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Responding to Financial Crisis:

The Rise of State Ownership and Implications for Firm Performance

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Abstract

We examine changes to corporate ownership in nine East Asian countries following the 1997 Asian Financial Crisis. Countries with lower incomes and in which policy making involves greater transactions costs (i.e., veto points) have more firms with state ownership. Partial state ownership appears to be effective insurance against crisis. Firms with minority state ownership exhibit 5% (annualized) lower idiosyncratic volatility in the quarter of the Lehman Brothers collapse than firms with either no or dominant state ownership. Minority state-owned firms also enjoy a higher abnormal return of 3.7% and 6.1% in the two quarters following the collapse of Lehman Brothers.

JEL Classifications: G01, G34, G38, H11, H12

Key words: financial crisis, government ownership, veto players, insurance, corporate performance

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1. Introduction

Until the early 1980s, state-owned banks and nonfinancial enterprises were widely used in an effort to spur development and growth. But success proved elusive for most countries and during the ensuing decade a wave of privatization unwound the state's involvement (Caprio, Fiechter, Litan, and Pomerleano 2004). The recent financial crisis has prompted a reconsideration of the state's role in the financial system and broader economy, not just indirectly, through stronger regulatory oversight, but also directly, through state ownership.

Take, for example, the U.S. government's takeover of American International Group (AIG) following the collapse of Lehman Brothers in September 2008. In the subsequent two months, AIG received \$128 billion from the government in exchange for a 92% ownership stake.¹ 19 months later, the Dodd-Frank Act was passed into law (July 21 2010), with an approximate cost of \$2.9 billion for the government over five years.² The new regulations were also projected to cost several hundred million dollars per year for the largest banks.³ Since then, the government has unwound its ownership stake, and today owns approximately 21.5% of AIG.

This example highlights some important facts about the relation between financial crises, state ownership and regulation. First, a typical response by governments during a crisis is to acquire an ownership stake in troubled firms (as part of a bailout). Second, governments then take costly action to make regulatory changes in areas of the economy deemed to be the 'cause' of the crisis. New regulation is formed with the aim to reduce both

¹ See: <http://online.wsj.com/article/SB122156561931242905.html>. An initial loan of \$85 billion occurred immediately following the collapse of Lehman Brothers. Two months later, the U.S. Treasury purchased \$40 billion in AIG senior preferred stock with funding from the Troubled Asset Relief Program.

² See: <http://blogs.wsj.com/economics/2011/03/28/gao-implementing-dodd-frank-could-cost-2-9-billion/>

³ The approximate cost for JP MorganChase was projected at \$400 to \$600 million annually. See: <http://www.economist.com/node/21547784>.

the likelihood and severity of future crises. In this regard, regulation can be thought of as state insurance against losses associated with financial crises. Third, as the crisis abates, ownership stakes are unwound and substituted for by (new) regulation. Accordingly, governments, at least implicitly, view state ownership and regulation as (albeit imperfect) alternative forms of insurance against the costs of future crises.

A natural question to ask is whether this process is the same for all countries. What determines whether new regulation is a viable alternative to persistent state ownership? What does this imply for the degree of state ownership in different countries following a crisis? And to what extent is state ownership effective as an insurance policy when crisis strikes again? Accordingly, we examine why firms in some countries display greater levels of state ownership in the wake of a crisis as well as the performance of these firms in a subsequent crisis.

There are two conditions that influence the extent to which state ownership is likely to persist following a crisis. The first regards the costs of implementing and complying with regulations. To the extent that implementation costs are fixed, poorer countries will find it relatively more costly to implement regulations that are comparable to their developed counterparts. Moreover, compliance with international standards such as the Basel Accords, the International Accounting Standards Board (IASB), the OECD's Principles of Corporate Governance (PCG), and the IMF-World Bank Financial Sector Assessment program (FSAP) commonly places developing country banks at a competitive disadvantage in relation to developed countries. For example, because developing countries' banks tend to have less sophisticated risk management systems, they must carry relatively more supervisory capital which raises their relative costs of lending (Basel Committee on Banking Supervision 2006;

Wade 2009).⁴ The consequence is that developing countries tend to face a higher cost of capital and a lower volume of lending than their high-income counterparts, and more procyclical volatility (Claessens, Underhill, and Zhang 2003). These implications generally apply to nonfinancial corporations as well and the regulatory standards mentioned above (Walter 2008).

The second condition influencing the extent of state ownership is the transactions costs associated with policy making. As more actors are involved in the decision-making process and as more decision points must be crossed, transactions costs increase. These kinds of transactions costs are often referred to as veto points (Tsebelis 1995 and 2002). More veto points make policy commitments more credible, but they also make them more costly and time-consuming to implement.⁵ As a result, veto points influence the extent of state ownership in three ways. First, they influence the likelihood for state ownership to persist when initiated in response to a crisis. In a sufficiently severe crisis, the need to act quickly can allow governments with many veto points to circumvent the normal policy making procedures and implement direct government ownership, thereby introducing greater flexibility in an otherwise rigid environment (Hemerijck and Vail 2006). Once the crisis has

⁴ The Basel Committee's own quantitative impact study (2006) revealed a large variance in the amount of capital required for banks using the different Basel II-based risk assessment methodologies. For example, some banks using the advanced "internal ratings-based" approach – coming predominantly from developed countries – were expected to have large reductions of their capital requirements of the order of 30%. Banks using the simpler "foundational" approach – predominantly from developing countries -- were expected to experience an increase in their capital requirements of over 38% (Basel Committee on Banking Supervision 2006, p. 2). The Basel II standards thus give structural advantage to large developed country banks and a structural disadvantage to developing country banks and to the regional, national, and local economies they are nested within. Basel III perpetuates these distributional effects.

⁵ See Henisz (1999) and Henisz (2000). On other applications to emerging markets, see Borner, Brunetti, and Weder (1995). On Asia, see Montinola, Qian, and Weingast (1995); and Root (1996).

abated, normal processes re-engage but the veto-point laden policy making process means that it can be difficult to undo changes implemented during the crisis. Hence, veto-points can lead to the perpetuation of the new ownership positions. States with few veto points can also increase their ownership stakes in domestic firms, but it is easier for them to unwind such positions once the crisis has passed.

Second, more veto points decrease the likelihood of implementing new regulations in a timely fashion. To the extent that state ownership is a substitute for timely regulatory reform, a higher number of veto points also provide governments with an added incentive to maintain ownership stakes for a longer period.

The third mechanism by which veto points influence the extent of state ownership is through their influence on a state's ability to maintain a credible commitment. As North and Weingast (1989) demonstrate, institutional constraints on the executive can make the state more credibly commit to repay lenders and to forgo expropriating their investment. The logic is that political systems with more veto points increase the probability of holding to an agreement once it is struck because the system provides a greater degree of "veto" to more players. Their consent to change is needed. Thus investors and lenders can enter into an agreement with greater confidence that the bargain will be held. This logic applies not simply to the issuance of bonds, but to a wide range of financial activities that depend on the state's capacity to credibly commit to an agreement, such as privatization.

When governments decide to privatize their firms, they are doing so in order to raise money. Governments with more veto points tend to be more trustworthy, or more 'credible' in their policy commitments, so they can sell stakes in their companies without investors worrying that their investment will be expropriated. Countries that lack such institutional credibility cannot raise money this way as effectively and often they do not want to expose their companies to public scrutiny via stock exchange listings since the logic of their political

regimes depends on opaque decision-making rules that concentrates power among a narrow elite. Hence, countries that exceed a minimum threshold in the number of veto points are more likely to successfully privatize their firms.

Within the subset of countries that surpass the veto-point threshold to credibly privatize, those with more veto points tend to retain higher levels of ownership after privatization than countries with fewer veto points because such transaction rich policy making processes make it difficult to enact major changes. As a result, change occurs incrementally and the state continues to have an important ownership stake in such political systems. Thus, countries with few veto-points are expected to have few publicly-listed firms with state ownership, those states with a moderate number of veto points should have moderately-sized ownership stakes, and those governments with the most veto points are expected to have firms with the largest ownership stakes for the state.

In summary, countries with more veto points exhibit higher levels of state ownership for three reasons. First, such countries make it more difficult to unwind ownership positions initiated during a crisis. Second, such governments have an incentive to maintain ownership as insurance in the absence of timely regulatory reform. Third, such governments can credibly commit to privatize their firms without expropriation and are likely to retain larger ownership stakes than countries with fewer veto points.

Taking into account the conditions that influence the extent of state ownership, two testable implications emerge: (1) lower-income countries will exhibit greater state ownership as an alternate form of insurance to regulation; and (2) state ownership will be more prevalent in countries with more veto points.

East Asia offers an ideal setting to test these hypotheses because governments from the region offer sufficient heterogeneity of political institutions and levels of development. The end of the Asian financial crisis brought with it a push (mainly from developed

countries) for international standards with regard to financial regulation. Walter (2008) argues that despite publicly agreeing in principle to new international standards, such compliance can be costly for (politically influential) domestic interests which led many governments in East Asia to opt for a strategy of ‘mock’ compliance. He also points out that the degree of ‘mock’ compliance varies substantially across the region but ignores the impact of institutional factors such as veto points in his analysis. Since we argue that regulation and state ownership can be viewed as substitutes, we expect that there is also substantial variation in the degree of state ownership across the East Asian countries.

Another reason to focus on East Asia is that we can observe how effectively state ownership acts as an insurance policy. The higher levels of state ownership that occurred in the wake of the 1997 Asian financial crisis allow us to examine whether these ownership stakes subsequently buffered firm performance during the 2008 crisis.

When a crisis hits, an increase in cash flow uncertainty causes the firm to pull back its investments which causes the share price to fall as investors realize the firm’s growth potential is lowered. Meanwhile, idiosyncratic volatility is expected to rise as investors become less certain about the return of the firm’s invested assets. If the firm is owned partially by the state, the state can serve as an insurer by providing capital when the firm faces impediments accessing internal or external capital during the crisis. This not only reduces the firm-specific risk, but also preserves the firm’s growth potential following the crisis, leading to post-crisis short-to-medium term out performance. Hence, for firms that are owned partially by the state, firm-specific risk is expected to be lower and abnormal returns are either zero or less negative.

But as the proportion of state ownership increases, managers of these firms become less capital constrained. This loosening of the budget may introduce a moral hazard problem when the firm is insured against the risk of capital shortage; in times of crisis, the firm is

more likely to be bailed out by its dominant owner – the state. Failing to do so might give rise to social and political costs. The influx of capital by the state creates room for managers to over-invest since growth strengthens managers' power to control firm resources, enhances executive compensation, and enables expropriation for personal gain (Penrose 1959; Morck, Shleifer, and Vishny 1990; Brush, Bromiley and Hendrickx 2000; Tosi et al. 2000). The nature of this problem is similar to the Soft Budget Constraint Syndrome originally identified by Kornai (1980, 1986).⁶ If instead the state diversifies and owns only a small fraction of the firm, the state has less incentive to provide full insurance when the crisis strikes. A dominant stake held by the state however increases the likelihood that the costs associated with moral hazard outweigh the benefits of the implicit insurance. In other words, firms with dominant state ownership are expected to exhibit higher firm-specific risk and lower abnormal returns.

This leads us to two testable implications with regard to firm performance: (1) firms with minority state ownership are expected to have lower idiosyncratic volatility than firms with dominant state ownership; and (2) firms with minority state ownership are expected to have higher abnormal returns than firms with dominant state ownership. A crisis is expected to magnify these differences.

Using hand collected data for a sample of over 300 firms for which we have identified ultimate owners at two points in time: 1996 and 2008 across nine East Asian states, this paper reports consistently strong support for the second, third, and fourth hypotheses, and strong but not robust support for the first hypothesis. Consistent with the first hypothesis, we find that countries with a higher GDP per capita in 1996 display lower levels of state ownership in 2008 in comparison to countries with a lower GDP per capita in 1996. However, these results

⁶ For elaboration on this point, see Kornai, Maskin, and Roland (2003). Also see Schaffer (1998), and Buddina, Garretson, and de Jong (2000) for evidence. Also see Schaffer (1998), and Buddina, Garretson, and de Jong (2000) for evidence.

weaken when subjected to robustness tests. With regard to the second hypothesis, our tests show that firms operating in countries that have more veto points in 1996 exhibit more state ownership in 2008 than firms operating in countries with fewer veto points in 1996. That is, firms operating in countries with greater transactions costs associated with implementing new regulations and unwinding state ownership tend to have more persistent state ownership. Turning to firm performance, the results are consistent with our third hypothesis which expects firms with minority state ownership to have lower idiosyncratic volatility in comparison to firms with dominant state ownership during a subsequent crisis. Finally, with regard to the fourth hypothesis, the tests show that firms with minority state ownership have higher abnormal returns than those without any state ownership and these in turn have higher abnormal returns than those with dominant state ownership. The results for our latter three hypotheses are robust to a variety of controls and alternative specifications.

Our results are not only statistically significant but also economically important. Based on our conservative estimates we find the following. An increase in GDP per capita of \$US1, 000 leads to: (i) a fall in the proportion of state ownership of about 0.5% on average (Table 2); and (ii) a reduction in the likelihood of state participation by approximately 16% (Table 3). On the relation between veto points and state ownership, we find that an increase in the number of veto players by one: (i) raises the proportion of state ownership by an average of over 3% (Table 2); and (ii) increases the likelihood of state participation by over 73% (Table 3). Our performance results in the quarter around the collapse of Lehman Brothers show that minority state-owned firms have 5% lower annualized idiosyncratic volatility than both non-state-owned firms and majority state-owned firms, and interestingly this reduction continues to hold for at least the next two quarters. Moreover, minority state-owned firms, on average, yield 3.7% and 6.1% higher (annualized abnormal) returns than their peers for the first and second quarters, respectively, after the crisis.

These findings are important for two reasons. First, the analysis suggests that the increasing number of regulatory agreements struck by international organizations is having the unintended effect of generating greater state ownership. As the costs of implementing these regulations increase, state ownership is likely to increase among developing nations. And in those countries with institutionally thick policymaking processes (i.e., numerous veto points), state ownership is likely to persist. Second, contrary to the literature which finds non-government owned firms with better performance than government-owned firms, we find that firms with minority government ownership display the best performance.

Our study contributes to the growing literature on responses to financial crisis and their policy implications. The vast majority of this literature focuses on varying national regulatory regimes and how they might be strengthened but pays little attention to state ownership as an alternative to such regulations (Claessens 2009; Claessens, Dell’Arriccia, Igan and Laeven 2010). For example, work has focused on how to mitigate procyclicality via regulatory remedies without attention to the potential benefits of state ownership (Andritzky, Kiff, Kodres, Madrid, Maechler, Narain, Sacasa, and Scarlata 2009). Crisis also presents an opportunity for owners to divert resources for private gains, as Lins, Volpin, and Wagner (2012) find with regard to family owned firms around the collapse of Lehman Brothers. Recent work has begun to document state ownership as a temporary response en route to privatization (Laeven and Valencia 2012), but to our knowledge, there are no studies which examine why such newly state-owned corporations would remain under state ownership for a prolonged period after a crisis.

Related to the potentially beneficial effects of state ownership in response to a crisis are the performance effects outside of a crisis episode. Our study contributes to this evolving literature. Research on state-owned enterprises has found that officials use these entities primarily for political purposes (Shleifer and Vishny 1994) and that the managers of such

corporations are therefore not incentivized to perform as effectively as managers of non-state-owned firms (Ehrlich, Gallais-Hamonno, Liu and Lutter 1994; Karpoff 2001). Numerous studies have found that SOEs tend to underperform as a result (Boardman and Vining 1989; Kikeri, Nellis, and Sherley 1992; La Porta and Lopez-de-Silanes 1999; Dewenter and Malatesta 2001; Cornett, Guo, Khaksari, and Tehranian 2009). While recent work on China finds that performance of such SOEs may vary according to different forms of state ownership (Chen, Firth, and Xu 2009), thus far the effects of minority ownership have been restricted to instances of partial privatizations (Majumdar 1998; Anderson, Lee, and Murrell 2000; Gupta 2005), sales growth (Uhlenbruck and DeCastro 2000) and firm value (Wu 2011). To our knowledge, our study is the first to systematically examine the performance effects of minority state ownership with regard to idiosyncratic volatility and abnormal returns.

Through our examination of the institutional preconditions for state ownership to persist in the wake of a crisis, our research contributes to the literature on links between institutions and economic outcomes. Johnson et al. (2000) find that the Asian financial crisis had more severe effects in countries with weaker institutions in general and weaker investor protections in particular. Lemmon and Lins (2003) present evidence that weaker corporate governance was associated with worse stock price performance in the Asian crisis. Keefer and Stasavage (2003) extend the literature on the role of veto points and the credibility of monetary policy, but we are not aware of any applications of the veto points framework to preserving state ownership after such ownership has served its purpose as a temporary response to a crisis.

Sections 2, 3 and 4 explain our data and methodology in more detail, respectively. Sections 5 and 6 present our main results and robustness checks. Section 7 concludes.

2. Data

In this section we describe our sample of firms as well as the variables used and how they were constructed.

2.1. Key variables

2.1.1. Corporate Ownership

We combine the dataset of Claessens, Djankov, and Lang (2000) with that of Carney and Child (2012) in order to identify firms for which ultimate ownership has been determined in both 1996 and 2008 across nine East Asian economies, including Hong Kong, Indonesia, Japan, South Korea, Malaysia, the Philippines, Singapore, Taiwan, and Thailand. This process yields a total of 230 firms which are among the two hundred largest firms in both points in time. In addition, 141 firms that exist in 2008 but not 1996 (newly listed firms) with identifiable ownership information are also included in the subsequent analysis. This takes the full sample of firms to 371. Ultimate owners are categorized as a family, the state, or widely held.

2.1.2. Veto-points

We use a measure of governments checks and balances developed by Keefer (2002), which accounts for the number of veto players, based on whether the executive and legislative chamber(s) are controlled by different parties in presidential systems and on the number of parties in the government coalition for parliamentary systems (as described in greater detail in Beck et al. 2001). The index is then modified to take account of the fact that certain electoral rules (closed list vs. open list) affect the cohesiveness of governing coalitions.

The measure captures the number of veto players and can be done in a cross-country setting that includes both OECD and developing countries. The indicator rises with the

number of veto points (depending upon the number of legislative chambers) and falls when the veto points are occupied by the same political party (depending on whether majorities are multiparty coalitions).

2.1.3. Performance

We use the abnormal return adjusted for Fama-French three-factors (Fama and French 1993) to measure the stock performance around the collapse of Lehman Brothers. Under the Fama-French three-factor model, the expected return is given by:

$$E[R_{i,t}] = r_{f,t} + \beta_i(E[R_{m,t}] - r_{f,t}) + s_iSMB_t + h_iHML_t. \quad (1)$$

SMB_t and HML_t are the size and value premiums. $E[R_{m,t}] - r_{f,t}$ is the market premium. Under the Fama-French three-factor model, the abnormal return is:

$$AR_{i,t} = R_{i,t} - r_{f,t} - \hat{\beta}_i(R_{m,t} - r_{f,t}) - \hat{s}_iSMB_t - \hat{h}_iHML_t \quad (2)$$

Abnormal return is used because it removes the systematic components of return that are attributed to variations in the market return and variations due to size and value premiums. Rather than applying the standard replication technique to form the Fama-French factors, we use commercially-available size and style indices on equities generated by MSCI to estimate the premiums. This approach is used in Elton, Gruber and Blake (1996). Specifically, for non-Japanese stocks, the size premium, SMB_t , is the return differential between the MSCI Asia ex-Japan APEX 200 Index and MSCI Asia ex-Japan APEX 50 Index on day t . The value premium, HML_t , is the return differential between the MSCI Asia ex-Japan Value Index and the MSCI Asia ex-Japan Growth Index on day t . For the market premium, we use the

MSCI Asia ex-Japan Index to proxy for the market return. For Japanese stocks, we use a different set of indices. The size premium is the return differential between the MSCI Japan Small Cap Index and the MSCI Japan Large Cap Index on day t , whereas the value premium is the return differential between the MSCI Japan Value Index and the MSCI Japan Growth Index on day t . For the market index, we use the MSCI Japan Index. For reasons of consistency, all index values are converted to local currency. Country-specific annualized yield of money market instruments (such as treasury bills or treasury bonds) are used as proxies for risk-free rates.

In order to calculate the daily abnormal return of stock i in month τ , we first estimate betas (β_i , s_i and h_i) using 36 months of data from month $\tau-37$ to month $\tau-1$. We then use the estimated betas to obtain the expected return for each stock on each day in month τ . The abnormal return is defined as the difference between the expected return and the realized return. For the purpose of consistency and ease of interpretation, we use the daily average of abnormal return for the month in our regression analysis.

To measure the firm-level risk, for each month we estimate the idiosyncratic volatility based on the standard deviation of the daily abnormal return.

We measure asset growth based on the year-to-year change of the book value of total asset. To measure the firm's profitability we look at the return on assets (ROA) and the return on equity (ROE). We compute the ROA using the net income or the earnings before interest, tax, depreciation and amortization (EBITDA) scaled by the book value of total assets. ROE is EBITDA divided by the book value of the shareholder's equity. Finally, leverage is defined as the ratio of long-term debt to total assets. All performance data are sourced from the DataStream.

2.2. *Other variables*

Carney and Child (2012) argue that major political changes can best account for corporate ownership changes between 1996 and 2008 across the nine economies. To control for this, we include a dummy variable for those economies identified as undergoing substantial political change.

To account for the possibility that political connections may influence whether the government acquires an ownership stake in a firm, we also include a political connectedness dummy variable. The measure comes from Carney (2012) where its construction is described in detail; it is similar to the political connectedness measure of Faccio (2006) but captures greater detail for the East Asian context. To briefly summarize it, companies are considered to be connected to a member of parliament (MP) or to a minister or head of state in three ways. First, at least one director simultaneously occupies a position as a minister/head of state or as an MP. A second connection may occur when a director is a relative of a political official as a spouse, a child, a sibling or a parent. A third connection occurs when a director is a close friend of an MP or a minister/head of state, is a foreign politician, or is a person known to be associated with a political party or government officials. Separate indicator variables are created for 1996 and 2008 to capture if the firm is connected in one or both of the periods.

Higher levels of state ownership may be expected to correlate with less democratic regimes since the concentration of political power usually coincides with the concentration of economic power. To control for this possibility, we include a measure of regime types called “Polity Score.” It assigns scores to regimes ranging from fully autocratic to fully democratic and places them on a spectrum ranging from -10 (hereditary monarchy) to +10 (consolidated democracy). These data come from the Polity IV Project database.⁷

⁷ Data can be downloaded from here: <http://www.systemicpeace.org/polity/polity4.htm>

To control for the possibility that the proportion of 1996 firms in which the state has acquired an ownership stake is not indicative of a broader pattern of state ownership of publicly listed corporations following the crisis, we identify the ownership of corporations in 2008 that are in the top 200 firms but did not exist in 1996 as newly listed. These firms are identified by an indicator variable.

GDP per capita data come from the International Monetary Fund's annual statistics database and are measured in current 1000's of US Dollars.

Inflation data come from the International Monetary Fund's annual statistics database and are annual percentage figures. We include this variable first to control for the fact that GDP per capita is measured in current and not constant dollars.

3. Descriptive Statistics

Table 1 reports the basic descriptive data for these firms. Panel A reports the variables definitions. Panel B reports simple averages for the variables according to the categories listed in the columns. Datum located at the first row and second column shows that the average level of state ownership in 2008 was 11.16% for the full sample of firms. The third column shows that those firms in which the state held an ownership position, its share was 45.36% on average. The subsequent two columns break down this aggregate figure and indicate that the state held ownership positions in firms either as a minority owner (with a 14.39% ownership position, on average) or as a dominant state owner (with a 52.38% ownership position, on average). The remaining columns are present state ownership positions for firms in the real estate and finance industry as well as those firms newly listed in 2008. For those real estate and finance firms in which the state held an ownership position, its average ownership stake was 41.56%. And for the newly listed firms in which the state retained an ownership position, its average ownership stake was 56.93%.

Comparing these data with those for the next row, ‘% State Ownership in 1996’, illustrates substantial variation between the two points in time for each of the categories. This difference is also reflected with the measure for the presence of state ownership, ‘State Ownership 08’ and ‘State Ownership 96’. The ‘% Change in State Ownership 96-08’ again reflects the clear variation across the two points in time. The data therefore illustrate the puzzle about why state ownership changes over time.

The variables listed in the subsequent rows down to ‘Inflation’ offer averages that do not exhibit similar patterns to those for the state ownership variables. The remaining rows display averages for the financial variables used in the performance tests. Our argument is that firms with dominant state ownership exhibit worse performance compared to firms with minority state ownership. The balance sheet data for ‘Leverage’ and ‘Asset Growth’ are consistent with our expectations; the ‘FF IVol’ and ‘FF AR’ data also correspond to our hypotheses. However, the remaining balance sheet variables are not consistent with what our expectations. Hence, we turn to more systematic analyses.

4. Empirical Strategy

We begin by presenting the empirical strategy to test our first two hypotheses relating to state ownership followed by a discussion for our two additional hypotheses regarding firm performance.

4.1. State Ownership

To assess the impact of national income and veto points on the state’s ownership stakes in the country’s largest corporations, or our first two hypotheses, we estimate the following model:

$$\text{State Ownership}_{i,j,t} = a + b_1 \text{GDP}_{j,t} + b_2 \text{Veto}_{j,t} + \sum_{k=3} b_k \text{Controls}_{i,j,t} + \varepsilon_{i,t} \quad (3)$$

State Ownership $_{i,j,t}$ is one of three variables for firm i : (i) the proportion of firm i that is state owned in 2008; (ii) a dummy variable = 1 if there is state ownership in firm i in 2008; and (iii) the change in the proportion of state ownership between 1996 and 2008 in firm i . GDP $_j$ is the GDP per capita in country j at time t . Veto $_j$ is the number of veto points in country j at time t . Both GDP per capita and Veto Points variables are measured in 1996 to capture initial country wealth and existing political structures prior to the Asian financial crisis, respectively. The argument posits that GDP per capita should exhibit a negative correlation while veto points exhibit a positive correlation. The two hypotheses are:

H1: Lower-income countries will exhibit greater state ownership as an alternate form of insurance to regulation.

H2: Countries with more veto points will exhibit a greater number of firms with state ownership.

For each of our measures of state ownership, we perform the following analysis: (a) estimate equation (3) for the sample of firms that exist in both 1996 and 2008 while controlling for ownership structure in 1996, whether the firm is politically connected in 1996 and/or 2008, whether the firm belongs to a country that underwent political change following the Asian crisis, the Polity score in 1996, and inflation in 1996; (b) estimate equation (3) for the full sample of firms (i.e. including newly listed firms) while controlling for whether the firm is newly listed in 2008, whether the firm is politically connected in 2008, whether the firm belongs to a country that underwent political change following the Asian crisis, the country's Polity score in 1996, and inflation in 1996; and (c) repeat (a) and (b) excluding the real estate

and financial sector from the analysis since one might expect this sector to drive the results due to the Asian Financial Crisis of 1997. All regressions include industry fixed-effects and clustered standard errors.⁸

We perform two additional sets of robustness tests. First, to ensure that no single country is driving the results, we repeat the analysis (using only our main dependent variable: the proportion of state ownership in 2008) excluding each of the countries one at a time. Our primary results do not include firms from Hong Kong for two reasons. The first is due to missing data for Veto Points and Polity Score from the Keefer (2002) dataset. However, St. Marie *et al.* (2007) argue that Hong Kong has two Veto players (being the Governor and Legislative Council). Accordingly, in a second robustness test we reintroduce Hong Kong firms into the analysis assigning firms from Hong Kong a Veto Score of two. Since we do not have data for Polity Score, this variable is dropped from the analysis including Hong Kong. The second reason we exclude Hong Kong from the analysis is that it is the only country in which a considerable fraction of its largest publicly traded firms come from outside its political jurisdiction in 2008 (from mainland China), thereby reducing the relevance of its veto points as a determinant of state ownership.

4.2. *Firm Performance*

To test the hypotheses that the level of state ownership – minority, dominant, or none – differentially affects firm performance, we employ a similar strategy to Johnson and Mitton (2003) in their study of political connectedness and Malaysian firm performance during the Asian financial crisis. We are interested in the cross-sectional difference in performance between firms with and without state ownership – that is, the ‘insurance effect’ of government ownership in times of crisis. Our regression model takes the following form:

⁸ Note, we do not include country fixed-effects as our main variable of interest Veto Points is a country level variable with virtually no within-country variation.

$$\text{Performance Measures}_{i,j,t} = c + d_1 \text{State Ownership}_{i,j,t} + \sum_{k=2} d_k \text{Controls}_{i,j,t} + \varepsilon_{i,t} \quad (4)$$

Here, $\text{State Ownership}_{i,j,t}$ is an indicator equal to one if there is state ownership in firm i in 2008. Our approach differs from Johnson and Mitton (2003) in that we consider abnormal returns and idiosyncratic volatility, rather than raw returns. We include industry fixed effects to capture any unobserved industry-level characteristics. Additionally, we control for the firm's return on equity, as well as the firm's capital structure (long-term debt as a proportion of total assets) because of the leverage effect (Black 1976 and Christie 1982).

We posit that the relation between the level of state ownership to firm-specific risk and abnormal returns is non-monotonic. If the state holds a stake in the firm, the firm benefits from lower costs associated with regulatory interference, bureaucratic red tape, and preferential access to the state's capital and resources including business and political networks (Meyer 2002). When the firm encounters capital constraints, the state is likely to act as an insurer by providing capital to the firm it owns at a lower cost. However, this insurance is not costless. If the stake is sizable enough, the insurance creates a moral hazard problem in that managers have an incentive to expropriate for personal gains and invest beyond what is required to maintain assets in place and to finance projects which may have negative net present value. The perceived abundance of resources exacerbates the agency problem and thus lowers firm value. Therefore, we expect abnormal returns to be higher for firms with minority state ownership than for firms with dominant state ownership. And when a crisis strikes, firms with minority state ownership are likewise expected to have lower firm-specific risk. Minority state ownership implies a more limited source of insurance which reduces managerial opportunism and thereby disciplines managers so that they use capital more efficiently. Given the above argument, we establish the third and fourth hypotheses:

H3: Firms with minority state ownership are expected to have a greater reduction in idiosyncratic volatility than firms with dominant state ownership.

H4: Firms with minority state ownership are expected to have a higher abnormal return than firms with dominant state ownership.

5. State Ownership Results

This section presents our main results and robustness checks. We examine the evidence for each of the hypotheses in turn. We begin by visualizing the relationships between the key variables of interest. Figure 1(a) displays a positive relationship between state ownership in 2008 and the number of a nation's veto points in 1996. Figure 1(b) excludes Hong Kong since the Keefer and Stasavage (2003) dataset does not provide a measure for Hong Kong thereby raising issues about measurement consistency; nevertheless, the positive relationship remains intact though slightly less uniform.

[Figure 1 about here]

Tables 2, 3 and 4 present the main results for the state ownership (equation 3) regressions. A consistent picture emerges: higher Veto Points in 1996 (historical political structure) positively predicts state ownership in 2008. Likewise, initial country wealth GDP per capita in 1996 is negatively related to state ownership in 2008. Taken together, these two results suggest that governments in poorer countries with more legislative hurdles (i.e. Veto Points) will enhance the use of state ownership. This result is robust to the proxy for state ownership used across the three tables, different controls for past ownership (column (1) vs. (2)),

whether we consider only firms that exist in both 1996 and 2008 or include newly listed firms (columns (1) and (2) vs. (3)), and if we exclude the real estate and financial sector from the sample (columns (1), (2) and (3) vs. (4), (5) and (6)).

The main results offer strong evidence for our two hypotheses concerning state ownership, but there are several additional results worth highlighting. The political change variable offers some interesting insights when comparing the results across Tables 2, 3, and 4. In Tables 2 and 4 there is a positive relationship when testing the full sample however the relation is statistically insignificant in Table 3 for state participation. This suggests that while political change has had no discernible impact on State participation (when state ownership is measured via a dummy variable), it has corresponded to an increase when state ownership is measured as a percentage of total ownership indicating that where state ownership occurs it is in a larger proportion. Looking at the political change result in Tables 2, 3, and 4 with (columns (1), (2) and (3) in Tables 2 and 3; columns (1) and (2) in Table 4) and without (columns (4), (5) and (6) in Tables 2 and 3; columns (3) and (4) in Table 4) the real estate and financial sector suggests a differing impact according to whether this industry is included. It appears that both participation and concentration of state ownership fell in countries that underwent political change in all industries except for the real estate and financial industry. But in this industry, participation fell while state ownership concentration increased.

Another result of interest concerns Polity score, which exhibits a negative relationship to state ownership. This indicates that where a country is more democratic, there tends to be less state ownership. This is consistent with what one would expect with regard to the concentration of political and economic power going hand-in-hand. The results indicate that this relationship is stronger for the real estate and financial industry than others.

As might be expected, we also observe a positive correlation between state ownership in 1996 and state ownership in 2008 in Tables 2 and 3 for all firms as well as for the subset of

firms that exclude real estate and finance. While Table 2 indicates that the existence of state ownership in 1996 corresponds to firms exhibiting some proportion of state ownership in 2008, Table 4 indicates that the state's ownership share has declined over time.

A somewhat puzzling result occurs with regard to political connectedness in 2008 which exhibits a negative relationship to state ownership in Tables 2 and 4. One possible interpretation for this finding is that these politically connected firms are family-owned and may have used their political connections to remove state interference in their operations. It would be interesting to investigate whether such a reduction in state ownership occurred simultaneously with other forms of preferential treatment such as access to loans or lax enforcement of regulations. This finding could be consistent with the concentration of political and economic power, but further analysis is necessary.

Finally, we observe weak evidence that political connectedness in 1996 is related to State ownership in 2008. In columns (4) and (5) in Table 3 the coefficient is positive and significant which suggests that State participation is more likely in non-financials that were politically connected in 1996. But the overall results suggest that political connectedness in 1996 corresponds to a lack of state ownership in 2008 which is consistent with the idea that politically connected families may prefer to retain ownership that is divorced from the state.

[Tables 2, 3 and 4 about here]

5.1. *Robustness Checks*

Tables 2 through 4 display robust results through the use of three alternative measures of state ownership, truncating the sample by excluding real estate and financial firms, truncating the sample by excluding newly listed firms for 2008, and including different sets of control variables. Hence Tables 2, 3, and 4 provide a robust series of results consistent with our

hypotheses about veto points and GDP per capita and their effect on state ownership. In Table 5, we extend these robustness checks by excluding each country individually to ensure no single country is driving the results. Panel A displays results for the sample of firms for which we have ownership data in both 1996 and 2008. Panel B shows the results for the full sample of firms; that is, including newly listed firms for 2008. The results for the Veto Players variable remain robust to this series of tests, however GDP per capita displays less robust results for the full sample as seen in the columns (1) Ex-Japan, and (6) Ex-Philippines.

[Table 5 about here]

Table 6 provides results for the inclusion of Hong Kong into the analysis. As mentioned above, Hong Kong was excluded in the previous tests for two reasons. First, a veto points measure was not included in the original dataset that from Keefer and Stasavage (2003). Second, China began listing firms on the Hong Kong exchange after 1997 which would not be subject to legislation and regulations that are the result of its political structure (veto points). We account for the problems associated with newly listed firms from mainland China in columns (1), (2), and (3) by restricting the sample to ex-newly listed corporations. Each column presents the results for each of the alternative measures for our dependent variables. Column (1) displays the results for the proportion of state ownership, column (2) uses state participation (a dummy variable for state ownership), and column (3) shows results for the change in the proportion of state ownership between 1996 and 2008. In each case, the veto players coefficients display positive, statistically significant results consistent with our expectations as well as the foregoing analyses. GDP per capita, however, does not yield a negative relationship as expected which may be attributable to Hong Kong being a high income economy. Column (4) tests the full sample of firms, and the results for Veto players

in 1996 is still statistically significant and positive though weaker than the results shown in the other columns, but this is expected as discussed above.

[Table 6 about here]

6. Performance Results

We examine if firm performance varies according to whether the state has no ownership stake, a minority ownership stake, or a dominant ownership stake. Figure 2(a) shows that firms with a minority state ownership, on average, have around 1% lower idiosyncratic volatility (which translates to around 3.5% on an annual basis) than firms with no state ownership in 2008; the volatility of firms with dominant state ownership tends to fall between these two extremes. But during the month of Lehman Brothers' collapse, there is no notable difference between firms with dominant State-ownership and firms without any state ownership. Figure 2(b) shows that firms in which the state has a minority ownership stake tend to outperform both firms with no state ownership and firms with dominant state ownership.

[Figure 2 about here]

6.1. Balance Sheet Indicators

Tables 7 through 9 present regression results on firm leverage, asset growth and ROE. The results suggest that both state- and non-state-owned firms do not exhibit (at least statistically) significant differences in their capital structure and profitability. Absent country fixed effects, columns (1) through (4) of Table 8 indicate that there is a positive relationship between alternative measures of state ownership and asset growth. For example, column (2)

suggests that if the state increases its holding by 10% (from 96 to 08), the firm's asset base will increase 0.7% more than its industry peer. Interestingly, when we separate firms with minority and dominant state ownership, the relation between asset growth and the level of state ownership is no longer monotonic. While firms with dominant state ownership invest 7.5% more than the industry average (Column 4), firms with minority state ownership invest less (but not statistically significant) than the industry average. When country dummies are included, the statistical significance of the dominant state ownership dummy falls but the sign of the coefficient remains unchanged. The pattern however, goes the other way round for minority state ownership coefficient; it becomes statistically significant and remains negative (Column 5).

[Tables 7, 8, and 9 about here]

6.2. Volatility and Abnormal Returns

Table 10 reports the regression results on (monthly) idiosyncratic volatility (IV) around the collapse of Lehman Brothers. Columns (2) and (1) present results based on the first and the second quarter, respectively, *prior* to the collapse, while Columns (4) and (5) present results based on the first and the second quarter *after* the collapse. In Panel B, we replace the state ownership dummy with two dummies that separate firms with minority and dominant state ownership. The results show that state-owned firms, on average, have a lower IV. Two quarters prior to the crisis ($Q = -2$), firms with the state being the minority owner have, on average, 2.4% ($\approx 0.00679 \times 12^{1/2}$) lower annualized IV than non-state-owned peers. When the crisis hits ($Q = 0$), these firms have 5% ($\approx 0.0139 \times 12^{1/2}$) lower annualized IV than non-state-owned firms, and interestingly this reduction continues to hold at least for the next two quarters. This result is consistent with the pattern observed in Figure 2(a). For dominant state-owned firms however, the reduction in IV is modest. During the quarter when Lehman

Brothers collapses, these firms do not exhibit (statistically) different IV from non-state-owned firms. Overall, these results are in line with our hypothesis; the injection of capital by the state helps to lower the uncertainty about the return of the firm's invested assets.

[Table 10 about here]

In Table 11, we compute the average daily return for each month and regress the monthly abnormal returns for each firm for each of the five quarters around the collapse of Lehman Brothers. We note a distinguishable difference on abnormal returns between firms that are predominantly owned by the state and firms that are not. Consistent with the expectations arising from agency costs associated with state insurance, the annualized abnormal returns for dominant state-owned firms are, on average, 2.82% ($\approx (1.00232)^{12} - 1$) lower than non-state-owned peers during the non-crisis period ($Q = -2$). This is consistent with our fourth hypothesis. Surprisingly, abnormal returns of these firms are not significantly different from their peers during the crisis period, which may be due to the systemic nature of the global financial crisis and the fact that risk has already been captured by the stock's beta. Minority state-owned firms, on average, yield 3.7% and 6.1% higher (annualized abnormal) returns than their peer for the first and second quarters, respectively, after the crisis, which is consistent with our insurance argument that these firms may receive preferential access to the state's capital/resources to uphold their investments in positive NPV projects. Table 12 repeats the analysis of Tables 10 and 11 with country fixed effects. The results remain largely unchanged, though the significance of coefficients drops slightly.

[Tables 11 & 12 about here]

7. Conclusion

With regard to the likelihood for states to increase their ownership stakes in the wake of a crisis, the evidence strongly supports the idea that government ownership is more likely to persist in those countries with more policy making hurdles to surmount; or, veto points. At the same time, lower income countries also display a greater propensity for their governments to acquire ownership stakes in the wake of a crisis, although the robustness tests indicate that the evidence for this is somewhat weaker than that for veto points.

The evidence also supports the idea that firm performance varies in important ways depending on the government's ownership stake. Where there is no government ownership, firms cannot rely on any form of state insurance in the event of a crisis, but where state ownership is dominant, agency costs exceed the benefits of state-backed insurance. Performance is maximized when the state retains a minority ownership position. In these cases, idiosyncratic volatility is at its lowest and abnormal returns are at their highest.

Hence, the evidence suggests that there are clear benefits to firms from maintaining some level of government ownership. The increasing costs of complying with and enforcing international regulatory standards make such arrangements more attractive for lower income countries. But these ownership patterns appear to be more likely to emerge not due to government directives but because of the cumbersome policymaking environment that makes it difficult to undo decisions made in the heat of a crisis.

The findings raise fresh questions about the behavior of non-majority state-owned firms in future crises. If these firms exhibit superior performance and have access to capital provided by the state, are they likely to use crises as a buying opportunity for domestic and/or, more interestingly, foreign firms? If so, are we seeing the beginning of a new wave of state-backed private enterprise, but one with the state playing a minor role rather than the more heavy-handed one of the 1970s?

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Figure 1: State Ownership of East Asian Firms in 2008

This figure plots the average proportion of state ownership in East Asian firms in 2008 as well as the change in the proportion of state ownership between 1996 and 2008 by Veto players in 1996. Veto players are a proxy for the degree of checks and balances in the political system (see Keefer and Stasavage, 2003). Panel (a) is for all firms across all countries in the sample. Panel (b) excludes Hong Kong firms from the analysis to maintain consistency with the measurements provided in the Keefer and Stasavage dataset which does not contain a figure for the number of Veto players in Hong Kong. In Panel (a), Hong Kong is assigned a Veto Players score of two (St Marie et al, 2007). The figures show that government ownership in 2008 is increasing with respect to the number of Veto players in 1996.

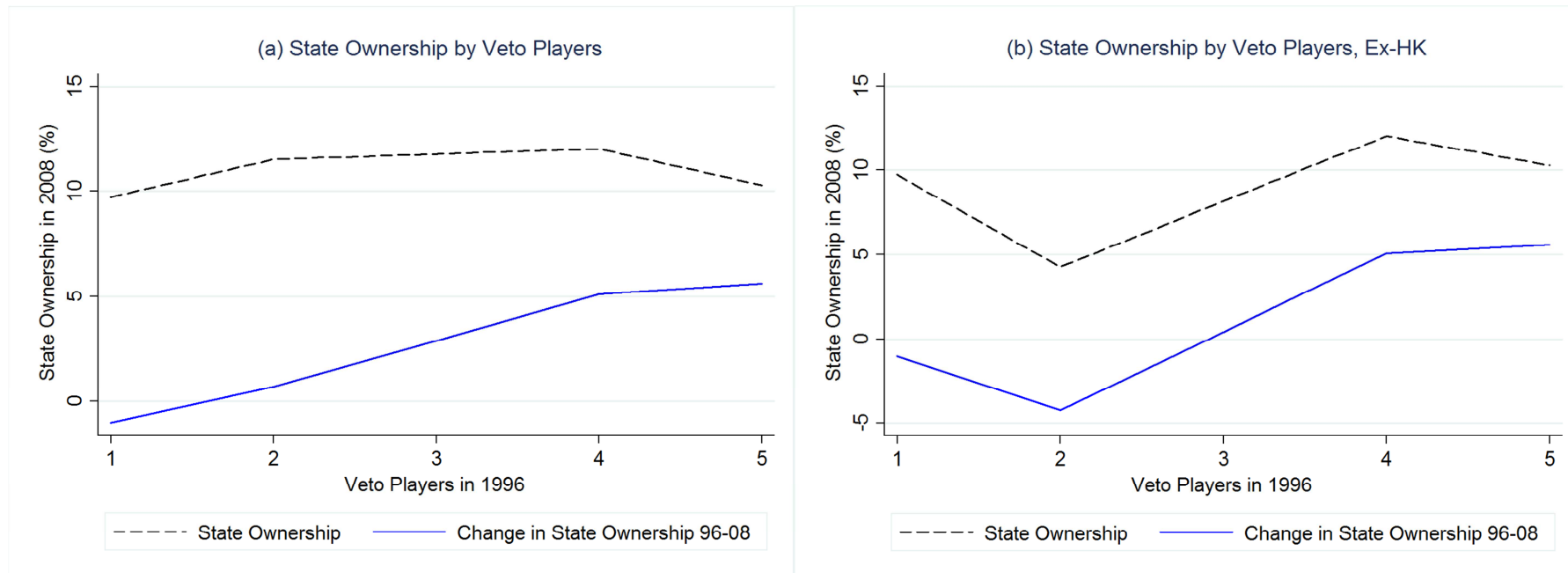


Figure 2: Market Performance of East Asian Firms around the Collapse of Lehman Brothers Holdings, Inc.

This figure plots the average monthly market performance for our sample of East Asian firms around the collapse of Lehman Brothers Holdings, Inc. (March 2008-Jun 2009). Panel (a) plots average idiosyncratic volatility adjusted for Fama-French factors and Panel (b) plots the abnormal return adjusted for Fama-French factors. In each case, the performance measure is plotted separately for firms where (i) the state has no ownership; (ii) the state has minority ownership; and (iii) the state has dominant ownership.

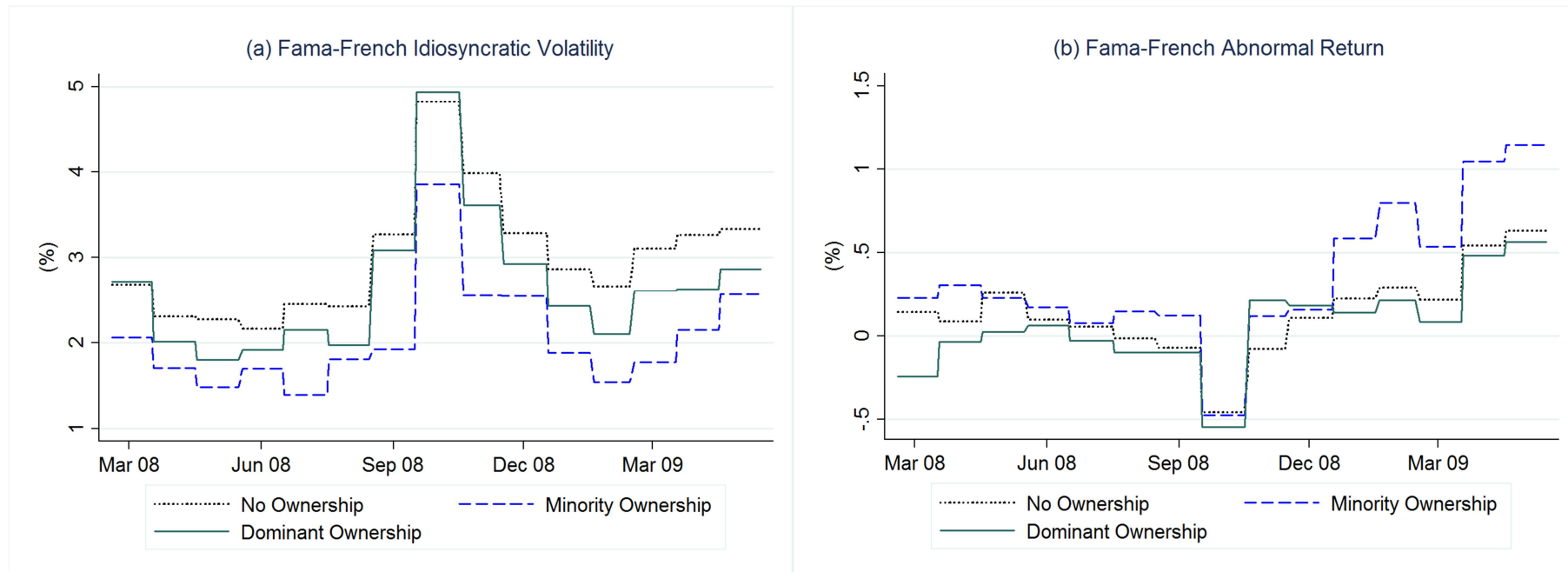


Table 1: Summary Statistics**PANEL A: Variable Definitions**

Variable	Definition
% State Ownership 08	Percentage of State ownership in 2008
% State Ownership in 96	Percentage of State ownership in 1996
State Ownership 08	Indicator=1 if State has ownership stake in 2008
State Ownership 96	Indicator=1 if State has ownership stake in 1996
Dominant State Ownership 08	Indicator=1 if State is the dominant owner in 2008
Dominant State Ownership 96	Indicator=1 if State is the dominant owner in 1996
% Change in State Ownership 96-08	Percentage change in State ownership between 1996 and 2008
Minority State Ownership 08	Indicator=1 if State has a minor ownership stake in 2008
% Family Ownership in 08	Percentage of family ownership in 2008
% Family Ownership in 96	Percentage of family ownership in 1996
Dominant Family Ownership 08	Indicator=1 if family is the dominant owner in 2008
Dominant Family Ownership 96	Indicator=1 if family is the dominant owner in 1996
Politically connected 08	Indicator=1 if firm has a politically connected director in 2008
Politically connected 96	Indicator=1 if firm has a politically connected director in 1996
Political change	Indicator=1 if there was significant political change between 1996 and 2008
Veto players 96	Veto players (checks and balances) in 1996
Polity score 96	Polity score in 1996
GDP per capita (current US\$) 96	GDP per capita (current US\$) in 1996
Inflation (annual %) 96	Inflation (annual %) in 1996
Leverage	Long term debt/total assets (annual 2008-2009)
Asset Growth	Percentage change in total assets (annual 2008-2009)
ROE	Net income/total equity (annual 2008-2009)
ROA	Net income/total assets (annual 2008-2009)
Price-to-Book	Market price/book price (annual 2008-2009)
Size	Log(total assets) (annual 2008-2009)
FF IVol	Idiosyncratic volatility calculated using Fama-French factor model (01 Mar 08-01 Jun 09)
FF AR	Abnormal return calculated using Fama-French factor model (01 Mar 08-01 Jun 09)

PANEL B

Variable	Full Sample					Financials		Newly Listed	
		No State Ownership in 2008	State Ownership in 2008	Minority State Ownership in 2008	Dominant State Ownership in 2008	No State Ownership in 2008	State Ownership in 2008	No State Ownership in 2008	State Ownership in 2008
% State Ownership 08	11.16	0.00	45.36	14.39	52.38	0.00	41.56	0.00	56.93
% State Ownership in 96	5.04	2.33	15.81	8.85	18.47	2.68	13.47	n/a	n/a
State Ownership 08	0.20	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
State Ownership 96	0.23	0.16	0.54	0.38	0.61	0.26	0.53	n/a	n/a
Dominant State Ownership 08	0.09	0.00	0.45	0.00	1.00	0.00	0.68	0.00	0.91
Dominant State Ownership 96	0.14	0.08	0.41	0.23	0.48	0.08	0.47	n/a	n/a
% Change in State Ownership 96-08	1.85	-2.33	18.47	4.69	23.74	-2.68	24.74	n/a	n/a
Minority State Ownership 08	0.03	0.00	0.14	1.00	0.00	0.00	0.32	0.00	0.09
% Family Ownership in 08	24.72	30.80	6.09	24.49	1.92	33.22	9.52	36.51	2.44
% Family Ownership in 96	22.74	23.51	19.70	28.85	16.21	27.37	21.11	n/a	n/a
Dominant Family Ownership 08	0.55	0.69	0.12	0.65	0.00	0.73	0.24	0.81	0.04
Dominant Family Ownership 96	0.62	0.66	0.46	0.46	0.45	0.79	0.37	n/a	n/a
Politically connected 08	0.12	0.12	0.15	0.06	0.17	0.21	0.12	0.05	0.11
Politically connected 96	0.39	0.39	0.39	0.23	0.45	0.45	0.37	n/a	n/a
Political change	0.46	0.45	0.49	0.29	0.53	0.47	0.40	0.42	0.60
Veto players 96	2.65	2.58	2.96	3.06	2.93	2.22	3.00	2.62	2.96
Polity score 96	3.17	3.25	2.81	5.29	2.15	2.48	2.84	3.17	2.00
GDP per capita (current US\$) 96	13.45	13.56	13.01	8.25	14.09	12.24	12.88	14.31	12.53
Inflation (annual %) 96	4.64	4.57	4.92	5.34	4.82	5.29	4.74	3.89	5.21
Leverage	0.13	0.13	0.14	0.08	0.15	0.13	0.13	0.13	0.15
Asset Growth	11.59	11.39	12.40	4.88	14.12	15.05	14.15	14.52	14.27
ROE	11.67	11.65	11.75	12.18	11.65	9.72	10.73	10.48	12.14
ROA	6.27	6.17	6.73	7.64	6.51	5.60	5.91	6.02	6.97
Price-to-Book	1.80	1.83	1.68	1.37	1.75	1.96	1.72	2.01	1.79
Size	17.73	17.79	17.47	15.83	17.85	17.93	17.53	17.53	17.31
FF IVol	2.91	3.00	2.58	2.07	2.66	2.83	2.26	3.27	2.62
FF AR	0.13	0.13	0.10	0.34	0.06	0.11	0.12	0.12	0.11

Table 2: Proportion of State Ownership in 2008 (%)

This table presents results from the least squares estimation of equation 1. Columns (4), (5) and (6) exclude the real estate and financial sector. The dependent variable is the proportion of State ownership in firm *i* in 2008. Our explanatory variables include: (1) Political change between 96 and 08: an indicator variable=1 if a firm operates in a country that underwent significant political change between 1996 and 2008 (see Carney and Child, 2012); (2) Veto players in 96: the number of Veto Points (see Keefer and Stasavage, 2003) ; (3) Polity score in 96: a measure of democracy, scores to regimes ranging from fully autocratic to fully democratic and places them on a spectrum ranging from -10 (hereditary monarchy) to +10 (consolidated democracy) ; (4) Politically connected in 96: an indicator variable =1 if firm *i* is has a politically connected director on the board in 1996; (5) Politically connected in 08: an indicator variable =1 if firm *i* is has a politically connected director on the board in 2008; (6) GDP per capita (current US\$) in 96; (7) Inflation (annual %) in 96; (8) Owner in 96 is State: is an indicator variable =1 if firm *i*'s dominant owner in 1996 is the State; (9) Owner in 96 is Family: is an indicator variable=1 if firm *i*'s dominant owner in 1996 is a family; (10) Owner in 96 is widely held shareholders: is an indicator variable=1 if firm *i*'s dominant owner in 1996 are dispersed shareholders; (11) State ownership in 96: proportion of government ownership in firm *i* in 1996 (%); (12) Family ownership in 96: proportion of family ownership in firm *i* in 1996 (%); (13) Newly listed: an indicator variable=1 if firm *i* was newly listed between 1996 and 2008. All regressions include industry fixed-effects. Robust (clustered standard errors) t-statistics are reported in parentheses. *, ** and *** represent significance levels of 10%, 5% and 1%, respectively.

	(1) Ex-Newly Listed	(2) Ex-Newly Listed	(3) Full Sample	(4) Ex-FRE/ Ex-Newly Listed	(5) Ex-FRE/ Ex-Newly Listed	(6) Ex-FRE
Political change between 96 and 08	2.211 (1.563)	2.733* (2.244)	3.762** (3.100)	-2.660*** (-3.611)	-2.703** (-3.345)	2.106 (1.733)
Veto players in 96	3.223*** (7.454)	3.087*** (7.179)	3.290*** (8.096)	1.417*** (7.122)	1.673*** (7.159)	1.777* (2.355)
Polity score in 96	-0.423*** (-5.039)	-0.350*** (-8.213)	-0.617** (-3.347)	-0.241*** (-3.743)	-0.310*** (-7.610)	-0.383 (-1.193)
Politically connected in 96	2.972 (1.237)	2.248 (0.928)		2.399 (1.240)	1.005 (0.620)	
Politically connected in 08	-6.182** (-2.721)	-6.386* (-2.364)	-1.472 (-0.409)	-4.325** (-3.291)	-3.648** (-2.773)	0.0955 (0.0237)
GDP per capita (current US\$) in 96	-0.547*** (-4.782)	-0.494*** (-4.153)	-0.336** (-2.499)	-0.466*** (-6.129)	-0.503*** (-5.816)	-0.157 (-0.906)
Inflation (annual %) in 96	-1.725*** (-4.358)	-1.326** (-2.918)	-0.995 (-1.677)	-1.599*** (-4.181)	-1.508*** (-4.688)	-0.190 (-0.212)
Owner in 96 is State		21.53*** (3.546)			16.57*** (5.478)	
Owner in 96 is Family		-0.195 (-0.0825)			-1.377 (-0.886)	
Owner in 96 is widely held shareholders		1.659 (0.858)			-1.148 (-0.792)	
State ownership in 96	0.529** (3.096)			0.436*** (3.913)		
Family ownership in 96	-0.110 (-1.866)			-0.0409 (-0.790)		
Newly listed			-0.339 (-0.0750)			-1.121 (-0.150)
Newly listed x Veto players in 96			2.123 (1.635)			3.406 (1.649)
Newly listed x Polity score in 96			-1.244 (-1.786)			-1.535 (-1.396)

Newly listed x Politically connected in 08			17.39 (1.741)			30.44* (1.959)
Constant	12.06 (1.476)	5.889 (0.972)	10.28 (0.954)	15.14* (2.229)	13.15** (2.491)	7.664 (0.543)
Observations	197	197	318	149	149	254
R-squared	0.351	0.356	0.209	0.395	0.400	0.267

Table 3: State Ownership Participation in 2008 (=1 if there is State Ownership)

This table presents results from the logistic regression of equation 1. Columns (4), (5), and (6) exclude the real estate and financial sector. The dependent variable is an indicator variable =1 if there is State ownership in firm *i* in 2008. Our explanatory variables include: (1) Political change between 96 and 08: an indicator variable=1 if a firm operates in a country that underwent significant political change between 1996 and 2008 (see Carney and Childs, 2012); (2) Veto players in 96: the number of Veto Points (see Keefer and Stasavage, 2003) ; (3) Polity score in 96: a measure of democracy, scores to regimes ranging from fully autocratic to fully democratic and places them on a spectrum ranging from -10 (hereditary monarchy) to +10 (consolidated democracy) ; (4) Politically connected in 96: an indicator variable =1 if firm *i* is has a politically connected director on the board in 1996; (5) Politically connected in 08: an indicator variable =1 if firm *i* is has a politically connected director on the board in 2008; (6) GDP per capita (current US\$) in 96; (7) Inflation (annual %) in 96; (8) Owner in 96 is State: is an indicator variable=1 if firm *i*'s dominant owner in 1996 is the State; (9) Owner in 96 is Family: is an indicator variable=1 if firm *i*'s dominant owner in 1996 is a family; (10) Owner in 96 is widely held shareholders: is an indicator variable =1 if firm *i*'s dominant owner in 1996 are dispersed shareholders; (11) State ownership in 96: proportion of government ownership in firm *i* in 1996 (%); (12) Family ownership in 96: proportion of family ownership in firm *i* in 1996 (%); (13) Newly listed: an indicator variable=1 if firm *i* was newly listed between 1996 and 2008. All regressions include industry fixed-effects. Robust (clustered standard errors) t-statistics are reported in parentheses. *, ** and *** represent significance levels of 10%, 5% and 1%, respectively.

	(1) Ex-Newly Listed	(2) Ex-Newly Listed	(3) Full Sample	(4) Ex-FRE/ Ex-Newly Listed	(5) Ex-FRE/ Ex-Newly Listed	(6) Ex-FRE
Political change between 96 and 08	-0.789*** (-2.672)	-1.007*** (-2.688)	-0.169 (-0.867)	-1.473*** (-3.658)	-1.469*** (-3.632)	-0.174 (-1.303)
Veto players in 96	0.544*** (2.717)	0.611*** (3.497)	0.402*** (4.230)	0.320* (1.786)	0.427** (2.255)	0.277** (2.074)
Polity score in 96	-0.0223 (-0.743)	-0.0491** (-2.187)	-0.0891** (-2.427)	0.0259 (0.378)	-0.0439 (-1.579)	-0.0821 (-1.537)
Politically connected in 96	0.431 (0.812)	0.486 (0.910)		0.972*** (2.578)	0.697*** (2.772)	
Politically connected in 08	-0.320 (-0.374)	-0.326 (-0.521)	0.273 (0.392)	-0.552 (-0.544)	-0.0956 (-0.191)	0.558 (0.657)
GDP per capita (current US\$) 96	-0.147*** (-7.968)	-0.202*** (-3.967)	-0.0942*** (-5.449)	-0.228*** (-4.866)	-0.249*** (-6.204)	-0.124*** (-3.714)
Inflation (annual %) 96	-0.507*** (-4.587)	-0.499*** (-4.832)	-0.337*** (-4.786)	-0.783*** (-4.934)	-0.732*** (-10.44)	-0.434*** (-3.298)
Owner in 96 is State		2.789** (2.256)			16.58*** (20.36)	
Owner in 96 is widely held shareholders		-0.588 (-0.358)			13.92*** (23.46)	
Owner in 96 is Family		-1.425 (-0.742)			12.98*** (13.96)	
State ownership in 96	0.105*** (6.963)			0.101*** (2.620)		
Family ownership in 96	-0.00813 (-0.764)			-0.0106 (-0.504)		
Newly listed			-1.771 (-1.202)			-0.436 (-0.270)
Newly listed x Veto players in 96			0.595 (1.259)			0.206 (0.356)
Newly listed x Polity score in 96			-0.233 (-1.638)			-0.149 (-0.832)
Newly listed x Politically connected in 08			1.333 (1.438)			
Constant	1.030 (0.669)	2.072* (1.720)	1.299 (1.170)	3.653*** (2.690)	-10.02*** (-9.736)	2.192 (1.461)
Observations	173	173	293	125	125	226

Table 4: Change in Proportion of State Ownership between 1996 and 2008 (%)

This table presents results from the least squares estimation of equation 1. Columns (3) and (4) exclude the real estate and financial sector. The dependent variable is the change in the proportion of State ownership in firm *i* between 1996 and 2008. Our explanatory variables include: (1) Political change between 96 and 08: an indicator variable=1 if a firm operates in a country that underwent significant political change between 1996 and 2008 (see Carney and Childs, 2012); (2) Veto players in 96: the number of Veto Points (see Keefer and Stasavage, 2003) ; (3) Polity score in 96: a measure of democracy, scores to regimes ranging from fully autocratic to fully democratic and places them on a spectrum ranging from -10 (hereditary monarchy) to +10 (consolidated democracy) ; (4) Politically connected in 96: an indicator variable =1 if firm *i* has a politically connected director on the board in 1996; (5) Politically connected in 08: an indicator variable =1 if firm *i* has a politically connected director on the board in 2008; (6) GDP per capita (current US\$) in 96; (7) Inflation (annual %) in 96; (8) Owner in 96 is State: is an indicator variable =1 if firm *i*'s dominant owner in 1996 is the State; (9) Owner in 96 is Family: is an indicator variable=1 if firm *i*'s dominant owner in 1996 is a family; (10) Owner in 96 is widely held shareholders: is an indicator variable=1 if firm *i*'s dominant owner in 1996 are dispersed shareholders; (11) State ownership in 96: proportion of government ownership in firm *i* in 1996 (%); (12) Family ownership in 96: proportion of family ownership in firm *i* in 1996 (%). All regressions include industry fixed-effects. Robust (clustered standard errors) t-statistics are reported in parentheses. *, ** and *** represent significance levels of 10%, 5% and 1%, respectively.

	(1)	(2)	(3) Ex-FRE	(4) Ex-FRE
Political change between 96 and 08	2.211 (1.563)	3.426*** (3.507)	-2.660*** (-3.611)	-1.953*** (-3.950)
Veto players in 96	3.223*** (7.454)	3.403*** (6.548)	1.417*** (7.122)	1.401*** (5.387)
Polity score in 96	-0.423*** (-5.039)	-0.215** (-3.245)	-0.241*** (-3.743)	-0.0380 (-0.928)
Politically connected in 96	2.972 (1.237)	3.287 (1.584)	2.399 (1.240)	3.370 (1.719)
Politically connected in 08	-6.182** (-2.721)	-7.924** (-2.504)	-4.325** (-3.291)	-7.035 (-1.705)
GDP per capita (current US\$) 96	-0.547*** (-4.782)	-0.312** (-2.556)	-0.466*** (-6.129)	-0.307*** (-4.064)
Inflation (annual %) 96	-1.725*** (-4.358)	-1.007** (-2.534)	-1.599*** (-4.181)	-0.927** (-2.396)
Owner in 96 is State		-2.109 (-0.416)		-11.89*** (-4.744)
Owner in 96 is widely held shareholders		6.511 (1.684)		1.512 (0.812)
Owner in 96 is Family		2.666 (0.761)		-0.744 (-0.393)
State ownership in 96	-0.471** (-2.756)		-0.564*** (-5.072)	
Family ownership in 96	-0.110 (-1.866)		-0.0409 (-0.790)	
Constant	12.06 (1.476)	-3.342 (-0.444)	15.14* (2.229)	6.896 (0.970)
Observations	197	197	149	149
R-squared	0.298	0.202	0.407	0.243

Table 5: Robustness Tests by Excluded Country for Proportion of State Ownership in 2008 (%)

This table presents results from the least squares estimation of equation 1. This analysis excludes firms from one country at a time in each of the columns, Panel A considers only firms that exist in both 1996 and 2008 while Panel B uses the full sample which includes newly listed firms. The dependent variable is the proportion of State ownership in firm *i* in 2008. Our explanatory variables include: (1) Political change between 96 and 08: an indicator variable=1 if a firm operates in a country that underwent significant political change between 1996 and 2008 (see Carney and Childs, 2012); (2) Veto players in 96: the number of Veto Points (see Keefer and Stasavage, 2003); (3) Polity score in 96: a measure of democracy, scores to regimes ranging from fully autocratic to fully democratic and places them on a spectrum ranging from -10 (hereditary monarchy) to +10 (consolidated democracy); (4) Politically connected in 96: an indicator variable=1 if firm *i* has a politically connected director on the board in 1996; (5) Politically connected in 08: an indicator variable=1 if firm *i* has a politically connected director on the board in 2008; (6) GDP per capita (current US\$) in 96; (7) Inflation (annual %) in 96; (8) Owner in 96 is State: is an indicator variable=1 if firm *i*'s dominant owner in 1996 is the State; (9) Owner in 96 is Family: is an indicator variable=1 if firm *i*'s dominant owner in 1996 is a family; (10) Owner in 96 is widely held shareholders: is an indicator variable=1 if firm *i*'s dominant owner in 1996 are dispersed shareholders; (11) State ownership in 96: proportion of government ownership in firm *i* in 1996 (%); (12) Family ownership in 96: proportion of family ownership in firm *i* in 1996 (%); (13) Newly listed: an indicator variable=1 if firm *i* was newly listed between 1996 and 2008. All regressions include industry fixed-effects. Robust (clustered standard errors) t-statistics are reported in parentheses. *, ** and *** represent significance levels of 10%, 5% and 1%, respectively.

Panel A: Ex-Newly Listed	(1) Ex-Japan	(2) Ex-Korea	(3) Ex-Taiwan	(4) Ex-Malaysia	(5) Ex-Thailand	(6) Ex-Philippines	(7) Ex-Singapore	(8) Ex-Indonesia
Political change between 96 and 08	2.171 (1.603)	1.499 (0.974)	4.910** (2.744)	2.845 (1.626)	1.171 (0.711)	6.210*** (4.992)	2.863* (2.367)	0.820 (0.535)
Veto players in 96	3.072*** (6.417)	3.446*** (10.32)	2.010* (2.063)	2.952*** (6.645)	2.931*** (5.534)	4.387*** (9.960)	3.398*** (7.632)	2.835*** (6.304)
Polity score in 96	-0.461*** (-5.754)	-0.424*** (-5.182)	-0.168 (-1.046)	-0.339** (-2.562)	-0.487*** (-6.712)	-0.742** (-3.701)	-0.397*** (-5.875)	-0.361 (-1.885)
Politically connected in 96	2.373 (1.015)	3.620 (1.251)	3.311 (1.449)	3.352 (1.110)	1.969 (0.911)	2.816 (0.955)	2.445 (1.024)	5.705* (2.420)
Politically connected in 08	-5.951** (-2.557)	-6.628** (-2.536)	-5.975** (-2.814)	-6.928* (-2.223)	-4.961*** (-5.116)	-8.385* (-2.437)	-4.666* (-1.988)	-7.061** (-2.484)
GDP per capita (current US\$) 1996	-0.661*** (-4.930)	-0.508*** (-4.601)	-0.638*** (-3.906)	-0.400** (-2.671)	-0.597*** (-5.303)	-0.517** (-3.376)	-0.547*** (-4.027)	-0.607*** (-5.478)
Inflation (annual %) 1996	-2.021*** (-4.404)	-1.507*** (-3.764)	-2.517** (-3.195)	-1.290* (-2.264)	-1.851*** (-4.659)	-2.246** (-3.292)	-1.740*** (-4.264)	-2.172*** (-4.687)
State ownership in 96	0.526** (3.017)	0.525** (2.653)	0.526** (2.728)	0.538** (2.820)	0.505** (2.779)	0.588** (3.026)	0.682*** (4.383)	0.380** (3.430)
Family ownership in 96	-0.124* (-2.118)	-0.101 (-1.511)	-0.115 (-1.763)	-0.0769 (-1.398)	-0.151** (-2.790)	-0.0720 (-0.830)	-0.122* (-1.966)	-0.0970 (-1.394)
Constant	15.19* (1.988)	10.51 (1.361)	19.36 (1.557)	4.276 (0.372)	15.00 (1.598)	14.30* (1.955)	6.734 (0.706)	17.82** (2.822)
Observations	178	180	183	179	175	160	164	160
R-squared	0.355	0.342	0.349	0.350	0.374	0.388	0.392	0.345

Panel B: Full Sample	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Ex-Japan	Ex-Korea	Ex-Taiwan	Ex-Malaysia	Ex-Thailand	Ex-Philippines	Ex-Singapore	Ex-Indonesia
Political change between 96 and 08	3.588** (2.972)	3.039* (2.304)	5.939*** (6.163)	3.999** (3.058)	3.068* (2.300)	6.733*** (5.174)	4.970*** (7.732)	2.767 (1.833)
Veto players in 1996	3.278*** (6.522)	3.391*** (9.410)	2.177** (2.656)	3.084*** (7.724)	3.862*** (10.51)	4.188*** (10.74)	3.263*** (7.199)	2.987*** (8.354)
Polity score in 1996	-0.617** (-3.071)	-0.620** (-3.214)	-0.388** (-3.180)	-0.582** (-2.759)	-0.650*** (-4.006)	-0.916** (-3.604)	-0.396** (-3.454)	-0.886*** (-6.129)
Politically connected in 08	-1.835 (-0.463)	-1.553 (-0.407)	-1.556 (-0.420)	-1.032 (-0.279)	0.484 (0.161)	-3.071 (-0.523)	-4.879 (-1.155)	-0.00929 (-0.00286)
GDP per capita (current US\$) 1996	-0.400 (-1.901)	-0.256** (-2.464)	-0.404** (-2.603)	-0.303** (-2.631)	-0.425** (-3.083)	-0.258 (-1.867)	-0.278* (-2.174)	-0.453** (-3.119)
Inflation (annual %) 1996	-1.197 (-1.585)	-0.591 (-1.464)	-1.663* (-2.243)	-0.827 (-1.445)	-1.266* (-2.178)	-1.282 (-1.893)	-0.632 (-1.107)	-1.629* (-2.173)
Newly listed	0.365 (0.0785)	-0.526 (-0.116)	-1.404 (-0.270)	-0.842 (-0.153)	2.341 (0.391)	-11.28 (-0.561)	5.116 (1.896)	-6.200** (-2.488)
Newly listed x Veto players in 96	1.743 (1.128)	2.508* (2.203)	2.509 (1.612)	2.529 (0.895)	0.709 (0.395)	6.068 (0.893)	1.825 (1.220)	1.879 (1.679)
Newly listed x Polity score in 96	-1.290 (-1.741)	-1.203 (-1.704)	-1.310 (-1.853)	-1.310 (-1.298)	-1.364 (-1.863)	-2.187 (-1.274)	-1.739*** (-3.735)	-0.127 (-0.568)
Newly listed x Politically connected in 08	18.39 (1.764)	15.85 (1.647)	17.06 (1.701)	17.13 (0.937)	10.33 (1.181)	21.93 (1.666)	25.26* (2.143)	14.88 (1.699)
Constant	12.16 (0.994)	7.308 (0.767)	16.93 (1.211)	12.25 (0.885)	5.370 (0.526)	7.591 (0.735)	3.300 (0.316)	20.21* (2.424)
Observations	293	289	304	265	280	273	252	270
R-squared	0.210	0.214	0.214	0.184	0.203	0.218	0.241	0.266

Table 6: Analysis including Hong Kong

This table presents results from the least squares estimation (columns 1, 3 and 4) and logistic regression (column 2) of equation 1. This analysis includes firms from Hong Kong by supplementing Veto Points data using St. Marie et al. (2007) and dropping Polity score from the list of explanatory variables. The dependent variables are: (1) State ownership is the (%) which is proportion of State ownership in firm *i* in 2008; (2) State participation (=1) which is an indicator variable =1 if there is State ownership in firm *i* in 2008; and (3) Change in State ownership (%) which is the change in the proportion of State ownership in firm *i* between 1996 and 2008. Our explanatory variables include: (1) Political change between 96 and 08: an indicator variable=1 if a firm operates in a country that underwent significant political change between 1996 and 2008 (see Carney and Childs, 2012); (2) Veto players in 96: the number of Veto Points (see Keefer and Stasavage, 2003) ; (3) Politically connected in 96: an indicator variable =1 if firm *i* is has a politically connected director on the board in 1996; (4) Politically connected in 08: an indicator variable =1 if firm *i* is has a politically connected director on the board in 2008; (5) GDP per capita (current US\$) in 96; (6) Inflation (annual %) in 96; (7) Owner in 96 is State: is an indicator variable=1 if firm *i*'s dominant owner in 1996 is the State; (8) Owner in 96 is Family: is an indicator variable=1 if firm *i*'s dominant owner in 1996 is a family; (9) Owner in 96 is widely held shareholders: is an indicator variable =1 if firm *i*'s dominant owner in 1996 are dispersed shareholders; (10) State ownership in 96: proportion of government ownership in firm *i* in 1996 (%); (11) Family ownership in 96: proportion of family ownership in firm *i* in 1996 (%); (12) Newly listed: an indicator variable=1 if firm *i* was newly listed between 1996 and 2008. All regressions include industry fixed-effects. Robust (clustered standard errors) t-statistics are reported in parentheses. *, ** and *** represent significance levels of 10%, 5% and 1%, respectively.

	(1) Ex-Newly Listed State ownership (%)	(2) Ex-Newly Listed State participation (=1)	(3) Ex-Newly Listed Change in State ownership (%)	(4) Full Sample State ownership (%)
Political change between 96 and 08	5.929** (2.555)	0.0625 (0.127)	5.929** (2.555)	9.812** (2.709)
Veto players in 96	2.732** (3.286)	0.486*** (2.978)	2.732** (3.286)	2.441* (1.990)
Politically connected in 96	0.107 (0.0348)	-0.312 (-0.580)	0.107 (0.0348)	
Politically connected in 08	-0.320 (-0.0912)	0.500 (0.954)	-0.320 (-0.0912)	-2.274 (-0.814)
State ownership in 96	0.552*** (3.510)	0.0894*** (5.375)	-0.448** (-2.844)	
Family ownership in 96	-0.0407 (-0.815)	0.00540 (0.507)	-0.0407 (-0.815)	
GDP per capita (current US\$) 96	0.115 (0.475)	0.00790 (0.132)	0.115 (0.475)	0.246 (0.809)
Inflation (annual %) 96	0.614 (0.591)	0.0493 (0.206)	0.614 (0.591)	0.759 (0.572)
Newly listed				22.64* (1.917)
Newly listed x Veto players in 96				-3.973 (-1.602)
Newly listed x Politically connected in 08				21.59** (2.671)
Constant	-11.58 (-0.806)	-3.489 (-1.106)	-11.58 (-0.806)	-5.050 (-0.363)
Observations	230	199	230	371
R-Squared	0.245		0.229	0.249

Table 7: Leverage

This table presents results from the least squares estimation on firm's leverage. The independent variables are: (1) the percentage of shares owned by the State in 2008, (2) the percentage change in State ownership for the firm from 1996 to 2008, (3) "State Ownership 08" is the indicator variable = 1 if the firm is owned partially by the state in 2008, (4) "Minority State Ownership 08" is the indicator variable = 1 if the State is the minority shareholder in 2008, (5) "Dominant State Ownership 08" is the indicator variable = 1 if the firm's dominant owner in 2008 is the State, (6) the fraction of family ownership in 2008, (7) return on asset, which is net income or the earnings before interest, tax, depreciation and amortization scaled by the book value of total assets, (8) firm size, and (9) the firm's price-to-book ratio. All regressions include industry fixed-effects. Robust (clustered standard errors) t-statistics are reported in parentheses. *, ** and *** represent significance levels of 10%, 5% and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)
% State Ownership 08	-9.91×10 ⁻⁵ (-0.276)				
% Change in State Ownership 96-08		4.73×10 ⁻⁴ (1.087)			
State Ownership 08			0.00281 (0.149)		
Minority State Ownership 08				-0.0296 (-1.004)	-0.0315 (-1.007)
Dominant State Ownership 08				0.0129 (0.618)	-0.00345 (-0.150)
% Family Ownership in 08	6.45×10 ⁻⁴ ** (2.372)	7.07×10 ⁻⁴ ** (1.971)	6.97×10 ⁻⁴ ** (2.584)	7.59×10 ⁻⁴ *** (2.822)	7.01×10 ⁻⁴ ** (2.376)
ROA	-0.00135** (-2.066)	-0.00120 (-1.639)	-0.00136** (-2.062)	-0.00134** (-2.063)	-0.00136** (-2.079)
Size	0.00676*** (3.289)	0.00869*** (3.106)	0.00684*** (3.274)	0.00669*** (3.188)	0.0155*** (3.702)
Price-to-Book	-0.00121 (-0.686)	-0.000665 (-0.369)	-0.00120 (-0.685)	-0.00127 (-0.729)	-0.00132 (-0.758)
Constant	0.0388 (0.830)	-0.0148 (-0.245)	0.0337 (0.696)	0.0362 (0.749)	-0.112 (-1.414)
Industry FE	yes	yes	yes	yes	yes
Country FE	no	no	no	no	yes
Observations	709	446	709	709	709
R-squared	0.127	0.120	0.126	0.129	0.159

Table 8: Asset Growth

This table presents results from the least squares estimation on firm's natural log year-to-year change in total asset. The independent variables are: (1) the percentage of shares owned by the State in 2008, (2) the percentage change in State ownership for the firm from 1996 to 2008, (3) "State Ownership 08" is the indicator variable = 1 if the firm is owned partially by the state in 2008, (4) "Minority State Ownership 08" is the indicator variable = 1 if the State is the minority shareholder in 2008, (5) "Dominant State Ownership 08" is the indicator variable = 1 if the firm's dominant owner in 2008 is the State, (6) the fraction of family ownership in 2008, (7) return on asset, which is net income or the earnings before interest, tax, depreciation and amortization scaled by the book value of total assets, (8) firm size, and (9) the firm's price-to-book ratio. All regressions include industry fixed-effects. Robust (clustered standard errors) t-statistics are reported in parentheses. *, ** and *** represent significance levels of 10%, 5% and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)
% State Ownership 08	0.151*** (2.793)				
% Change in State Ownership 96-08		0.0735* (1.842)			
State Ownership 08			5.350** (2.174)		
Minority State Ownership 08				-1.551 (-0.629)	-4.537* (-1.805)
Dominant State Ownership 08				7.506*** (2.593)	2.888 (0.939)
% Family Ownership in 08	0.144 (1.434)	0.0319 (0.832)	0.128 (1.275)	0.141 (1.413)	0.0630 (0.727)
ROA	0.105 (0.632)	-0.00829 (-0.0676)	0.106 (0.632)	0.108 (0.638)	0.124 (0.720)
Leverage	27.86** (2.142)	22.54 (1.300)	27.47** (2.110)	26.81** (2.052)	26.97** (2.024)
Size	0.473 (1.353)	0.870* (1.897)	0.525 (1.480)	0.498 (1.394)	1.443** (2.002)
Price-to-Book	0.122 (0.377)	0.389 (1.156)	0.109 (0.337)	0.0944 (0.294)	0.177 (0.528)
Constant	-16.44* (-1.804)	-13.05 (-1.555)	-16.57* (-1.774)	-16.03* (-1.729)	-26.27* (-1.650)
Industry FE	yes	yes	yes	yes	yes
Country FE	no	no	no	no	yes
Observations	708	440	708	708	708
R-squared	0.069	0.100	0.065	0.067	0.086

Table 9: Return on Equity

This table presents results from the least squares estimation on firm's return on equity, which is computed by the firm's net income or the earnings before interest, tax, depreciation and amortization divided by the book value of the shareholder's equity. The independent variables are: (1) the percentage of shares owned by the State in 2008, (2) the percentage change in State ownership for the firm from 1996 to 2008, (3) "State Ownership 08" is the indicator variable = 1 if the firm is owned partially by the state in 2008, (4) "Minority State Ownership 08" is the indicator variable = 1 if the State is the minority shareholder in 2008, (5) "Dominant State Ownership 08" is the indicator variable = 1 if the firm's dominant owner in 2008 is the State, (6) the fraction of family ownership in 2008, (7) return on asset, which is net income or the earnings before interest, tax, depreciation and amortization scaled by the book value of total assets, (8) firm size, and (9) the firm's price-to-book ratio. All regressions include industry fixed-effects. Robust (clustered standard errors) t-statistics are reported in parentheses. *, ** and *** represent significance levels of 10%, 5% and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)
% State Ownership 08	0.00893 (0.156)				
% Change in State Ownership 96-08		-0.0846 (-0.862)			
State Ownership 08			-0.978 (-0.229)		
Minority State Ownership 08				-1.275 (-0.281)	-0.956 (-0.213)
Dominant State Ownership 08				-0.886 (-0.194)	-1.356 (-0.267)
% Family Ownership in 08	0.0714 (0.722)	0.0494 (0.352)	0.0619 (0.648)	0.0625 (0.652)	0.0565 (0.560)
Asset Growth	-0.0519 (-0.505)	-0.349 (-1.035)	-0.0509 (-0.495)	-0.0510 (-0.495)	-0.0512 (-0.494)
Leverage	-44.44** (-1.989)	-59.16* (-1.708)	-44.49** (-1.992)	-44.52** (-1.985)	-47.61** (-2.072)
Size	-0.664 (-0.702)	-0.516 (-0.343)	-0.684 (-0.686)	-0.685 (-0.689)	0.464 (0.384)
Price-to-Book	12.71 (1.468)	16.01 (1.463)	12.72 (1.464)	12.72 (1.463)	12.71 (1.451)
Constant	6.242 (0.570)	-5.754 (-0.301)	7.319 (0.643)	7.343 (0.645)	-16.19 (-0.867)
Industry FE	yes	yes	yes	yes	yes
Country FE	no	no	no	no	yes
Observations	703	442	703	703	703
R-squared	0.228	0.303	0.228	0.228	0.235

Table 10: Idiosyncratic Volatility Based on Fama-French 3-Factor Model

This table presents results from the least squares estimation on firm's idiosyncratic volatility (adjusted for Fama-French 3-Factors) two quarters prior and after the collapse of Lehman Brothers Holding, Inc. The independent variables are: (1) "State Ownership 08", an indicator variable = 1 if the firm is owned partially by the state in 2008, (2) "Minority State Ownership 08", an indicator variable = 1 if the State is the minority shareholder in 2008, (3) "Dominant State Ownership 08", an indicator variable = 1 if the firm's dominant owner in 2008 is the State, (4) the firm's return on equity and (5) the firm's leverage ratio. All regressions include industry fixed-effects. Robust (clustered standard errors) t-statistics are reported in parentheses. *, ** and *** represent significance levels of 10%, 5% and 1%, respectively.

Panel A	(1) Q = -2	(2) Q = -1	(3) Q = 0	(4) Q = +1	(5) Q = +2
State Ownership 08	-0.271** (-2.157)	-0.328*** (-2.641)	-0.0612 (-0.248)	-0.378** (-2.352)	-0.446** (-2.186)
ROE	-0.00369** (-2.401)	-0.00429*** (-2.992)	-0.00850*** (-2.699)	0.000713 (0.302)	0.000763 (0.689)
Leverage	0.286 (0.615)	0.808 (1.464)	1.673* (1.845)	0.0946 (0.206)	-0.949 (-1.443)
Constant	2.278*** (6.488)	2.160*** (8.781)	2.838*** (9.638)	2.276*** (13.73)	2.401*** (8.009)
Observations	24,744	24,895	24,895	24,769	24,700
R-squared	0.038	0.057	0.056	0.040	0.043
Panel B	(1) Q = -2	(2) Q = -1	(3) Q = 0	(4) Q = +1	(5) Q = +2
State is Minority Owner	-0.679*** (-4.029)	-0.721*** (-3.734)	-1.139*** (-3.125)	-0.848*** (-2.872)	-0.922*** (-3.145)
State is Dominant Owner	-0.202 (-1.518)	-0.261** (-2.040)	0.123 (0.475)	-0.296* (-1.781)	-0.362* (-1.690)
ROE	-0.00374** (-2.443)	-0.00434*** (-3.000)	-0.00863*** (-2.692)	.14×10 ⁻⁴ (0.302)	7.72×10 ⁻⁴ (0.698)
Leverage	0.274 (0.588)	0.797 (1.448)	1.644* (1.812)	0.0783 (0.171)	-0.968 (-1.471)
Constant	2.305*** (6.741)	2.183*** (9.740)	2.901*** (12.95)	2.312*** (16.58)	2.442*** (8.818)
Observations	24,744	24,895	24,895	24,769	24,700
R-squared	0.040	0.059	0.061	0.041	0.044

Table 11: Abnormal Return Based on Fama-French 3-Factor Model

This table presents results from the least squares estimation on firm's abnormal return (adjusted for the Fama-French 3-Factors) two quarters prior and after the collapse of Lehman Brothers Holding, Inc. The independent variables are: (1) "State Ownership 08", an indicator variable = 1 if the firm is owned partially by the state in 2008, (2) "Minority State Ownership 08", an indicator variable = 1 if the State is the minority shareholder in 2008, (3) "Dominant State Ownership 08", an indicator variable = 1 if the firm's dominant owner in 2008 is the State, (4) the firm's return on equity and (5) the firm's leverage ratio. All regressions include industry fixed-effects. Robust (clustered standard errors) t-statistics are reported in parentheses. *, ** and *** represent significance levels of 10%, 5% and 1%, respectively.

Panel A	(1) Q = -2	(2) Q = -1	(3) Q = 0	(4) Q = +1	(5) Q = +2
State Ownership 08	-0.188*** (-3.525)	-0.0221 (-0.435)	0.0383 (0.539)	-0.00130 (-0.0223)	-0.0593 (-0.747)
ROE	0.00145 (1.303)	0.00107 (1.460)	0.00193 (1.291)	7.00×10 ⁻⁴ ** (1.988)	0.00114*** (4.959)
Leverage	-0.154 (-0.761)	0.0316 (0.191)	-0.303 (-1.387)	-0.124 (-0.633)	-0.0706 (-0.336)
Constant	0.162 (1.219)	0.00514 (0.0423)	-0.113 (-0.686)	0.155 (1.029)	0.368 (1.413)
Observations	24,744	24,895	24,895	24,769	24,700
R-squared	0.002	0.001	0.001	0.001	0.001
Panel B	(1) Q = -2	(2) Q = -1	(3) Q = 0	(4) Q = +1	(5) Q = +2
State is Minority Owner	0.0692 (0.533)	0.0490 (0.508)	0.0946 (0.734)	0.300** (2.170)	0.494*** (3.662)
State is Dominant Owner	-0.232*** (-4.261)	-0.0342 (-0.628)	0.0287 (0.372)	-0.0539 (-0.908)	-0.157* (-1.925)
ROE	0.00148 (1.347)	0.00108 (1.480)	0.00193 (1.295)	0.000700** (1.996)	0.00113*** (4.972)
Leverage	-0.146 (-0.725)	0.0334 (0.203)	-0.301 (-1.379)	-0.113 (-0.581)	-0.0481 (-0.234)
Constant	0.145 (1.047)	0.000972 (0.00802)	-0.116 (-0.708)	0.132 (0.925)	0.320 (1.378)
Observations	24,744	24,895	24,895	24,769	24,700
R-squared	0.038	0.018	0.014	0.023	0.037

Table 12: Idiosyncratic Volatility & Abnormal Return Based on Fama-French 3-Factor Model (with Country Fixed Effects)

This table presents results from the least squares estimation on firm's idiosyncratic volatility and abnormal return (adjusted for the Fama-French 3-Factors) two quarters prior and after the collapse of Lehman Brothers Holding, Inc. The independent variables are: (1) "Minority State Ownership 08", an indicator variable = 1 if the State is the minority shareholder in 2008, (52) "Dominant State Ownership 08", an indicator variable = 1 if the firm's dominant owner in 2008 is the State, (3) the firm's return on equity and (4) the firm's leverage ratio. All regressions include industry and country fixed-effects. Robust (clustered standard errors) t-statistics are reported in parentheses. *, ** and *** represent significance levels of 10%, 5% and 1%, respectively.

	Fama-French Idiosyncratic Volatility					Fama-French Abnormal Return				
	(1) Q = -2	(2) Q = -1	(3) Q = 0	(4) Q = +1	(5) Q = +2	(6) Q = -2	(7) Q = -1	(8) Q = 0	(9) Q = +1	(10) Q = +2
State is Minority Owner	-0.517*** (-2.802)	-0.429** (-2.199)	-0.420 (-0.945)	-0.499 (-1.360)	-0.651** (-1.994)	0.125 (1.406)	0.164** (2.218)	0.0194 (0.161)	0.170 (1.445)	0.168 (1.041)
State is Dominant Owner	-0.223* (-1.709)	-0.183 (-1.297)	0.131 (0.516)	-0.330* (-1.862)	-0.456** (-2.028)	-0.272*** (-5.051)	-0.0488 (-0.929)	-0.0564 (-0.825)	-0.177*** (-2.590)	-0.270*** (-3.651)
ROE	-0.00364* (-1.933)	-0.00484*** (-3.220)	-0.00798*** (-2.781)	-4.87×10 ⁻⁵ (-0.0208)	-6.69×10 ⁻⁴ (-0.496)	0.00140 (1.177)	0.00131** (2.105)	0.00177 (1.500)	7.33×10 ⁻⁴ ** (2.263)	8.01×10 ⁻⁴ *** (3.473)
Leverage	0.190 (0.429)	0.721 (1.446)	1.462* (1.843)	-0.107 (-0.231)	-1.008 (-1.527)	-0.255 (-1.283)	-0.0349 (-0.222)	-0.361* (-1.950)	-0.0995 (-0.565)	-0.0688 (-0.385)
Constant	2.333*** (7.224)	2.149*** (7.594)	3.588*** (9.986)	2.903*** (10.06)	3.135*** (6.527)	0.360** (2.455)	0.197* (1.703)	0.185 (1.010)	0.476*** (2.869)	0.221 (1.154)
Observations	24,744	24,895	24,895	24,769	24,700	24,744	24,895	24,895	24,769	24,700
R-squared	0.103	0.099	0.155	0.118	0.133	0.123	0.082	0.090	0.091	0.131