Ownership structure and firm performance: evidence from the subprime crisis period

Mamduh M. Hanafi, Bowo Setiyono and I Putu Sugiartha Sanjaya

Abstract

Purpose – *This paper aims to compare the effect of ownership on firm performances in the 1997 and 2008 financial crises. More specifically, it investigates the effect of cash flow rights, control rights and cash flow rights leverage on firm performance. Two conditions motivated the study. First, the 2008 financial crisis happened quickly, so it was endogenous for firms. This setting is ideal to deal with endogeneity problems in a study that involves ownership and performance. Second, during the 2000s, awareness and implementation of corporate governance increased significantly. The authors believe that the markets learn these changes and incorporate them into prices, as suggested by an efficient market hypothesis.*

Design/methodology/approach – *The paper investigates and compares the effect of ownership structure on firm performance in the 2008 subprime crisis period to that in the 1997 financial crisis. Both crises happen unexpectedly, so the authors can expect that the crises are exogenous to firms. The authors use cash flow rights, control rights and cash flow right leverage for the ownership structure dimension. They also study time-series data to investigate the effect of ownership on a firm's value.*

Findings – *The study finds that cash flow right and cash flow right leverage did not affect stock performance during the subprime crisis of 2008. It also finds that cash flow right leverage and cash flow right affected stock performance during the financial crisis of 1997. The study attributes this finding to the learning process and improvement of corporate governance during the period of the 2000s. Using time-series data, it finds that cash flow rights positively affect firm performance, suggesting an alignment effect. Ownership concentration improves firm performance. When the study split its sample, it found that the effect ownership on firms' value is stronger for large firms.*

Research limitations/implications – *The study's main limitation is that it does not test directly the learning process hypothesis. The study contributes to the current literature by presenting more recent evidence on the effect of ownership structure on firm performance in a developing country. The authors argue that markets learn the improvement of corporate governance and incorporate this development into prices. Extending this research to other markets will provide confirmation whether the learning process is an international phenomenon.*

Practical implications – *The awareness and implementation of corporate governance should be maintained at least at this level. The positive relationship between ownership concentration and firm performance suggests that concentrated ownership performs monitoring more effectively. Investors should pay attention to ownership concentration.*

Social implications – *The finding that prices already reflect corporate governance may suggest that market is monitoring this issue. This seems to be a good finding. Markets can be expected to discipline companies in the implementation of corporate governance. The awareness and implementation of corporate governance should be maintained at least at the current level.*

Originality/value – *The study contributes to the current literature by presenting additional evidence on the effect of ownership (using cash flow rights, control rights and cash flow right leverage) on firms' performance in a more recent period and in a developing country. This period*

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is characterized by a significant increase in awareness and the implementation of good corporate governance.

Keywords *Indonesia, Firm performance, Cash flow rights, Cash flow rights leverage, Control rights, Subprime crisis*

Paper type *Research paper*

1. Introduction

Extant literature shows that corporate governance explains 1997's Asian financial crisis. Johnson *et al.* (2000) show that governance measures and ownership structures explain the collapse of the currencies and stock markets in the 1997 crisis, and that the effect of these variables was stronger than the standard macroeconomic variables. Mitton (2002) extends this idea to the firms' level, and shows that ownerships concentration, disclosures' quality and diversification affected the firms' performance in the crisis. Lemmon and Lins (2003) show that cash flow rights leverage (defined as control rights divided by cash flow rights) negatively affected firms' performance during the 1997 Asian crisis. The effect was stronger when managerial ownership was present. Thus, managerial ownership can be used as a vehicle for majority shareholders to expropriate minority shareholders. Even so, corporate governance seems to have an impact on trading strategies. A trading strategy based on corporate governance seems to produce abnormal profits. For example, using the decade of the 1990s, Gompers *et al.* (2003) show that a trading strategy consisting of buying stock in companies that are in the top 10 per cent of the governance index and selling stock in companies that form the lowest 10 per cent of the governance index would have yielded an abnormal return of 8.5 per cent.

The year 2000 witnessed a growing awareness of good corporate governance (Bebchuk *et al.*, 2013). Markets also seemed to learn this and incorporate this information into prices. The efficient market hypothesis predicts that trading based on widely held information will not yield abnormal profits. Consistent with this notion, Bebchuk *et al.* (2013) show that the profitability of a trading strategy based on governance, which produced abnormal profits in the 1990s (Gompers *et al.*, 2003), disappears during the next decade. They attribute the disappearance to the governance learning process during this period.

In 2008, the markets experienced another financial crisis, which was the subprime crisis. This event, along with the more recent developments in corporate governance during the 2000s, motivated our study. Specifically, our research question is, "Does the significant effect of the ownerships structure on a firm's performance, as observed in the 1997 financial crisis, disappear during the 2008 financial crisis?" We hypothesize that the significant effect disappeared in the 2008 financial crisis. The use of the 2008 subprime crisis provides an advantage. As suggested by Lemmon and Lins (2003), the use of crisis periods may be appropriate when looking to disentangle endogeneity problems that may arise as ownership structures, investment opportunities and firms' values may all be jointly determined (Demsetz and Lehn, 1985; Akbar *et al.*, 2016). Akbar *et al.* (2016) show that after controlling for endogeneity problems, previous findings of positive associations between corporate governance and performance disappear. The 1997 crisis hit the Asian countries suddenly, so the crisis was exogenous to the firms. They have little or probably no opportunity to adjust to the crisis in the short-term.

Using a sample of firms listed on the Indonesian Stock Exchange, we find that cash flow rights and cash flow rights leverage did not affect the stocks' performance during the subprime crisis of 2008. We do, however, find that cash flow rights leverage and cash flow rights affected the stocks' performance during the financial crisis of 1997. We attribute these findings to the learning process and improvements to corporate governance during the 2000s. Although we do not directly test a learning process hypothesis, indirect evidence seems to show that corporate governance improved during the 2000s. Various new regulations on corporate governance were implemented during this period. An awareness

of, and attention to, good corporate governance significantly increased in the 2000s. Our paper contributes to the existing literature by presenting more recent evidence of the impact of ownerships structure on firms' performance, and the dynamics of markets that make the effect changes with time. We also contribute to the existing literature by providing complementary evidence on the effect of governance and ownerships structure on firms' performance in the Asian context (Wiwattanakantang, 2001; Lin and Lin, 2013; Utama *et al.*, 2017). To the best of our knowledge, there has been no study on emerging markets that compares the effect of ownerships structure on performance using the setting of different financial crises.

We organize the paper as follows. Section 2 is a literature review that discusses the effects of governance and ownerships structure on firms' performance, and the development of good corporate governance during the decade of the 2000s. The central message in this section is that the attention to, awareness of and implementation of good corporate governance increased significantly during this period. Section 3 provides a discussion on our data and methodology. Section 4 discusses the empirical findings. Section 5 offers our conclusions.

2. Literature review

2.1 Corporate governance, ownership structure and firm performance

The agency theory (Jensen and Meckling, 1976) predicts that there will be conflicts among parties involved in corporations. In a dispersed ownership (Berle and Means, 1932), the separation of ownership and control creates conflicts between shareholders and managers. However, in a concentrated ownership, conflicts between the controlling (majority) and minority shareholders become more important. Claessens *et al.* (2000) have formalized this concept by introducing parameters for control rights, cash flow rights and a divergence between the control and cash flow rights. Ownerships concentration may be able to monitor companies more effectively; however, a larger divergence between the control and cash flow rights may reflect higher agency conflicts between the controlling and minority shareholders. The larger the divergence is, the worse the performance of the companies is. Empirical findings seem to support this view (Claessens *et al.*, 2000; Lemmon and Lins, 2003).

The evidence from country-specific studies, especially in the Asian context, can be found in Wiwattanakantang (2001) for Thailand, Lin and Lin (2013) for Taiwan and Utama *et al.* (2017) for Indonesia. Wiwattanakantang (2001) and Lin and Lin (2013) report a non-linear effect of ownership on firms' performance. For exampe, Lin and Lin (2013) find that cash flow rights of less than 27.8 per cent and control rights of between 32.34 and 34.03 per cent maximize firms' values, as measured by Tobin's Q. Applying the Indonesian data, Utama *et al.* (2017) use a two-stage least square to deal with the endogeneity issue and found that corporate governance practice has a positive influence on cash flow rights and a marginally negative effect on cash flow rights leverage; cash flow rights and cash flow rights leverage have negative impacts on corporate governance's practice. Endogeneity between ownership and performance is well documented in the literature (Demsetz, 1983). Several papers deal with this problem in different ways. Lemmon and Lins (2003) used 1997's financial crisis in their research setup, arguing that a financial crisis is an exogenous event for companies. Akbar *et al.* (2016) use the generalized method of moments (GMM), while Utama *et al.* (2017) use a two-stage least square to deal with the endogeneity problems.

2.2 Development of good corporate governance

Bebchuk *et al.* (2013) use three variables to measure the attention paid to corporate governance: references in the media, corporate governance shareholders' resolution by institutional investors and academic research into corporate governance. They show that

attention to corporate governance increased sharply during the 2000s, much higher than that seen in the 1990s. Claessens and Yurtoglu (2013) provide an overview of corporate governance in emerging markets. They show that after the 1997 financial crisis, Asian countries reformed their corporate governance systems. It is widely believed that poor governance was the main cause of the crisis. The reforms ranged from major and fundamental changes, such as in Korea, to partial or even a few specific aspects, as occurred in Turkey. An example for Korea is the requirement, imposed by the government in 1999, to appoint independent/outside members to the board of directors for a company, for at least one quarter of the total board's members. A large number of countries issued corporate governance codes. Globalization and the integration of financial markets seem to be the main driver for this process, in which foreign institutional investors act as agents of development (Aggarwal *et al.*, 2011). In general, reforms seem to bring positive results, such as increases in share prices.

Companies also voluntarily adopt reforms. For example, companies adjust their ownership structures by increasing their secondary blockholders, adjusting their dividend policy, adopting international accounting standards and hiring more reputable auditors. These changes have a higher impact in countries with weaker governance, although the weaker governance in these countries may limit the benefits of these reforms. De Nicolo *et al.* (2008) construct a composite index of corporate governance quality at the firms' level, and show that many corporations in the world have shown an improvement in the quality of their corporate governance. They also show that corporate governance among countries seems to converge; differences in the scores among countries seem to have decreased. They also report that corporate governance has positive impacts on real economic activities, such as GDP growth and productivity growth. Good corporate governance seems to offer economic benefits for companies, such as higher cash flows and lower costs of capital. The number of firms that follow good governance practices increased after the issuance of the Cadbury Report (Weir *et al.*, 2002), although performance does not seem to have improved.

Indonesia takes a similar path as do other countries in the development of its corporate governance. Reforms to corporate governance in Indonesia started after the financial crisis of 1997 hit the country. As with other countries, it is believed that poor corporate governance was the main cause of the crisis. As part of the steps to overcome the crisis, the Government of Indonesia signed a letter of intent with the International Monetary Fund (IMF), which creates a more conducive environment for good corporate governance. In the early 2000s, the Jakarta Stock Exchange issued a regulation stating that public companies were to appoint independent commissioners to fill at least 30 per cent of their total number of commissioners' posts, and form audit committees with a minimum of three members. While the adoption was initially slow during the early years, currently, practically all public companies have independent commissioners and an audit committee. In 1999, the Government of Indonesia created a new institution called the National Committee for Corporate Governance policy (NCCG). The objective of this institution was to formulate a code of good corporate governance and an institutional framework to implement the code. In 2004, Indonesia government extended the assignment of NCCG to include the public sector. The code of good corporate governance was first issued in 2000 and revised in 2006. The latest code consists of eight chapters. In 2000, the private sector, through several business and professional associations, initiated the development by forming the Forum for Corporate Governance in Indonesia (FCGI). The forum complemented the work of the NCCG in improving good corporate governance in Indonesia, and enhanced the Indonesian business community's awareness of good corporate governance. The government also issued several regulations to improve the corporate governance of state-owned enterprises, such as the establishment of audit committees, independent commissioners and guidance for implementing good corporate governance. State-owned enterprises make up a significant portion of Indonesia's business community. The scores for the Corruption Perception Index for Indonesia kept increasing year on year, from 1.98 in 1995 to 2.8 in 2010.

One weakness of good corporate governance's implementation, so far, is that there have been no sanctions for companies that do not implement it. However, in the banking sector, more binding regulations on good corporate governance have been introduced, which may result in sanctions for banks that do not comply with the principles of good corporate governance. With such an "explosion" of attention to corporate governance, it was very unlikely that the markets would not pay attention to corporate governance in the 2000s. The efficient market hypothesis suggests that the relevant information would be quickly incorporated into prices; thus, corporate governance would also be quickly incorporated into prices.

Indonesia offers an ideal setting to investigate the effects of ownerships structure on performance under a setting of different financial crises. Indonesia is one of the countries that experienced the biggest collapse in its stock market and currency during the 1997 financial crisis (Johnson *et al.*, 2000). Ownership in Indonesia tends to be highly concentrated (Utama *et al.*, 2017). On average, the percentage of shares sold to public investors is only 30 per cent. The rest are still controlled by the company's founding family. We believe that such extreme conditions offer an ideal setting for a natural experiment to investigate the effect of ownerships structure under a changing environment.

3. Sample, data and methodology

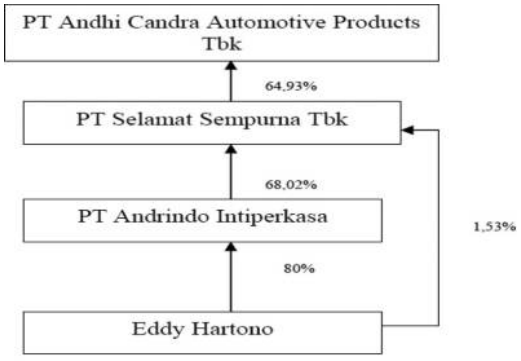
We use samples of 143 firms for the 1997 financial crisis, and 124 firms for the 2008 financial crisis. In 1997, the total number of listed companies on the Jakarta Stock Exchange was 304. This number had grown to 396 companies by 2008. Our sample for the 1997 crisis covers a broad spectrum of industries, while our sample for the 2008 crisis concentrates more on the manufacturing sector.

We use the following variables in this study: ultimate ownership, daily stock price and firms' fundamentals (total assets, total debts, profitability, debt ratio, etc.). The daily stock price and the fundamental data are collected from the Indonesian Stock Exchange and Indonesian Capital Market Directory (ICMD). For the 1997 sample, ultimate ownership data are obtained from Claessens *et al.* (2000), while for 2008, the data were collected manually using the help of the Pusat Data Bisnis Indonesia (PDBI) consulting firm. Ultimate ownership can be differentiated from immediate ownership. While immediate ownership can be found directly from a firm's financial statement, ultimate ownership has to be traced back to the final shareholders in the chain of ownership. After obtaining the ultimate ownership data, we then calculate the control rights, cash flow rights and cash flow rights leverage. The illustration shows the calculation for voting rights, cash flow rights and cash flow rights leverage (Sanjaya, 2010).

Figure 1 shows the ownership structure for PT Andhi Candra. On the basis of Figure 1, we can calculate the control rights, cash flow rights and cash flow rights leverage for the company as follows: cash flow rights of Eddy Hartono: [(80 $\times$ 68.02 per cent) $+$ 1.53 per cent] $\times$ 64.93 per cent = 36.33 per cent. Control rights of Eddy Hartono: minimum of (80; 69.55; 64.93 per cent), which is 64.93 per cent. Cash flow rights leverage for PT Andhi Candra is 0.6493 $-$ 0.3633 = 0.286 or 28.6 per cent.

As we want to investigate this issue for a period of crisis, we have to define more precisely what the crisis period is. Figure 2 shows the Jakarta Composite Index (JCI) movements for the 1997 financial crisis (Panel A) and the 2008 financial crisis (Panel B). In Panel A, the index starts to decline from July 1997 until February 1998, and then it moves sideways and starts to climb in March 1999. Specifically, we calculate the return for the period from 30 june 1997 until 30 August 1998, and use this return for the 1997 financial crisis. In Panel B, for the 2008 financial crisis, the JCI starts to decline from February 2008 to October 2008, and starts to climb from March 2009 to October 2009. We calculate the return for the period from 2 February 2008 until 28 July 2008, and use this as the dependent variable for the 2008 financial crisis.

Figure 1 Ownership structure for PT Andhi Candra



Notes: This figure shows the pyramidal ownership structure for PT Adhi Candra Automotive Products. Control rights, cash flow rights and cash flow rights leverage calculations are explained in the text

4. Empirical findings

4.1 Descriptive statistics

Table I shows the descriptive statistics for the variables used in this paper.

For the 1997 financial crisis, our numbers for the cash flow rights and control rights are very similar to those for Indonesia reported by Claessens *et al.* (2000). Indonesia tends to have more concentrated ownership than other East Asian countries. Claessens *et al.* (2000) reported that the averages for the cash flow rights and control rights for Indonesia were 25.61 and 33.68 per cent, respectively, while the averages for the East Asian countries were 15.70 and 19.77 per cent, respectively. Compared to those for the 1997 financial crisis, the cash flow rights and voting rights in Indonesia tended to increase in the 2008 financial crisis. Ownership concentration tended to increase from 1997 to 2008. However, cash flow rights leverage tended to decrease from 1997 to 2008. This decrease may reflect a decrease in agency conflict between the majority and minority shareholders, which is consistent with a significant increase in the awareness of corporate governance during the 2000s.

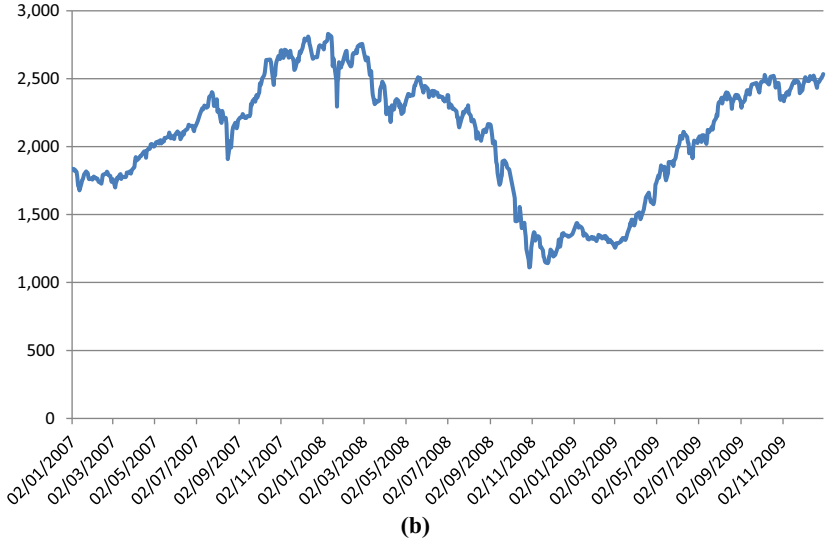
Averages of the cash flow rights and control rights for Indonesia during the 2008 financial crisis tended to resemble those in the European countries. Faccio and Lang (2002) report that the averages for cash flow rights and control rights in Europe were 34.64 and 38.48 per cent, respectively, with the highest being found in Germany (48.54 and 54.5 per cent) and the lowest in Ireland (18.82 and 21.55 per cent). Average price decreased during the 2008 financial crisis tended to be less severe than those in the 1997 financial crisis. We should be cautious, however, as the 1997 and 2008 sample compositions are not exactly the same.

4.2 The effect of cash flow rights and cash flow rights leverage on firms performance

Before we examine the effects of ownership on performance during the subprime crisis period, we show the effect during the 1997 financial crisis using our data set. Table II shows the effect of cash flow rights and cash flow rights leverage on returns during the 1997 financial crisis.

Figure 2 Jakarta Composite Index (JCI) Movement in the 1997 and 2008 financial crises

(a)



(b)

Notes: Panel A. 1997 financial crisis; Panel B. 2008 financial crisis; this figure shows the JCI's movements during the 1997 and 2008 financial crises. In panel A, for the 1997 financial crisis, the index starts to decline from June 1997 until February 1998, then move sideways, and starts to climb on 3 march 1999. We use returns for the period from 30 June 1997 to 30 August 1998, for 1997's financial crisis. In panel B, for the 2008 financial crisis, the JCI starts to decline from February 2008 to October 2008, and starts to climb from March 2009 to October 2009. For 2008's financial crisis, we use returns from the period from 2 February 2008 to 28 July 2008

The table shows that cash flow rights positively affects stock returns. There seems to be an alignment effect in this case. Stockholders that have a higher stake in companies with higher cash flow rights and can be expected to monitor these companies more closely. In Column 2, we find that cash flow rights leverage negatively affects stock returns. This result suggests that high cash flow rights leverage reflects the high potential for agency conflicts, which leads to lower stock performance. In general, the findings in Table II

Table I Descriptive statistics

Variable	*Mean*	*Median*	*SD*	*Minimum*	*Maximum*	N
Panel A: 1997 financial crisis						
Cash flow rights (CFR)	0.2818	0.2600	0.1295	0.0400	0.5800	143
Control rights	0.3656	0.3600	0.1134	0.0800	0.5800	143
Cash flow rights leverage	0.0837	0.0700	0.0930	0	0.3400	143
Return	−0.6093	−0.8196	0.5425	−0.9902	3.2222	143
Management	0.6810	1.000	0.4681	0	1.0000	143
Total assets (Rp million)	3,414,290	1,054,508	7,175,483	34,458	57,174,551	143
Panel B: 2008 financial crisis						
Cash flow rights (CFR)	0.5065	0.5050	0.2173	0.1450	0.9975	124
Control rights	0.5357	0.5265	0.2067	0.1533	0.9975	124
Cash flow rights leverage	0.0292	0	0.0638	0	0.2774	124
Return	−0.2462	−0.2367	0.3552	−0.9009	1.0743	124
Management	0.6774	1.000	0.4693	0	1.0000	124
Liabilities	0.5664	0.5057	0.3592	0.1202	2.9521	124
Total assets (Rp million)	2,171,759	448,184	5,581,901	34,163	46,066,234	124

Notes: This table presents descriptive statistics for control rights, cash flow rights, cash flow rights leverage (CFRL), returns and other variables used in this paper. CFRL is calculated as control rights minus cash flow rights. Returns are calculated as natural logarithm (ln) (Pt/Pt − 1), where Pt and Pt − 1 are, respectively, stock prices, as on 30 June 1997 and 30 August 1998 (the highest and lowest prices in the 1997 financial crisis) and those as on 2 February 2008 and 28 July 2008 (the highest and lowest prices during the 2008 financial crisis). Management has a value of 1 if one member of the board of commissioners of the company is affiliated with the controlling shareholders and 0 otherwise. Liabilities are calculated as the total liabilities divided by the total assets

Table II The effect of cash flow rights and cash flow rights leverage on the return during the 1997 financial crisis

Independent variables	*(1)*	*(2)*
Intercept	−0.8179 (<0.0001)	−0.5454 (<0.0001)
CFR/CFRL **)	0.7467 (0.0346)	−0.7869 (0.1094)
Ln total assets	−5.59E-10 (0.9292)	5.75E-10 (0.9278)
F	2.28	1.3
Sign *F*	(0.1059)	(0.2752)
Adjusted R^2	0.0177	0.0042
N	142	142

Notes: This table reports the regression result of the cash flow rights and cash flow rights leverage on returns during the 1997 financial crisis. Cash flow rights leverage is calculated as control rights minus cash flow rights. Returns are calculated as ln (Pt/Pt − 1), where Pt is the stock price as on 30 August 1998, and Pt − 1 is the stock price on 30 June 1997. Cash flow rights leverage is calculated as control rights divided by minus cash flow rights. *P* values are in parentheses. For variables CFR/CFRL, in Column (1), we use cash flow rights as the independent variable, while in Column (2) we use cash flow rights leverage as the independent variable

seem to be consistent with the message that poor corporate governance results in poor performance, which is a common view regarding the 1997 financial crisis (Lemmon and Lins, 2003 for example).

Next, we examine the effect of cash flow rights and cash flow rights leverage during the 2008 financial crisis. Tables III and IV show the regression results. We also include the variable of management and the interaction between the cash flow rights or cash flow rights leverage and management. Lemmon and Lins (2003) argue that managerial affiliation is a precondition for the expropriation of controlling shareholders on minority shareholders. Controlling shareholders will be able to expropriate minority shareholders through affiliated management.

Table III The effect of cash flow rights leverage on returns during the 2008 subprime crisis period

Independent variables	*(1)*	*(2) Management = 1*	*(3) Management = 0*	*(4)*
Intercept	0.9237 (0.0007)	0.5335 (0.1191)	1.5232 (0.0005)	0.9629 (0.0005)
Cash flow rights leverage (CFRL)	0.2184 (0.6436)	0.9223 (0.1296)	−1.1332 (0.1173)	−1.002 (0.2114)
Management				−0.1011 (0.8177)
CFRL × management				1.8684 (0.0601)
Liability	0.0372 (0.6630)	0.0012 (0.9899)	0.2525 (0.1795)	0.0591 (0.4907)
Ln total assets	−0.0903 (<0.0001)	−0.0619 (0.0196)	−0.1382 (<0.0001)	−0.0883 (<0.0001)
F	6.88	3.04	8.52	5.02
Sign *F*	(0.0003)	(0.0336)	(0.0002)	(0.0003)
Adjusted R^2	0.1252	0.0687	0.3664	0.1405
N	124	84	40	124

Notes: This table reports the regression result of cash flow rights on returns during the crisis period. Cash flow rights leverage is calculated as control rights minus cash flow rights. Returns are calculated as ln (Pt/Pt − 1), where Pt is the stock price as on 28 July 2008, and Pt − 1 is the stock price as on 2 February 2008. These dates represent the highest and the lowest Jakarta Composite Stock Index levels during the 2008 subprime crisis. Management has a value of 1 if one member of the board of commissioners of the company is affiliated with a controlling shareholder and 0 otherwise. In Column 4, to alleviate the problem of multicollinearity from the interaction of the variables, all data are centered at the means. *p*-values are in parentheses

Table IV The effect of cash flow rights on returns during the 2008 subprime crisis period

Independent variables	*(1)*	*(2) Management = 1*	*(3) Management = 0*	*(4)*
Intercept	0.9277(0.0010)	0.5649 (0.1219)	1.5457 (0.0007)	0.9921 (0.0008)
Cash flow rights (CFR)	0.0160 (0.9079)	0.0665 (0.7232)	0.0139 (0.9451)	−0.0558 (0.8042)
Management				−0.0991 (0.5432)
CFR × management				1.030 (0.7218)
Liabilities	0.0399 (0.638)	0.0011 (0.9915)	0.1821 (0.3381)	0.0466 (0.5923)
Ln total assets	−0.0908 (<0.0001)	−0.0646 (0.0164)	−0.1401 (<0.0001)	−0.0908 (<0.0001)
F	6.79	2.24	7.15	4.15
Sign *F*	(0.0003)	(0.0898)	(0.0007)	(0.0016)
Adjusted R^2	0.1237	0.0429	0.3212	0.1135
N	124	84	40	124

Notes: This table reports the regression result of cash flow rights on returns during the crisis period. Cash flow rights leverage is calculated as control rights minus cash flow rights. Returns are calculated as ln (Pt/Pt − 1), where Pt is the stock price as on 28 July 2008, and Pt − 1 is the stock price as on 2 February 2008. These dates represent the highest and the lowest levels for the Jakarta Composite Stock Index during the 2008 subprime crisis. Management has a value of 1 if one member of the board of commissioners of the company is affiliated with a controlling shareholder and 0 otherwise. In Column 4, to alleviate the problem of multicollinearity from the interaction variables, all the data are centered at the means. *p*-values are in parentheses

Table III shows that there is no effect of cash flow rights leverage on stock returns during the 2008 financial crisis. We split the sample into two groups: companies in which at least one member of the board of commissioners has a relationship with the ultimate owners (dummy for management = 1), and companies that do not have such a relationship (dummy for management = 0). Again, we do not find significant results. In the last column of Table III, we show the interaction between management and the cash flow rights variable. We do not find a significant result for the interaction variable. Table IV uses cash flow rights as an independent variable. The message from Table IV is similar to that from Table III. None of the variables of interest is significant. The total assets variable turns out to have a significant impact on returns. Smaller companies tended to experience less of an impact from the crisis.

The results in Tables III and IV are in sharp contrast to those found with respect to the period of the 1997 financial crisis (Lemmon and Lins, 2003). While corporate governance may not produce positive returns, good corporate governance may result in better performance, such as operating performance and Tobin's Q. Bebchuk *et al.* (2013) show that corporate governance significantly improved operating performance and the value

of companies, as measured by Tobin's Q. Similarly, Conyon and Mallin (1997) and Peasnell *et al.* (1998) show improvements in corporate performance after the issuance of the Cadbury Report in 1992. The report issues a recommendation for the adoption of some internal monitoring mechanisms to promote shareholder interests.

To investigate this issue, we collect data for the variable of the year-end price to book value (PBV) from 2003-2007, and run a pooled regression of the effect of cash flow rights and cash flow rights leverage on PBV. As we have panel data, we attempt to control for possible cross-sectional and time-series effects. Hausman's tests suggested the use of a random effects model was more appropriate for our data. Hence, we use panel data random effect estimation in our analysis. Table V reports the regression results.

In Table V, we find that cash flow rights positively affected the PBV. Cash flow rights leverage does not have any impact on the PBV, although the signs for regression are negative, as expected.

The insignificant results of the effects of cash flow rights leverage on the PBV may indicate that the companies were successful in controlling their agency conflicts during the period we observed. Thus, the companies were able to endogenously internalize any negative impacts of their agency conflicts as the negative effect does not show up in the regression. Cash flow rights had a positive effect on the PBV, suggesting an alignment effect (Claessens *et al.*, 2000, 2002; La Porta *et al.*, 1999; Yeh *et al.*, 2003). This finding also supports arguments that concentrated ownership, measured by control rights, improves performance (Agrawal and Mandelker, 1990; García-Meca and Sánchez-Ballesta, 2011; Shleifer and Vishny, 1997), and is inconsistent with the view that large shareholders have incentives to use their controlling position to expropriate the minority shareholders (Lee, 2008).

To gain a further insight, we split our sample into two categories: small and large companies. We classified their size based on the mean of the total assets. More specifically, we classify a company as a large (or small) one if the company has total assets greater (or less) than the mean of the total assets. Then, we run the same regressions as in Table V, using these two sub-samples. Table VI reports these regression results.

Table V The effect of cash flow rights and cash flow rights leverage on the price to book value

	(1)	(2)	(3)	(4)
Independent variables	*Cash flow rights*		*Cash flow rights leverage*	
Intercept	4.1128 (0.2633)	5.1099 (0.1831)	5.6395 (0.1621)	7.2603 (0.0742)
CFR/CFRL**	2.9248 (0.1002)	4.6540 (0.1031)	−4.1631 (0.4700)	−9.0905 (0.4646)
Management		0.3022 (0.8857)		−2.1734 (0.0329)
CFR × management		−4.1045 (0.2714)		6.9269 (0.6202)
Liability	−1.7363 (0.1630)	−1.2529 (0.3193)	−1.6052 (0.2310)	−1.2648 (0.3443)
Ln total assets	−0.2293 (0.3858)	−0.3065 (0.2516)	−0.2288 (0.4403)	−0.2551 (0.3872)
R^2	0.0102	0.0204	0.0051	0.0137
N	560	560	560	560

Notes: This table reports the regression result of cash flow rights and cash flow rights leverage during the years 2003-2007. Cash flow rights leverage is calculated as control rights minus cash flow rights. Price to book value is price divided by the book value at the end of the year. Management has a value of 1 if one executive director of the company is affiliated with the controlling shareholders and 0 otherwise. Liability is total liabilities divided by total assets. Ln is natural logarithm. We use panel data random effect estimation as Hausman's test suggests that this estimation is more appropriate for our data. *p*-values are in parenthesis. For variables CFR/CFRL, in Columns 1 and 2, we use cash flow rights as the independent variables, while in Columns 3 and 4 we use cash flow rights leverage as the independent variables

Table VI The effect of cash flow rights and cash flow rights leverage on price to book value classified by size

	Cash flow rights leverage		*Cash flow rights*	
Independent variables	*Small*	*Large*	*Small*	*Large*
Intercept	14.9908 (0.0081)	1.9637 (0.6940)	16.5532 (0.0002)	0.3981 (0.9386)
CFR/CFRL**	−1.5554 (0.8777)	−15.6835 (0.0605)	3.9982 (0.0501)	6.4861 (0.0016)
Management	−0.8737 (0.2930)	−2.3729 (0.0018)	0.2968 (0.8421)	0.4069 (0.7841)
CFR × management	−3.9682 (0.7241)	16.4544 (0.0676)	−2.4662 (0.3467)	−2.7903 (0.2836)
Liability	0.7165 (0.4289)	−3.0123 (0.0040)	1.4533 (0.0587)	−3.7201 (0.0004)
Ln total assets	−1.0303 (0.0233)	0.2377 (0.4658)	−1.3621 (0.0003)	0.08361 (0.9011)
R^2	0.0250	0.0972	0.0645	0.1319
N	316	234	316	234

Notes: This table reports the regression result of cash flow rights and cash flow rights leverage during the period from 2003 to 2007 by size. Large (small) companies are those with total assets larger (smaller) than the mean of the total assets in our sample. Cash flow rights leverage is calculated as control rights minus cash flow rights. Price to book value is price divided by the book value at the end of the year. Liability is total liabilities divided by total assets. Ln is natural logarithm. We use panel data random effect estimation as Hausman's test suggests that this estimation is more appropriate for our data. *p*-values are in parenthesis. For variables CFR/CFRL, in Columns 1 and 2, we use cash flow rights as the independent variables, while in Columns 3 and 4, we use cash flow rights leverage as the independent variables

The effect of covariates on the PBV is stronger for large companies. For large companies, while the cash flow rights leverage has a negative effect, cash flow rights have a positive effect on the PBV. For small companies, these effects are weaker. Cash flow rights positively affect the PBV for both small and large companies. Cash flow rights have a stronger effect than cash flow rights leverage.

To investigate possible answers for this pattern, we compare the fundamentals of small and large companies: PBV, cash flow rights leverage, cash flow rights, managerial ownership, total assets and total liabilities. Table VII shows the fundamentals for these companies along with the statistical tests.

Table VII shows that except for total liabilites, there are no significant differences in the fundamentals of small and large companies. The larger liablities of the large companies may suggest that agency conflicts in these companies are greater, as a large liability can be used to monitor agency conflict. Markets realize this situation and factors such conflicts into the stocks prices. Another possible interpretation is the different monitoring activities by small and large companies. Large companies attract a more sophistictaed ownership, such

Table VII Fundamentals of small and large firms

Independent variables	*Small*	*Large*	t-*value*	*Prob (t)*
Price to book value	1.8588	1.8716	−0.02	0.9823
Cash flow rights leverage	0.0339	0.0312	0.22	0.8248
Cash flow rights	0.5124	0.4746	0.99	0.3263
Management	0.5671	0.4689	0.45	0.6565
Total assets (Rp million)	164,248	3,386,239	−3.89	<0.0001
Total liabilities	0.5221	0.6186	−1.71	0.0899
N	77	53		

Notes: This table presents the fundamental values for small and large firms. A company is classified as large (small) if its total assets are larger (smaller) than the mean of the total assets in our sample. Price to book value is calculated as of the end of the year. Cash flow rights leverage and cash flow rights are defined as in the text. Managerial ownership is a dummy variable with a value of 1 if the board of commissioners has a relationship with the ultimate owners and 0 if the board does not have such a relationship. Liabilities are calculated as the total liabilities divided by the total assets

as institutional and/or foreign investors. Muniandya *et al.* (2016) show that the presence of institutional ownership is more pronounced in the top 500 Australian firms, and the variable of institutional ownership has a significant positive correlation with total assets. Using Japanese data, Kang and Stulz (1997) show that foreign investors are attracted to large firms, manufacturing industries, firms with good accounting performance, low unsystematic risks and low leverage. Moreover, Aggarwal *et al.* (2011) show that institutional investors improve corporate governance, and its outcome, which is better performance, and governance "travels" around the world. Foreign institutions and institutions from countries with strong shareholders promote governance improvements outside the USA. We believe that these classes of investors exercise their monitoring role more effectively, resulting in the pattern we observe in Table VI.

5. Conclusion

We investigate the effect of cash flow rights and cash flow rights leverage during the 2008 subprime financial crisis, and compare the results to those of the 1997 financial crisis. We take advantage of the exogenous setting, which resulted from the unexpected financial crises. The exogenous setting enables us to mitigate the endogeneity-related problems. While we find a negative impact for cash flow leverage on returns and a positive impact for cash flow rights on returns in the 1997 financial crisis, we do not find significant effects of the same variables on the returns during the 2008 financial crisis. We then use panel data to investigate the effects of cash flow rights and cash flow rights leverage on the PBV during the period from 2003 to 2007. For cash flow rights leverage, although we obtained a negative sign, as expected, the effect is not statistically significant. We do find a positive effect for cash flow rights on the PBV, suggesting an alignment effect. When we investigate further, we find that the negative effect of cash flow rights leverage and the positive effect of cash flow rights on the PBV are stronger for large firms.

The contrast in the findings between those for the 1997 and 2008 financial crises may be because of the learning process of the markets. While the idea and implementation of corporate governance were still new back in the 1990s, the 2000s witnessed a rapid development of the idea and the implementation of corporate governance. We believe that the markets learn this development and incorporate it into the prices. This argument is also consistent with the market efficient hypothesis. Findings from panel data from the 2004 to 2008 period seem to suggest that companies successfully control agency conflicts between the majority and minority shareholders. The widespread adoption of good corporate governance during the 2000s may also have helped to monitor agency conflicts between the majority and minority shareholders. Cash flow rights have a positive effect on the PBV, suggesting that the alignment effect still holds. This finding is also consistent with the view that ownership affects performance, and more specifically, concentrated ownership improves performance. Further investigation shows that the negative effects of cash flow rights leverage and the positive effects of cash flow rights on the PBV are stronger for large firms. This stronger effect for the large firms may suggest that institutional and/or foreign investments exercise their monitoring functions effectively in these firms.

Our findings have important policy and academic implications. They suggest that corporate governance has successfully reached the level where the markets incorporate it into prices. We should at least maintain this level. Our findings show that ownership matters for companies' performance. Thus, the regulators and investors should pay attention to ownership. On the academic side, at least we identify two potential future research directions. First, the rapid development of good corporate governance in the 2000s seems to be an international phenomenon (Claessens and Yurtoglu, 2013). However, there have been few researches investigating the effect of this development on financial market issues, such as stock performance. Investigating these issues in other markets will confirm whether the pattern found in Bebchuk *et al.* (2013) for a developed country and that in this paper

for a developing country, can be generalized to other markets. Second, our evidence for a learning hypothesis has so far been indirect. We discuss the rapid development of corporate governance during the 2000s' decade. However, we have not yet directly tested this hypothesis. Future research can focus on the direct link between the learning process and the disappearance of the positive impact of corporate governance on stock prices, especially in the context of developing markets. We leave these issues for further research.

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