are Crisis Period Stock Return = cumulative stock return (buy-and-hold return) over the crisis period; Market-to-Book = market value of Equity plus book value of Debt, divided by Total Assets; Idiosyncratic Risk = standard deviation of the residuals from the market model regression in equation (3); Capital Expenditures = (Fixed Assets at the end of year t - Fixed Assets at the end of year t-1 + Depreciation in year t)/Total Assets in year t-1. Control Variables are Total Assets (in thousands of euros); Leverage = Financial Debt divided by Total Assets; Cash Holdings = Cash and Cash Equivalents divided by Total Assets; Return on Assets = Earnings before Interest and Taxes (EBIT) divided by Total Assets; SD(Return on Assets) = standard deviation of Return on Assets over the three previous years; Asset Tangibility = Tangible Fixed Assets divided by Total Assets; Beta = sum of the estimated slope coefficients of the different market factors from the market model regression in equation (3); Liquidity = percentage of trading days; Past Stock Return = the cumulative stock return (buy-and-hold return) over the year prior to the year in which the crisis period starts, i.e. 2006; Rule of Law (from the World Bank).

Table 3 Pearson correlation matrix

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	Non-Zero-Points Duration	1																		
2	Maintain-Stake-Points Duration	0.85	1																	
3	Largest Blockholder Ownership	0.22	0.21	1																
4	Herfindahl Index	0.09	0.09	0.53	1															
5	Total Blockholder Ownership	0.20	0.21	0.73	-0.10	1														
6	Crisis Period Stock Return	0.10	0.13	0.16	0.11	0.10	1													
7	Ln(Market-to-Book)	-0.04	-0.06	-0.02	0.04	-0.06	-0.05	1												
8	Ln(Idiosyncratic Risk)	-0.03	-0.03	0.04	-0.02	0.07	-0.16	-0.17	1											
9	Capital Expenditures	-0.02	-0.02	-0.02	-0.02	-0.01	-0.01	0.23	-0.08	1										
10	Ln(Total Assets)	-0.12	-0.14	-0.14	0.04	-0.19	-0.02	0.03	-0.36	0.03	1									
11	Leverage	0.01	0.01	0.00	-0.01	0.02	-0.10	-0.11	0.02	-0.05	0.20	1								
12	Cash Holdings	-0.04	-0.05	-0.08	-0.03	-0.08	0.05	0.25	0.01	0.08	-0.11	-0.28	1							
13	Return on Assets	0.00	0.00	0.01	0.00	0.01	0.01	0.15	-0.28	0.10	0.18	-0.09	-0.01	1						
14	Ln(SD(Return on Assets))	-0.09	-0.08	-0.04	-0.02	-0.04	-0.09	0.02	0.31	-0.01	-0.29	-0.10	0.15	-0.24	1					
15	Asset Tangibility	0.04	0.07	0.08	0.01	0.10	0.02	-0.20	-0.01	0.05	0.04	0.18	-0.20	0.10	-0.04	1				
16	Beta	-0.03	-0.06	-0.03	0.00	-0.04	-0.19	0.04	0.25	-0.01	0.00	0.01	0.01	-0.08	0.07	-0.04	1			
17	Stock Liquidity	-0.12	-0.17	-0.26	-0.08	-0.26	-0.28	0.20	-0.14	0.05	0.34	0.02	0.07	0.05	-0.06	-0.19	0.18	1		
18	Past Stock Return	0.05	0.04	0.04	-0.01	0.05	-0.17	0.31	0.32	0.08	-0.02	-0.01	0.00	0.13	-0.01	0.03	0.28	0.06	1	
19	Rule of Law	-0.10	-0.12	-0.26	-0.09	-0.26	0.10	0.15	-0.17	0.03	0.09	-0.09	0.19	-0.02	0.04	-0.25	-0.08	0.07	-0.20	1

This table shows the Pearson correlation matrix, which is based on the full sample over the period 2005-2010, except for Crisis Period Stock Return and Past Stock Return which are based on the crisis period and the pre-crisis period respectively. All variables are defined as before. Some of them are transformed to deal with high skewness: Market-to-Book, Idiosyncratic Risk, Total Assets and SD(Return on Assets) are log-transformed. Here **Bold** indicates significance at the 1% level.

Table 4 Ownership and crisis period stock returns

	(1)	(2)	(3)	(4)
	Stock Return Crisis Period			
Non-Zero-Points Duration	0.040***	0.041***		
	(0.000)	(0.000)		
Maintain-Stake-Points Duration			0.055***	0.056***
			(0.000)	(0.000)
Largest Blockholder Ownership	0.140***		0.139***	
	(0.000)		(0.000)	
Herfindahl Index		0.085***		0.083***
		(0.000)		(0.001)
Total Blockholder Ownership		0.082***		0.080***
		(0.006)		(0.007)
Ln(Total Assets)	-0.002	-0.003	-0.001	-0.002
	(0.659)	(0.535)	(0.763)	(0.624)
Leverage	-0.132***	-0.132***	-0.135***	-0.135***
	(0.000)	(0.000)	(0.000)	(0.000)
Cash Holdings	0.113*	0.112*	0.109	0.107
	(0.098)	(0.098)	(0.110)	(0.110)
Return on Assets	-0.044	-0.044	-0.045	-0.045
	(0.594)	(0.598)	(0.585)	(0.591)
Beta	-0.016*	-0.016*	-0.015*	-0.015*
	(0.059)	(0.063)	(0.072)	(0.078)
Ln(Idiosyncratic Risk)	-0.094***	-0.095***	-0.092***	-0.093***
	(0.000)	(0.000)	(0.000)	(0.000)
Ln(Market-to-Book)	-0.014	-0.014	-0.012	-0.012
	(0.284)	(0.286)	(0.344)	(0.346)
Past Stock Return	-0.029**	-0.029**	-0.029**	-0.029**
	(0.017)	(0.020)	(0.015)	(0.017)
Stock Liquidity	-0.322***	-0.325***	-0.315***	-0.319***
	(0.000)	(0.000)	(0.000)	(0.000)
Rule of Law	0.052***	0.051***	0.055***	0.054***
	(0.000)	(0.000)	(0.000)	(0.000)
Industry Dummies	Yes	Yes	Yes	Yes
Observations	1,702	1,702	1,702	1,702
Adjusted R-squared	0.2053	0.2036	0.2095	0.2075
F-Statistic	27.06***	24.99***	28.05***	25.84***

This table displays regression coefficients and heteroskedasticity-robust p-values for OLS regressions with the stock return during the crisis period as dependent variable. All variables are defined as before. Coefficients for industry dummy variables are not reported. Here ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 5 Ownership and stock returns during the pre-crisis period and the recovery period

	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Stock Return Pre-Crisis Period				Stock Return Recovery Period			
Non-Zero-Points Duration	-0.012	-0.011			0.001	-0.001		
	(0.652)	(0.672)			(0.986)	(0.972)		
Maintain-Stake-Points Duration			-0.011	-0.010			-0.006	-0.008
			(0.692)	(0.716)			(0.861)	(0.826)
Largest Blockholder Ownership	-0.053		-0.055		-0.037		-0.035	
	(0.414)		(0.395)		(0.686)		(0.705)	
Herfindahl Index		-0.043		-0.044		0.001		0.002
		(0.383)		(0.370)		(0.992)		(0.984)
Total Blockholder Ownership		-0.032		-0.033		-0.003		-0.001
		(0.595)		(0.583)		(0.972)		(0.990)
Ln(Total Assets)	-0.015	-0.015	-0.015	-0.015	0.088***	0.088***	0.087***	0.088***
	(0.136)	(0.156)	(0.136)	(0.157)	(0.000)	(0.000)	(0.000)	(0.000)
Leverage	0.055	0.056	0.057	0.057	-0.428***	-0.427***	-0.427***	-0.427***
	(0.587)	(0.587)	(0.578)	(0.578)	(0.001)	(0.001)	(0.001)	(0.001)
Cash Holdings	0.093	0.092	0.095	0.094	0.117	0.121	0.116	0.119
	(0.574)	(0.578)	(0.569)	(0.573)	(0.521)	(0.509)	(0.525)	(0.514)
Return on Assets	0.533***	0.529***	0.534***	0.530***	0.174	0.175	0.172	0.173
	(0.001)	(0.001)	(0.001)	(0.001)	(0.292)	(0.289)	(0.298)	(0.295)
Beta	0.042**	0.042**	0.042**	0.042**	0.094*	0.093*	0.094*	0.093*
	(0.042)	(0.043)	(0.042)	(0.043)	(0.052)	(0.053)	(0.052)	(0.053)
Ln(Idiosyncratic Risk)	0.003	0.003	0.003	0.003	0.330***	0.330***	0.329***	0.329***
	(0.948)	(0.940)	(0.945)	(0.937)	(0.000)	(0.000)	(0.000)	(0.000)
Ln(Market-to-Book)	-0.140***	-0.139***	-0.140***	-0.139***	0.047	0.044	0.047	0.044
	(0.000)	(0.000)	(0.000)	(0.000)	(0.315)	(0.339)	(0.315)	(0.339)
Past Stock Return	0.073*	0.073*	0.073**	0.073**	-0.976***	-0.978***	-0.975***	-0.977***
	(0.050)	(0.050)	(0.050)	(0.050)	(0.000)	(0.000)	(0.000)	(0.000)
Stock Liquidity	0.027	0.026	0.025	0.024	0.311***	0.317***	0.311***	0.316***
	(0.761)	(0.772)	(0.781)	(0.789)	(0.003)	(0.002)	(0.003)	(0.002)
Rule of Law	-0.203***	-0.204***	-0.204***	-0.204***	0.038	0.041	0.037	0.040
	(0.000)	(0.000)	(0.000)	(0.000)	(0.383)	(0.354)	(0.393)	(0.363)
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,634	1,634	1,634	1,634	1,456	1,456	1,456	1,456
Adjusted R-squared	0.1090	0.1086	0.1090	0.1086	0.2230	0.2224	0.2230	0.2224
F-Statistic	6.88***	6.50***	6.90***	6.54***	30.24***	28.73***	30.24***	28.71***

This table displays regression coefficients and heteroskedasticity-robust p-values for OLS regressions with the stock return during the pre-crisis period and the recovery period as dependent variables. All variables are defined as before. Coefficients for industry dummy variables are not reported. Here ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 6 Ownership and market-to-book

	(13)	(14)	(15)	(16)
	Ln(Market-to-Book)			
Non-Zero-Points Duration	-0.007	-0.007		
	(0.490)	(0.488)		
Maintain-Stake-Points Duration			-0.015	-0.015
			(0.127)	(0.132)
* Firm-Year 2007	0.021	0.017	0.020	0.016
	(0.145)	(0.239)	(0.180)	(0.294)
* Firm-Year 2008	0.049***	0.044***	0.064***	0.057***
	(0.000)	(0.002)	(0.000)	(0.000)
* Firm-Year 2009	0.049***	0.047***	0.068***	0.066***
	(0.001)	(0.001)	(0.000)	(0.000)
* Firm-Year 2010	0.016	0.015	0.035**	0.034**
	(0.337)	(0.374)	(0.042)	(0.050)
Largest Blockholder Ownership	0.000		-0.003	
	(0.991)		(0.947)	
Herfindahl Index		0.033		0.032
		(0.269)		(0.294)
* Firm-Year 2007	0.043	-0.011	0.047	-0.009
	(0.207)	(0.681)	(0.170)	(0.727)
* Firm-Year 2008	0.215***	0.087***	0.211***	0.086***
	(0.000)	(0.001)	(0.000)	(0.001)
* Firm-Year 2009	0.078**	0.063**	0.072**	0.060**
	(0.032)	(0.021)	(0.050)	(0.026)
* Firm-Year 2010	0.044	0.062*	0.037	0.060*
	(0.306)	(0.057)	(0.401)	(0.067)
Total Blockholder Ownership		-0.046		-0.047
		(0.173)		(0.158)
* Firm-Year 2007		0.068**		0.070**
		(0.031)		(0.026)
* Firm-Year 2008		0.209***		0.203***
		(0.000)		(0.000)
* Firm-Year 2009		0.055		0.047
		(0.111)		(0.176)
* Firm-Year 2010		0.016		0.006
		(0.691)		(0.872)
Ln(Total Assets)	-0.386***	-0.386***	-0.385***	-0.385***
	(0.000)	(0.000)	(0.000)	(0.000)
Leverage	0.200***	0.201***	0.201***	0.202***
	(0.000)	(0.000)	(0.000)	(0.000)
Cash Holdings	0.155***	0.158***	0.157***	0.159***
	(0.004)	(0.004)	(0.004)	(0.003)
Return on Assets	0.292***	0.297***	0.292***	0.297***
	(0.000)	(0.000)	(0.000)	(0.000)
Asset Tangibility	-0.127**	-0.130**	-0.128**	-0.131**
	(0.028)	(0.024)	(0.027)	(0.023)
Beta	0.001	0.001	0.000	0.000
	(0.882)	(0.872)	(0.945)	(0.930)
Ln(Idiosyncratic Risk)	-0.018*	-0.018*	-0.017*	-0.017*
	(0.060)	(0.060)	(0.081)	(0.079)
Stock Liquidity	0.159***	0.153***	0.157***	0.152***
	(0.000)	(0.000)	(0.000)	(0.000)
Firm-Years 2007-2010	Yes	Yes	Yes	Yes
… with Firm-Year 2008	-0.278***	-0.356***	-0.226***	-0.307***
	(0.000)	(0.000)	(0.000)	(0.000)
Firm Fixed Effects	Yes	Yes	Yes	Yes
Firm-Year Observations	9,743	9,743	9,743	9,743
Number of Firms	2,250	2,250	2,250	2,250
Adjusted R-squared	0.4444	0.4461	0.4452	0.4468
F-Statistic	216.28***	177.02***	216.85***	177.42***
Hausman Chi-Squared	307.52***	481.93***	190.76***	662.17***

This table displays regression coefficients and heteroskedasticity-robust p-values for firm fixed effects panel data regressions with Ln(Market-to-Book) as the dependent variable. All variables are defined as before. Coefficients for year dummy variables are not reported. Here ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 7 Ownership and idiosyncratic risk

	(17)	(18)	(19)	(20)
	Ln(Idiosyncratic Risk)			
Non-Zero-Points Duration	0.018	0.018		
	(0.161)	(0.149)		
Maintain-Stake-Points Duration			0.012	0.012
			(0.372)	(0.373)
* Firm-Year 2007	-0.007	-0.006	-0.002	0.001
	(0.714)	(0.757)	(0.928)	(0.977)
* Firm-Year 2008	-0.072***	-0.066***	-0.093***	-0.085***
	(0.000)	(0.001)	(0.000)	(0.000)
* Firm-Year 2009	-0.078***	-0.077***	-0.072***	-0.070***
	(0.000)	(0.000)	(0.002)	(0.003)
* Firm-Year 2010	-0.052**	-0.052**	-0.040*	-0.039*
	(0.014)	(0.014)	(0.085)	(0.097)
Largest Blockholder Ownership	0.040		0.050	
	(0.510)		(0.405)	
Herfindahl Index		-0.009		-0.003
		(0.804)		(0.937)
* Firm-Year 2007	-0.109**	-0.021	-0.113**	-0.024
	(0.024)	(0.570)	(0.017)	(0.504)
* Firm-Year 2008	-0.235***	-0.029	-0.227***	-0.028
	(0.000)	(0.462)	(0.000)	(0.463)
* Firm-Year 2009	-0.127**	-0.070*	-0.134**	-0.073*
	(0.021)	(0.100)	(0.015)	(0.085)
* Firm-Year 2010	-0.105*	-0.053	-0.115**	-0.058
	(0.053)	(0.193)	(0.033)	(0.155)
Total Blockholder Ownership		0.032		0.038
		(0.475)		(0.390)
* Firm-Year 2007		-0.109**		-0.112**
		(0.013)		(0.011)
* Firm-Year 2008		-0.278***		-0.267***
		(0.000)		(0.000)
* Firm-Year 2009		-0.110**		-0.114**
		(0.026)		(0.021)
* Firm-Year 2010		-0.084*		-0.092*
		(0.086)		(0.062)
Ln(Total Assets)	-0.077***	-0.077***	-0.078***	-0.078***
	(0.000)	(0.000)	(0.000)	(0.000)
Leverage	0.273***	0.272***	0.269***	0.267***
	(0.000)	(0.000)	(0.000)	(0.000)
Cash Holdings	-0.205***	-0.210***	-0.206***	-0.211***
	(0.000)	(0.000)	(0.000)	(0.000)
Return on Assets	-0.215***	-0.219***	-0.213***	-0.217***
	(0.000)	(0.000)	(0.000)	(0.000)
Ln(SD(Return on Assets))	0.014***	0.014***	0.014***	0.014***
	(0.004)	(0.005)	(0.003)	(0.004)
Asset Tangibility	-0.091	-0.090	-0.087	-0.086
	(0.216)	(0.223)	(0.235)	(0.240)
Ln(Market-to-Book)	-0.139***	-0.137***	-0.140***	-0.138***
	(0.000)	(0.000)	(0.000)	(0.000)
Stock Liquidity	-0.504***	-0.497***	-0.502***	-0.496***
	(0.000)	(0.000)	(0.000)	(0.000)
Firm-Years 2007-2010	Yes	Yes	Yes	Yes
… with Firm-Year 2008	0.639***	0.716***	0.561***	0.641***
	(0.000)	(0.000)	(0.000)	(0.000)
Firm Fixed Effects	Yes	Yes	Yes	Yes
Firm-Year Observations	9,413	9,413	9,413	9,413
Number of Firms	2,211	2,211	2,211	2,211
Adjusted R-squared	0.2971	0.2986	0.2976	0.2989
F-Statistic	134.82***	114.53***	136.35***	115.61***
Hausman Chi-Squared	175.70***	181.92***	179.05***	154.73***

This table displays regression coefficients and heteroskedasticity-robust p-values for firm fixed effects panel data regressions with Ln(Idiosyncratic Risk) as the dependent variable. All variables are defined as before. Coefficients for year dummy variables are not reported. Here ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 8 Ownership and investments

	(21)	(22)	(23)	(24)
	Capital Expenditures			
Non-Zero-Points Duration	-0.002	-0.002		
	(0.775)	(0.765)		
Maintain-Stake-Points Duration			0.004	0.004
			(0.505)	(0.515)
* Firm-Year 2007	0.007	0.007	0.004	0.004
	(0.505)	(0.495)	(0.704)	(0.675)
* Firm-Year 2008	0.031***	0.031***	0.025**	0.025**
	(0.002)	(0.002)	(0.021)	(0.022)
* Firm-Year 2009	0.012	0.011	0.010	0.009
	(0.201)	(0.230)	(0.351)	(0.378)
* Firm-Year 2010	0.018*	0.017*	0.013	0.013
	(0.076)	(0.083)	(0.204)	(0.211)
Largest Blockholder Ownership	0.019		0.013	
	(0.449)		(0.612)	
Herfindahl Index		0.016		0.013
		(0.392)		(0.507)
* Firm-Year 2007	0.015	0.009	0.018	0.010
	(0.506)	(0.638)	(0.434)	(0.574)
* Firm-Year 2008	0.062***	0.059***	0.067***	0.061***
	(0.006)	(0.001)	(0.003)	(0.001)
* Firm-Year 2009	-0.005	-0.005	-0.003	-0.003
	(0.816)	(0.782)	(0.882)	(0.841)
* Firm-Year 2010	-0.011	-0.012	-0.007	-0.010
	(0.640)	(0.514)	(0.749)	(0.579)
Total Blockholder Ownership		-0.004		-0.008
		(0.855)		(0.687)
* Firm-Year 2007		0.005		0.006
		(0.823)		(0.786)
* Firm-Year 2008		0.033		0.036
		(0.130)		(0.102)
* Firm-Year 2009		-0.002		-0.001
		(0.933)		(0.947)
* Firm-Year 2010		-0.008		-0.006
		(0.720)		(0.784)
Ln(Total Assets)	-0.129***	-0.129***	-0.129***	-0.129***
	(0.000)	(0.000)	(0.000)	(0.000)
Leverage	-0.113***	-0.113***	-0.113***	-0.113***
	(0.000)	(0.000)	(0.000)	(0.000)
Cash Holdings	0.203***	0.202***	0.204***	0.202***
	(0.000)	(0.000)	(0.000)	(0.000)
Return on Assets	0.063**	0.061*	0.061*	0.060*
	(0.049)	(0.055)	(0.053)	(0.059)
Ln(Market-to-Book)	0.068***	0.068***	0.068***	0.068***
	(0.000)	(0.000)	(0.000)	(0.000)
Ln(Idiosyncratic Risk)	-0.011**	-0.011**	-0.011**	-0.011**
	(0.034)	(0.032)	(0.038)	(0.036)
Firm-Years 2007-2010	Yes	Yes	Yes	Yes
… with Firm-Year 2008	-0.108***	-0.137***	-0.067***	-0.097***
	(0.000)	(0.000)	(0.000)	(0.000)
Firm Fixed Effects	Yes	Yes	Yes	Yes
Firm-Year Observations	8,578	8,578	8,578	8,578
Number of Firms	2,047	2,047	2,047	2,047
Adjusted R-squared	0.1119	0.1126	0.1115	0.1122
Hausman Chi-Squared	298.33***	498.90***	43.48***	616.54***

This table displays regression coefficients and heteroskedasticity-robust p-values for firm fixed effects panel data regressions with Capital Expenditures as the dependent variable. All variables are defined as before. Coefficients for year dummy variables are not reported. Here ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 9 Ownership and crisis period stock returns: The role of investor protection

	Investor Protection = Rule of Law				Investor Protection = Rule of Law x Antidirector Rights			
	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)
	Stock Return Crisis Period				Stock Return Crisis Period			
Non-Zero-Points Duration	0.046*	0.046*			0.039	0.033		
	(0.064)	(0.059)			(0.106)	(0.180)		
Maintain-Stake-Points Duration			0.056**	0.057**			0.047*	0.041
			(0.031)	(0.026)			(0.078)	(0.129)
* Investor Protection	-0.009	-0.006	-0.005	-0.005	-0.001	0.000	-0.000	0.001
	(0.635)	(0.725)	(0.793)	(0.804)	(0.729)	(0.892)	(0.929)	(0.798)
Largest Blockholder Ownership	-0.106*		-0.097		-0.164**		-0.158**	
	(0.091)		(0.122)		(0.031)		(0.038)	
Herfindahl Index		-0.101*		-0.096*		-0.055		-0.050
		(0.054)		(0.070)		(0.315)		(0.362)
* Investor Protection	0.192***	0.140***	0.183***	0.134***	0.036***	0.016***	0.035***	0.015**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.008)	(0.000)	(0.012)
Total Blockholder Ownership		-0.039		-0.034		-0.058		-0.057
		(0.530)		(0.590)		(0.412)		(0.424)
* Investor Protection		0.092**		0.087**		0.015*		0.014*
		(0.034)		(0.045)		(0.057)		(0.062)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,702	1,702	1,702	1,702	1,690	1,690	1,690	1,690
Adjusted R-squared	0.2122	0.2096	0.2158	0.2129	0.2023	0.1961	0.2050	0.1987
F-Statistic	23.82***	20.93***	24.53***	21.50***	22.71***	19.57***	23.20***	19.98***

This table displays regression coefficients and heteroskedasticity-robust p-values for OLS regressions with the stock return during the crisis period as dependent variable. Ownership measures are interacted with two measures of investor protection: the rule of law index from the World Bank and an index of shareholder protection, defined as the updated anti-director rights index from Djankov et al. (2008) multiplied by the rule of law index from the World Bank. All variables are defined as before. Coefficients for control variables are not reported. Here ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 10 Ownership and crisis period stock returns: The effect of ownership stability across blockholder types

	(33)	(34)	(35)	(36)
Panel A: Family Blockholders	Stock Return Crisis Period			
Non-Zero-Points Duration	0.025**	0.025**		
(mean = 2.013; median = 2.000)	(0.042)	(0.040)		
Maintain-Stake-Points Duration			0.029**	0.030**
(mean = 0.738; median = 0.500)			(0.031)	(0.032)
Largest Blockholder Ownership	Yes	No	Yes	No
Herfindahl Index	No	Yes	No	Yes
Total Blockholder Ownership	No	Yes	No	Yes
Control Variables	Yes	Yes	Yes	Yes
Observations	826	826	826	826
Adjusted R-squared	0.1723	0.1719	0.1731	0.1725
F-Statistic	11.34***	10.57***	11.45***	10.67***

	(37)	(38)	(39)	(40)
Panel B: Institutional Blockholders	Stock Return Crisis Period			
Non-Zero-Points Duration	0.043***	0.045***		
(mean = 1.718; median = 1.600)	(0.002)	(0.001)		
Maintain-Stake-Points Duration			0.054***	0.054***
(mean = 0.531; median = 0.400)			(0.000)	(0.000)
Largest Blockholder Ownership	Yes	No	Yes	No
Herfindahl Index	No	Yes	No	Yes
Total Blockholder Ownership	No	Yes	No	Yes
Control Variables	Yes	Yes	Yes	Yes
Observations	1,071	1,071	1,071	1,071
Adjusted R-squared	0.1758	0.1745	0.1787	0.1766
F-Statistic	12.32***	11.37***	12.50***	11.50***
Chi-Squared Institutional vs. Family	2.56	2.92*	4.11**	4.07**

	(41)	(42)	(43)	(44)
Panel C: Corporate Blockholders	Stock Return Crisis Period			
Non-Zero-Points Duration	-0.003	-0.003		
(mean = 1.963; median = 2.000)	(0.755)	(0.798)		
Maintain-Stake-Points Duration			0.009	0.010
(mean = 0.715; median = 0.600)			(0.426)	(0.394)
Largest Blockholder Ownership	Yes	No	Yes	No
Herfindahl Index	No	Yes	No	Yes
Total Blockholder Ownership	No	Yes	No	Yes
Control Variables	Yes	Yes	Yes	Yes
Observations	1,286	1,286	1,286	1,286
Adjusted R-squared	0.1929	0.1917	0.1933	0.1921
F-Statistic	21.16***	19.70***	21.34***	19.87***

This table displays regression coefficients and heteroskedasticity-robust p-values for OLS regressions with the stock return during the crisis period as dependent variable. Ownership stability measures are calculated separately for each investor type. All variables are defined as before. Coefficients for ownership concentration measures and control variables are not reported. Here ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.